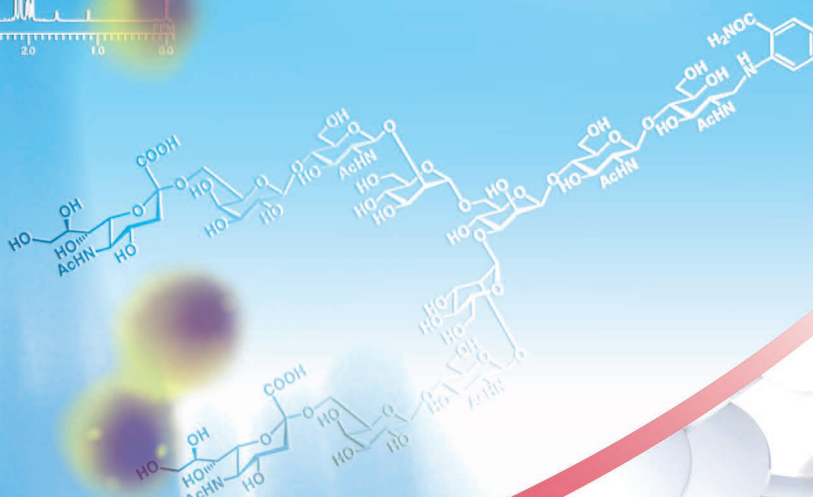
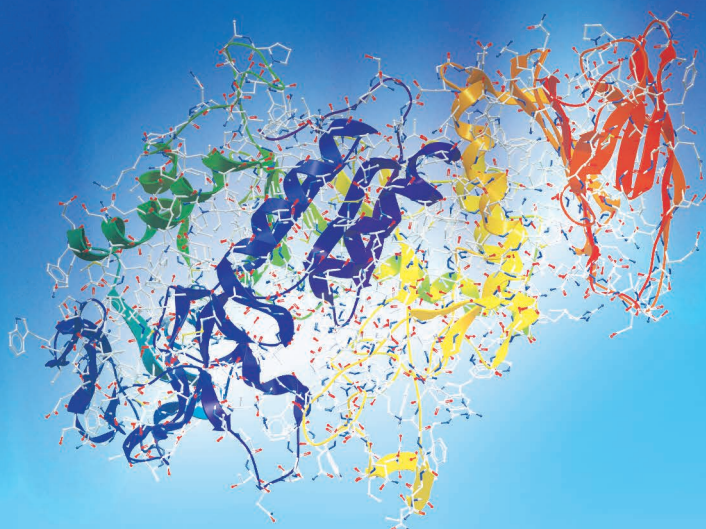
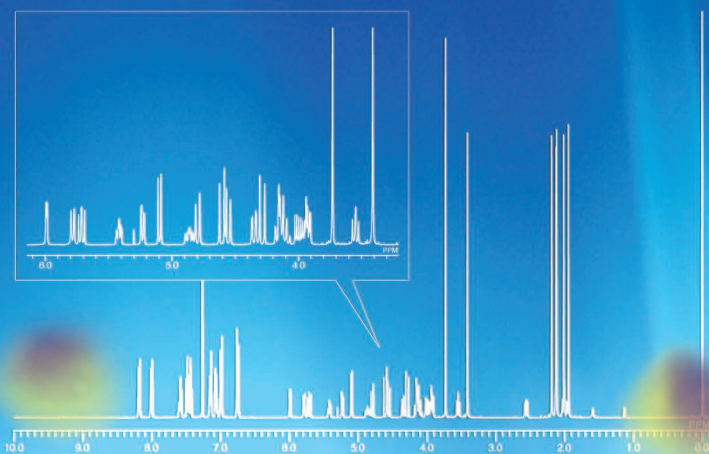


# T C I



Reagents for

# Glyco Chemistry & Biology

5th Edition

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# TCI Glycoscience Online

## 糖鎖情報はウェブサイト

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 “糖鎖” ページでは、TCI の糖鎖製品や糖鎖関連の情報をご紹介します。

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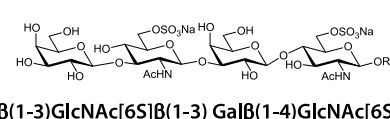
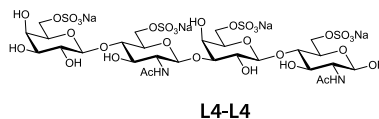
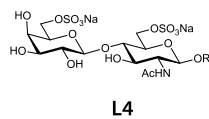
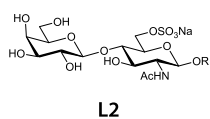
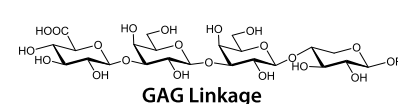
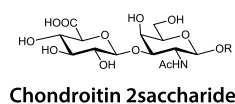
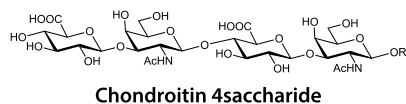
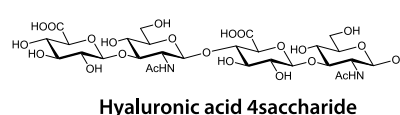
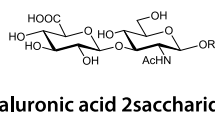
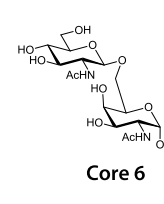
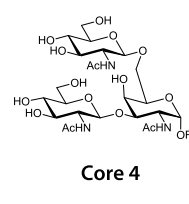
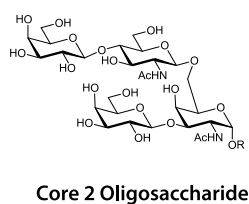
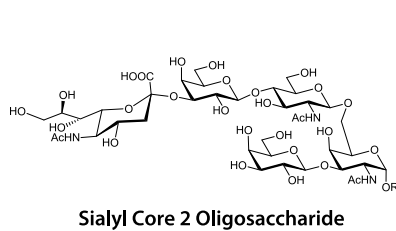
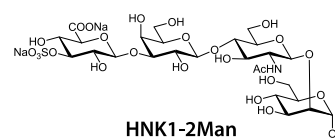
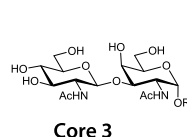
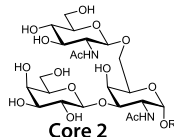
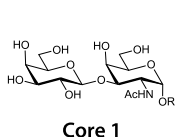
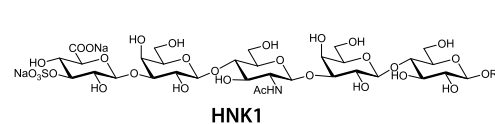
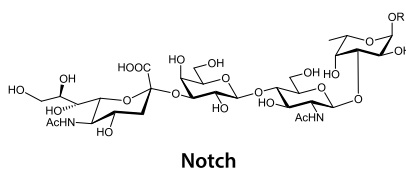
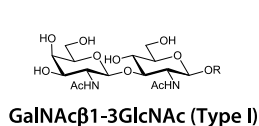
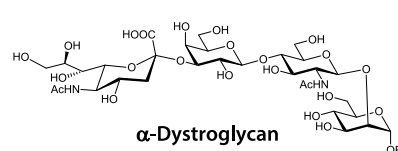
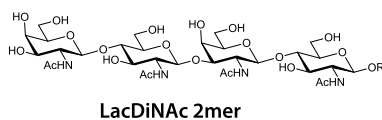
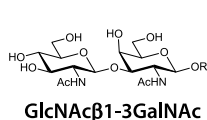
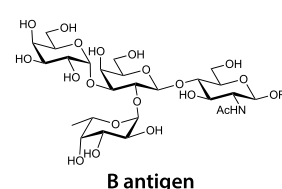
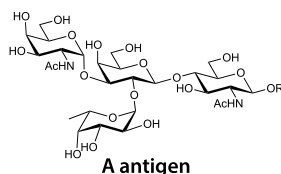
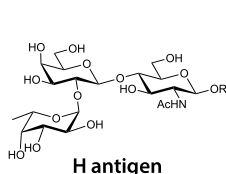
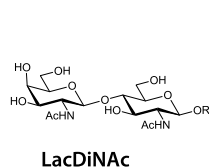
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# The Functional Oligosaccharide Chains-①

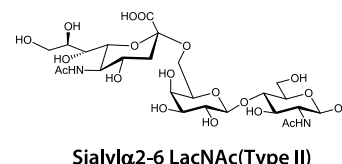
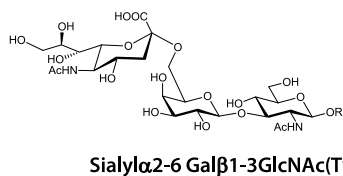
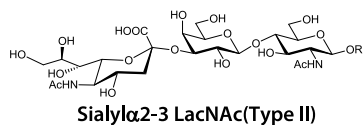
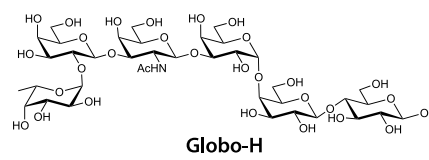
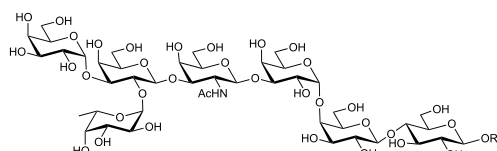
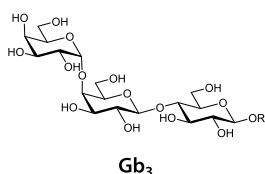
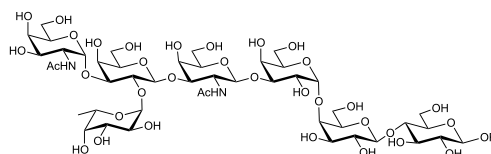
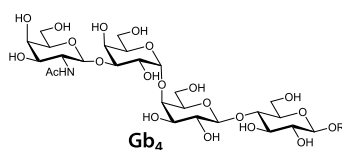
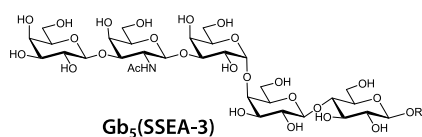
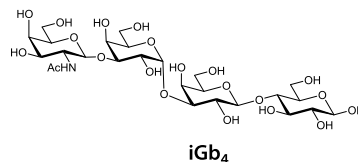
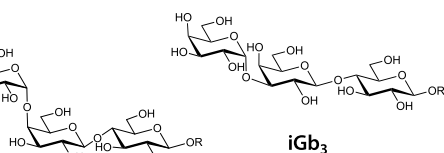
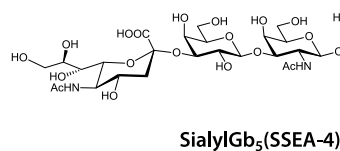
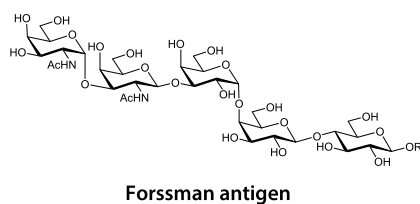
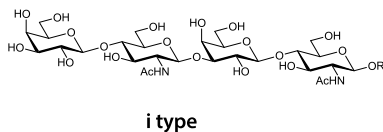
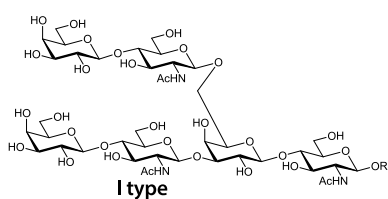
The following structures are examples of functional oligosaccharide chains synthesized by TCI. If your research calls for various modifications to oligosaccharide chains with aglycon (R part), our team can assist you. If you require any sugar chains not listed here, please contact us. For more details, please see the inside back cover.

以下は、ご提供可能な機能性糖鎖の一例です。アグリコン (R部分) につきましては、様々な修飾に対応します。掲載されていない糖鎖につきましても、ぜひお問い合わせください。

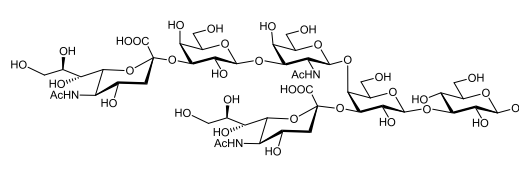
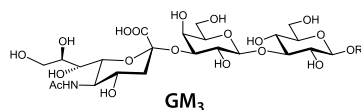
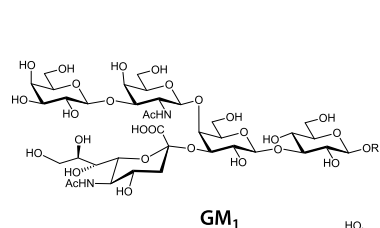
機能性糖鎖以外にも、糖鎖合成中間体などの糖鎖合成委託をご検討の場合は、お気軽にご連絡・ご相談ください。詳細は、最終ページでご紹介しています。



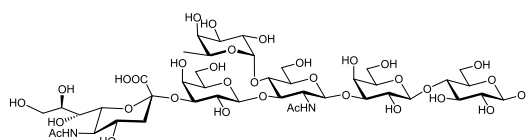
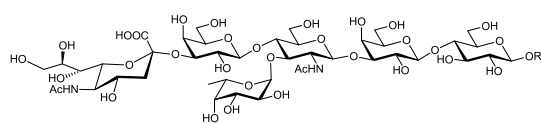
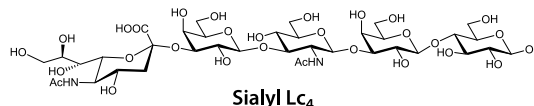
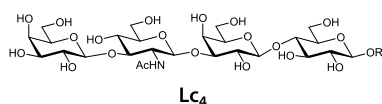
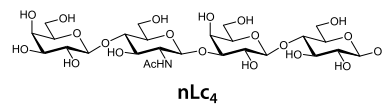
# The Functional Oligosaccharide Chains-②



**Sialylα2-3 Galβ1-3GlcNAc (Type I)**



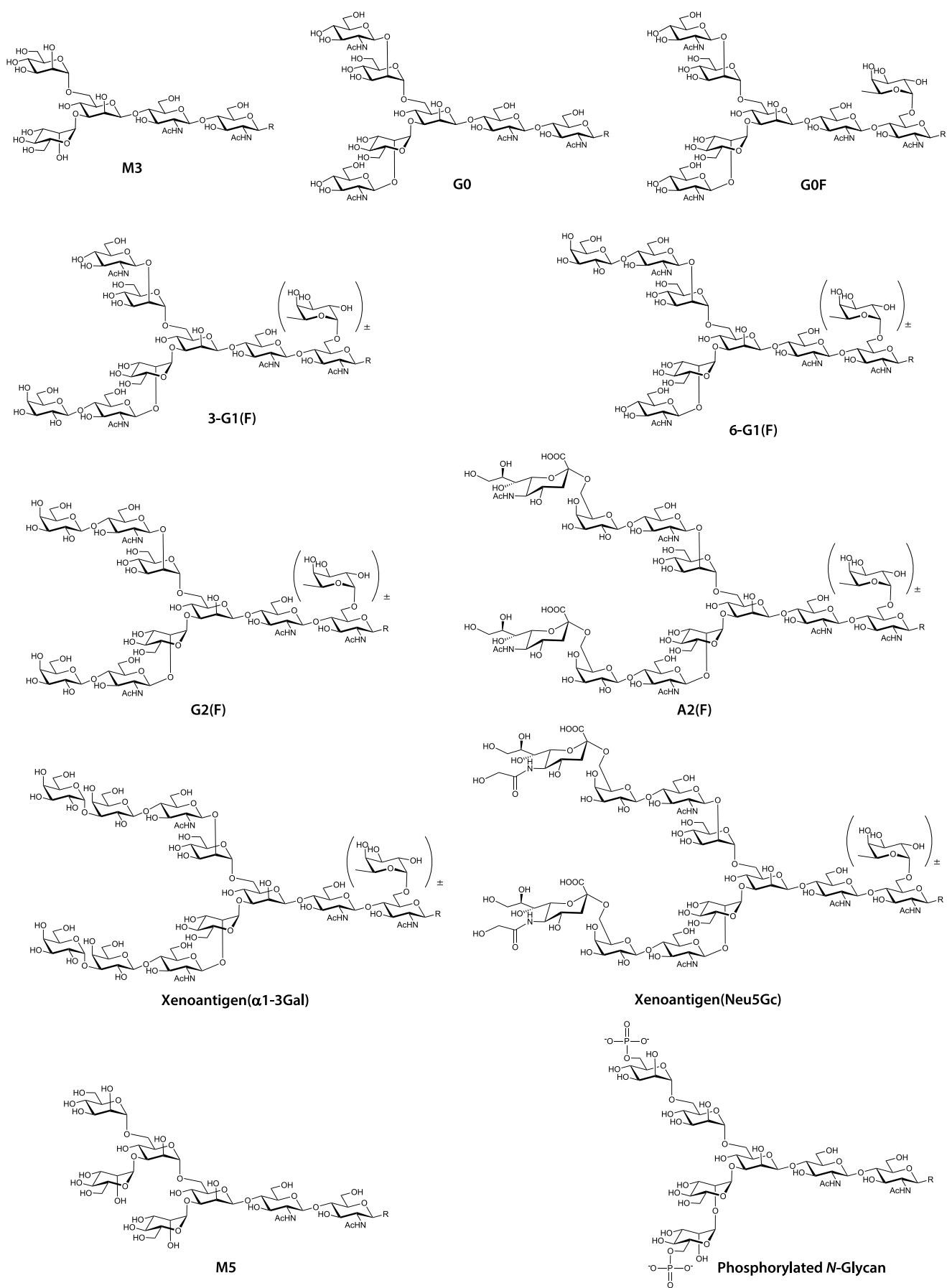
**GM<sub>1</sub>**



**Sialyl Le<sup>x</sup> (Sialyl SSEA-1)**

**Sialyl Le<sup>a</sup>**

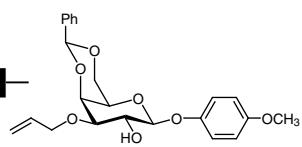
# The Functional Oligosaccharide Chains-③





**Reagents for  
Glyco Chemistry  
& Biology**

**糖鎖関連試薬**

<b>1</b> — <b>M1589</b>	<b>2</b> — <b>4-Methoxyphenyl 3-O-Allyl-4,6-O-benzylidene-β-D-galactopyranoside</b>	<b>1g</b>	<b>5g</b>	<b>7</b>
<p>&gt;98.0%(HPLC) C<sub>23</sub>H<sub>26</sub>O<sub>7</sub> = 414.45 [400091-05-6] MFCD06797132            mp 228°C</p>				
<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>8</b>
<p>NMR P.140</p>				
<b>14</b>				
<b>B0643</b>	<b>Allyl Bromide</b>	<b>25g</b>	<b>500g</b>	
<b>9</b>	<p>&gt;98.0%(GC) C<sub>3</sub>H<sub>5</sub>Br = 120.98 [106-95-6] MFCD00000244            bp 71°C d 1.43 flp 12°C</p>			<b>10</b>
<b>11</b>	Beil. 1,201 MI14-288	RTECS UC7090000		
				<b>12</b>
<b>A1651</b>	<b>endo-β-N-Acetylglucosaminidase</b> (= Endo-M) Recombinant: from <i>Mucor hiemalis</i> expressed in <i>Candida boidinii</i> [Purity: single band by SDS-PAGE(85KDa)]			<b>1vial</b>
<p>[37278-88-9] MFCD00151069 EC 3.2.1.96 — <b>13</b></p>				

- 1** Product Number Please use the product number with the chemical name when inquiring and ordering.
- 2** Chemical Name
- 3** Molecular Formula
- 4** Molecular Weight
- 5** CAS Registry Number (Chemical Abstracts Service Registry Number)
- 6** MDL Number\*
- 7** Quantity
- 8** Structural Formula
- 9** Purity
- 10** Physical Property  
 fp : freezing point(°C) / mp : melting point(°C) / bp : boiling point(°C) / d : specific gravity / flp : flash point(°C)  
 from literature, and not necessarily product specification.
- 11** References  
 Beil. : Beilstein(vol. (suppl.) part, page) / MI14 : Monograph Number from "The Merck Index", 14th edition\*\* / F&F : Fieser & Fieser's "Reagents for Organic Synthesis"; vol., page
- 12** RTECS Number (Registry of Toxic Effects of Chemical Substances Number)
- 13** EC Number (Enzyme Commission Number)
- 14** NMR NMR data are prepared.

- 1** 製品コード ご注文の際にご利用ください。
- 2** 製品名
- 3** 分子式
- 4** 分子量
- 5** CAS 番号 (Chemical Abstracts Service Registry Number)
- 6** MDL 番号\*
- 7** 包装単位
- 8** 構造式
- 9** 純度・含量
- 10** 物理的性質  
 fp : 凝固点 (°C) / mp : 融点 (°C) / bp : 沸点 (°C) / d : 比重 / flp : 引火点 (°C)  
 参考値として記載しました。規格値ではありません。
- 11** 参考文献  
 Beil. : Beilstein (巻数 (増補編) パート, 頁) / MI14 : Merck Index 14th edition\*\* モノグラフ番号 / F&F : Fieser & Fieser (巻数, 頁)
- 12** RTECS 番号 (化学物質毒性登録番号(米国))
- 13** 酵素番号
- 14** NMR NMR データをご用意しております。

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 \*\*Reproduced with permission from The Merck Index, Fourteenth Edition.  
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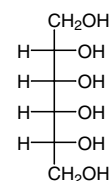
## << Abbreviations Used in the Catalog >>

Ac	acetyl	MP	4-methoxyphenyl
All	allyl	Ph	phenyl
Bn	benzyl	pNP	p-nitrophenyl
Boc	tert-butoxycarbonyl	SDS-PAGE	sodium dodecylsulfate-polyacrylamide gel electrophoresis
Bz	benzoyl		
Fmoc	(9H-fluoren-9-ylmethoxy)carbonyl		

**A1982 Allitol**

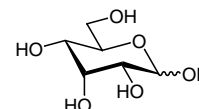
100mg

>98.0%(GC)  $C_6H_{14}O_6 = 182.17$  [488-44-8]  
 mp 152°C  
 Beil. 1(4)2839 RTECS BA1840000

**A1488 D-(+)-Allose**

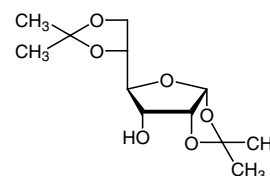
100mg 1g

>98.0%(HPLC)  $C_6H_{12}O_6 = 180.16$  [2595-97-3] MFCD00135833  
 mp 149°C  
 Beil. 1(4)4299 MI14-280

**D2265 1,2:5,6-Di-O-isopropylidene- $\alpha$ -D-allofuranose**

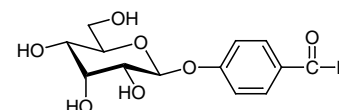
1g 5g

>98.0%(GC)  $C_{12}H_{20}O_6 = 260.29$  [2595-05-3] MFCD00135634  
 mp 75°C  
 Beil. 19(5)12,318

**F0542 4-Formylphenyl  $\beta$ -D-Allopyranoside**

5g

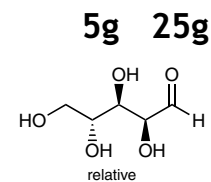
>98.0%(HPLC)  $C_{13}H_{16}O_7 = 284.26$  [80154-34-3]  
 mp 190°C



# Arabinose-①

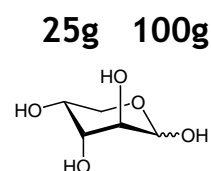
## New **A0514** DL-Arabinose

>98.0%(HPLC) C<sub>5</sub>H<sub>10</sub>O<sub>5</sub> = 150.13 [147-81-9] MFCD00135867  
mp 158°C  
Beil. 1(4)4223



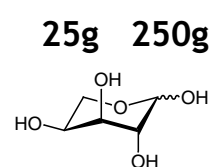
## **A0513** D-(-)-Arabinose

>99.0%(HPLC) C<sub>5</sub>H<sub>10</sub>O<sub>5</sub> = 150.13 [10323-20-3] MFCD00135608  
mp 161°C  
Beil. 1(4)4215



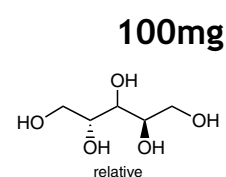
## **A0515** L-(+)-Arabinose

>98.0%(GC) C<sub>5</sub>H<sub>10</sub>O<sub>5</sub> = 150.13 [5328-37-0] MFCD00135866  
mp 156°C  
Beil. 1(4)4218 MI14-761



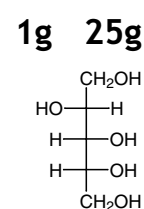
## **A0517** DL-Arabitol

>97.0%(GC) C<sub>5</sub>H<sub>12</sub>O<sub>5</sub> = 152.15 [2152-56-9] MFCD00070503  
Beil. 1(4)2832 MI14-762



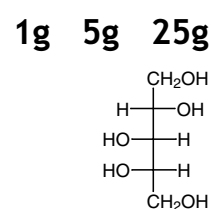
## **A0516** D-(+)-Arabitol

>98.0%(GC) C<sub>5</sub>H<sub>12</sub>O<sub>5</sub> = 152.15 [488-82-4] MFCD00004709  
mp 103°C  
Beil. 1(4)2832 MI14-762



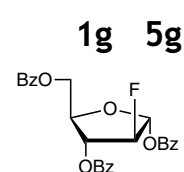
## **A0518** L-(-)-Arabitol

>97.0%(GC) C<sub>5</sub>H<sub>12</sub>O<sub>5</sub> = 152.15 [7643-75-6] MFCD00064290  
mp 103°C  
Beil. 1(4)2832 MI14-762



## New **D4594** 2-Deoxy-2-fluoro-1,3,5-tri-O-benzoyl- $\alpha$ -D-arabinofuranose

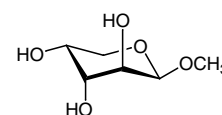
>98.0%(GC) C<sub>26</sub>H<sub>21</sub>FO<sub>7</sub> = 464.45 [97614-43-2] MFCD00083339  
mp 85°C



**M1019 Methyl β-D-Arabinopyranoside**

100mg

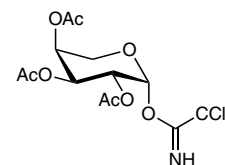
>99.0%(GC) C<sub>6</sub>H<sub>12</sub>O<sub>5</sub> = 164.16 [5328-63-2] MFCD00063261  
mp 174°C

**T2695 2,3,4-Tri-O-acetyl-β-L-arabinopyranosyl  
2,2,2-Trichloroacetimidate**

Price on request

C<sub>13</sub>H<sub>16</sub>Cl<sub>3</sub>NO<sub>8</sub> = 420.62 [869848-87-3]

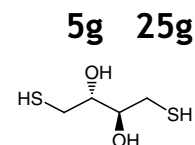
NMR P.198



# Erythrose

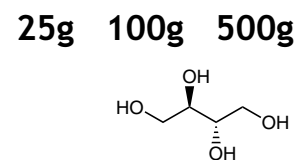
## D1320 Dithioerythritol

>98.0%(T)  $C_4H_{10}O_2S_2 = 154.24$  [6892-68-8] MFCD00063750  
mp 84°C  
Beil. 2(3)2360 RTECS KF2410000



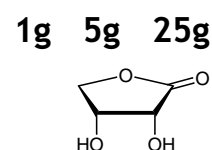
## E0021 meso-Erythritol

>99.0%(HPLC)(T)  $C_4H_{10}O_4 = 122.12$  [149-32-6] MFCD00004710  
mp 120°C  
Beil. 1,525 MI14-3675 RTECS KF2000000



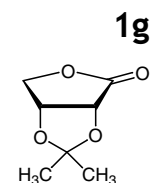
## E0455 D-Erythronolactone

>98.0%(GC)  $C_4H_6O_4 = 118.09$  [15667-21-7] MFCD00077763  
mp 103°C  
Beil. 18,78



## I0454 2,3-O-Isopropylidene-D-erythronolactone

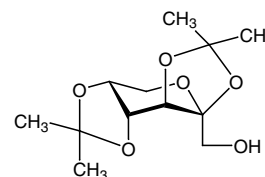
>98.0%(GC)  $C_7H_{10}O_4 = 158.15$  [25581-41-3] MFCD00134440  
mp 68°C  
Beil. 19(5)10,235



**D3758 2,3:4,5-Di-O-isopropylidene- $\beta$ -D-fructopyranose**

>98.0%(GC)  $C_{12}H_{20}O_6 = 260.29$  [20880-92-6] MFCD00022183  
 mp 96°C  
 Beil. 19(4)6124

5g 25g

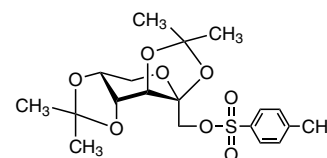


New

**D5395 2,3:4,5-Di-O-isopropylidene-1-O-p-toluenesulfonyl-beta-D-fructopyranose**

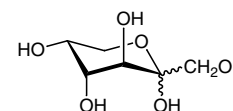
$C_{19}H_{26}O_8S = 414.47$  [78574-35-3] MFCD21496270  
 mp 83°C  
 NMR P.199

Price on request

**F0060 D-(-)-Fructose**

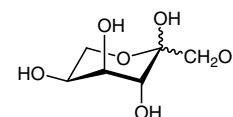
>99.0%(HPLC)  $C_6H_{12}O_6 = 180.16$  [57-48-7] MFCD00148910  
 Beil. 31,321 MI14-4273 RTECS LS7120000

25g 500g

**F0317 L-(+)-Fructose**

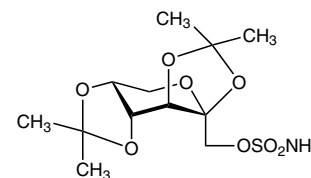
>95.0%(HPLC)  $C_6H_{12}O_6 = 180.16$  [7776-48-9] MFCD05662378

100mg 1g

**T2755 Topiramate**

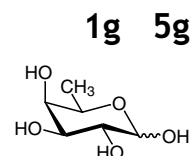
>98.0%(HPLC)(T)  $C_{12}H_{21}NO_8S = 339.36$  [97240-79-4] MFCD00865320  
 mp 126°C  
 MI14-9547 RTECS LS7083000

1g 5g



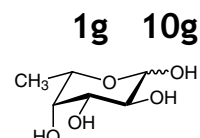
## D0049 D-(+)-Fucose

>98.0%(HPLC)  $C_6H_{12}O_5 = 164.16$  [3615-37-0] MFCD00135603  
 mp 137°C  
 Beil. 31,76 MI14-4278



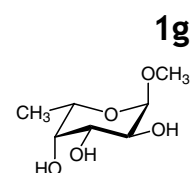
## F0065 L-(-)-Fucose

>97.0%(HPLC)  $C_6H_{12}O_5 = 164.16$  [2438-80-4] MFCD00135607  
 Beil. 31,78 MI14-4279



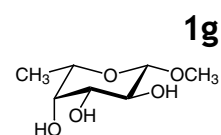
## M1051 Methyl $\alpha$ -L-Fucopyranoside

>98.0%(HPLC)  $C_7H_{14}O_5 = 178.18$  [14687-15-1] MFCD00069802  
 mp 159°C



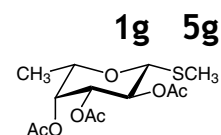
## M1050 Methyl $\beta$ -L-Fucopyranoside

$C_7H_{14}O_5 = 178.18$  [24332-98-7] MFCD00069803  
 mp 123°C



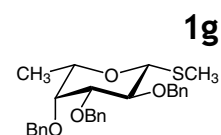
## M1626 Methyl 2,3,4-Tri-O-acetyl-1-thio- $\beta$ -L-fucopyranoside

>98.0%(HPLC)  $C_{13}H_{20}O_7S = 320.36$  [84635-54-1] MFCD00080803  
 mp 148°C  
 NMR P.200



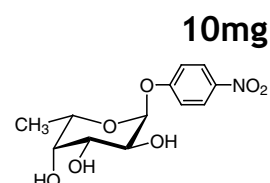
## M1628 Methyl 2,3,4-Tri-O-benzyl-1-thio- $\beta$ -L-fucopyranoside

>95.0%(HPLC)  $C_{28}H_{32}O_4S = 464.62$  [107802-80-2] MFCD06797141  
 mp 58°C  
 NMR P.201



## N0392 4-Nitrophenyl $\alpha$ -L-Fucopyranoside

>98.0%(HPLC)  $C_{12}H_{15}NO_7 = 285.25$  [10231-84-2] MFCD00063697

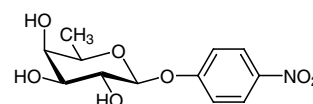




**N0774 4-Nitrophenyl  $\beta$ -D-Fucopyranoside**

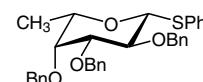
100mg

>98.0%(GC)  $C_{12}H_{15}NO_7 = 285.25$  [1226-39-7]  
mp 184°C

**P1842 Phenyl 2,3,4-Tri-O-benzyl-1-thio- $\beta$ -L-fucopyranoside**

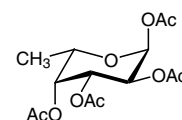
1g 5g

>98.0%(HPLC)  $C_{33}H_{34}O_4S = 526.69$  [167612-35-3]  
mp 108°C

**T2207 1,2,3,4-Tetra-O-acetyl- $\alpha$ -L-fucopyranose**

1g 5g

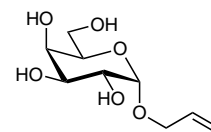
>98.0%(HPLC)  $C_{14}H_{20}O_9 = 332.31$  [64913-16-2] MFCD00069791  
mp 94°C  
Beil. 17(3/4)2549



**New A2346 Allyl  $\alpha$ -D-Galactopyranoside**

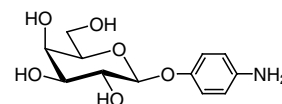
1g

>96.0%(GC)  $C_9H_{16}O_6 = 220.22$  [48149-72-0] MFCD01320363  
 mp 145°C  
 Beil. 17(4)2939

**A1413 4-Aminophenyl  $\beta$ -D-Galactopyranoside**

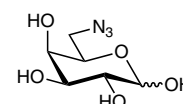
1g

>98.0%(HPLC)  $C_{12}H_{17}NO_6 = 271.27$  [5094-33-7] MFCD00067362  
 mp 163°C  
 Beil. 17(3/4)3409

**New A3167 6-Azido-6-deoxy-D-galactopyranose**

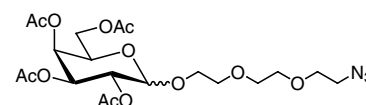
Price on request

$C_6H_{11}N_3O_5 = 205.17$  [66927-03-5] MFCD03265529  
 NMR P.202

**G0257 2-[2-(2-Azidoethoxy)ethoxy]ethyl  
2,3,4,6-Tetra-O-acetyl-  
D-galactopyranoside**

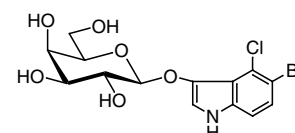
1g 5g

>95.0%(N)  $C_{20}H_{31}N_3O_{12} = 505.48$  [381716-33-2] MFCD00191441

**B3201 5-Bromo-4-chloro-3-indolyl  
 $\beta$ -D-Galactopyranoside  
[for Biochemical Research]**

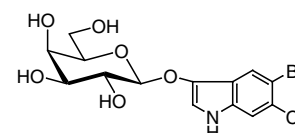
200mg 1g

>98.0%(HPLC)(N)  $C_{14}H_{15}BrClNO_6 = 408.63$  [7240-90-6] MFCD00005666  
 MI14-10074

**B3469 5-Bromo-6-chloro-3-indolyl  
 $\beta$ -D-Galactopyranoside (contains ca. 10%  
Ethyl Acetate) [for Biochemical Research]**

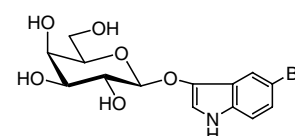
20mg 100mg

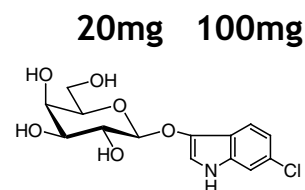
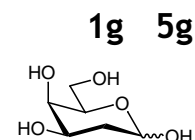
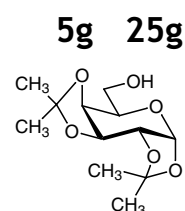
>98.0%(HPLC)  $C_{14}H_{15}BrClNO_6 = 408.63$  [93863-88-8] MFCD00210022

**B3470 5-Bromo-3-indolyl  
 $\beta$ -D-Galactopyranoside  
[for Biochemical Research]**

20mg 100mg

>98.0%(HPLC)  $C_{14}H_{16}BrNO_6 = 374.19$  [97753-82-7] MFCD00063691

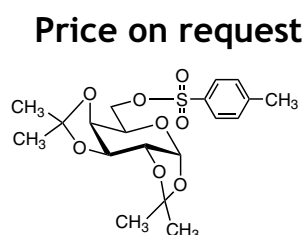
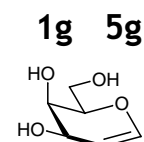
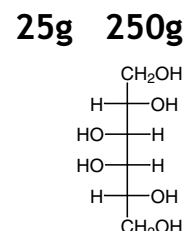
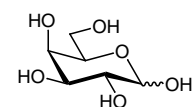


**C2371 6-Chloro-3-indolyl  
β-D-Galactopyranoside**  
[for Biochemical Research]>98.0%(HPLC) C<sub>14</sub>H<sub>16</sub>ClNO<sub>6</sub> = 329.73 [138182-21-5] MFCD00467206**D0050 2-Deoxy-D-galactose**>98.0%(HPLC) C<sub>6</sub>H<sub>12</sub>O<sub>5</sub> = 164.16 [1949-89-9] MFCD00014649  
mp 112°C**D2555 1,2:3,4-Di-O-isopropylidene-  
α-D-galactopyranose**>92.0%(GC) C<sub>12</sub>H<sub>20</sub>O<sub>6</sub> = 260.29 [4064-06-6] MFCD00063225  
bp 133°C /0.2mmHg  
Beil. 19(5)12,366

New

**D5458 1,2:3,4-Di-O-isopropylidene-  
6-O-(p-toluenesulfonyl)-  
α-D-galactopyranose**C<sub>19</sub>H<sub>26</sub>O<sub>8</sub>S = 414.47 [4478-43-7] MFCD07367501  
mp 92°C

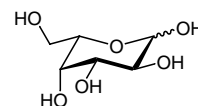
NMR P.203

**G0273 D-Galactal**>98.0%(HPLC) C<sub>6</sub>H<sub>10</sub>O<sub>4</sub> = 146.14 [21193-75-9] MFCD00038067  
Beil. 17(5)5,698**G0005 Galactitol**>98.0%(GC) C<sub>6</sub>H<sub>14</sub>O<sub>6</sub> = 182.17 [608-66-2] MFCD00064288  
mp 189°C  
Beil. 1,544 MI14-4332**G0008 D-(+)-Galactose Anhydrous**>98.0%(HPLC) C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> = 180.16 [59-23-4] MFCD00151230  
Beil. 1(4)4336 MI14-4335 RTECS LW5490000

**G0267 L(-)-Galactose**

100mg 500mg

>98.0%(HPLC)  $C_6H_{12}O_6 = 180.16$  [15572-79-9] MFCD00063833  
Beil. 1(4)4343

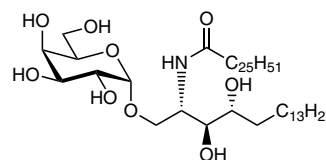


New

**G0509  $\alpha$ -Galactosylceramide**

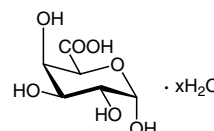
Price on request

$C_{50}H_{99}NO_9 = 858.34$  [158021-47-7] MFCD00939559  
mp 190°C

**G0010  $\alpha$ -D-Galacturonic Acid Hydrate**

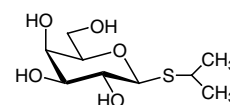
5g 25g

>95.0%(T)  $C_6H_{10}O_7 \cdot xH_2O = 194.14(\text{Anh})$  [91510-62-2] MFCD00006618  
Beil. 3(4)2000 MI14-4337

**I0328 Isopropyl 1-Thio- $\beta$ -D-galactopyranoside**

1g 5g

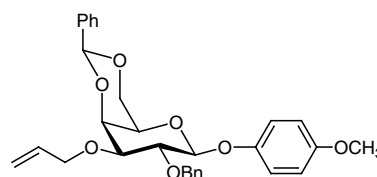
>98.0%(GC)  $C_9H_{18}O_5S = 238.30$  [367-93-1] MFCD00063273  
MI14-5082

**M1620 4-Methoxyphenyl 3-O-Allyl-2-O-benzyl-4,6-O-benzylidene- $\beta$ -D-galactopyranoside**

1g

>98.0%(HPLC)  $C_{30}H_{32}O_7 = 504.58$  MFCD06797140  
mp 177°C

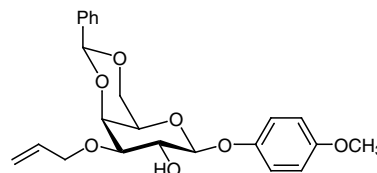
NMR P.204

**M1589 4-Methoxyphenyl 3-O-Allyl-4,6-O-benzylidene- $\beta$ -D-galactopyranoside**

1g 5g

>98.0%(HPLC)  $C_{23}H_{26}O_7 = 414.45$  [400091-05-6] MFCD06797132  
mp 228°C

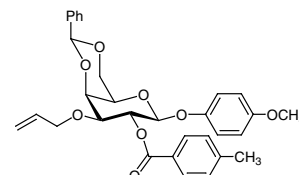
NMR P.205

**M1590 4-Methoxyphenyl 3-O-Allyl-4,6-O-benzylidene-2-O-(4-methylbenzoyl)- $\beta$ -D-galactopyranoside**

1g

>98.0%(HPLC)  $C_{31}H_{32}O_8 = 532.59$  MFCD06797133

NMR P.206

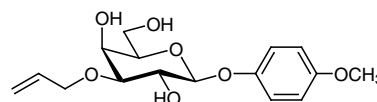


**M1482 4-Methoxyphenyl 3-O-Allyl- $\beta$ -D-galactopyranoside**

5g

>98.0%(HPLC)  $C_{16}H_{22}O_7$  = 326.35 [144985-19-3] MFCD06797127  
mp 143°C

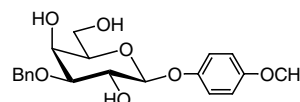
NMR P.207

**M1725 4-Methoxyphenyl 3-O-Benzyl- $\beta$ -D-galactopyranoside**

1g 5g

>98.0%(HPLC)  $C_{20}H_{24}O_7$  = 376.41 [383905-60-0]  
mp 154°C

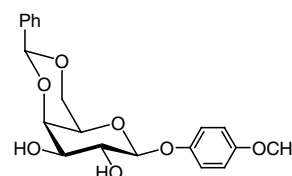
NMR P.208

**M1710 4-Methoxyphenyl 4,6-O-Benzylidene- $\beta$ -D-galactopyranoside**

Price on request

$C_{20}H_{22}O_7$  = 374.39 [176299-96-0]

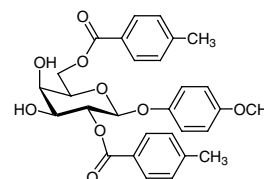
NMR P.209

**M1597 4-Methoxyphenyl 2,6-Bis-O-(4-methylbenzoyl)- $\beta$ -D-galactopyranoside**

1g

>98.0%(HPLC)  $C_{29}H_{30}O_9$  = 522.55 MFCD06797138  
mp 205°C

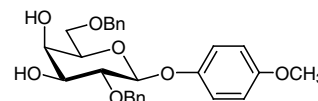
NMR P.210

**M1634 4-Methoxyphenyl 2,6-Di-O-benzyl- $\beta$ -D-galactopyranoside**

1g 5g

>98.0%(HPLC)  $C_{27}H_{30}O_7$  = 466.53 [159922-50-6] MFCD06797145  
mp 113°C

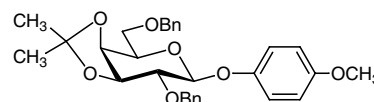
NMR P.211

**M1633 4-Methoxyphenyl 2,6-Di-O-benzyl-3,4-O-isopropylidene- $\beta$ -D-galactopyranoside**

1g 5g

>98.0%(HPLC)  $C_{30}H_{34}O_7$  = 506.60 [159922-68-6] MFCD06797144  
mp 105°C

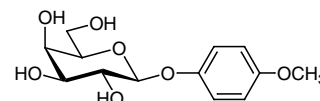
NMR P.212

**M1481 4-Methoxyphenyl  $\beta$ -D-Galactopyranoside**

5g 25g

>98.0%(HPLC)  $C_{13}H_{18}O_7$  = 286.28 [3150-20-7] MFCD06797126  
mp 160°C  
Beil. 17(3/4)2984

NMR P.213



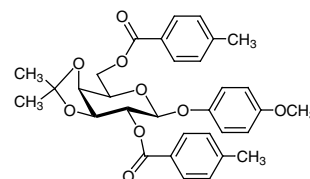
**M1596 4-Methoxyphenyl 3,4-O-Isopropylidene-2,6-bis-O-(4-methylbenzoyl)-β-D-galactopyranoside**

1g

>95.0%(HPLC) C<sub>32</sub>H<sub>34</sub>O<sub>9</sub> = 562.62 [1496536-69-6] MFCD06797137

mp 160°C

NMR P.214

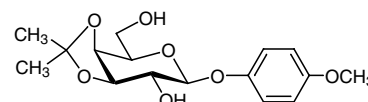
**M1593 4-Methoxyphenyl 3,4-O-Isopropylidene-β-D-galactopyranoside**

1g 5g

>98.0%(HPLC) C<sub>16</sub>H<sub>22</sub>O<sub>7</sub> = 326.35 [159922-67-5] MFCD06797135

mp 151°C

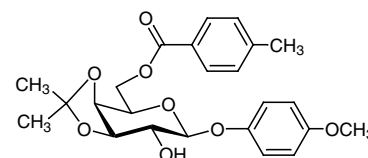
NMR P.215

**M1594 4-Methoxyphenyl 3,4-O-Isopropylidene-6-O-(4-methylbenzoyl)-β-D-galactopyranoside**

1g

>98.0%(HPLC) C<sub>24</sub>H<sub>28</sub>O<sub>8</sub> = 444.48 MFCD06797136

NMR P.216

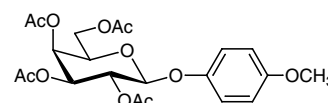
**M1477 4-Methoxyphenyl 2,3,4,6-Tetra-O-acetyl-β-D-galactopyranoside**

5g 25g

>98.0%(HPLC) C<sub>21</sub>H<sub>26</sub>O<sub>11</sub> = 454.43 [2872-65-3] MFCD06797123

mp 105°C

NMR P.217

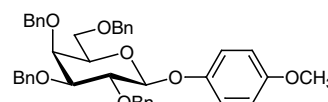
**M1588 4-Methoxyphenyl 2,3,4,6-Tetra-O-benzyl-β-D-galactopyranoside**

5g

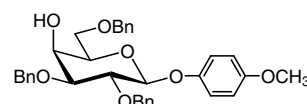
>98.0%(HPLC) C<sub>41</sub>H<sub>42</sub>O<sub>7</sub> = 646.78 [143536-99-6] MFCD06797131

mp 110°C

NMR P.218

**M2104 4-Methoxyphenyl 2,3,6-Tri-O-benzyl-β-D-galactopyranoside**

Price on request

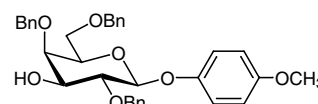
C<sub>34</sub>H<sub>36</sub>O<sub>7</sub> = 556.66 [869107-36-8]**M1592 4-Methoxyphenyl 2,4,6-Tri-O-benzyl-β-D-galactopyranoside**

1g

>98.0%(HPLC) C<sub>34</sub>H<sub>36</sub>O<sub>7</sub> = 556.66 [247027-79-8] MFCD06797134

mp 94°C

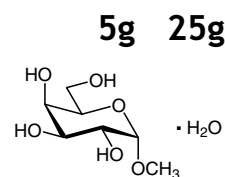
NMR P.219



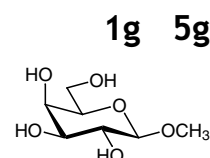
**M1047 Methyl  $\alpha$ -D-Galactopyranoside**

Monohydrate

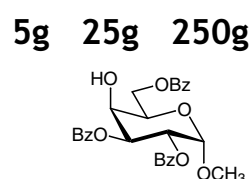
>98.0%(GC)  $C_7H_{14}O_6 \cdot H_2O = 194.18$ (Anh) [34004-14-3] MFCD00064085  
mp 108°C

**M1035 Methyl  $\beta$ -D-Galactopyranoside**

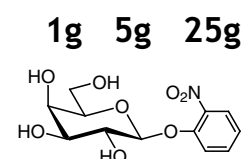
>98.0%(GC)  $C_7H_{14}O_6 = 194.18$  [1824-94-8] MFCD00064357  
mp 178°C  
Beil. 31,315

**M1933 Methyl 2,3,6-Tri-O-benzoyl- $\alpha$ -D-galactopyranoside**

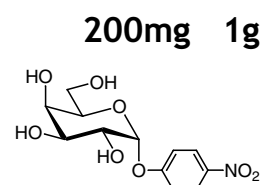
>98.0%(HPLC)  $C_{28}H_{26}O_9 = 506.51$  [3601-36-3] MFCD06200842  
mp 143°C  
NMR P.220

**N0418 2-Nitrophenyl  $\beta$ -D-Galactopyranoside**  
[Substrate for  $\beta$ -D-Galactosidase]

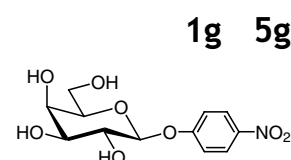
>98.0%(HPLC)  $C_{12}H_{15}NO_8 = 301.25$  [369-07-3] MFCD00063255

**N0492 4-Nitrophenyl  $\alpha$ -D-Galactopyranoside**  
[Substrate for  $\alpha$ -D-Galactosidase]

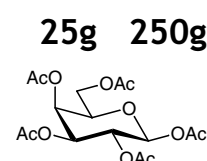
>98.0%(HPLC)  $C_{12}H_{15}NO_8 = 301.25$  [7493-95-0] MFCD00065050  
mp 168°C

**N0616 4-Nitrophenyl  $\beta$ -D-Galactopyranoside**  
[Substrate for  $\beta$ -Galactosidase]

>98.0%(HPLC)  $C_{12}H_{15}NO_8 = 301.25$  [3150-24-1] MFCD00063256  
mp 180°C  
Beil. 17(5)7,55

**G0247 Penta-O-acetyl- $\beta$ -D-galactopyranose**

>97.0%(GC)  $C_{16}H_{22}O_{11} = 390.34$  [4163-60-4] MFCD00063259  
mp 145°C  
Beil. 17(5)7,322



New

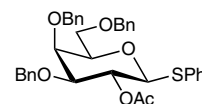
**P2078 Phenyl 2-O-Acetyl-3,4,6-tri-O-benzyl-1-thio-β-D-galactopyranoside**

1g

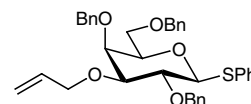
C<sub>35</sub>H<sub>36</sub>O<sub>6</sub>S = 584.73 [183875-28-7]

mp 111°C

NMR P.221

**P1660 Phenyl 3-O-Allyl-2,4,6-tri-O-benzyl-1-thio-β-D-galactopyranoside**

1g

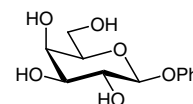
>98.0%(HPLC) C<sub>36</sub>H<sub>38</sub>O<sub>5</sub>S = 582.76 [1017587-57-3]**P1326 Phenyl β-D-Galactopyranoside**

1g 5g

>98.0%(HPLC) C<sub>12</sub>H<sub>16</sub>O<sub>6</sub> = 256.25 [2818-58-8] MFCD00063258

mp 148°C

Beil. 17(5)7,47

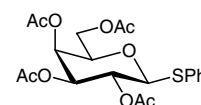
**P1477 Phenyl 2,3,4,6-Tetra-O-acetyl-1-thio-β-D-galactopyranoside**

5g 25g

>98.0%(HPLC) C<sub>20</sub>H<sub>24</sub>O<sub>9</sub>S = 440.46 [24404-53-3]

mp 70°C

NMR P.222

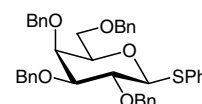
**P1679 Phenyl 2,3,4,6-Tetra-O-benzyl-1-thio-β-D-galactopyranoside**

1g

>98.0%(HPLC) C<sub>40</sub>H<sub>40</sub>O<sub>5</sub>S = 632.82 [74801-29-9] MFCD06657856

mp 88°C

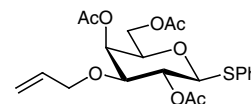
NMR P.223

**P1680 Phenyl 2,4,6-Tri-O-acetyl-3-O-allyl-1-thio-β-D-galactopyranoside**

1g

>98.0%(HPLC) C<sub>27</sub>H<sub>26</sub>O<sub>8</sub>S = 438.49

NMR P.224

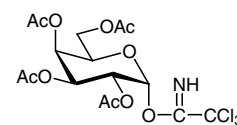
**T2295 2,3,4,6-Tetra-O-acetyl-α-D-galactopyranosyl 2,2,2-Trichloroacetimidate**

1g 5g

>95.0%(HPLC) C<sub>16</sub>H<sub>20</sub>Cl<sub>3</sub>NO<sub>10</sub> = 492.68 [86520-63-0] MFCD07369652

mp 122°C

NMR P.225



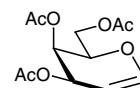
試験, 研究を目的とした弊社収載化学品は, その使用により発生した特許法上の諸問題をユーザーの方々に保証するものではありません。



**T1734 Tri-O-acetyl-D-galactal**

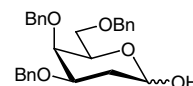
>95.0%(GC)  $C_{12}H_{16}O_7 = 272.25$  [4098-06-0] MFCD00064092  
Beil. 17(5)5,700

1g 5g

**T1932 3,4,6-Tri-O-benzyl-2-deoxy-D-galactopyranose**

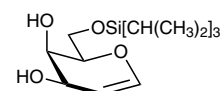
>98.0%(HPLC)  $C_{27}H_{30}O_5 = 434.53$  [94189-64-7] MFCD06797169

100mg

**T1935 6-O-(Triisopropylsilyl)-D-galactal**

>97.0%(GC)  $C_{15}H_{30}O_4Si = 302.49$  [166021-01-8]

200mg

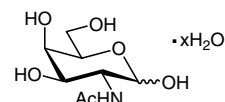


# Galactosamine-①

## A1245 N-Acetyl-D-galactosamine Hydrate

1g 5g

>98.0%(HPLC)(N)  $C_8H_{15}NO_6 \cdot xH_2O = 221.21(\text{Anh})$  [14215-68-0] MFCD00065372  
Beil. 4(4)2039

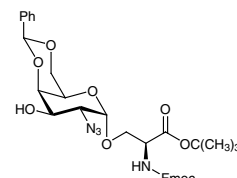


## A1833 O-(2-Azido-4,6-O-benzylidene-2-deoxy- $\alpha$ -D-galactopyranosyl)-N-[(9H-fluoren-9-ylmethoxy)carbonyl]-L-serine tert-Butyl Ester

100mg

>92.0%(HPLC)  $C_{35}H_{38}N_4O_9 = 658.71$  [878483-02-4]

NMR P.226

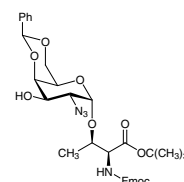


## A1832 O-(2-Azido-4,6-O-benzylidene-2-deoxy- $\alpha$ -D-galactopyranosyl)-N-[(9H-fluoren-9-ylmethoxy)carbonyl]-L-threonine tert-Butyl Ester

100mg

>97.0%(HPLC)  $C_{36}H_{40}N_4O_9 = 672.74$  [195976-07-9]

NMR P.227



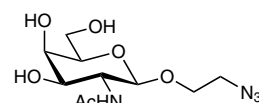
New

## A2627 2-Azidoethyl 2-Acetamido-2-deoxy- $\beta$ -D-galactopyranoside

Price on request

$C_{10}H_{18}N_4O_6 = 290.28$  [142072-15-9] MFCD19981043

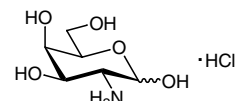
NMR P.228



## G0007 D-(+)-Galactosamine Hydrochloride

1g 5g

>98.0%(HPLC)(N)  $C_6H_{13}NO_5 \cdot HCl = 215.63$  [1772-03-8] MFCD00135830  
MI14-4334 RTECS LW5500000

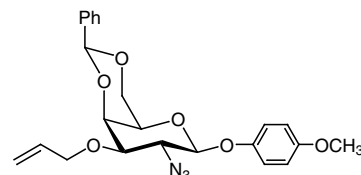


## M1643 4-Methoxyphenyl 3-O-Allyl-2-azido-4,6-O-benzylidene-2-deoxy- $\beta$ -D-galactopyranoside

1g

>95.0%(HPLC)  $C_{23}H_{25}N_3O_6 = 439.47$  [889453-83-2]

NMR P.229



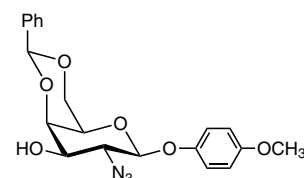
New

## M2737 4-Methoxyphenyl 2-Azido-4,6-O-benzylidene-2-deoxy- $\beta$ -D-galactopyranoside

Price on request

$C_{20}H_{21}N_3O_6 = 399.40$  [1340541-47-0]

NMR P.230

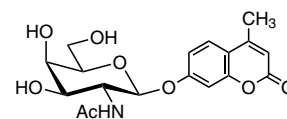


試験, 研究を目的とした弊社取載化学品は, その使用により発生した特許法上の諸問題をユーザーの方々に保証するものではありません。

New

**M3029 4-Methylumbelliferyl 2-Acetamido-2-deoxy-β-D-galactopyranoside**

250mg 1g

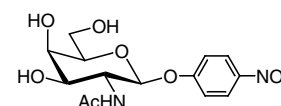
>98.0%(HPLC) C<sub>18</sub>H<sub>21</sub>NO<sub>8</sub> = 379.37 [36476-29-6]**N0865 4-Nitrophenyl 2-Acetamido-2-deoxy-β-D-galactopyranoside**

Price on request

C<sub>14</sub>H<sub>18</sub>N<sub>2</sub>O<sub>8</sub> = 342.30 [14948-96-0] MFCD00067360

mp 207°C

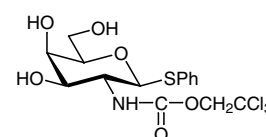
Beil. 18(5)11,102

**P1643 Phenyl 2-Deoxy-1-thio-2-(2,2,2-trichloroethoxyformamido)-β-D-galactopyranoside**

Price on request

C<sub>15</sub>H<sub>18</sub>Cl<sub>3</sub>NO<sub>6</sub>S = 446.72 [868230-98-2]

NMR P.231

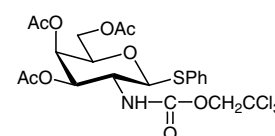
**P1642 Phenyl 3,4,6-Tri-O-acetyl-2-deoxy-1-thio-2-(2,2,2-trichloroethoxyformamido)-β-D-galactopyranoside**

1g 5g

>98.0%(HPLC)(N) C<sub>21</sub>H<sub>24</sub>Cl<sub>3</sub>NO<sub>9</sub>S = 572.83 [278784-83-1]

mp 117°C

NMR P.232

**T1731 1,3,4,6-Tetra-O-acetyl-2-azido-2-deoxy-α-D-galactopyranose**

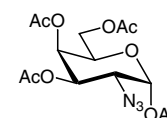
100mg

C<sub>14</sub>H<sub>19</sub>N<sub>3</sub>O<sub>9</sub> = 373.32 [67817-30-5] MFCD01076182

mp 121°C

Beil. 17(5)6,400

NMR P.233



## A2253 2-Acetyl-5-methoxyphenyl β-D-Glucopyranoside

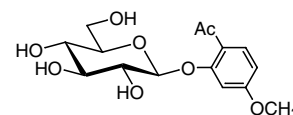
$C_{15}H_{20}O_8 = 328.32$  [20309-70-0]

mp 83°C

Beil. 17(4)3020

NMR P.234

Price on request

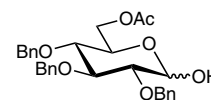


## A2636 6-O-Acetyl-2,3,4-tri-O-benzyl- D-glucopyranose

$C_{29}H_{32}O_7 = 492.57$  [85011-34-3]

mp 100°C

Price on request

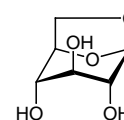


## A1074 1,6-Anhydro-β-D-glucose

>99.0%(GC)  $C_6H_{10}O_5 = 162.14$  [498-07-7] MFCD00063248

mp 183°C

1g 5g

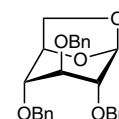


## A2637 1,6-Anhydro-2,3,4-tri-O-benzyl- β-D-glucopyranose

$C_{27}H_{28}O_5 = 432.52$  [10548-46-6] MFCD02683260

mp 90°C

Price on request



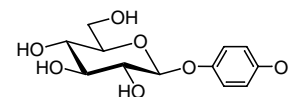
## A0522 Arbutin

>95.0%(HPLC)  $C_{12}H_{16}O_7 = 272.25$  [497-76-7] MFCD00016915

mp 198°C

Beil. 31,210 MI14-773 RTECS CE8863000

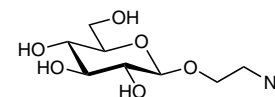
5g 25g



## A2267 2-Azidoethyl β-D-Glucopyranoside

>98.0%(HPLC)  $C_8H_{15}N_3O_6 = 249.22$  [165331-08-8]

1g



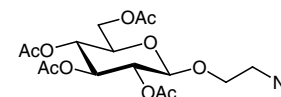
## A2377 2-Azidoethyl 2,3,4,6-Tetra-O-acetyl- β-D-glucopyranoside

>92.0%(HPLC)  $C_{16}H_{23}N_3O_{10} = 417.37$  [140428-81-5]

mp 115°C

NMR P.235

1g 5g



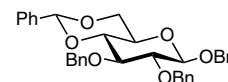
**B4170 Benzyl 2,3-Di-O-benzyl-4,6-O-benzylidene-β-D-glucopyranoside**

Price on request

 $C_{34}H_{34}O_6 = 538.64$  [183953-29-9]

mp 136°C

NMR P.236

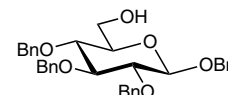
**B4171 Benzyl 2,3,4-Tri-O-benzyl-β-D-glucopyranoside**

Price on request

 $C_{34}H_{36}O_6 = 540.66$  [27851-29-2] MFCD03701135

mp 103°C

NMR P.237



New

**B0397 Betanin** (Red Beet extract diluted with Dextrin)

25g 100g

[7659-95-2] MFCD00060076

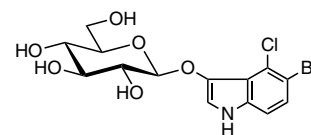
RTECS US7968100

**B5393 5-Bromo-4-chloro-3-indolyl β-D-Glucopyranoside**  
[for Biochemical Research]

200mg 1g

>98.0%(HPLC)  $C_{14}H_{13}BrClNO_6 = 408.63$  [15548-60-4] MFCD00063690

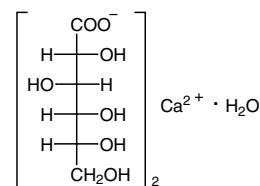
mp 243°C

**G0037 Calcium Gluconate** Monohydrate

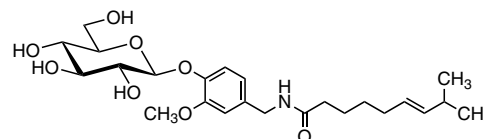
25g 500g

>98.0%(T)  $C_{12}H_{22}CaO_{14} \cdot H_2O = 430.37$ (Anh) [299-28-5] MFCD00064209

Beil. 3,544 MI14-1669 RTECS EW2100000

**C2548 Capsaicin β-D-Glucopyranoside**

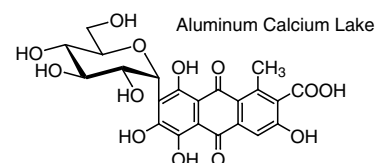
200mg

>90.0%(HPLC)  $C_{24}H_{37}NO_8 = 467.56$  [153409-16-6]**C0543 Carmine**

5g 25g

&gt;40.0%(HPLC) [1390-65-4] MFCD00167028

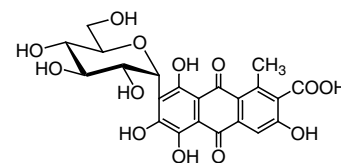
MI14-1843 RTECS FH8891000



## C0782 Carminic Acid (Natural dye)

5g 25g

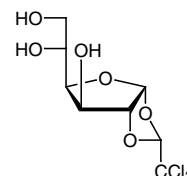
$C_{22}H_{20}O_{13} = 492.39$  [1260-17-9] MFCD00167028  
Beil. 10(2)776 MI14-1843



## C0074 $\alpha$ -Chloralose (contains $\beta$ -isomer)

25g

>85.0%(GC)  $C_8H_{11}Cl_3O_6 = 309.52$  [15879-93-3] MFCD00005542  
mp 181°C  
MI14-2072 RTECS FM9450000

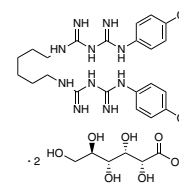


New

## C3105 Chlorhexidine Digluconate (20% in Water)

25mL

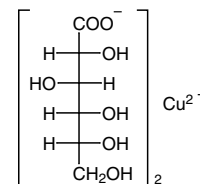
$C_{22}H_{30}Cl_2N_{10} \cdot 2C_6H_{12}O_7 = 897.76$  [18472-51-0] MFCD00083599  
d 1.07  
MI14-2091 RTECS DU1950000



## G0275 Copper(II) Gluconate

25g

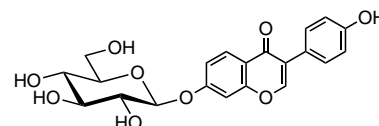
>97.0%(T)  $C_{12}H_{22}CuO_{14} = 453.84$  [527-09-3] MFCD00075297  
Beil. 3(4)1256 MI14-2640 RTECS LZ5058000



## D3920 Daidzin

25mg

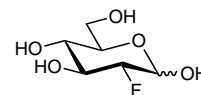
>98.0%(HPLC)  $C_{21}H_{20}O_9 = 416.38$  [552-66-9] MFCD00017466  
Beil. 18(4)1808 RTECS DJ3094000



## D3023 2-Deoxy-2-fluoro-D-glucopyranose

100mg

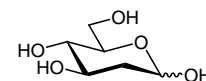
>98.0%(GC)  $C_6H_{11}FO_5 = 182.15$  [29702-43-0] MFCD00077527



## D0051 2-Deoxy-D-glucose

1g 5g 25g

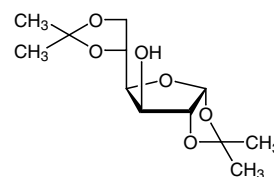
>97.0%(GC)  $C_6H_{12}O_5 = 164.16$  [154-17-6] MFCD00151328  
mp 150°C  
MI14-2904 RTECS MQ3325000



**D1949 1,2:5,6-Di-O-isopropylidene- $\alpha$ -D-glucofuranose**

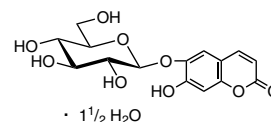
>97.0%(GC)  $C_{12}H_{20}O_6 = 260.29$  [582-52-5] MFCD00005544  
 mp 110°C  
 Beil. 19(5)12,318 MI14-2965 RTECS LZ4958000

10g 25g

**E0024 Esculin Sesquihydrate**

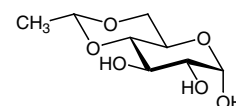
>98.0%(HPLC)(T)  $C_{15}H_{16}O_9 \cdot 11/2H_2O = 340.28(\text{Anh})$  [66778-17-4] MFCD00006879  
 Beil. 18(3/4)1326 MI14-3698 RTECS DJ3085000

5g 25g

**E0402 4,6-O-Ethylidene- $\alpha$ -D-glucopyranose**

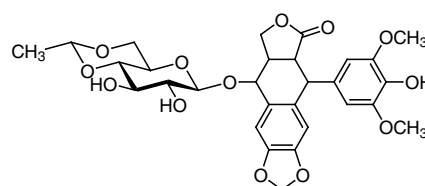
>96.0%(GC)  $C_8H_{14}O_6 = 206.19$  [13224-99-2] MFCD00006820  
 mp 173°C

1g 5g

**E0675 Etoposide**

>98.0%(HPLC)  $C_{29}H_{32}O_{13} = 588.56$  [33419-42-0]  
 mp 251°C  
 MI14-3886 RTECS KC0190000

100mg 1g

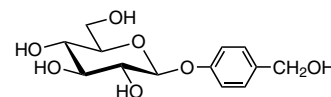


New

**G0468 Gastrodin**

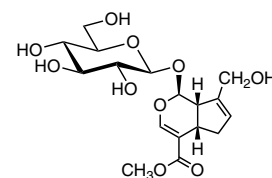
>98.0%(HPLC)  $C_{13}H_{18}O_7 = 286.28$  [62499-27-8] MFCD00272169  
 mp 155°C  
 MI14-4375 RTECS LZ5776885

200mg 1g

**G0385 Geniposide**

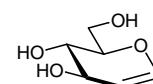
>95.0%(HPLC)  $C_{17}H_{24}O_{10} = 388.37$  [24512-63-8] MFCD00016659  
 mp 162°C

100mg 1g

**G0274 D-Glucal**

>97.0%(GC)  $C_6H_{10}O_4 = 146.14$  [13265-84-4] MFCD00067186  
 mp 62°C  
 Beil. 17(5)5,697

1g 5g

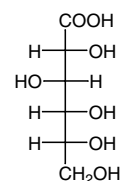


# Glucose-⑤

## G0036 Gluconic Acid (contains Gluconolactone) (45-50% in Water)

$C_6H_{12}O_7 = 196.16$  [526-95-4] MFCD00004240  
Beil. 3,542 MI14-4456 RTECS LZ5057100

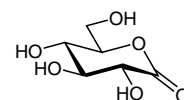
25g 500g



## G0039 D-(+)-Glucono-1,5-lactone

>98.0%(T)  $C_6H_{10}O_6 = 178.14$  [90-80-2] MFCD00006647  
mp 153°C  
Beil. 3(4)1255 MI14-4457 RTECS LZ5184000

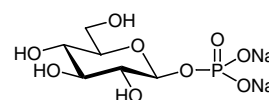
25g 500g



## G0339 β-D-Glucopyranose 1-Phosphate Disodium Salt

>98.0%(HPLC)  $C_6H_{11}Na_2O_9P = 304.10$  [83833-15-2]  
NMR P.238

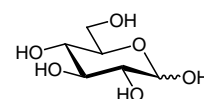
20mg 100mg



## G0048 D-(+)-Glucose

>98.0%(GC)  $C_6H_{12}O_6 = 180.16$  [50-99-7] MFCD00148912  
Beil. 31,83 MI14-4459 RTECS LZ6600000

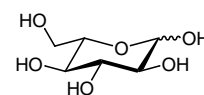
25g 500g



## G0226 L-(-)-Glucose

>98.0%(GC)  $C_6H_{12}O_6 = 180.16$  [921-60-8] MFCD00148913  
MI14-4459 RTECS LZ6610000

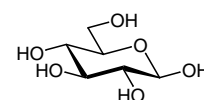
1g 5g



## G0047 β-D-Glucose (contains α-D-Glucose)

>85.0%(GC)  $C_6H_{12}O_6 = 180.16$  [492-61-5] MFCD00063989  
mp 155°C  
Beil. 1(4)4306 MI14-4459

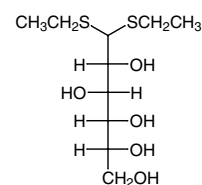
25g 500g



## G0259 D-Glucose Diethyl Mercaptal

$C_{10}H_{22}O_5S_2 = 286.40$  [1941-52-2] MFCD00004706  
mp 128°C  
Beil. 31,475

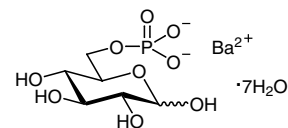
1g



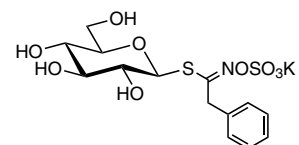


**G0052 D-Glucose 6-Phosphate Barium Salt**  
Heptahydrate

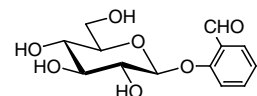
100mg 1g

>98.0%(W)  $C_6H_{11}BaO_9P \cdot 7H_2O = 395.45(\text{Anh})$  [58823-95-3] MFCD00221521**G0397 Glucotropaeolin Potassium Salt**

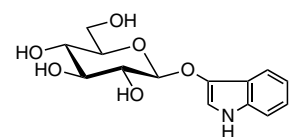
10mg

>95.0%(HPLC)  $C_{14}H_{18}KNO_9S_2 = 447.51$  [5115-71-9] MFCD00153006**H0908 Helicin**

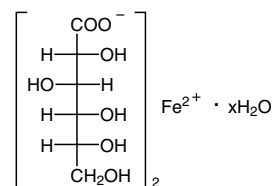
1g 5g

>98.0%(HPLC)  $C_{13}H_{16}O_7 = 284.26$  [618-65-5] MFCD00006589  
Beil. 31,223 MI14-4628**New I1012 Indican (Plant Indican)**

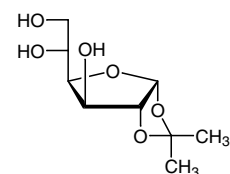
200mg 1g

>98.0%(HPLC)  $C_{14}H_{17}NO_6 = 295.29$  [487-60-5] MFCD00047169  
mp 183°C  
MI14-4942**G0038 Iron(II) Gluconate Hydrate**

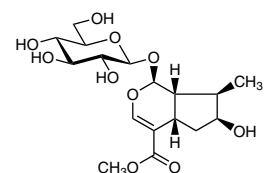
25g 500g

>95.0%(T)  $C_{12}H_{22}FeO_{14} \cdot xH_2O = 446.14(\text{Anh})$  [22830-45-1] MFCD00150872  
Beil. 3(4)1256 MI14-4047 RTECS LZ5180000**I0400 1,2-O-Isopropylidene-α-D-glucofuranose**

25g

>97.0%(GC)  $C_9H_{16}O_6 = 220.22$  [18549-40-1] MFCD00063244  
mp 156°C  
Beil. 19(3/4)4919**New L0268 Loganin**

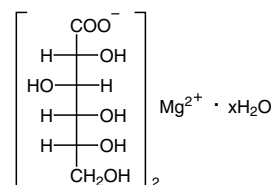
10mg 50mg

>98.0%(HPLC)  $C_{17}H_{26}O_{10} = 390.39$  [18524-94-2] MFCD00075645  
mp 225°C  
MI14-5560

## G0276 Magnesium(II) Gluconate Hydrate

25g 500g

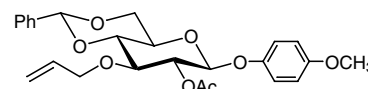
>98.0%(T)  $C_{12}H_{22}MgO_{14} \cdot xH_2O = 414.60(\text{Anh})$  [3632-91-5] MFCD00150971  
Beil. 3(2)350 RTECS OM3480000



## M2065 4-Methoxyphenyl 2-O-Acetyl-3-O-allyl-4,6-O-benzylidene-β-D-glucopyranoside

1g 5g

>98.0%(HPLC)  $C_{25}H_{28}O_8 = 456.49$  [1477956-18-5]

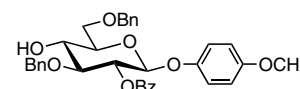


## M2434 4-Methoxyphenyl 2-O-Benzoyl-3,6-di-O-benzyl-β-D-glucopyranoside

Price on request

$C_{34}H_{34}O_8 = 570.64$  [1393898-89-9]

NMR P.239



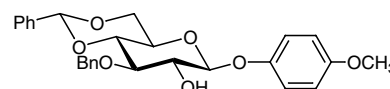
## M1640 4-Methoxyphenyl 3-O-Benzyl-4,6-O-benzylidene-β-D-glucopyranoside

1g 5g

>98.0%(HPLC)  $C_{27}H_{28}O_7 = 464.51$  [303127-81-3]

mp 207°C

NMR P.240

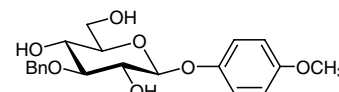


## M1641 4-Methoxyphenyl 3-O-Benzyl-β-D-glucopyranoside

1g

>98.0%(HPLC)  $C_{20}H_{24}O_7 = 376.41$  [303127-80-2]

NMR P.241



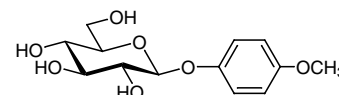
## M1631 4-Methoxyphenyl β-D-Glucopyranoside

5g 25g

>97.0%(HPLC)  $C_{13}H_{18}O_7 = 286.28$  [6032-32-2] MFCD06797143

mp 176°C

NMR P.242

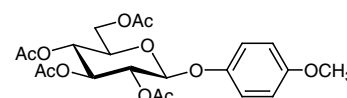


## M1630 4-Methoxyphenyl 2,3,4,6-Tetra-O-acetyl-β-D-glucopyranoside

5g

>98.0%(HPLC)  $C_{21}H_{26}O_{11} = 454.43$  [14581-81-8] MFCD06797142

NMR P.243



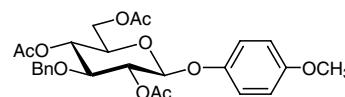
**M1642 4-Methoxyphenyl 2,4,6-Tri-O-acetyl-3-O-benzyl-β-D-glucopyranoside**

1g 5g

>96.0%(HPLC) C<sub>26</sub>H<sub>30</sub>O<sub>10</sub> = 502.52 [303127-79-9]

mp 160°C

NMR P.244

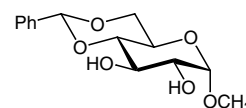
**M1125 Methyl 4,6-O-Benzylidene-α-D-glucopyranoside**

5g 25g

>98.0%(GC) C<sub>14</sub>H<sub>18</sub>O<sub>6</sub> = 282.29 [3162-96-7] MFCD00006819

mp 164°C

Beil. 19(3/4)4956

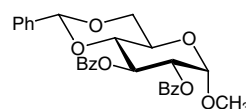
**M2013 Methyl 2,3-Di-O-benzoyl-4,6-O-benzylidene-α-D-glucopyranoside**

1g

>98.0%(HPLC) C<sub>28</sub>H<sub>26</sub>O<sub>8</sub> = 490.51 [6748-91-0] MFCD02167693

mp 154°C

Beil. 19(4)4974



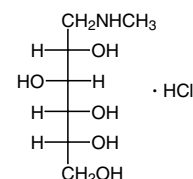
New

**M0713 N-Methyl-D-glucamine Hydrochloride**  
[for Buffer]

5g 25g

>98.0%(HPLC)(T) C<sub>7</sub>H<sub>17</sub>NO<sub>5</sub> · HCl = 231.67 [35564-86-4] MFCD00060164

mp 150°C

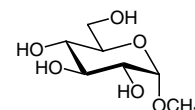
**M0228 Methyl α-D-Glucopyranoside**

25g 100g 500g

>98.0%(GC) C<sub>7</sub>H<sub>14</sub>O<sub>6</sub> = 194.18 [97-30-3] MFCD00064086

mp 170°C

Beil. 31,179 MI14-6080

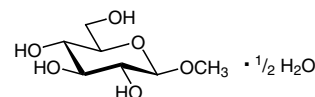
**M0709 Methyl β-D-Glucopyranoside Hemihydrate**

5g 25g

>98.0%(GC) C<sub>7</sub>H<sub>14</sub>O<sub>6</sub> · 1/2H<sub>2</sub>O = 194.18(Anh) [709-50-2] MFCD00006602

mp 111°C

Beil. 17(3/4)2911

**M1682 Methyl 2,3,4,6-Tetra-O-acetyl-1-thio-β-D-glucopyranoside**

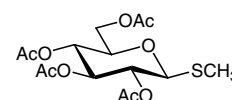
1g 5g

>98.0%(GC) C<sub>15</sub>H<sub>22</sub>O<sub>9</sub>S = 378.39 [13350-45-3]

mp 91°C

Beil. 17(3/4)3729

NMR P.245



## M1487 Methyl 2,3,4-Tri-O-benzoyl- $\alpha$ -D-glucopyranoside

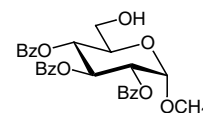
1g 5g

>98.0%(HPLC)  $C_{28}H_{26}O_9$  = 506.51 [34234-44-1] MFCD06797128

mp 146°C

Beil. 17(3/4)3309

NMR P.246



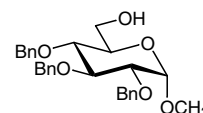
## M1488 Methyl 2,3,4-Tri-O-benzyl- $\alpha$ -D-glucopyranoside

1g

>98.0%(HPLC)  $C_{28}H_{32}O_6$  = 464.56 [53008-65-4] MFCD06798958

mp 67°C

NMR P.247

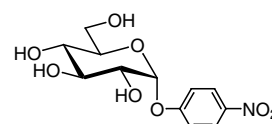


## N0493 4-Nitrophenyl $\alpha$ -D-Glucopyranoside [Substrate for $\alpha$ -D-Glucosidase]

1g 5g

>98.0%(HPLC)  $C_{12}H_{15}NO_8$  = 301.25 [3767-28-0] MFCD00064088

mp 212°C

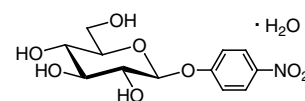


## N0235 4-Nitrophenyl $\beta$ -D-Glucopyranoside Monohydrate [Substrate for $\beta$ -D-Glucosidase]

1g 5g

>98.0%(HPLC)  $C_{12}H_{15}NO_8 \cdot H_2O$  = 301.25(Anh) [2492-87-7] MFCD00006593

mp 167°C

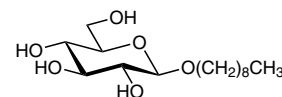


## N0909 Nonyl $\beta$ -D-Glucopyranoside

1g

>98.0%(GC)  $C_{15}H_{30}O_6$  = 306.40 [69984-73-2] MFCD00063300

mp 70°C

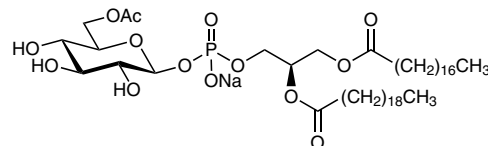


## A2638 6-OAc PtdGlc(di-acyl Chain)

Price on request

$C_{49}H_{92}NaO_{14}P$  = 959.22 [1065483-61-5]

NMR P.248

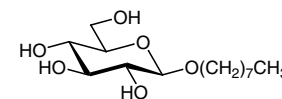


## O0355 n-Octyl $\beta$ -D-Glucopyranoside [for Biochemical Research]

1g

>96.0%(GC)  $C_{14}H_{28}O_6$  = 292.37 [29836-26-8] MFCD00063288

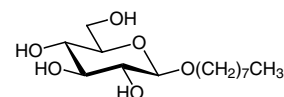
Beil. 17(5)7,38 MI14-6767



**00232 n-Octyl β-D-Glucopyranoside**

1g 5g

>96.0%(GC) C<sub>14</sub>H<sub>28</sub>O<sub>6</sub> = 292.37 [29836-26-8] MFCD00063288  
Beil. 17(5)7,38 MI14-6767

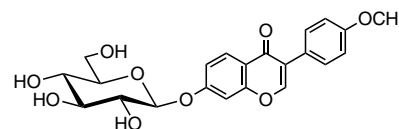


New

**00405 Ononin**

10mg

>97.0%(HPLC) C<sub>22</sub>H<sub>22</sub>O<sub>9</sub> = 430.41 [486-62-4] MFCD00017464

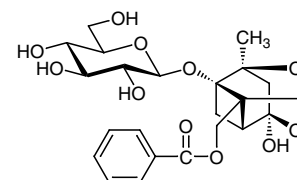


New

**P1876 Paeoniflorin**

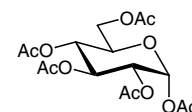
100mg

>97.0%(HPLC) C<sub>23</sub>H<sub>28</sub>O<sub>11</sub> = 480.47 [23180-57-6] MFCD00869331  
RTECS RT1200000

**G0225 Penta-O-acetyl-α-D-glucopyranose**

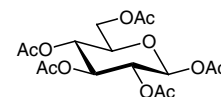
10g 25g 250g

>97.0%(GC) C<sub>16</sub>H<sub>22</sub>O<sub>11</sub> = 390.34 [604-68-2] MFCD00064071  
mp 113°C  
Beil. 31,119

**P0028 Penta-O-acetyl-β-D-glucopyranose**

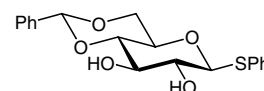
100g 500g

>99.0%(GC) C<sub>16</sub>H<sub>22</sub>O<sub>11</sub> = 390.34 [604-69-3] MFCD00006597  
mp 132°C  
Beil. 17(3/4)3278

**P1475 Phenyl 4,6-O-Benzylidene-1-thio-β-D-glucopyranoside**

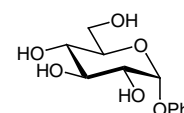
5g

>98.0%(HPLC) C<sub>19</sub>H<sub>20</sub>O<sub>5</sub>S = 360.42 [87508-17-6] MFCD06797160  
mp 185°C  
NMR P.249

**P1346 Phenyl α-D-Glucopyranoside**

1g

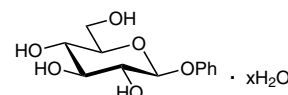
>97.0%(GC) C<sub>12</sub>H<sub>16</sub>O<sub>6</sub> = 256.25 [4630-62-0] MFCD00006594  
mp 172°C  
Beil. 17(5)7,45 RTECS LZ5985500



## P0178 Phenyl β-D-Glucopyranoside Hydrate

1g 10g

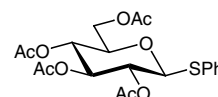
>99.0%(GC) C<sub>12</sub>H<sub>16</sub>O<sub>6</sub> · xH<sub>2</sub>O = 256.25(Anh) [1464-44-4] MFCD03410292  
mp 173°C  
RTECS LZ5985510



## P1476 Phenyl 2,3,4,6-Tetra-O-acetyl-1-thio-β-D-glucopyranoside

5g 25g

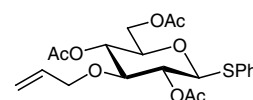
>98.0%(HPLC) C<sub>20</sub>H<sub>24</sub>O<sub>9</sub>S = 440.46 [23661-28-1] MFCD00135159  
mp 118°C  
NMR P.250



## P1736 Phenyl 2,4,6-Tri-O-acetyl-3-O-allyl-1-thio-β-D-glucopyranoside

1g

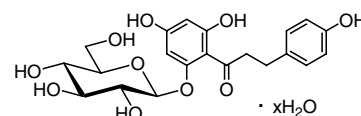
>98.0%(HPLC) C<sub>21</sub>H<sub>26</sub>O<sub>8</sub>S = 438.49 [197005-22-4]  
mp 115°C  
NMR P.251



## P0248 Phlorizin Hydrate

1g 5g

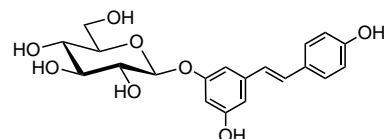
>97.0%(T) C<sub>21</sub>H<sub>24</sub>O<sub>10</sub> · xH<sub>2</sub>O = 436.41(Anh) [60-81-1] MFCD00006591  
Beil. 17(3/4)3042 MI14-7327 RTECS UC2080000



## New P1878 Piceid

1g 5g

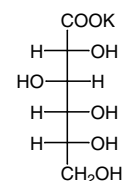
>95.0%(HPLC) C<sub>20</sub>H<sub>22</sub>O<sub>8</sub> = 390.39 [27208-80-6] MFCD00210592  
mp 226°C  
Beil. 17(4)3001



## G0040 Potassium Gluconate

25g 500g

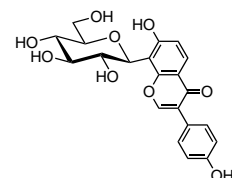
>99.0%(T) C<sub>6</sub>H<sub>11</sub>KO<sub>7</sub> = 234.25 [299-27-4] MFCD00064211  
MI14-4456 RTECS LZ5230000



## P1886 Puerarin

200mg 1g

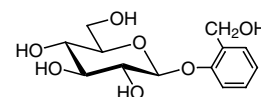
>98.0%(HPLC)(T) C<sub>21</sub>H<sub>20</sub>O<sub>9</sub> = 416.38 [3681-99-0] MFCD00076007  
Beil. 19(4)3200 RTECS UO5216000



**S0003 Salicin**

5g 25g

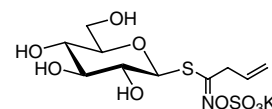
>98.0%(HPLC)  $C_{13}H_{18}O_7 = 286.28$  [138-52-3] MFCD00006590  
 mp 200°C  
 Beil. 31,214 MI14-8324 RTECS LZ5901700



**S0156 Sinigrin Hydrate**

100mg

>98.0%(HPLC)  $C_{10}H_{16}KNO_9S_2 \cdot xH_2O = 397.45(Anh)$  [3952-98-5] MFCD00006616  
 mp 127°C  
 MI14-8545 RTECS LZ5778000

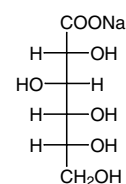


· xH<sub>2</sub>O

**G0041 Sodium Gluconate**

25g 500g

>99.0%(T)  $C_6H_{11}NaO_7 = 218.14$  [527-07-1] MFCD00064210  
 Beil. 3(1)188 MI14-4456 RTECS LZ5235000

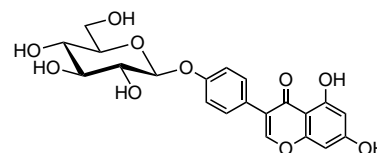


New

**S0835 Sophoricoside**

100mg

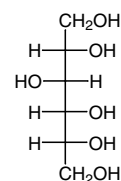
>98.0%(HPLC)  $C_{21}H_{20}O_{10} = 432.38$  [152-95-4] MFCD01075138  
 mp 297°C  
 Beil. 18(5)4,597



**S0065 D-Sorbitol**

25g 500g

>97.0%(GC)  $C_6H_{14}O_6 = 182.17$  [50-70-4] MFCD00004708  
 Beil. 1(4)2839 MI14-8725 RTECS LZ4290000

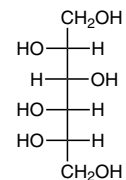


New

**S0388 L-Sorbitol**

100mg 1g

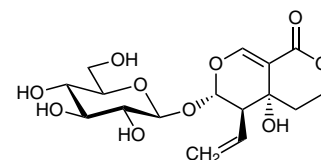
>97.0%(GC)  $C_6H_{14}O_6 = 182.17$  [6706-59-8] MFCD00191490  
 mp 91°C



**S0897 Swertiamarin**

25mg

>98.0%(HPLC)  $C_{16}H_{22}O_{10} = 374.34$  [17388-39-5] MFCD07783984  
 mp 114°C  
 MI14-9010 RTECS UQ1366700

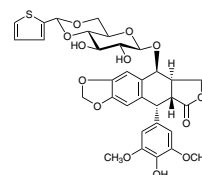


New

## T3109 Teniposide

20mg 100mg

>98.0%(HPLC)  $C_{32}H_{32}O_{13}S = 656.66$  [29767-20-2] MFCD00866516  
MI14-9145 RTECS KC0180000

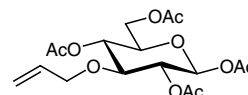


## T2449 1,2,4,6-Tetra-O-acetyl-3-O-allyl-β-D-glucopyranose

1g

>98.0%(HPLC)  $C_{17}H_{24}O_{10} = 388.37$  [39698-00-5]  
mp 119°C

NMR P.252



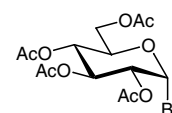
## T1961 2,3,4,6-Tetra-O-acetyl-α-D-glucopyranosyl Bromide (stabilized with CaCO<sub>3</sub>)

5g

>98.0%(T)  $C_{14}H_{19}BrO_9 = 411.20$  [572-09-8] MFCD00063254

mp 89°C

Beil. 17(5)6,368 MI14-60



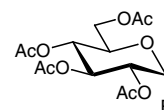
## T1995 2,3,4,6-Tetra-O-acetyl-α-D-glucopyranosyl Fluoride

1g

>98.0%(GC)  $C_{14}H_{19}FO_9 = 350.30$  [3934-29-0] MFCD00792705

Beil. 17(5)6,357

NMR P.253



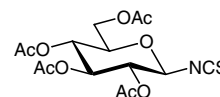
## A5514 2,3,4,6-Tetra-O-acetyl-β-D-glucopyranosyl Isothiocyanate [for HPLC Labeling]

100mg 1g

>98.0%(HPLC)(N)  $C_{15}H_{19}NO_9S = 389.38$  [14152-97-7] MFCD00043085

mp 116°C

Beil. 31,161



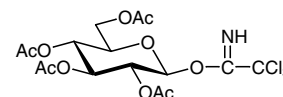
## T2491 2,3,4,6-Tetra-O-acetyl-β-D-glucopyranosyl 2,2,2-Trichloroacetimidate

1g 5g

>98.0%(N)  $C_{16}H_{20}Cl_3NO_{10} = 492.68$  [92052-29-4]

mp 158°C

NMR P.254

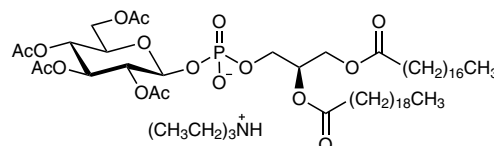


## P2079 2,3,4,6-Tetra-O-acetyl-PtdGlc (di-acyl Chain)

Price on request

$C_{61}H_{114}NO_{17}P = 1164.55$  [1037195-49-5]

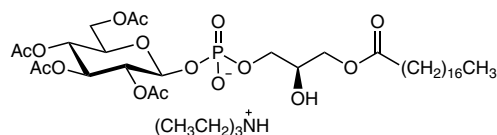
NMR P.255





**P2080 2,3,4,6-Tetra-O-acetyl-PtdGlc  
(mono-acyl Chain)**C<sub>41</sub>H<sub>76</sub>NO<sub>16</sub>P = 870.02

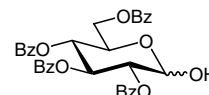
NMR P.256



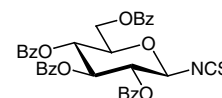
Price on request

**T2020 2,3,4,6-Tetra-O-benzoyl-D-glucopyranose**

250mg 1g

>90.0%(HPLC) C<sub>34</sub>H<sub>28</sub>O<sub>10</sub> = 596.59 [64768-20-3] MFCD00066004  
mp 122°C**A5515 2,3,4,6-Tetra-O-benzoyl-  
β-D-glucopyranosyl Isothiocyanate  
[for HPLC Labeling]**

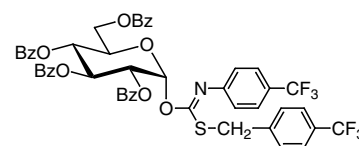
100mg 1g

>98.0%(HPLC) C<sub>35</sub>H<sub>27</sub>NO<sub>9</sub>S = 637.66 [132413-50-4] MFCD00075064**T1991 2,3,4,6-Tetra-O-benzoyl-α-D-glucopyranosyl  
p-Trifluoromethylbenzylthio-  
N-(p-trifluoromethylphenyl)formimidate**

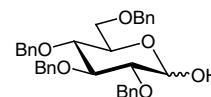
200mg 1g

>96.0%(HPLC) C<sub>50</sub>H<sub>37</sub>F<sub>6</sub>NO<sub>10</sub>S = 957.89 [428816-48-2] MFCD06797174

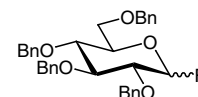
NMR P.257

**T1914 2,3,4,6-Tetra-O-benzyl-D-glucopyranose**

1g 5g

>97.0%(HPLC) C<sub>34</sub>H<sub>36</sub>O<sub>6</sub> = 540.66 [4132-28-9] MFCD00066004  
mp 150°C**T1971 2,3,4,6-Tetra-O-benzyl-  
D-glucopyranosyl Fluoride**

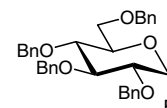
500mg

>96.0%(HPLC) C<sub>34</sub>H<sub>35</sub>FO<sub>5</sub> = 542.65 [122741-44-0] MFCD01862264  
mp 45°C**T1922 2,3,4,6-Tetra-O-benzyl-  
α-D-glucopyranosyl Fluoride**

500mg

>95.0%(GC) C<sub>34</sub>H<sub>35</sub>FO<sub>5</sub> = 542.65 [89025-46-7] MFCD03701104  
mp 69°C

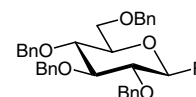
NMR P.258



**T1923 2,3,4,6-Tetra-O-benzyl-β-D-glucopyranosyl Fluoride**

500mg

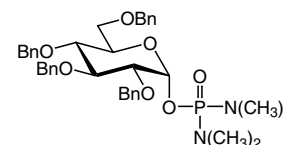
>96.0%(HPLC) C<sub>34</sub>H<sub>35</sub>FO<sub>5</sub> = 542.65 [78153-79-4] MFCD01862264  
mp 47°C  
NMR P.259



**T2197 2,3,4,6-Tetra-O-benzyl-α-D-glucopyranosyl N,N,N',N'-Tetramethylphosphorodiamidate (ca. 20% in Benzene)**

5g

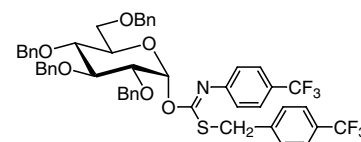
C<sub>38</sub>H<sub>47</sub>N<sub>2</sub>O<sub>7</sub>P = 674.77 [143520-19-8] MFCD06797176  
NMR P.260



**T1999 2,3,4,6-Tetra-O-benzyl-α-D-glucopyranosyl p-Trifluoromethylbenzylthio-N-(p-trifluoromethylphenyl)formimidate**

200mg 1g

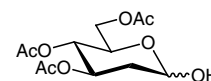
C<sub>50</sub>H<sub>45</sub>F<sub>6</sub>NO<sub>6</sub>S = 901.96 [468095-63-8] MFCD06797177  
mp 123°C  
NMR P.261



**T1931 3,4,6-Tri-O-acetyl-2-deoxy-D-glucopyranose**

100mg

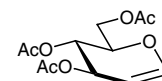
>98.0%(GC) C<sub>12</sub>H<sub>18</sub>O<sub>8</sub> = 290.27 [69503-94-2] MFCD06797168  
mp 106°C



**T1596 Tri-O-acetyl-D-glucal**

5g 25g

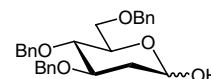
>96.0%(GC) C<sub>12</sub>H<sub>16</sub>O<sub>7</sub> = 272.25 [2873-29-2] MFCD00063253  
mp 55°C  
Beil. 17(5)5,699



**T1933 3,4,6-Tri-O-benzyl-2-deoxy-D-glucopyranose**

100mg

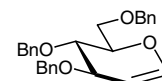
>98.0%(HPLC) C<sub>27</sub>H<sub>30</sub>O<sub>5</sub> = 434.53 [132732-60-6] MFCD06797170



**T1859 Tri-O-benzyl-D-glucal**

1g 5g

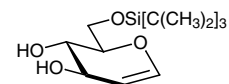
>95.0%(HPLC) C<sub>27</sub>H<sub>28</sub>O<sub>4</sub> = 416.52 [55628-54-1] MFCD00061640  
mp 57°C  
Beil. 17(5)5,698



New **T1936 6-O-(Triisopropylsilyl)-D-glucal**

>95.0%(GC)  $C_{15}H_{30}O_4Si = 302.49$  [137915-37-8]

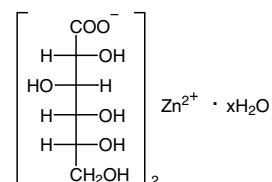
100mg



**G0277 Zinc(II) Gluconate Hydrate**

>98.0%(T)  $C_{12}H_{22}O_{14}Zn \cdot xH_2O = 455.67(\text{Anh})$  [4468-02-4] MFCD04037230  
Beil. 3(3)1059 RTECS ZH3750000

25g 500g

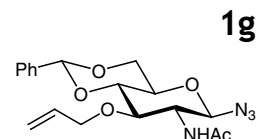


# Glucosamine-①

## A1812 2-Acetamido-3-O-allyl-4,6-O-benzylidene-2-deoxy-β-D-glucopyranosyl Azide

>98.0%(HPLC) C<sub>18</sub>H<sub>22</sub>N<sub>4</sub>O<sub>5</sub> = 374.40 MFCD06797051

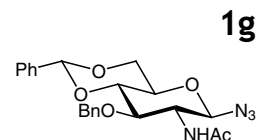
NMR P.262



## A1813 2-Acetamido-3-O-benzyl-4,6-O-benzylidene-2-deoxy-β-D-glucopyranosyl Azide

>98.0%(HPLC) C<sub>22</sub>H<sub>24</sub>N<sub>4</sub>O<sub>5</sub> = 424.46 [80887-27-0] MFCD06797052

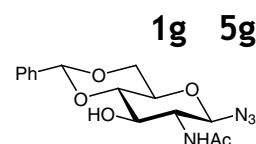
NMR P.263



## A1811 2-Acetamido-4,6-O-benzylidene-2-deoxy-β-D-glucopyranosyl Azide

>98.0%(HPLC) C<sub>15</sub>H<sub>18</sub>N<sub>4</sub>O<sub>5</sub> = 334.33 [168397-51-1]

NMR P.264

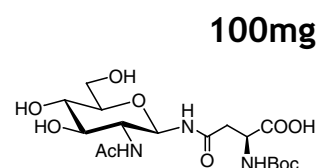


## A1614 N<sup>ω</sup>-(2-Acetamido-2-deoxy-β-D-glucopyranosyl)-N<sup>α</sup>-(tert-butoxycarbonyl)-L-asparagine

>96.0%(HPLC) C<sub>17</sub>H<sub>29</sub>N<sub>3</sub>O<sub>10</sub> = 435.43 [137255-40-4] MFCD06797037

mp 213°C

NMR P.265

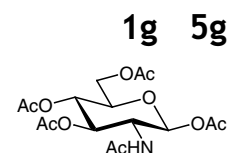


## A1459 2-Acetamido-1,3,4,6-tetra-O-acetyl-2-deoxy-β-D-glucopyranose

>98.0%(HPLC) C<sub>16</sub>H<sub>23</sub>NO<sub>10</sub> = 389.36 [7772-79-4] MFCD00006595

mp 188°C

Beil. 18(5)11,132

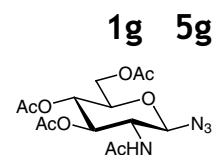


## A1616 2-Acetamido-3,4,6-tri-O-acetyl-2-deoxy-β-D-glucopyranosyl Azide

>98.0%(HPLC) C<sub>14</sub>H<sub>20</sub>N<sub>4</sub>O<sub>8</sub> = 372.33 [6205-69-2] MFCD00216968

Beil. 18(5)10,575

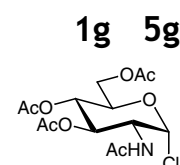
NMR P.266



## A1416 2-Acetamido-3,4,6-tri-O-acetyl-2-deoxy-α-D-glucopyranosyl Chloride

>93.0%(T) C<sub>14</sub>H<sub>20</sub>ClNO<sub>8</sub> = 365.76 [3068-34-6] MFCD00069776

Beil. 18(5)10,570

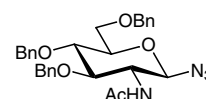


**A1678 2-Acetamido-3,4,6-tri-O-benzyl-2-deoxy-β-D-glucopyranosyl Azide**

1g 5g

>98.0%(HPLC) C<sub>29</sub>H<sub>32</sub>N<sub>4</sub>O<sub>5</sub> = 516.60 [214467-60-4] MFCD06797049

NMR P.267

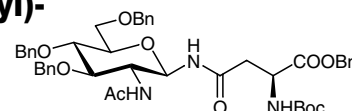


**A1685 N<sup>ω</sup>-(2-Acetamido-3,4,6-tri-O-benzyl-2-deoxy-β-D-glucopyranosyl)-N<sup>α</sup>-(tert-butoxycarbonyl)-L-asparagine Benzyl Ester**

100mg

>97.0%(HPLC) C<sub>45</sub>H<sub>53</sub>N<sub>3</sub>O<sub>10</sub> = 795.93 [219968-28-2] MFCD06797050

NMR P.268

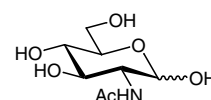


**A0092 N-Acetyl-D-glucosamine**

25g 100g 500g

>98.0%(HPLC)(N) C<sub>8</sub>H<sub>15</sub>NO<sub>6</sub> = 221.21 [7512-17-6] MFCD00136044

Beil. 31,170

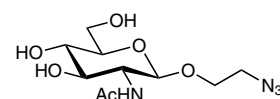


**A2172 2-Azidoethyl 2-Acetamido-2-deoxy-β-D-glucopyranoside**

500mg

>98.0%(HPLC) C<sub>10</sub>H<sub>18</sub>N<sub>4</sub>O<sub>6</sub> = 290.28 [142072-12-6]

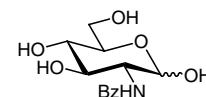
NMR P.269



**B0200 N-Benzoyl-D-glucosamine**

5g 25g

>98.0%(N) C<sub>13</sub>H<sub>17</sub>NO<sub>6</sub> = 283.28 [655-42-5] MFCD00070521

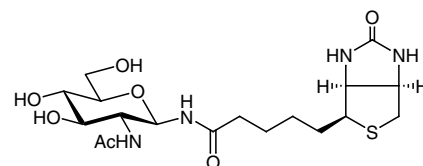


**G0297 N-GlcNAc-Biotin**

50mg

C<sub>18</sub>H<sub>30</sub>N<sub>4</sub>O<sub>7</sub>S = 446.52 [1272755-69-7]

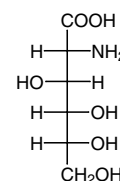
NMR P.270



**G0042 D-Glucosamic Acid**

1g 5g

>98.0%(T) C<sub>6</sub>H<sub>13</sub>NO<sub>6</sub> = 195.17 [3646-68-2] MFCD00037764

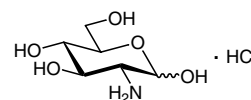


# Glucosamine-③

## G0044 D-(+)-Glucosamine Hydrochloride

>98.0%(T) C<sub>6</sub>H<sub>13</sub>NO<sub>5</sub> · HCl = 215.63 [66-84-2] MFCD00135831  
Beil. 1,902 RTECS LZ6665000

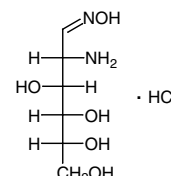
25g 500g



## G0045 D-Glucosamine Oxime Hydrochloride

>98.0%(HPLC)(N) C<sub>6</sub>H<sub>14</sub>N<sub>2</sub>O<sub>5</sub> · HCl = 230.65 [54947-34-1] MFCD00060165

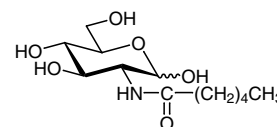
1g



## H0118 N-Hexanoyl-D-glucosamine

>98.0%(N) C<sub>12</sub>H<sub>23</sub>NO<sub>6</sub> = 277.32 [19817-88-0] MFCD00059806

1g



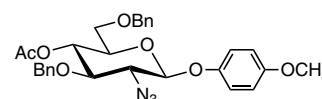
New

## M2051 4-Methoxyphenyl 4-O-Acetyl-2-azido-3,6-di-O-benzyl-2-deoxy-β-D-glucopyranoside

C<sub>29</sub>H<sub>31</sub>N<sub>3</sub>O<sub>7</sub> = 533.58

NMR P.271

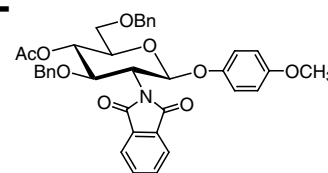
Price on request



## M1834 4-Methoxyphenyl 4-O-Acetyl-3,6-di-O-benzyl-2-deoxy-2-phthalimido-β-D-glucopyranoside

>98.0%(HPLC) C<sub>37</sub>H<sub>35</sub>NO<sub>9</sub> = 637.69 [140615-77-6]

1g 5g



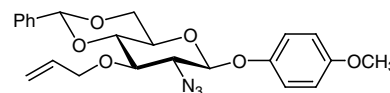
## M1638 4-Methoxyphenyl 3-O-Allyl-2-azido-4,6-O-benzylidene-2-deoxy-β-D-glucopyranoside

>98.0%(HPLC) C<sub>23</sub>H<sub>25</sub>N<sub>3</sub>O<sub>6</sub> = 439.47 [889453-78-5] MFCD06797147

mp 121°C

NMR P.272

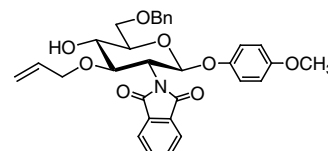
1g



## M1604 4-Methoxyphenyl 3-O-Allyl-6-O-benzyl-2-deoxy-2-phthalimido-β-D-glucopyranoside

>98.0%(HPLC) C<sub>31</sub>H<sub>31</sub>NO<sub>8</sub> = 545.59

1g 5g



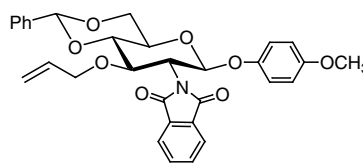
**M1598 4-Methoxyphenyl 3-O-Allyl-4,6-O-benzylidene-2-deoxy-2-phthalimido-β-D-glucopyranoside**

1g 5g

>97.0%(HPLC) C<sub>31</sub>H<sub>29</sub>NO<sub>8</sub> = 543.57 [889453-84-3]

mp 130°C

NMR P.273



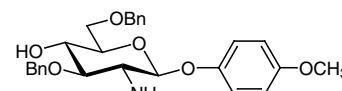
**M1616 4-Methoxyphenyl 2-Amino-3,6-di-O-benzyl-2-deoxy-β-D-glucopyranoside**

1g 5g

C<sub>27</sub>H<sub>31</sub>NO<sub>6</sub> = 465.55 [1272755-07-3]

mp 105°C

NMR P.274



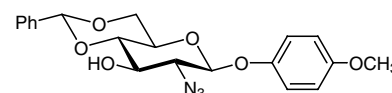
**M1637 4-Methoxyphenyl 2-Azido-4,6-O-benzylidene-2-deoxy-β-D-glucopyranoside**

1g 5g

>98.0%(HPLC) C<sub>20</sub>H<sub>21</sub>N<sub>3</sub>O<sub>6</sub> = 399.40 [1430068-18-0] MFCD06797146

mp 165°C

NMR P.275

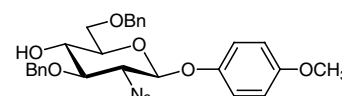


**M1617 4-Methoxyphenyl 2-Azido-3,6-di-O-benzyl-2-deoxy-β-D-glucopyranoside**

1g

C<sub>27</sub>H<sub>29</sub>N<sub>3</sub>O<sub>6</sub> = 491.54 [1272755-25-5]

NMR P.276



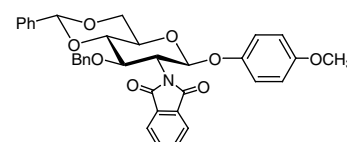
**M1609 4-Methoxyphenyl 3-O-Benzyl-4,6-O-benzylidene-2-deoxy-2-phthalimido-β-D-glucopyranoside**

1g

>98.0%(HPLC) C<sub>35</sub>H<sub>31</sub>NO<sub>8</sub> = 593.63 [129575-88-8] MFCD06797139

mp 133°C

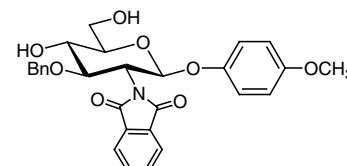
NMR P.277



**M1610 4-Methoxyphenyl 3-O-Benzyl-2-deoxy-2-phthalimido-β-D-glucopyranoside**

Price on request

C<sub>28</sub>H<sub>27</sub>NO<sub>8</sub> = 505.52 [138906-44-2]



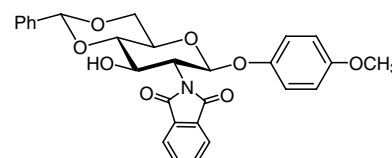
**M1479 4-Methoxyphenyl 4,6-O-Benzylidene-2-deoxy-2-phthalimido-β-D-glucopyranoside**

5g

>98.0%(HPLC) C<sub>28</sub>H<sub>25</sub>NO<sub>8</sub> = 503.51 [138906-43-1] MFCD06797124

mp 142°C

NMR P.278

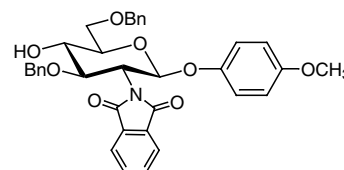


**M1615 4-Methoxyphenyl 3,6-Di-O-benzyl-2-deoxy-2-phthalimido-β-D-glucopyranoside**

1g

>95.0%(HPLC) C<sub>35</sub>H<sub>33</sub>NO<sub>8</sub> = 595.65 [129575-89-9]

NMR P.279



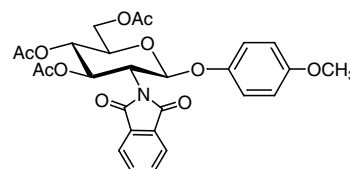
**M1480 4-Methoxyphenyl 3,4,6-Tri-O-acetyl-2-deoxy-2-phthalimido-β-D-glucopyranoside**

5g

>98.0%(HPLC) C<sub>27</sub>H<sub>27</sub>NO<sub>11</sub> = 541.51 [138906-41-9] MFCD06797125

mp 149°C

NMR P.280



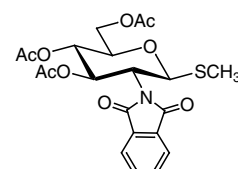
**M1649 Methyl 3,4,6-Tri-O-acetyl-2-deoxy-2-phthalimido-1-thio-β-D-glucopyranoside**

1g 5g

>98.0%(HPLC)(N) C<sub>21</sub>H<sub>23</sub>NO<sub>9</sub>S = 465.47 [79528-48-6]

mp 150°C

NMR P.281



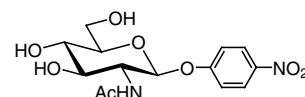
**N0866 4-Nitrophenyl 2-Acetamido-2-deoxy-β-D-glucopyranoside**

200mg 1g

>98.0%(HPLC)(N) C<sub>14</sub>H<sub>18</sub>N<sub>2</sub>O<sub>8</sub> = 342.30 [3459-18-5] MFCD00063696

mp 205°C

Beil. 18(5)11,102

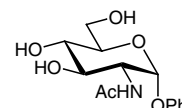


**P0130 Phenyl N-Acetyl-α-D-glucosaminide**

100mg

C<sub>14</sub>H<sub>19</sub>NO<sub>6</sub> = 297.31 [10139-04-5] MFCD00067651

mp 241°C

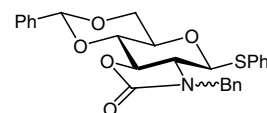


**P1762 Phenyl N-Benzyl-2-amino-4,6-O-benzylidene-2-N,3-O-carbonyl-2-deoxy-1-thio-β-D-glucopyranoside**

1g

>97.0%(HPLC) C<sub>27</sub>H<sub>25</sub>NO<sub>5</sub>S = 475.56 [910805-49-1]

NMR P.282

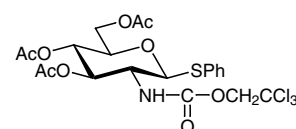


**P1866 Phenyl 3,4,6-Tri-O-acetyl-2-deoxy-1-thio-(2,2,2-trichloroethoxyformamido)-β-D-glucopyranoside**

5g

>98.0%(HPLC) C<sub>21</sub>H<sub>24</sub>Cl<sub>3</sub>NO<sub>9</sub>S = 572.83 [187022-49-7] MFCD11112181

mp 143°C





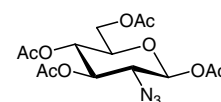
**T2196 1,3,4,6-Tetra-O-acetyl-2-azido-2-deoxy-β-D-glucopyranose**

200mg 1g

>97.0%(HPLC)  $C_{14}H_{19}N_3O_9 = 373.32$  [80321-89-7]

mp 97°C

NMR P.283



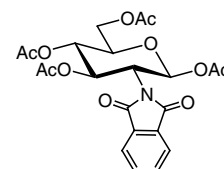
**T2047 1,3,4,6-Tetra-O-acetyl-2-deoxy-2-phthalimido-β-D-glucopyranose**

5g 25g

>97.0%(HPLC)  $C_{22}H_{23}NO_{11} = 477.42$  [10022-13-6]

mp 200°C

NMR P.284

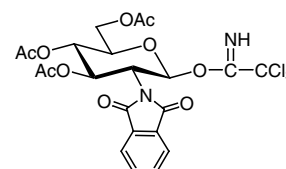


**T2615 3,4,6-Tri-O-acetyl-2-deoxy-2-phthalimido-β-D-glucopyranosyl 2,2,2-Trichloroacetimidate**

Price on request

$C_{22}H_{21}Cl_3N_2O_{10} = 579.76$  [87190-67-8] MFCD09750821

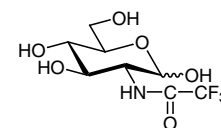
mp 146°C



**T0973 N-Trifluoroacetyl-D-glucosamine**

1g 5g

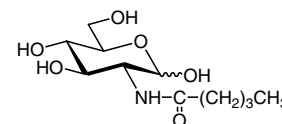
>96.0%(N)  $C_8H_{12}F_3NO_6 = 275.18$  [36875-26-0] MFCD00059807



**V0011 N-Valeryl-D-glucosamine**

1g

>98.0%(N)  $C_{11}H_{21}NO_6 = 263.29$  [63223-57-4] MFCD00059805

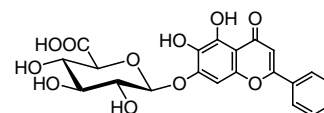


# Glucuronic Acid-①

## B2835 Baicalin

25g

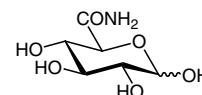
>90.0%(T)  $C_{21}H_{18}O_{11}$  = 446.36 [21967-41-9] MFCD00134418  
mp 196°C  
Beil. 18(3/4)5154 RTECS LZ5776910



## G0223 D-Glucuronamide

25g

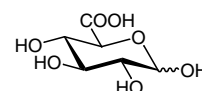
>98.0%(N)  $C_6H_{11}NO_6$  = 193.16 [3789-97-7] MFCD00006619  
mp 167°C  
Beil. 3(4)2009 RTECS LZ8829200



## G0302 D-Glucuronic Acid

5g 25g

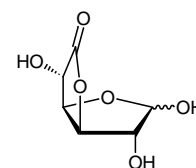
>96.0%(HPLC)(T)  $C_6H_{10}O_7$  = 194.14 [6556-12-3] MFCD00077778  
Beil. 3(4)1996 MI14-4465 RTECS LZ8836600



## G0055 D-Glucurono-6,3-lactone

25g 100g 500g

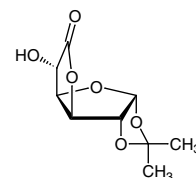
>99.0%(T)  $C_6H_8O_6$  = 176.12 [32449-92-6] MFCD00135622  
Beil. 18(3/4)3055 MI14-4467 RTECS LZ8930000



## I0688 1,2-O-Isopropylidene- α-D-glucurono-6,3-lactone

1g

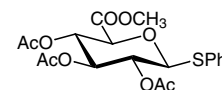
>98.0%(GC)  $C_9H_{12}O_6$  = 216.19 [20513-98-8] MFCD00061641  
mp 121°C  
Beil. 19(3/4)5942



## M1759 Methyl (Phenyl 2,3,4-Tri-O-acetyl-1-thio- β-D-glucopyranosid)uronate

1g

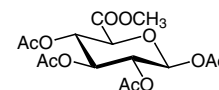
>98.0%(HPLC)  $C_{19}H_{22}O_9S$  = 426.44 [62812-42-4]  
mp 119°C  
Beil. 18(3/4)5222  
NMR P.285



## M1868 Methyl 1,2,3,4-Tetra-O-acetyl- β-D-glucuronate

1g 5g

>96.0%(GC)  $C_{15}H_{20}O_{11}$  = 376.31 [7355-18-2] MFCD00069834  
mp 179°C  
Beil. 18(3/4)5187  
NMR P.286



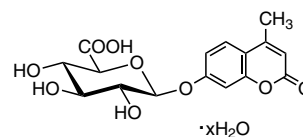
試験, 研究を目的とした弊社収載化学品は, その使用により発生した特許法上の諸問題をユーザーの方々に保証するものではありません。

New

**M3026 4-Methylumbelliferyl β-D-Glucuronide Hydrate**

100mg 1g

>98.0%(HPLC)  $C_{16}H_{16}O_9 \cdot xH_2O = 352.30(\text{Anh})$  [881005-91-0] MFCD09039280

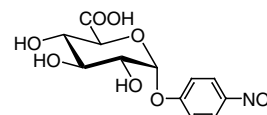


**N0857 4-Nitrophenyl α-D-Glucuronide**

25mg

>97.0%(HPLC)  $C_{12}H_{13}NO_9 = 315.23$  [71484-85-0]

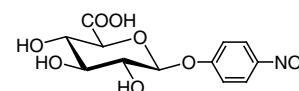
NMR P.287



**N0618 4-Nitrophenyl β-D-Glucuronide**  
[Substrate for β-Glucuronidase]

100mg

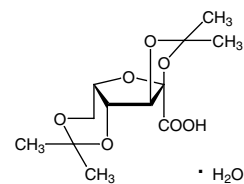
>98.0%(HPLC)  $C_{12}H_{13}NO_9 = 315.23$  [10344-94-2] MFCD00036210  
mp 93°C



# Gulose

## D2191 (-)-2,3:4,6-Di-O-isopropylidene-2-keto-L-gulonic Acid Monohydrate

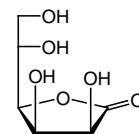
>97.0%(T)  $C_{12}H_{18}O_7 \cdot H_2O = 274.27$ (Anh) [68539-16-2] MFCD00150517  
Beil. 19(5)12,520 MI14-3199



5g

## G0235 L-(+)-Gulonic Acid $\gamma$ -Lactone

>98.0%(GC)  $C_6H_{10}O_6 = 178.14$  [1128-23-0] MFCD00064331  
mp 188°C

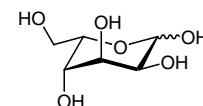


5g 25g

## G0239 L-Gulose

>98.0%(HPLC)  $C_6H_{12}O_6 = 180.16$  [6027-89-0] MFCD00136022  
mp 132°C  
Beil. 1(4)4334 MI14-4579

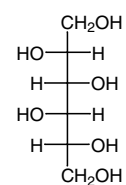
1g 5g 25g



**I0724 D-Iditol**

**100mg**

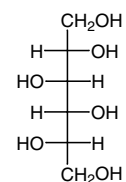
>98.0%(HPLC) C<sub>6</sub>H<sub>14</sub>O<sub>6</sub> = 182.17 [25878-23-3]  
 mp 76°C bp 230°C  
 Beil. 1,544



**I0725 L-Iditol**

**200mg**

>98.0%(HPLC) C<sub>6</sub>H<sub>14</sub>O<sub>6</sub> = 182.17 [488-45-9]  
 mp 77°C  
 Beil. 1(4)2843



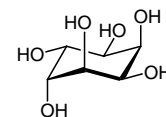
## I0629 *allo*-Inositol

>98.0%(HPLC) C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> = 180.16 [643-10-7] MFCD00799555

Beil. 6(4)7919

NMR P.288

25mg



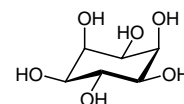
## I0628 *epi*-Inositol

>98.0%(HPLC) C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> = 180.16 [488-58-4] MFCD00003863

Beil. 6(4)7919

NMR P.289

200mg



## I0630 *muco*-Inositol

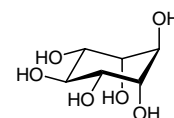
>98.0%(HPLC) C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> = 180.16 [41546-34-3] MFCD01321249

mp 286°C

Beil. 6(4)7920

NMR P.290

100mg



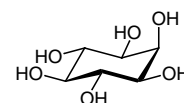
## I0040 *myo*-Inositol

>99.0%(GC) C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> = 180.16 [87-89-8] MFCD00077932

mp 226°C

Beil. 6(2)1157 MI14-4978 RTECS NM7520800

25g 500g



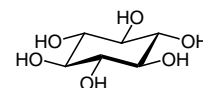
## I0631 *scyllo*-Inositol

>99.0%(HPLC) C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> = 180.16 [488-59-5] MFCD00065455

Beil. 6(4)7920

NMR P.291

200mg 1g

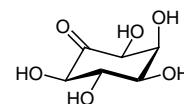


## I0634 1*L*-*epi*-2-Inosose

>98.0%(HPLC) C<sub>6</sub>H<sub>10</sub>O<sub>6</sub> = 178.14 [33471-33-9] MFCD00038395

NMR P.292

200mg



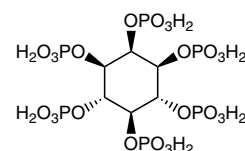
## P0409 Phytic Acid

(ca. 50% in Water, ca. 1.1mol/L)

C<sub>6</sub>H<sub>18</sub>O<sub>24</sub>P<sub>6</sub> = 660.03 [83-86-3] MFCD00082309

MI14-7387 RTECS NM7525000

25g 500g



**P0410 Phytin**

25g 500g

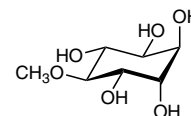
[3615-82-5] MFCD00082315  
MI14-7387 RTECS NM7530000

New

**P2219 D-Pinitol**

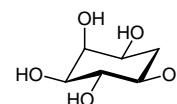
100mg 1g

>98.0%(HPLC)  $C_7H_{14}O_6 = 194.18$  [10284-63-6] MFCD00216659  
mp 188°C

**Q0070 (+)-epi-Quercitol**

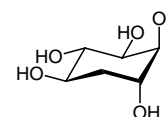
200mg

>97.0%(HPLC)  $C_6H_{12}O_5 = 164.16$  [131435-06-8] MFCD06797162  
NMR P.293

**Q0071 (+)-proto-Quercitol**

100mg

>97.0%(HPLC)  $C_6H_{12}O_5 = 164.16$  [488-73-3] MFCD06797163  
mp 237°C  
MI14-8036  
NMR P.294

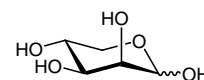


# Lyxose

## L0073 D-(-)-Lyxose

>98.0%(HPLC) C<sub>5</sub>H<sub>10</sub>O<sub>5</sub> = 150.13 [1114-34-7] MFCD00064362  
Beil. 31,56 MI14-5641

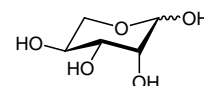
1g 5g 25g



## L0153 L-(+)-Lyxose

>98.0%(HPLC) C<sub>5</sub>H<sub>10</sub>O<sub>5</sub> = 150.13 [1949-78-6] MFCD00064111  
Beil. 1(4)4232

1g 5g





New

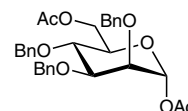
**D5294 1,6-Di-O-acetyl-2,3,4-tri-O-benzyl- $\alpha$ -D-mannopyranose**

1g

>95.0%(HPLC)  $C_{31}H_{34}O_8 = 534.61$  [65556-30-1]

mp 96°C

NMR P.295



New

**D4372 1,6:2,3-Dianhydro- $\beta$ -D-mannopyranose**

200mg

>98.0%(HPLC)  $C_6H_8O_4 = 144.13$  [3868-03-9] MFCD18643031

mp 69°C

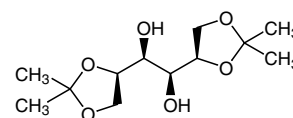
**D2024 1,2:5,6-Di-O-isopropylidene-D-mannitol**

5g 25g

>97.0%(GC)  $C_{12}H_{22}O_6 = 262.30$  [1707-77-3] MFCD00003211

mp 120°C

Beil. 19(1)826

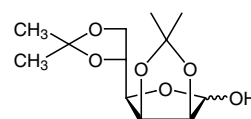
**D2447 2,3:5,6-Di-O-isopropylidene-D-mannofuranose**

5g

>98.0%(GC)  $C_{12}H_{20}O_6 = 260.29$  [14131-84-1] MFCD00134206

mp 125°C

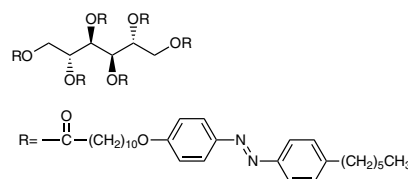
Beil. 19(5)12,5



New

**H1452 1,2,3,4,5,6-Hexa-O-[11-[4-(4-hexylphenylazo)phenoxy]undecanoyl]-D-mannitol**

1g 5g

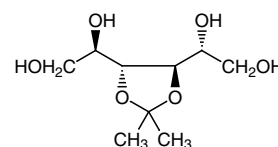
>97.0%(HPLC)  $C_{180}H_{254}N_{12}O_{18} = 2874.08$  [1093077-77-0]**I0489 3,4-O-Isopropylidene-D-mannitol**

1g 5g

>96.0%(GC)  $C_9H_{18}O_6 = 222.24$  [3969-84-4] MFCD00075122

mp 86°C

Beil. 19(5)3,653

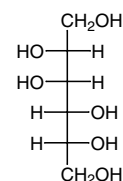
**M0044 D-Mannitol**

25g 500g

>99.0%(T)  $C_6H_{14}O_6 = 182.17$  [69-65-8] MFCD00064287

mp 168°C

Beil. 1,534 MI14-5745 RTECS OP2060000

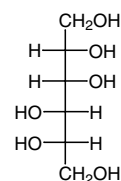


# Mannose-②

## M1084 L-Mannitol

>97.0%(GC) C<sub>6</sub>H<sub>14</sub>O<sub>6</sub> = 182.17 [643-01-6] MFCD00154039  
mp 165°C

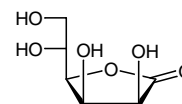
100mg



## M0958 D-Mannono-1,4-lactone

>97.0%(GC) C<sub>6</sub>H<sub>10</sub>O<sub>6</sub> = 178.14 [26301-79-1] MFCD00065020  
mp 153°C  
Beil. 18(3/4)3018

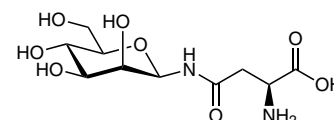
1g 5g



## M2435 N<sup>ω</sup>-(β-D-Mannopyranosyl)-L-asparagine

Price on request

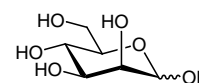
C<sub>10</sub>H<sub>18</sub>N<sub>2</sub>O<sub>8</sub> = 294.26 [41355-52-6]  
NMR P.296



## M0045 D-(+)-Mannose

>98.0%(HPLC) C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> = 180.16 [3458-28-4] MFCD00064122  
Beil. 31,284 MI14-5747

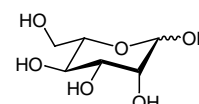
25g 100g 500g



## M1308 L-(-)-Mannose

>98.0%(HPLC) C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> = 180.16 [10030-80-5] MFCD00136021  
mp 131°C  
Beil. 1(4)4333

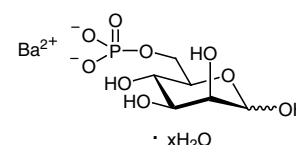
1g



## M0046 Mannose-6-phosphate Barium Salt Hydrate

>85.0%(W) C<sub>6</sub>H<sub>11</sub>BaO<sub>9</sub>P · xH<sub>2</sub>O = 395.45(Anh) MFCD00067376

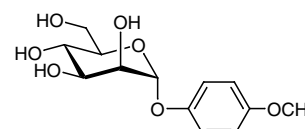
100mg



## M1646 4-Methoxyphenyl α-D-Mannopyranoside

>98.0%(HPLC) C<sub>13</sub>H<sub>18</sub>O<sub>7</sub> = 286.28 [28541-75-5]  
mp 156°C  
NMR P.297

5g



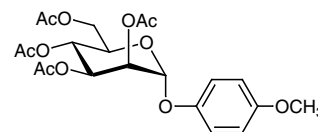
**M1647 4-Methoxyphenyl 2,3,4,6-Tetra-O-acetyl- $\alpha$ -D-mannopyranoside**

5g

>98.0%(HPLC)  $C_{21}H_{26}O_{11}$  = 454.43 [17042-40-9]

mp 102°C

NMR P.298

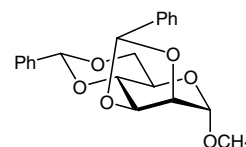
**M2061 Methyl 2,3:4,6-Di-O-benzylidene- $\alpha$ -D-mannopyranoside**

5g 25g

>98.0%(HPLC)  $C_{21}H_{22}O_6$  = 370.40 [4148-71-4] MFCD00192286

mp 185°C

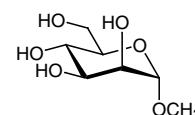
Beil. 19(4)6150

**M0368 Methyl  $\alpha$ -D-Mannopyranoside**

25g 250g

>98.0%(HPLC)  $C_7H_{14}O_6$  = 194.18 [617-04-9] MFCD00063262

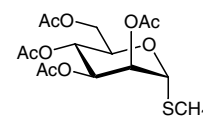
mp 192°C

**M1501 Methyl 2,3,4,6-Tetra-O-acetyl-1-thio- $\alpha$ -D-mannopyranoside**  
(contains ca. 5%  $\beta$ -isomer)

5g

>95.0%(HPLC)  $C_{15}H_{22}O_9S$  = 378.39 [64550-71-6] MFCD00080808

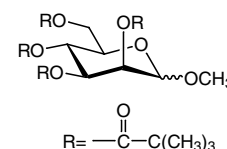
NMR P.299

**M2102 Methyl 2,3,4,6-Tetra-O-pivaloyl- $\alpha$ -D-mannopyranoside**

1g

>97.0%(HPLC)  $C_{27}H_{46}O_{10}$  = 530.66

mp 102°C



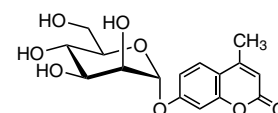
New

**M3023 4-Methylumbelliferyl  $\alpha$ -D-Mannopyranoside**

25mg 100mg

>97.0%(HPLC)  $C_{16}H_{18}O_8$  = 338.31 [28541-83-5] MFCD00067662

mp 217°C

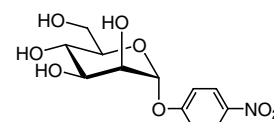
**N0619 4-Nitrophenyl  $\alpha$ -D-Mannopyranoside**  
[Substrate for  $\alpha$ -Mannosidase]

1g

>98.0%(HPLC)  $C_{12}H_{15}NO_8$  = 301.25 [10357-27-4] MFCD00066002

mp 180°C

Beil. 17(3/4)2951



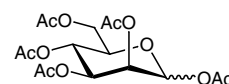
## P1514 1,2,3,4,6-Penta-O-acetyl-D-mannopyranose

5g

>97.0%(GC) C<sub>16</sub>H<sub>22</sub>O<sub>11</sub> = 390.34 [25941-03-1] MFCD05864874

mp 68°C

NMR P.300



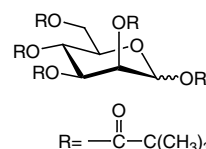
## P1803 1,2,3,4,6-Penta-O-pivaloyl-D-mannopyranose

1g

>98.0%(GC) C<sub>31</sub>H<sub>52</sub>O<sub>11</sub> = 600.75 [220017-47-0]

mp 169°C

NMR P.301



New

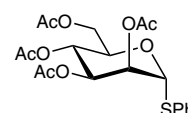
## P2521 Phenyl 2,3,4,6-Tetra-O-acetyl-1-thio-α-D-mannopyranoside

5g

>98.0%(HPLC) C<sub>20</sub>H<sub>24</sub>O<sub>9</sub>S = 440.46 [108032-93-5] MFCD01862644

mp 85°C

NMR P.302



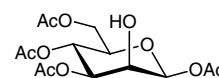
## T1459 1,3,4,6-Tetra-O-acetyl-β-D-mannopyranose

1g 5g

>97.0%(GC) C<sub>14</sub>H<sub>20</sub>O<sub>10</sub> = 348.30 [18968-05-3] MFCD00012354

mp 162°C

Beil. 17(5)7,247

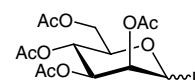


## T2567 2,3,4,6-Tetra-O-acetyl-D-mannopyranosyl Fluoride

1g 5g

>95.0%(GC) C<sub>14</sub>H<sub>19</sub>FO<sub>9</sub> = 350.30 [174511-17-2]

NMR P.303



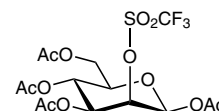
## T2307 1,3,4,6-Tetra-O-acetyl-2-O-(trifluoromethanesulfonyl)-β-D-mannopyranose

100mg

>98.0%(GC) C<sub>15</sub>H<sub>19</sub>F<sub>3</sub>O<sub>12</sub>S = 480.36 [92051-23-5]

mp 122°C

NMR P.304

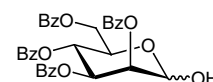


## T2056 2,3,4,6-Tetra-O-benzoyl-D-mannopyranose

1g 5g

>93.0%(HPLC) C<sub>34</sub>H<sub>28</sub>O<sub>10</sub> = 596.59 [113544-59-5] MFCD02683399

mp 182°C

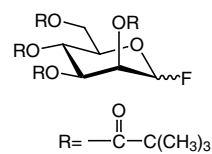


**T2568 2,3,4,6-Tetra-O-pivaloyl-D-mannopyranosyl Fluoride**

>95.0%(GC)  $C_{26}H_{43}FO_9 = 518.62$

NMR P.305

1g

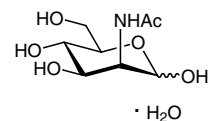


# Mannosamine

## A2160 N-Acetyl-D-mannosamine Monohydrate

>98.0%(HPLC)  $C_8H_{15}NO_6 \cdot H_2O = 221.21(\text{Anh})$  [3615-17-6] MFCD00136044  
mp 125°C

1g 5g



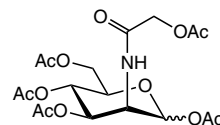
New

## G0463 N-Glycolyl-D-mannosamine Pentaacetate

>93.0%(HPLC)  $C_{18}H_{25}NO_{12} = 447.39$  [258824-38-3]

NMR P.306

100mg



## T1733 1,3,4,6-Tetra-O-acetyl-2-azido-2-deoxy- $\alpha$ -D-mannopyranose

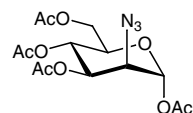
>98.0%(HPLC)  $C_{14}H_{19}N_3O_9 = 373.32$  [68733-20-0] MFCD01321201

mp 132°C

Beil. 17(5)6,400

NMR P.307

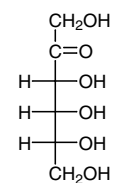
100mg



**P1699 D-Psicose**

100mg 1g

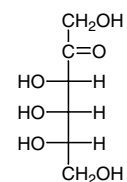
>99.0%(HPLC) C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> = 180.16 [551-68-8] MFCD00083478  
 mp 109°C  
 Beil. 1(4)4400 MI14-7924



**P1778 L-Psicose**

100mg

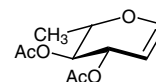
>98.0%(HPLC) C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> = 180.16 [16354-64-6]  
 mp 113°C  
 Beil. 1(4)4401



# Rhamnose

## D2752 3,4-Di-O-acetyl-6-deoxy-L-glucal

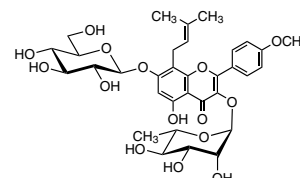
>95.0%(GC)  $C_{10}H_{14}O_5 = 214.22$  [34819-86-8] MFCD00074970  
d 1.14  
Beil. 17(5)5,94



1g 5g

## New I0862 Icariin

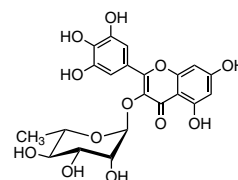
>96.0%(HPLC)  $C_{33}H_{40}O_{15} = 676.67$  [489-32-7] MFCD00210516  
mp 237°C  
MI14-3617 RTECS DJ2980500



200mg 1g

## New M2361 Myricitrin

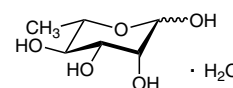
>98.0%(HPLC)  $C_{21}H_{20}O_{12} = 464.38$  [17912-87-7] MFCD00016930  
mp 197°C



10mg 50mg

## R0013 L-(+)-Rhamnose Monohydrate

>98.0%(HPLC)  $C_6H_{12}O_5 \cdot H_2O = 164.16(\text{Anh})$  [10030-85-0] MFCD00149363  
mp 93°C  
Beil. 31,65 MI14-8172

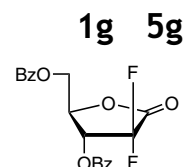


5g 25g



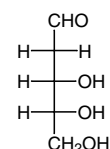
**D4207 2-Deoxy-2,2-difluoro-D-erythro-pentonic Acid  $\gamma$ -Lactone 3,5-Dibenzoate**

>98.0%(HPLC)  $C_{19}H_{14}F_2O_6 = 376.31$  [122111-01-7] MFCD08458308  
mp 123°C

**D0059 2-Deoxy-D-ribose**

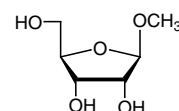
>98.0%(HPLC)  $C_5H_{10}O_4 = 134.13$  [533-67-5] MFCD00135904  
mp 90°C  
MI14-2908 RTECS SB7230000

5g 25g

**M1965 Methyl  $\beta$ -D-Ribofuranoside**

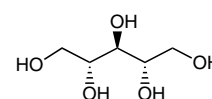
>97.0%(GC)  $C_6H_{12}O_5 = 164.16$  [7473-45-2] MFCD00047075  
mp 78°C  
Beil. 17(4)2491

1g 5g

**A0171 Ribitol**

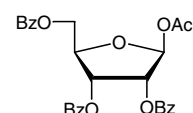
>97.0%(GC)  $C_5H_{12}O_5 = 152.15$  [488-81-3] MFCD00064291  
mp 102°C  
Beil. 1,530 MI14-168 RTECS VJ0800000

1g 25g

**R0067  $\beta$ -D-Ribofuranose 1-Acetate 2,3,5-Tribenzoate**

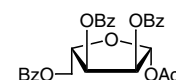
>98.0%(HPLC)  $C_{28}H_{24}O_9 = 504.49$  [6974-32-9] MFCD00005357  
mp 129°C  
Beil. 17(5)6,213

5g 25g

**R0080  $\beta$ -L-Ribofuranose 1-Acetate 2,3,5-Tribenzoate**

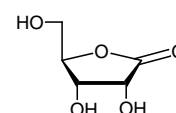
>98.0%(HPLC)  $C_{28}H_{24}O_9 = 504.49$  [3080-30-6] MFCD04114304  
mp 130°C

1g

**R0063 D-(+)-Ribono-1,4-lactone**

>97.0%(GC)  $C_5H_8O_5 = 148.11$  [5336-08-3] MFCD00063241  
mp 86°C  
Beil. 18(5)4,224

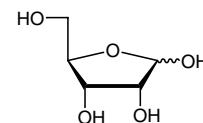
1g 5g



## R0025 D-(-)-Ribose

>98.0%(GC) C<sub>5</sub>H<sub>10</sub>O<sub>5</sub> = 150.13 [50-69-1] MFCD00135453  
Beil. 1(4)4214 MI14-8204 RTECS VJ2275000

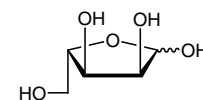
25g 250g



## R0068 L-Ribose

>98.0%(HPLC) C<sub>5</sub>H<sub>10</sub>O<sub>5</sub> = 150.13 [24259-59-4] MFCD00167010  
mp 90°C  
Beil. 1(4)4214

1g 5g 25g

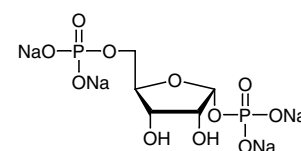


## R0082 α-D-Ribose 1,5-Bis(phosphate) Tetrasodium Salt

C<sub>5</sub>H<sub>8</sub>Na<sub>4</sub>O<sub>11</sub>P<sub>2</sub> = 398.01 [113599-17-0]

NMR P.308

5mg

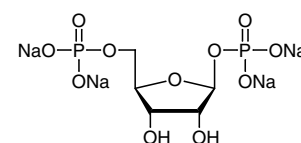


## R0083 β-D-Ribose 1,5-Bis(phosphate) Tetrasodium Salt

C<sub>5</sub>H<sub>8</sub>Na<sub>4</sub>O<sub>11</sub>P<sub>2</sub> = 398.01

NMR P.309

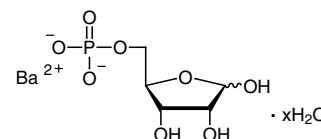
Price on request



## R0026 Ribose-5-phosphate Barium Salt Hydrate

>95.0%(T) C<sub>5</sub>H<sub>9</sub>BaO<sub>8</sub>P · xH<sub>2</sub>O = 365.42(Anh) [15673-79-7] MFCD00047534  
MI14-8205

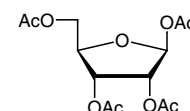
100mg 1g



## R0066 Tetra-O-acetyl-β-D-ribofuranose

>98.0%(GC) C<sub>13</sub>H<sub>18</sub>O<sub>9</sub> = 318.28 [13035-61-5] MFCD00005358  
mp 83°C  
Beil. 17(5)6,205

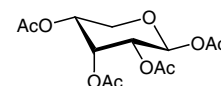
5g 25g



## R0065 Tetra-O-acetyl-β-D-ribofuranose

>98.0%(GC) C<sub>13</sub>H<sub>18</sub>O<sub>9</sub> = 318.28 [4049-34-7] MFCD00006596  
mp 110°C  
Beil. 17(3/4)2459

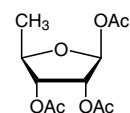
1g



**T2607 1,2,3-Tri-O-acetyl-5-deoxy- $\beta$ -D-ribofuranose**

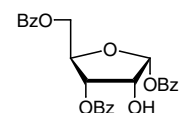
>98.0%(GC)  $C_{11}H_{16}O_7 = 260.24$  [62211-93-2] MFCD08458459  
mp 67°C  
Beil. 17(4)2287

5g 25g

**T2641 1,3,5-Tri-O-benzoyl- $\alpha$ -D-ribofuranose**

>97.0%(HPLC)  $C_{26}H_{22}O_8 = 462.45$  [22224-41-5] MFCD00080818  
mp 140°C  
Beil. 17(4)2505

5g 25g



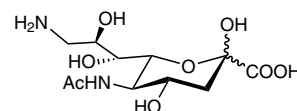
## Sialic Acid-①

### A2511 N-Acetyl-9-deoxy-9-aminoneuraminic Acid

$C_{11}H_{20}N_2O_8 = 308.29$  [112037-47-5] MFCD09841684

NMR P.310

Price on request



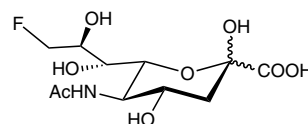
### A2492 N-Acetyl-9-deoxy-9-fluoroneuraminic Acid

$C_{11}H_{18}FNO_8 = 311.26$  [85819-28-9]

mp 167°C

NMR P.311

Price on request

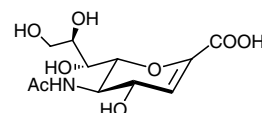


### A2205 N-Acetyl-2,3-didehydro-2-deoxyneuraminic Acid

>98.0%(HPLC)  $C_{11}H_{17}NO_8 = 291.26$  [24967-27-9] MFCD00057470

mp 134°C

5mg

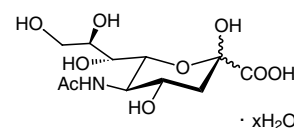


### A0639 N-Acetylneuraminic Acid Hydrate

>98.0%(T)  $C_{11}H_{19}NO_9 \cdot xH_2O = 309.27$  (Anh) [131-48-6] MFCD00006620

MI14-8484

100mg 1g 5g



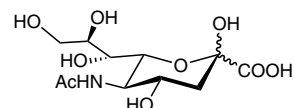
### New A1105 N-Acetylneuraminic Acid

>98.0%(T)  $C_{11}H_{19}NO_9 = 309.27$  [131-48-6] MFCD00006620

mp 186°C

MI14-8484

100mg 1g 5g

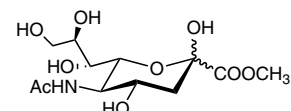


### A1821 N-Acetylneuraminic Acid Methyl Ester

>95.0%(HPLC)  $C_{12}H_{21}NO_9 = 323.30$  [22900-11-4]

NMR P.312

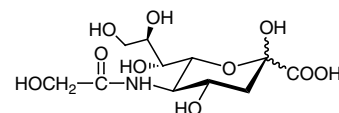
1g



### G0336 N-Glycolylneuraminic Acid

>98.0%(HPLC)  $C_{11}H_{19}NO_{10} = 325.27$  [1113-83-3] MFCD00057551

10mg



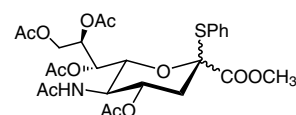
**M1706 Methyl 5-Acetamido-4,7,8,9-tetra-O-acetyl-3,5-dideoxy-2-S-phenyl-2-thio-D-glycero-β-D-galacto-2-nonulopyranosylonate**

1g

>97.0%(HPLC) C<sub>26</sub>H<sub>33</sub>NO<sub>12</sub>S = 583.61 [155155-64-9]

mp 183°C

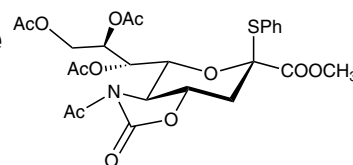
NMR P.313

**M2319 Methyl 5-Acetamido-7,8,9-tri-O-acetyl-5-N,4-O-carbonyl-3,5-dideoxy-2-S-phenyl-2-thio-D-glycero-β-D-galacto-2-nonulopyranosylonate**

200mg 1g

>96.0%(HPLC) C<sub>25</sub>H<sub>29</sub>NO<sub>12</sub>S = 567.56 [934591-76-1]

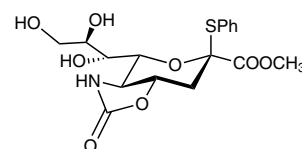
mp 152°C

**M2329 Methyl 5-N,4-O-Carbonyl-3,5-dideoxy-2-S-phenyl-2-thio-D-glycero-β-D-galacto-2-nonulopyranosylonate**

1g

>98.0%(HPLC) C<sub>17</sub>H<sub>21</sub>NO<sub>8</sub>S = 399.41 [934591-79-4]

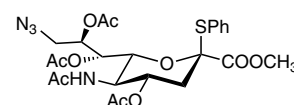
NMR P.314

**New M2695 Methyl (Phenyl 5-Acetamido-4,7,8-tri-O-acetyl-9-azido-3,5,9-trideoxy-2-thio-D-glycero-β-D-galacto-2-nonulopyranosid)onate**

100mg

>97.0%(HPLC) C<sub>24</sub>H<sub>30</sub>N<sub>4</sub>O<sub>10</sub>S = 566.58 [219814-65-0]

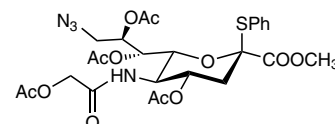
NMR P.315

**New M2696 Methyl (Phenyl 5-Acetoxyacetamido-4,7,8-tri-O-acetyl-9-azido-3,5,9-trideoxy-2-thio-D-glycero-β-D-galacto-2-nonulopyranosid)onate**

100mg

>93.0%(HPLC) C<sub>26</sub>H<sub>32</sub>N<sub>4</sub>O<sub>12</sub>S = 624.62 [1195053-25-8]

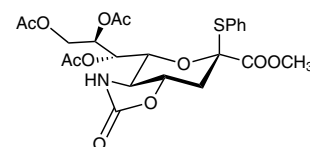
NMR P.316

**M2330 Methyl 7,8,9-Tri-O-acetyl-5-N,4-O-carbonyl-3,5-dideoxy-2-S-phenyl-2-thio-D-glycero-β-D-galacto-2-nonulopyranosylonate**

Price on request

C<sub>23</sub>H<sub>27</sub>NO<sub>11</sub>S = 525.53

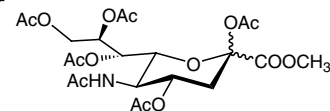
NMR P.317

**M1707 2,4,7,8,9-Penta-O-acetyl-N-acetylneuraminic Acid Methyl Ester**

Price on request

C<sub>22</sub>H<sub>31</sub>NO<sub>14</sub> = 533.48 [73208-82-9]

mp 157°C



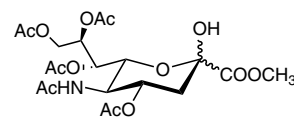
## Sialic Acid-③

### A1822 4,7,8,9-Tetra-O-acetyl-N-acetylneuraminic Acid Methyl Ester

1g

>90.0%(HPLC)  $C_{20}H_{29}NO_{13}$  = 491.45 [84380-10-9]

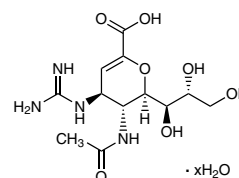
NMR P.318



### New Z0023 Zanamivir Hydrate

100mg

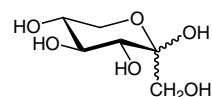
>98.0%(HPLC)(T)  $C_{12}H_{20}N_4O_7 \cdot xH_2O$  = 332.31(Anh) [551942-41-7]



## S0390 D-Sorbose

100mg

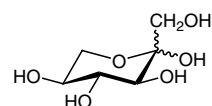
>98.0%(HPLC) C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> = 180.16 [3615-56-3] MFCD00151095  
 mp 158°C  
 Beil. 1(4)4411



## S0066 L-(-)-Sorbose

25g

>98.0%(HPLC) C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> = 180.16 [87-79-6] MFCD00151097  
 mp 165°C  
 Beil. 1(4)4412 MI14-8726 RTECS WG3195025

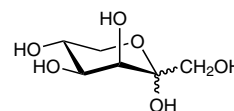


# Tagatose

## T1501 D-Tagatose

>98.0%(HPLC) C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> = 180.16 [87-81-0] MFCD00134449  
mp 132°C  
Beil. 1(4)4414 MI14-9030 RTECS WW1100000

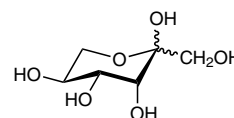
1g 5g



## T2535 L-Tagatose

>98.0%(HPLC) C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> = 180.16 [17598-82-2]  
mp 131°C  
Beil. 1(4)4415 MI14-9030

100mg

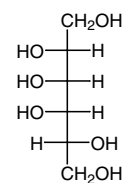




**T1398 D-Talitol**

>98.0%(HPLC) C<sub>6</sub>H<sub>14</sub>O<sub>6</sub> = 182.17 [643-03-8] MFCD00191491  
mp 88°C

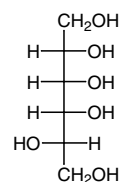
100mg



**T2536 L-Talitol**

>98.0%(HPLC) C<sub>6</sub>H<sub>14</sub>O<sub>6</sub> = 182.17 [60660-58-4]

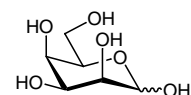
100mg



**T0869 D-(+)-Talose**

>98.0%(HPLC) C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> = 180.16 [2595-98-4] MFCD00135834  
mp 134°C  
Beil. 31,283

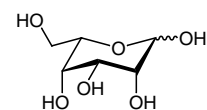
100mg 500mg



**T1767 L-(-)-Talose**

>98.0%(HPLC) C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> = 180.16 [23567-25-1] MFCD00135850  
mp 133°C

100mg

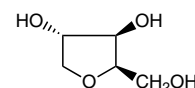


New

## A2635 1,4-Anhydro-D-xylitol

>97.0%(HPLC)  $C_5H_{10}O_4 = 134.13$  [53448-53-6]  
bp 160°C /0.2mmHg

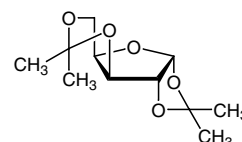
20mg 100mg



## D2616 1,2:3,5-Di-O-isopropylidene- $\alpha$ -D-xylofuranose

>98.0%(GC)  $C_{11}H_{18}O_5 = 230.26$  [20881-04-3] MFCD00063224  
mp 45°C bp 125°C /1mmHg  
Beil. 19(3/4)6076

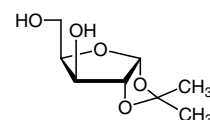
5g



## I0721 1,2-O-Isopropylidene- $\alpha$ -D-xylofuranose

>98.0%(GC)  $C_8H_{14}O_5 = 190.20$  [20031-21-4] MFCD00063295  
mp 70°C  
Beil. 19(5)9,435

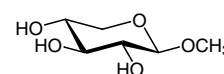
5g 25g



## M1253 Methyl- $\beta$ -D-xylopyranoside

>96.0%(GC)  $C_6H_{12}O_5 = 164.16$  [612-05-5] MFCD00047532  
mp 155°C  
Beil. 17(5)6,92

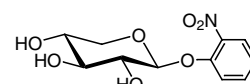
5g 25g



## N0868 2-Nitrophenyl $\beta$ -D-Xylopyranoside

>98.0%(HPLC)  $C_{11}H_{13}NO_7 = 271.23$  [10238-27-4] MFCD00047515  
mp 173°C

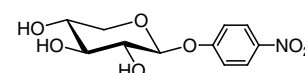
100mg



## N0620 4-Nitrophenyl $\beta$ -D-Xylopyranoside [Substrate for $\beta$ -Xylosidase]

>98.0%(HPLC)  $C_{11}H_{13}NO_7 = 271.23$  [2001-96-9] MFCD00047519  
mp 160°C  
Beil. 17(3/4)2438

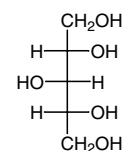
100mg



## X0018 Xylitol

>98.0%(T)  $C_5H_{12}O_5 = 152.15$  [87-99-0] MFCD00064292  
mp 92°C  
Beil. 1,531 MI14-10085 RTECS ZF0800000

25g 500g

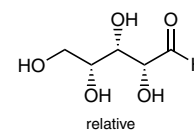


New

**X0020 DL-Xylose**

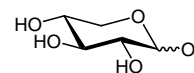
>98.0%(GC) C<sub>5</sub>H<sub>10</sub>O<sub>5</sub> = 150.13 [25990-60-7] MFCD00198055  
Beil. 31,61

1g

**X0019 D-(+)-Xylose**

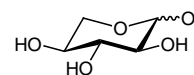
>98.0%(HPLC) C<sub>5</sub>H<sub>10</sub>O<sub>5</sub> = 150.13 [58-86-6] MFCD00151475  
mp 151°C  
Beil. 31,47 MI14-10087 RTECS ZF2285000

25g 500g

**X0021 L-(-)-Xylose**

>97.0%(T) C<sub>5</sub>H<sub>10</sub>O<sub>5</sub> = 150.13 [609-06-3] MFCD00151096  
mp 150°C  
Beil. 31,55

5g 25g



# Disaccharide-①

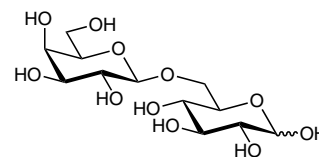
## A2630 Allolactose

$C_{12}H_{22}O_{11}$  = 342.30 [28447-39-4] MFCD15145331

mp 168°C

NMR P.319

Price on request



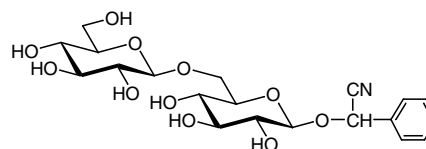
## A0443 Amygdalin

>97.0%(HPLC)  $C_{20}H_{27}NO_{11}$  = 457.43 [29883-15-6] MFCD00006598

mp 213°C

Beil. 17(3/4)3614 RTECS 008450000

1g 10g

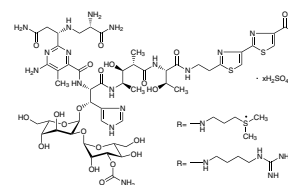


## New B3972 Bleomycin Sulfate (mixture)

>85.0%(HPLC) [9041-93-4] MFCD00070310

MI14-1318 RTECS EC5991990

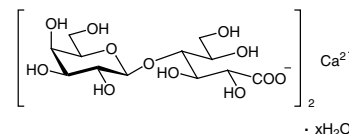
10mg 50mg



## L0006 Calcium Lactobionate Hydrate

>97.0%(T)  $C_{24}H_{42}CaO_{24} \cdot xH_2O$  = 754.65(Anh) [5001-51-4] MFCD00135895

25g

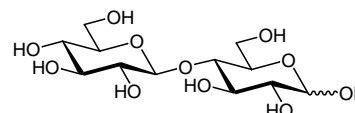


## C0056 D-(+)-Cellobiose

>98.0%(HPLC)  $C_{12}H_{22}O_{11}$  = 342.30 [528-50-7] MFCD00136034

Beil. 31,380 MI14-1961

5g 25g



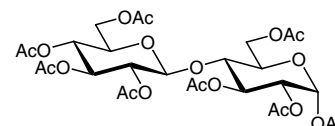
## C0861 alpha-D-Cellobiose Octaacetate

>98.0%(GC)  $C_{28}H_{38}O_{19}$  = 678.59 [5346-90-7] MFCD00009600

mp 232°C

Beil. 17(3/4)3589

25g



## C1527 Crocin (Gardenia Fruits Extract)

$C_{44}H_{64}O_{24}$  = 976.97 [42553-65-1] MFCD00017495

MI14-2589 RTECS HL7380000

25g

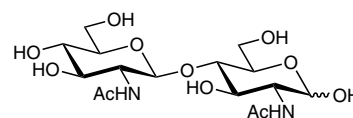
**D4215 N,N'-Diacetylchitobiose**

20mg

>98.0%(HPLC)  $C_{16}H_{28}N_2O_{11} = 424.40$  [35061-50-8] MFCD00077715

mp 247°C

NMR P.320



New

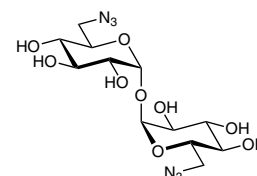
**D5372 6,6'-Diazido-6,6'-dideoxytrehalose**

50mg

>93.0%(HPLC)  $C_{12}H_{20}N_6O_9 = 392.33$  [18933-88-5]

mp 211°C

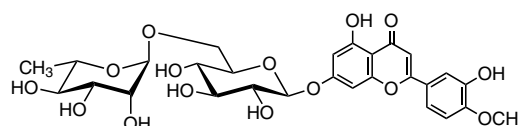
NMR P.321

**D3908 Diosmin**

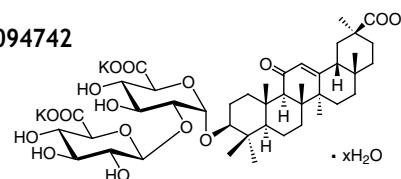
5g 25g

>85.0%(HPLC)  $C_{28}H_{32}O_{15} = 608.55$  [520-27-4] MFCD00009772

Beil. 18(4)3270 MI14-3297

**G0270 Dipotassium Glycyrrhizinate Hydrate**

25g

>75.0%(HPLC)  $C_{42}H_{60}K_2O_{16} \cdot xH_2O = 899.12(\text{Anh})$  [68797-35-3] MFCD02094742

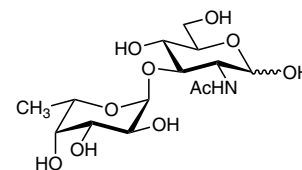
New

**F1030 Fuc α (1-3)GlcNAc**

Price on request

 $C_{14}H_{25}NO_{10} = 367.35$  [52630-68-9] MFCD00153896

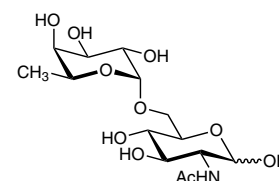
NMR P.322

**F0897 Fuc α (1-6)GlcNAc**

Price on request

 $C_{14}H_{25}NO_{10} = 367.35$  [33639-80-4] MFCD04973531

NMR P.323



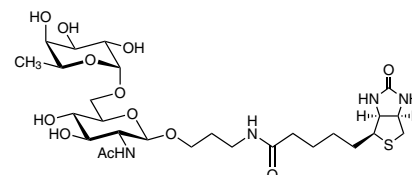
New

**F1021 Fuc α (1-6)GlcNAc-β-propylamido-biotin**

Price on request

 $C_{27}H_{46}N_4O_{12}S = 650.74$ 

NMR P.324

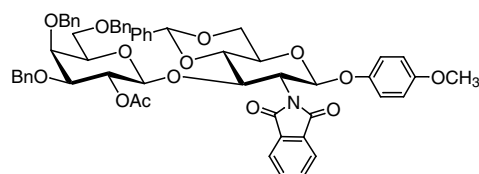


# Disaccharide-③

## G0374 Gal[2Ac,346Bn]β(1-3)GlcNPhth[46Bzd]-β-MP

C<sub>57</sub>H<sub>55</sub>NO<sub>14</sub> = 978.06

Price on request



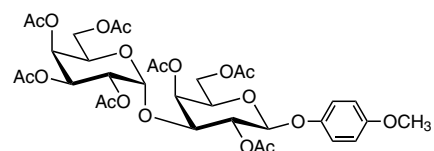
New

## G0460 Gal[2346Ac]α(1-3)Gal[246Ac]-β-MP

C<sub>33</sub>H<sub>42</sub>O<sub>19</sub> = 742.68 [1253645-85-0]

NMR P.325

Price on request



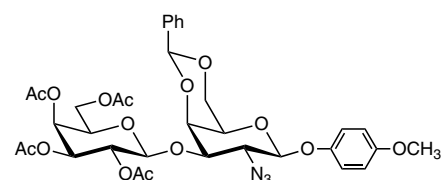
## G0330 Gal[2346Ac]β(1-3)GalN<sub>3</sub>[46Bzd]-β-MP

1g 5g

>95.0%(HPLC) C<sub>34</sub>H<sub>39</sub>N<sub>3</sub>O<sub>15</sub> = 729.69

mp 193°C

NMR P.326



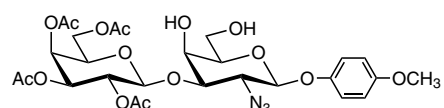
New

## G0329 Gal[2346Ac]β(1-3)GalN<sub>3</sub>-β-MP

C<sub>27</sub>H<sub>35</sub>N<sub>3</sub>O<sub>15</sub> = 641.58

NMR P.327

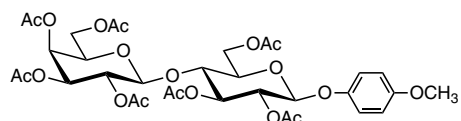
Price on request



## M1694 Gal[2346Ac]β(1-4)Glc[236Ac]-β-MP

Price on request

C<sub>33</sub>H<sub>42</sub>O<sub>19</sub> = 742.68 [160227-12-3]



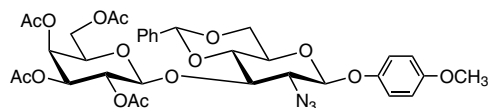
## G0309 Gal[2346Ac]β(1-3)GlcN<sub>3</sub>[46Bzd]-β-MP

1g 5g

>98.0%(HPLC) C<sub>34</sub>H<sub>39</sub>N<sub>3</sub>O<sub>15</sub> = 729.69

mp 172°C

NMR P.328

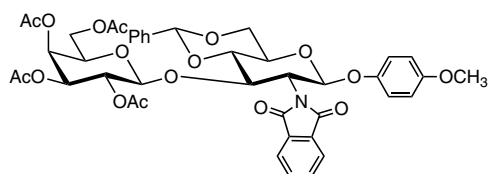


## G0311 Gal[2346Ac]β(1-3)GlcNPhth[46Bzd]-β-MP

1g 5g

>97.0%(HPLC) C<sub>42</sub>H<sub>43</sub>NO<sub>17</sub> = 833.80

NMR P.329

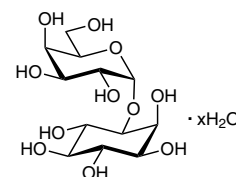


試験, 研究を目的とした弊社収載化学品は, その使用により発生した特許法上の諸問題をユーザーの方々に保証するものではありません。

**G0298 Galactinol Hydrate**

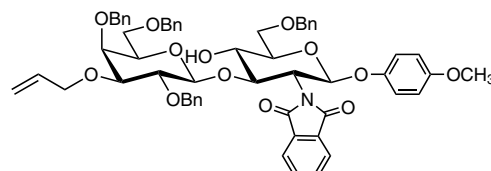
100mg 1g

>99.0%(HPLC)  $C_{12}H_{22}O_{11} \cdot xH_2O = 342.30(\text{Anh})$  [3687-64-7]  
 mp 221°C  
 Beil. 17(3/4)3008

**G0379 Gal[3All,246Bn]β(1-3)GlcNPhth[6Bn]-β-MP**

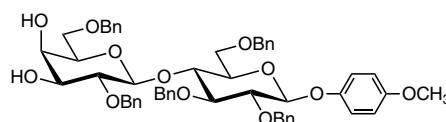
Price on request

$C_{58}H_{59}NO_{13} = 978.10$

**M1686 Gal[26Bn]β(1-4)Glc[236Bn]-β-MP**

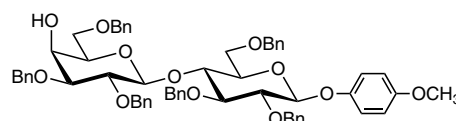
1g 5g

>98.0%(HPLC)  $C_{54}H_{58}O_{12} = 899.05$  [358681-61-5]  
 mp 130°C  
 NMR P.330

**M1726 Gal[236Bn]β(1-4)Glc[236Bn]-β-MP**

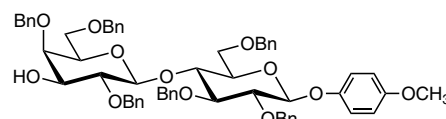
1g 5g

>92.0%(HPLC)  $C_{61}H_{64}O_{12} = 989.17$  [150412-81-0]

**M1727 Gal[246Bn]β(1-4)Glc[236Bn]-β-MP**

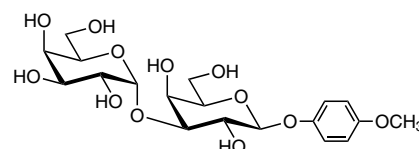
1g

>95.0%(HPLC)  $C_{61}H_{64}O_{12} = 989.17$  [717132-49-5]  
 NMR P.331

**New G0461 Galα(1-3)Gal-β-MP**

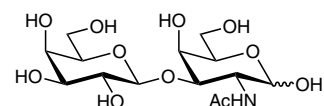
Price on request

$C_{19}H_{28}O_{12} = 448.42$   
 NMR P.332

**New G0439 Galβ(1-3)GalNAc**

Price on request

$C_{14}H_{25}NO_{11} = 383.35$  [20972-29-6] MFCD00063995  
 NMR P.333



## Disaccharide-⑤

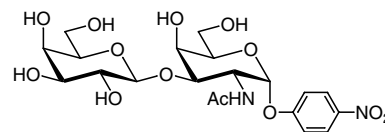
### G0375 Gal $\beta$ (1-3)GalNAc- $\alpha$ -pNP

5mg

>97.0%(HPLC) C<sub>20</sub>H<sub>28</sub>N<sub>2</sub>O<sub>13</sub> = 504.45 [59837-14-8] MFCD00064051

mp 228°C

NMR P.334

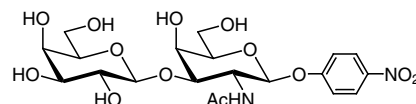


### G0344 Gal $\beta$ (1-3)GalNAc- $\beta$ -pNP

5mg

>98.0%(HPLC) C<sub>20</sub>H<sub>28</sub>N<sub>2</sub>O<sub>13</sub> = 504.45 [59837-15-9]

NMR P.335



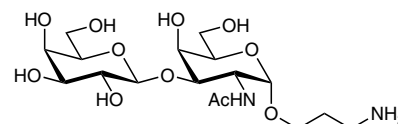
New

### G0528 Gal $\beta$ (1-3)GalNAc- $\alpha$ -propylamine

Price on request

C<sub>17</sub>H<sub>32</sub>N<sub>2</sub>O<sub>11</sub> = 440.45 [100496-29-5]

NMR P.336

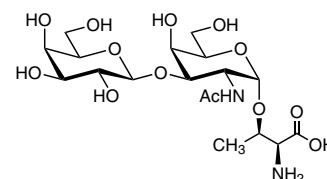


### G0340 Gal $\beta$ (1-3)GalNAc- $\alpha$ -Thr

5mg

>97.0%(HPLC) C<sub>18</sub>H<sub>32</sub>N<sub>2</sub>O<sub>13</sub> = 484.46 [60280-58-2] MFCD02683396

NMR P.337

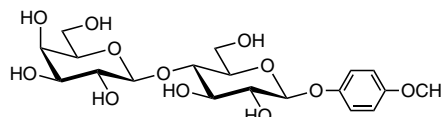


### M1805 Gal $\beta$ (1-4)Glc- $\beta$ -MP

1g

>96.0%(HPLC) C<sub>19</sub>H<sub>28</sub>O<sub>12</sub> = 448.42 [150412-80-9]

Beil. 17(3/4)3528



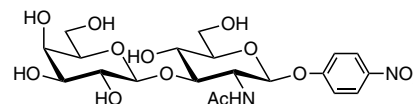
### G0420 Gal $\beta$ (1-3)GlcNAc- $\beta$ -pNP

Price on request

C<sub>20</sub>H<sub>28</sub>N<sub>2</sub>O<sub>13</sub> = 504.45 [57467-13-7] MFCD00037620

mp 186°C

NMR P.338

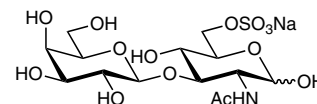


New

### G0527 Gal $\beta$ (1-3)GlcNAc[6S]

Price on request

C<sub>14</sub>H<sub>24</sub>NNaO<sub>14</sub>S = 485.39



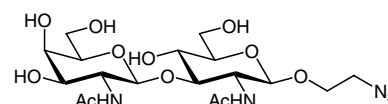


**G0373 GalNAc  $\beta$  (1-3)GlcNAc- $\beta$ -ethylazide**

Price on request

 $C_{18}H_{31}N_5O_{11} = 493.47$ 

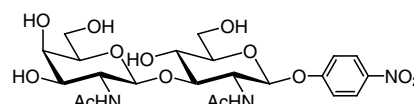
NMR P.339

**G0352 GalNAc  $\beta$  (1-3)GlcNAc- $\beta$ -pNP**

2mg

>98.0%(HPLC)  $C_{22}H_{31}N_3O_{13} = 545.50$  [1456553-26-6]

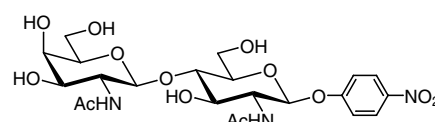
NMR P.340

**G0356 GalNAc  $\beta$  (1-4)GlcNAc- $\beta$ -pNP**

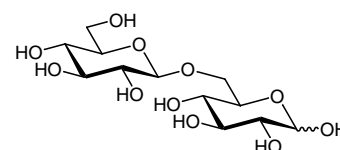
2mg

>98.0%(HPLC)  $C_{22}H_{31}N_3O_{13} = 545.50$  [872578-72-8]

NMR P.341

**G0026 Gentiobiose**

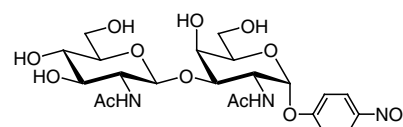
100mg

>96.0%(HPLC)  $C_{12}H_{22}O_{11} = 342.30$  [554-91-6] MFCD00198056  
Beil. 31,397 MI14-4396**G0376 GlcNAc  $\beta$  (1-3)GalNAc- $\alpha$ -pNP**

5mg

>98.0%(HPLC)  $C_{22}H_{31}N_3O_{13} = 545.50$  [125455-64-3]

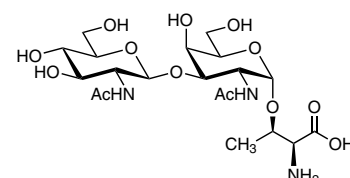
NMR P.342

**G0341 GlcNAc  $\beta$  (1-3)GalNAc- $\alpha$ -Thr**

2mg

>97.0%(HPLC)  $C_{20}H_{35}N_3O_{13} = 525.51$  [286959-52-2]

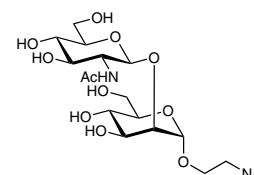
NMR P.343

**G0337 GlcNAc  $\beta$  (1-2)Man- $\alpha$ -ethylazide**

100mg

>98.0%(HPLC)  $C_{16}H_{28}N_4O_{11} = 452.42$ 

NMR P.344



## Disaccharide-⑦

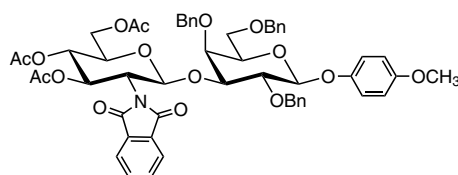
### G0299 GlcNPhth[346Ac]β(1-3)Gal[246Bn]-β-MP

200mg 1g

>98.0%(HPLC) C<sub>54</sub>H<sub>55</sub>NO<sub>16</sub> = 974.03

mp 175°C

NMR P.345

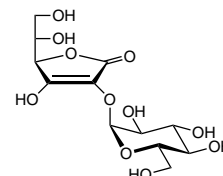


### G0394 2-O-α-D-Glucopyranosyl-L-ascorbic Acid

1g 5g

>98.0%(HPLC)(T) C<sub>12</sub>H<sub>18</sub>O<sub>11</sub> = 338.27 [129499-78-1] MFCD00925623

mp 160°C

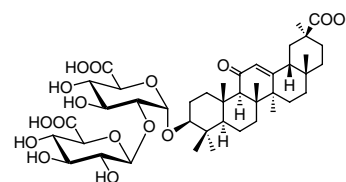


### G0150 Glycyrrhizin

1g 25g

>93.0%(T) C<sub>42</sub>H<sub>62</sub>O<sub>16</sub> = 822.94 [1405-86-3] MFCD00065194

Beil. 18(3/4)5156 MI14-4505 RTECS MD2025000

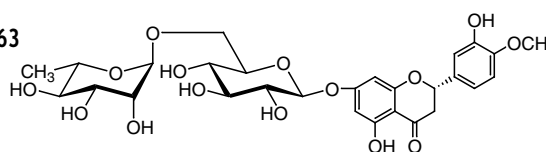


### H0049 Hesperidin

25g 100g 500g

>90.0%(HPLC)(T) C<sub>28</sub>H<sub>34</sub>O<sub>15</sub> = 610.57 [520-26-3] MFCD00075663

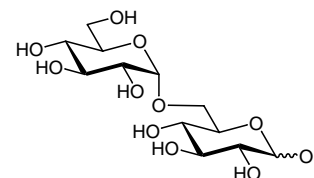
Beil. 18(3/4)3219 MI14-4671 RTECS MK6650000



### I0231 Isomaltose

100mg 1g

>97.0%(GC) C<sub>12</sub>H<sub>22</sub>O<sub>11</sub> = 342.30 [499-40-1] MFCD00065373

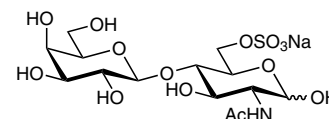


### New L0324 L2

Price on request

C<sub>14</sub>H<sub>24</sub>NNaO<sub>14</sub>S = 485.39 [145447-78-5] MFCD23160317

NMR P.346

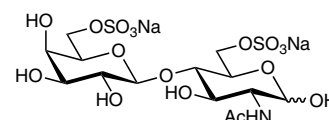


### New L0325 L4

Price on request

C<sub>14</sub>H<sub>23</sub>NNa<sub>2</sub>O<sub>17</sub>S<sub>2</sub> = 587.43 [321897-68-1] MFCD23160316

NMR P.347

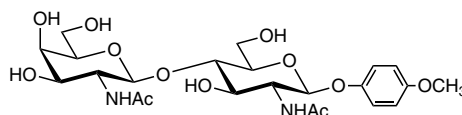


**M1733 LacDiNAc MP Glycoside**

5mg

 $C_{23}H_{34}N_2O_{12} = 530.53$ 

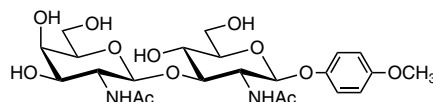
NMR P.348

**M1776 LacDiNAc(I) MP Glycoside**

5mg

 $C_{23}H_{34}N_2O_{12} = 530.53$ 

NMR P.349

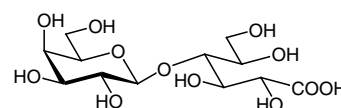
**L0005 Lactobionic Acid**

(mixture of Acid form and Lactone form)

25g 100g 500g

>96.0%(T)  $C_{12}H_{22}O_{12} = 358.30$  [96-82-2] MFCD00078147

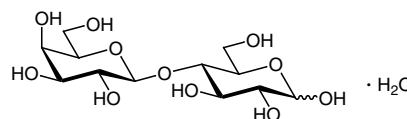
Beil. 31,415 MI14-5342

**L0008 D-(+)-Lactose Monohydrate**

25g 500g

>98.0%(HPLC)  $C_{12}H_{22}O_{11} \cdot H_2O = 342.30$  (Anh) [64044-51-5] MFCD00150747

Beil. 31,408 MI14-5343

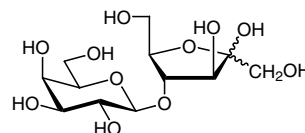
**L0140 Lactulose**

25g

>98.0%(HPLC)  $C_{12}H_{22}O_{11} = 342.30$  [4618-18-2] MFCD00151469

mp 169°C

MI14-5346 RTECS LS6965000

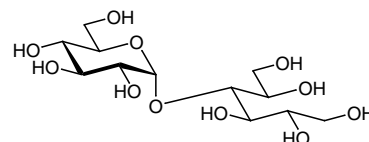
**M0601 Maltitol**

25g 500g

>95.0%(GC)  $C_{12}H_{24}O_{11} = 344.31$  [585-88-6] MFCD00006600

mp 146°C

Beil. 17(5)7,145 RTECS LZ4394000

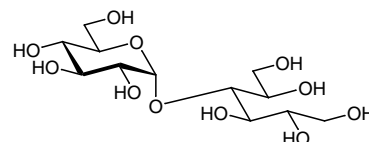
**M0797 Maltitol**

25g 100g 500g

>98.0%(GC)  $C_{12}H_{24}O_{11} = 344.31$  [585-88-6] MFCD00006600

mp 151°C

Beil. 17(5)7,145 RTECS LZ4394000

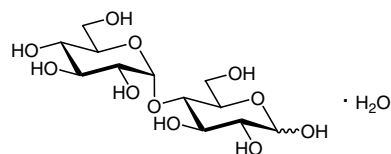


# Disaccharide-⑨

## M0037 D-(+)-Maltose Monohydrate

25g 100g 500g

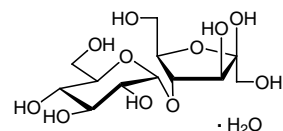
>98.0%(HPLC)  $C_{12}H_{22}O_{11} \cdot H_2O = 342.30(\text{Anh})$  [6363-53-7] MFCD00149343  
Beil. 17(3/4)3057 MI14-5714 RTECS 005250000



## M1138 Maltulose Monohydrate

1g

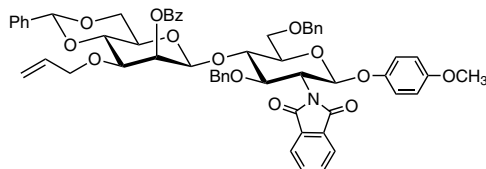
>98.0%(GC)  $C_{12}H_{22}O_{11} \cdot H_2O = 342.30(\text{Anh})$  [17606-72-3] MFCD00191667  
mp 113°C



## M2442 Man[2Bz,3All,46Bzd] β(1-4)GlcNPhth[36Bn]-β-MP

Price on request

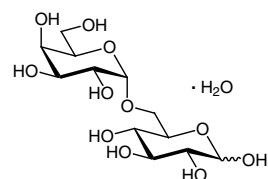
$C_{58}H_{55}NO_{14} = 990.07$



## M0050 D-(+)-Melibiose Monohydrate

1g 10g

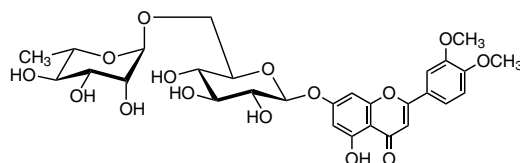
>99.0%(HPLC)  $C_{12}H_{22}O_{11} \cdot H_2O = 342.30(\text{Anh})$  [66009-10-7] MFCD00198188  
Beil. 31,421 MI14-5820



## New M0338 Methyl Hesperidine

5g 25g

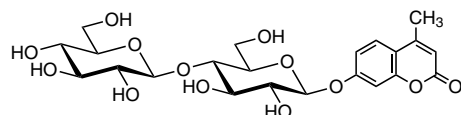
>90.0%(E)  $C_{29}H_{36}O_{15} = 624.59$  [11013-97-1] MFCD01741310



## New M3028 4-Methylumbelliferyl β-D-Cellobioside

100mg 500mg

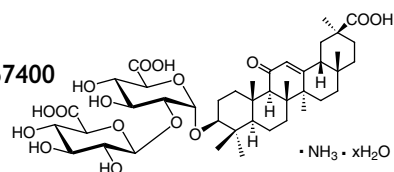
>98.0%(HPLC)  $C_{22}H_{28}O_{13} = 500.45$  [72626-61-0] MFCD00063279



## G0151 Monoammonium Glycyrrhizinate Hydrate

1g 25g

>75.0%(HPLC)  $C_{42}H_{65}NO_{16} \cdot xH_2O = 839.97(\text{Anh})$  [53956-04-0] MFCD00167400  
mp 217°C  
RTECS LZ6500000

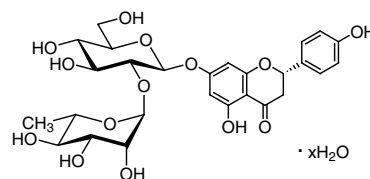


試験, 研究を目的とした弊社収載化学品は, その使用により発生した特許法上の諸問題をユーザーの方々に保証するものではありません。

**N0073 Naringin Hydrate**

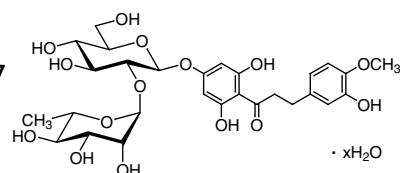
25g

>90.0%(T)  $C_{27}H_{32}O_{14} \cdot xH_2O = 580.54(\text{Anh})$  [10236-47-2] MFCD00148888  
Beil. 18,528 MI14-6425 RTECS QN6340000

**N0675 Neohesperidin Dihydrochalcone Hydrate**

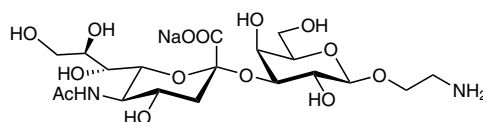
5g 25g

>98.0%(T)  $C_{28}H_{36}O_{15} \cdot xH_2O = 612.58(\text{Anh})$  [20702-77-6] MFCD03840557  
MI14-6452 RTECS LZ5785000

**N0947 Neu5Ac  $\alpha$  (2-3)Gal- $\beta$ -ethylamine**

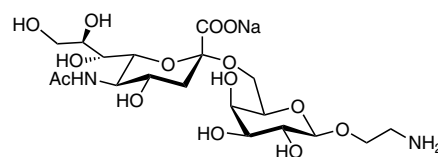
Price on request

$C_{19}H_{33}N_2NaO_{14} = 536.46$

**N0948 Neu5Ac  $\alpha$  (2-6)Gal- $\beta$ -ethylamine**

Price on request

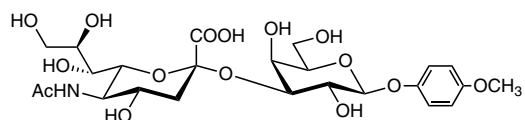
$C_{19}H_{33}N_2NaO_{14} = 536.46$

**N0791 Neu5Ac  $\alpha$  (2-3)Gal  $\beta$  MP Glycoside**

10mg 50mg

>95.0%(HPLC)  $C_{24}H_{35}NO_{15} = 577.54$  [159922-54-0]

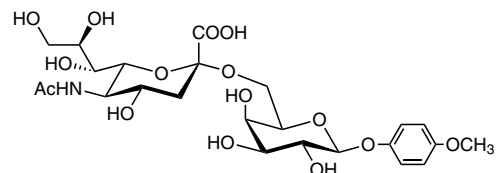
**NMR** P.350

**N0792 Neu5Ac  $\alpha$  (2-6)Gal  $\beta$  MP Glycoside**

10mg 50mg

>95.0%(HPLC)  $C_{24}H_{35}NO_{15} = 577.54$

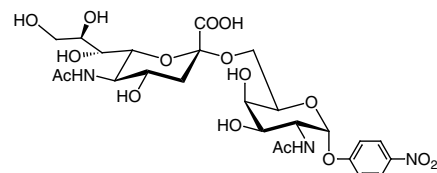
**NMR** P.351

**N0890 Neu5Ac  $\alpha$  (2-6)GalNAc- $\alpha$ -pNP**

5mg

>98.0%(HPLC)  $C_{25}H_{35}N_3O_{16} = 633.56$

**NMR** P.352



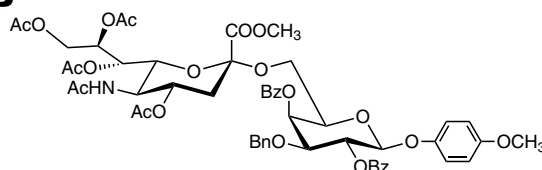
# Disaccharide-⑪

## M1761 Neu5Ac[1Me,4789Ac] $\alpha$ (2-6)Gal[24Bz,3Bn]- $\beta$ -MP

200mg

>95.0%(HPLC)  $C_{54}H_{59}NO_{21} = 1058.05$

NMR P.353

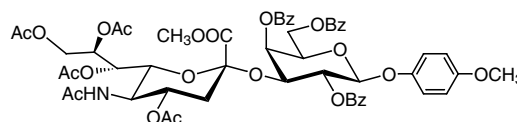


## N0846 Neu5Ac[1Me,4789Ac] $\alpha$ (2-3)Gal[246Bz]- $\beta$ -MP

200mg 1g

>95.0%(HPLC)  $C_{54}H_{57}NO_{22} = 1072.04$

NMR P.354

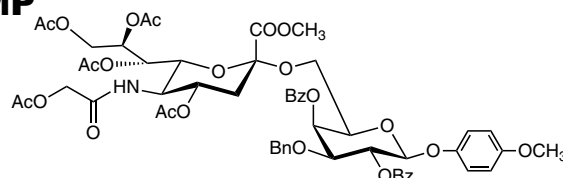


## M1763 Neu5GcAc[1Me,4789Ac] $\alpha$ (2-6)Gal[24Bz,3Bn]- $\beta$ -MP

200mg

>97.0%(HPLC)  $C_{56}H_{61}NO_{23} = 1116.09$

NMR P.355

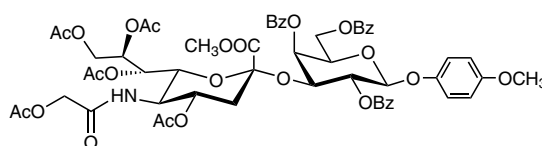


## N0816 Neu5GcAc[1Me,4789Ac] $\alpha$ (2-3)Gal[246Bz]- $\beta$ -MP

Price on request

$C_{56}H_{59}NO_{24} = 1130.07$

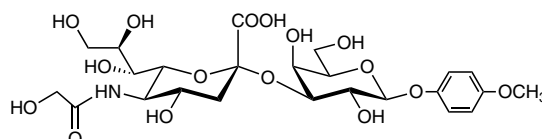
NMR P.356



## N0793 Neu5Gc $\alpha$ (2-3)Gal $\beta$ MP Glycoside

5mg

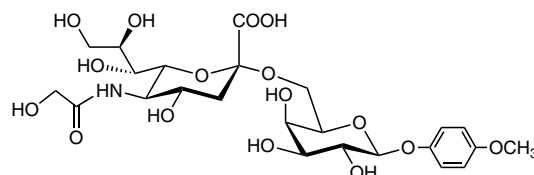
>95.0%(HPLC)  $C_{24}H_{35}NO_{16} = 593.54$



## N0794 Neu5Gc $\alpha$ (2-6)Gal $\beta$ MP Glycoside

5mg

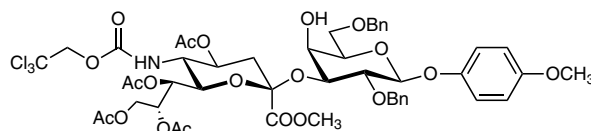
>97.0%(HPLC)  $C_{24}H_{35}NO_{16} = 593.54$  [1072896-38-8]



## M1729 Neu5Troc[1Me,4789Ac] $\alpha$ (2-3)Gal[26Bn]- $\beta$ -MP

1g

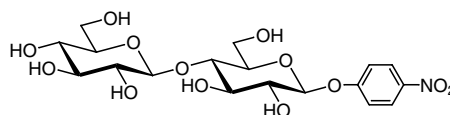
>98.0%(HPLC)  $C_{48}H_{56}Cl_3NO_{20} = 1073.31$  [610763-72-9]



**N0867 4-Nitrophenyl β-D-Cellobioside**

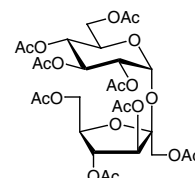
100mg

>98.0%(HPLC)  $C_{18}H_{25}NO_{13} = 463.39$  [3482-57-3] MFCD00069845  
Beil. 17(4)3523

**S0052 Octa-O-acetyl D-(+)-Sucrose**

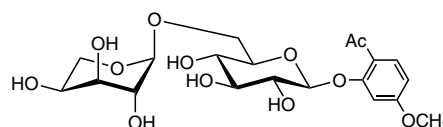
25g 500g

>98.0%(T)  $C_{28}H_{38}O_{19} = 678.59$  [126-14-7] MFCD00006623  
mp 86°C  
MI14-8881 RTECS WN6620000

**P1879 Paeonolide**

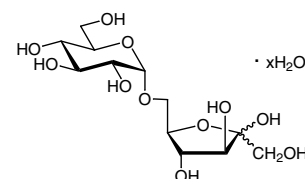
10mg

>97.0%(HPLC)  $C_{20}H_{28}O_{12} = 460.43$  [72520-92-4]  
Beil. 17(4)3462

**P1234 Palatinose Hydrate**

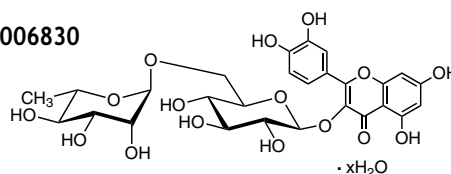
25g 500g

>98.0%(HPLC)  $C_{12}H_{22}O_{11} \cdot xH_2O = 342.30$  (Anh) [13718-94-0] MFCD00076094  
mp 123°C  
Beil. 17(5)7,215 MI14-5182

**R0035 Rutin Hydrate**

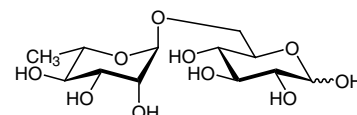
25g

>98.0%(T)  $C_{27}H_{30}O_{16} \cdot xH_2O = 610.52$  (Anh) [207671-50-9] MFCD00006830  
MI14-8304 RTECS VM2975000

**R0062 Rutinose**

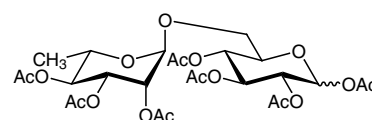
100mg

>95.0%(HPLC)  $C_{12}H_{22}O_{10} = 326.30$  [90-74-4] MFCD00161473  
MI14-8305

**H0628 Rutinose Heptaacetate**

1g

>98.0%(GC)  $C_{26}H_{36}O_{17} = 620.56$  [29202-64-0] MFCD00161474  
mp 168°C  
MI14-8305

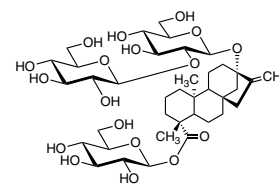


New

## S0594 Stevioside

25g

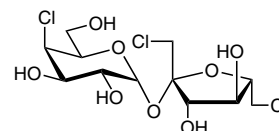
>85.0%(HPLC)  $C_{38}H_{60}O_{18} = 804.88$  [57817-89-7] MFCD00079561  
 mp 236°C  
 Beil. 17(4)3618 MI14-8810 RTECS NZ8175000



## S0839 Sucralose

5g 25g 100g

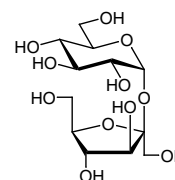
>98.0%(HPLC)  $C_{12}H_{19}Cl_3O_8 = 397.63$  [56038-13-2] MFCD03648615  
 MI14-8880 RTECS LW5440140



## S0111 D-(+)-Sucrose

25g 500g

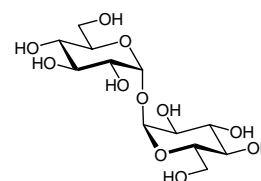
>99.0%(HPLC)  $C_{12}H_{22}O_{11} = 342.30$  [57-50-1] MFCD00006626  
 Beil. 31,424 MI14-8881 RTECS WN6500000



## T0832 D-(+)-Trehalose Anhydrous

5g 25g

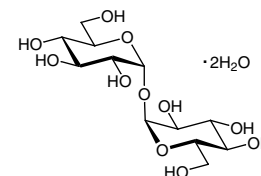
>98.0%(GC)  $C_{12}H_{22}O_{11} = 342.30$  [99-20-7] MFCD00006628  
 mp 205°C  
 Beil. 17(3/4)3505 MI14-9580



## T0331 D-(+)-Trehalose Dihydrate

25g 500g

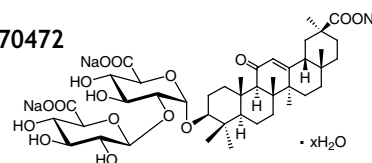
>98.0%(GC)  $C_{12}H_{22}O_{11} \cdot 2H_2O = 342.30(Anh)$  [6138-23-4] MFCD00071594  
 Beil. 17(3/4)3505 MI14-9580 RTECS LZ5776547



## G0217 Trisodium Glycyrrhizinate Hydrate

25g

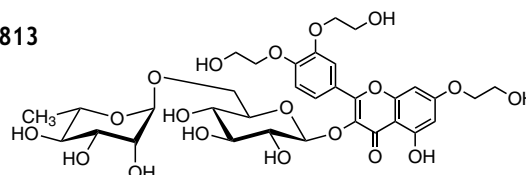
>80.0%(HPLC)  $C_{42}H_{59}Na_3O_{16} \cdot xH_2O = 888.89(Anh)$  [71277-78-6] MFCD00070472  
 RTECS LZ6500500



## T3541 Troxerutin

5g 25g

>90.0%(HPLC)  $C_{33}H_{42}O_{19} = 742.68$  [7085-55-4] MFCD00893813  
 mp 186°C  
 MI14-9789 RTECS LK8331500

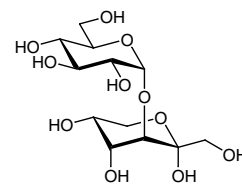




**T0542 D-(+)-Turanose**

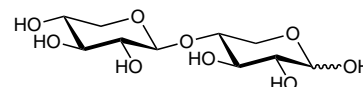
>98.0%(HPLC)  $C_{12}H_{22}O_{11}$  = 342.30 [547-25-1] MFCD00006606  
Beil. 17(3/4)3092 MI14-9821

1g 5g

**X0067 Xylobiose**

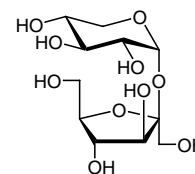
>98.0%(HPLC)  $C_{10}H_{18}O_9$  = 282.25 [6860-47-5] MFCD00135984

100mg 1g

**X0065 Xylosucrose**

>98.0%(HPLC)  $C_{11}H_{20}O_{10}$  = 312.27 [512-66-3]  
mp 114°C  
Beil. 17(4)3786

100mg 1g

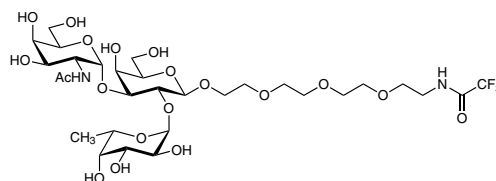


## A2631 A Antigen PEG-trifluoroacetamide

Price on request

$C_{30}H_{51}F_3N_2O_{19} = 800.73$

NMR P.357



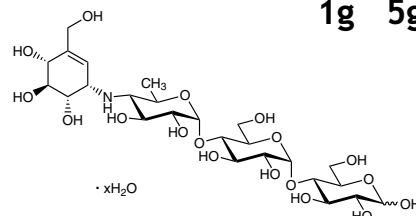
## A2485 Acarbose Hydrate

1g 5g

>98.0%(HPLC)(N)  $C_{25}H_{43}NO_{18} \cdot xH_2O = 645.61(\text{Anh})$  [56180-94-0]

MFC000869592

MI14-18 RTECS LZ7153000

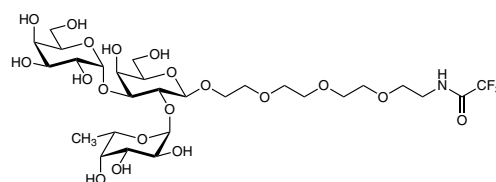


## B4172 B Antigen PEG-trifluoroacetamide

Price on request

$C_{28}H_{48}F_3NO_{19} = 759.68$

NMR P.358



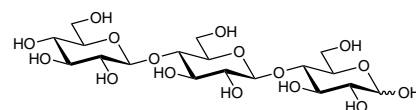
## C2795 Cellotriose

20mg

>95.0%(HPLC)  $C_{18}H_{32}O_{16} = 504.44$  [33404-34-1] MFC00069842

mp 209°C

NMR P.359

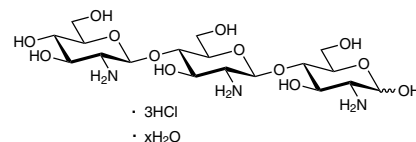


## C2642 Chitotriose Trihydrochloride Hydrate

25mg

>93.0%(HPLC)  $C_{18}H_{35}N_3O_{13} \cdot 3HCl \cdot xH_2O = 610.86(\text{Anh})$  [117436-78-9]

mp 255°C



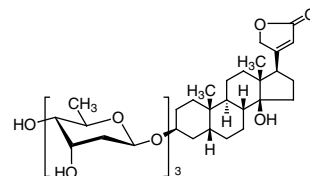
## D0542 Digitoxin

100mg

>97.0%(HPLC)  $C_{41}H_{64}O_{13} = 764.95$  [71-63-6] MFC00003686

mp 257°C

Beil. 18(3/4)1478 MI14-3163 RTECS IH2275000

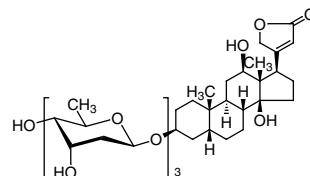


## D1828 Digoxin

100mg 1g

>96.0%(HPLC)  $C_{41}H_{64}O_{14} = 780.95$  [20830-75-5] MFC00003674

Beil. 18(3/4)2453 MI14-3167 RTECS IH6125000

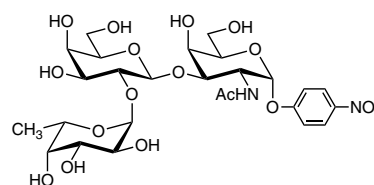


**F0895 Fuc  $\alpha$  (1-2)Gal  $\beta$  (1-3)GalNAc- $\alpha$ -pNP** (=H type 3  $\alpha$ -pNP Glycoside)

$C_{26}H_{38}N_2O_{17}$  = 650.59 [1105508-81-3]

NMR P.360

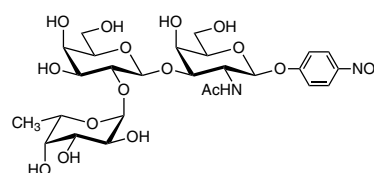
Price on request



**F0896 Fuc  $\alpha$  (1-2)Gal  $\beta$  (1-3)GalNAc- $\beta$ -pNP** (=H type 3  $\beta$ -pNP Glycoside)

$C_{26}H_{38}N_2O_{17}$  = 650.59

Price on request

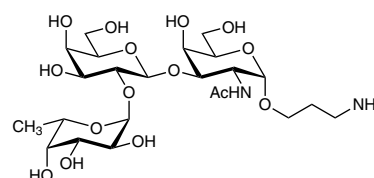


New **F1189 Fuc  $\alpha$  (1-2)Gal  $\beta$  (1-3)GalNAc- $\alpha$ -propylamine**

$C_{23}H_{42}N_2O_{15}$  = 586.59 [1016164-81-0]

NMR P.361

Price on request

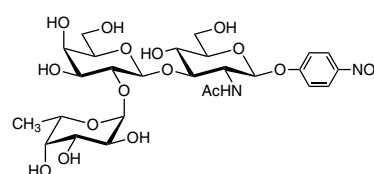


**F0894 Fuc  $\alpha$  (1-2)Gal  $\beta$  (1-3)GlcNAc- $\beta$ -pNP** (=H type 1  $\beta$ -pNP Glycoside)

$C_{26}H_{38}N_2O_{17}$  = 650.59 [93496-53-8] MFCD07369574

NMR P.362

Price on request

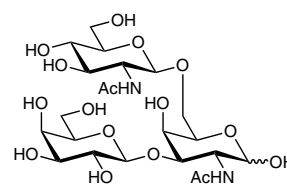


New **G0529 Gal  $\beta$  (1-3)[GlcNAc  $\beta$  (1-6)]GalNAc**

$C_{22}H_{38}N_2O_{16}$  = 586.54 [73499-58-8]

NMR P.363

Price on request

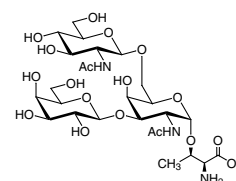


**G0343 Gal  $\beta$  (1-3)[GlcNAc  $\beta$  (1-6)]GalNAc- $\alpha$ -Thr**

$C_{26}H_{45}N_3O_{18}$  = 687.65 [186600-27-1]

NMR P.364

Price on request

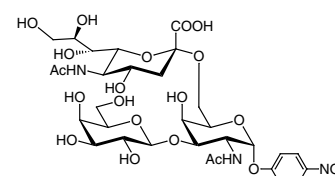


**G0377 Gal  $\beta$  (1-3)[Neu5Ac  $\alpha$  (2-6)]GalNAc- $\alpha$ -pNP**

>95.0%(HPLC)  $C_{31}H_{45}N_3O_{21}$  = 795.70 [1316822-90-8]

NMR P.365

2mg



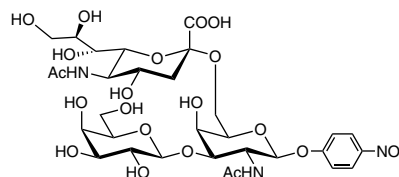
# Trisaccharide-③

## G0345 Gal β (1-3)[Neu5Ac α (2-6)]GalNAc-β-pNP

5mg

$C_{31}H_{45}N_3O_{21} = 795.70$

NMR P.366

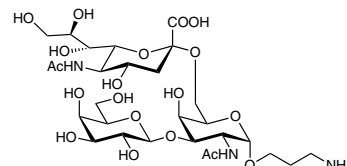


New

## G0440 Gal β (1-3)[Neu5Ac α (2-6)]GalNAc-α-propylamine

Price on request

$C_{28}H_{49}N_3O_{19} = 731.70$  [864967-77-1]

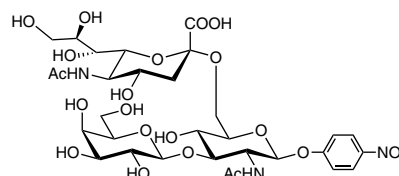


## G0347 Gal β (1-3)[Neu5Ac α (2-6)]GlcNAc-β-pNP

2mg

>92.0%(HPLC)  $C_{31}H_{45}N_3O_{21} = 795.70$  [754954-71-7]

NMR P.367

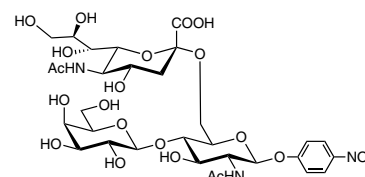


## G0353 Gal β (1-4)[Neu5Ac α (2-6)]GlcNAc-β-pNP

2mg

>90.0%(HPLC)  $C_{31}H_{45}N_3O_{21} = 795.70$

NMR P.368

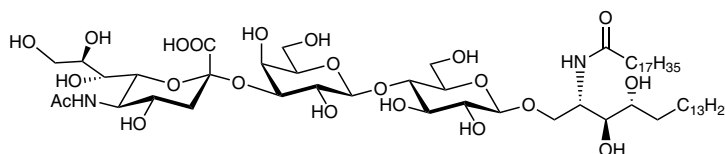


## G0422 Ganglioside GM<sub>3</sub> (phyto-type)

Price on request

$C_{59}H_{110}N_2O_{22} = 1199.52$  [1046791-63-2]

NMR P.369



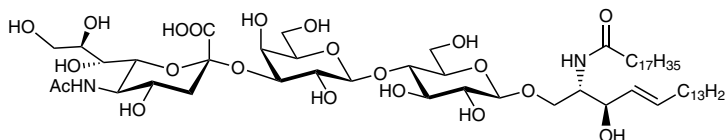
New

## G0489 Ganglioside GM<sub>3</sub>

Price on request

$C_{59}H_{108}N_2O_{21} = 1181.51$  [124579-05-1]

NMR P.370

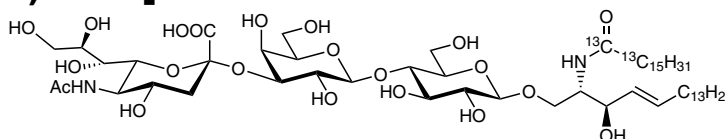


## G0419 Ganglioside GM<sub>3</sub> [d18:1, (Carbon-13)C16:0]

Price on request

$^{13}C_{16}C_{41}H_{104}N_2O_{21} = 1169.33$

NMR P.371



多くの試薬は、その危険性・有害性に関する知見が十分に得られていません。従って、試薬の使用は化学知識を持った専門家に限られ、それ以外の方の使用は避けください。なお、ご使用の際には安全面に十分注意し、開封・保管から廃棄に至るまで責任を持って管理してください。

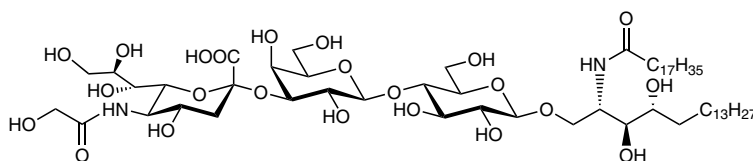
New

**G0510 Ganglioside GM<sub>3</sub>(Neu5Gc)** (phyto-type)

Price on request

C<sub>59</sub>H<sub>110</sub>N<sub>2</sub>O<sub>23</sub> = 1215.52

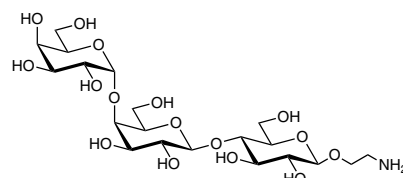
NMR P.372



**G0402 Gb<sub>3</sub>-β-ethylamine**

Price on request

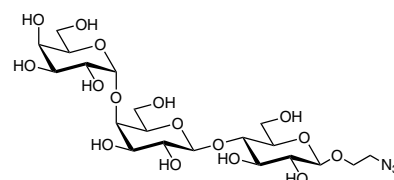
C<sub>20</sub>H<sub>37</sub>NO<sub>16</sub> = 547.51 [261155-98-0]



**G0403 Gb<sub>3</sub>-β-ethylazide**

Price on request

C<sub>20</sub>H<sub>35</sub>N<sub>3</sub>O<sub>16</sub> = 573.51

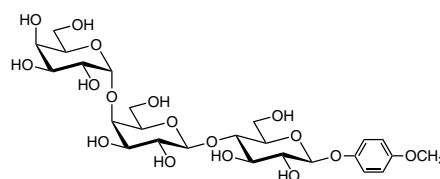


**M1767 Gb<sub>3</sub>-β-MP**

100mg

>95.0%(HPLC) C<sub>25</sub>H<sub>38</sub>O<sub>17</sub> = 610.56 [898826-64-7]

NMR P.373



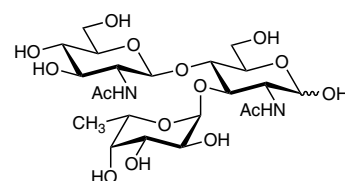
New

**G0465 GlcNAc β (1-4)[Fuc α (1-3)]GlcNAc**

Price on request

C<sub>22</sub>H<sub>38</sub>N<sub>2</sub>O<sub>15</sub> = 570.55 [77735-22-9]

NMR P.374

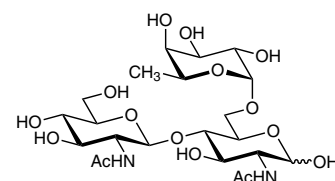


**G0423 GlcNAc β (1-4)[Fuc α (1-6)]GlcNAc**

Price on request

>98.0%(HPLC) C<sub>22</sub>H<sub>38</sub>N<sub>2</sub>O<sub>15</sub> = 570.55 [108964-40-5]

NMR P.375

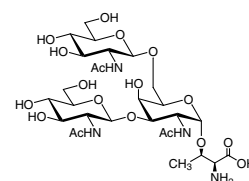


**G0342 GlcNAc β (1-3)[GlcNAc β (1-6)]GalNAc-α-Thr**

2mg

>94.0%(HPLC) C<sub>28</sub>H<sub>48</sub>N<sub>4</sub>O<sub>18</sub> = 728.70 [1304646-03-4]

NMR P.376



The chemical, physical and toxicological properties of the new chemicals have not been thoroughly investigated. Please handle with care.

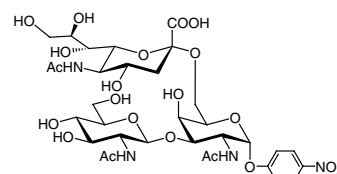
# Trisaccharide-⑤

## G0378 GlcNAc $\beta$ (1-3)[Neu5Ac $\alpha$ (2-6)]GalNAc- $\alpha$ -pNP

2mg

>97.0%(HPLC)  $C_{33}H_{48}N_4O_{21} = 836.75$

NMR P.377

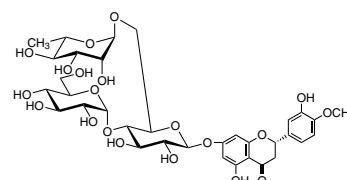


New

## G0398 $\alpha$ -Glucosyl Hesperidin

5mg

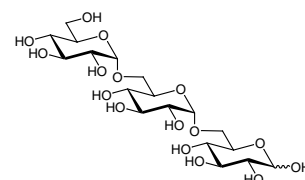
>97.0%(HPLC)  $C_{34}H_{44}O_{20} = 772.71$  [161713-86-6]



## I0329 Isomaltotriose

100mg 1g

>97.0%(HPLC)  $C_{18}H_{32}O_{16} = 504.44$  [3371-50-4] MFCD00070623

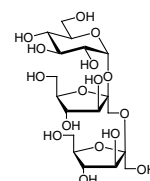


## K0032 1-Kestose

1g 5g

>99.0%(HPLC)  $C_{18}H_{32}O_{16} = 504.44$  [470-69-9] MFCD00142647

Beil. 17(5)8,416



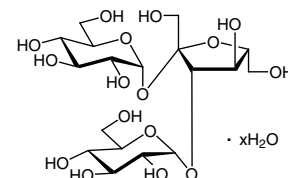
## M0049 D-(+)-Melezitose Hydrate

5g 25g

>99.0%(GC)  $C_{18}H_{32}O_{16} \cdot xH_2O = 504.44(Anh)$  [207511-10-2] MFCD00149448

mp 153°C

Beil. 31,466 MI14-5819

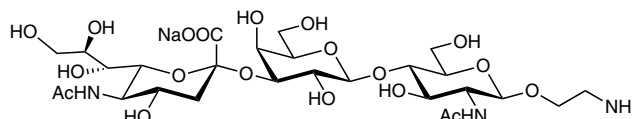


## N0949 Neu5Ac $\alpha$ (2-3)Gal $\beta$ (1-4)GlcNAc- $\beta$ -ethylamine

Price on request

$C_{27}H_{46}N_3NaO_{19} = 739.66$

NMR P.378

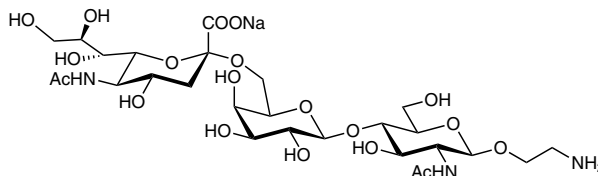


## N0950 Neu5Ac $\alpha$ (2-6)Gal $\beta$ (1-4)GlcNAc- $\beta$ -ethylamine

5mg

>98.0%(HPLC)  $C_{27}H_{46}N_3NaO_{19} = 739.66$

NMR P.379



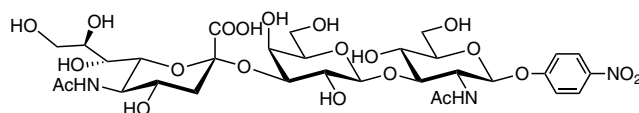
多くの試薬は、その危険性・有害性に関する知見が十分に得られていません。従って、試薬の使用は化学知識を持った専門家に限られ、それ以外の方の使用はお避けください。なお、ご使用の際には安全面に十分注意し、開封・保管から廃棄に至るまで責任を持って管理してください。

**N0853 Neu5Ac  $\alpha$  (2-3)Gal  $\beta$  (1-3)GlcNAc-  
 $\beta$ -pNP**

Price on request

$C_{31}H_{45}N_3O_{21} = 795.70$  [1363424-95-6]

NMR P.380

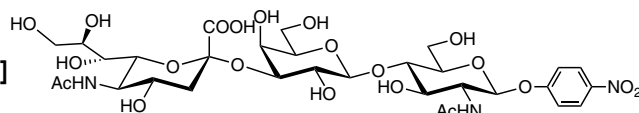


**N0854 Neu5Ac  $\alpha$  (2-3)Gal  $\beta$  (1-4)GlcNAc-  
 $\beta$ -pNP**

2mg

>95.0%(HPLC)  $C_{31}H_{45}N_3O_{21} = 795.70$  [501427-92-5]

NMR P.381

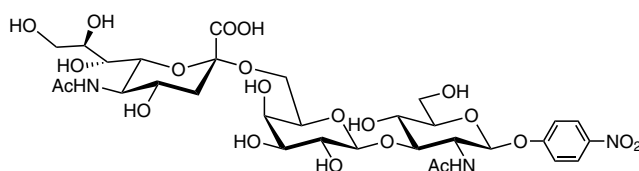


**N0855 Neu5Ac  $\alpha$  (2-6)Gal  $\beta$  (1-3)GlcNAc-  
 $\beta$ -pNP**

1mg

>97.0%(HPLC)  $C_{31}H_{45}N_3O_{21} = 795.70$

NMR P.382

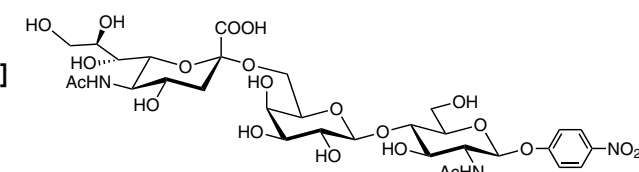


**N0856 Neu5Ac  $\alpha$  (2-6)Gal  $\beta$  (1-4)GlcNAc-  
 $\beta$ -pNP**

2mg

>97.0%(HPLC)  $C_{31}H_{45}N_3O_{21} = 795.70$  [501427-93-6]

NMR P.383

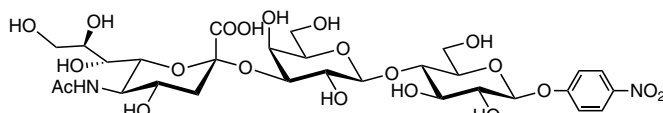


**N0860 Neu5Ac  $\alpha$  (2-3)Gal  $\beta$  (1-4)Glc- $\beta$ -pNP**

5mg

>97.0%(HPLC)  $C_{29}H_{42}N_2O_{21} = 754.65$

NMR P.384



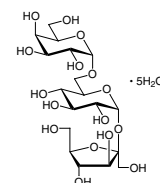
**R0002 d-(+)-Raffinose Pentahydrate**

25g

>98.0%(HPLC)  $C_{18}H_{32}O_{16} \cdot 5H_2O = 504.44(Anh)$  [17629-30-0] MFCD00006630

mp 80°C

Beil. 31,462 MI14-8096



New

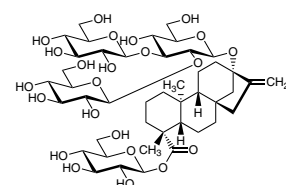
**R0095 Rebaudioside A**

5g 25g

>98.0%(HPLC)  $C_{44}H_{70}O_{23} = 967.02$  [58543-16-1] MFCD02183463

mp 235°C

RTECS NZ8174800

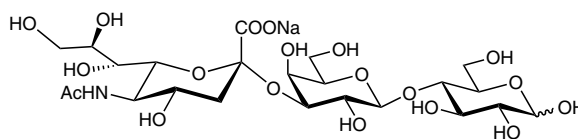


# Trisaccharide-⑦

## New **S0885 3'-Sialyllactose Sodium Salt**

20mg 100mg

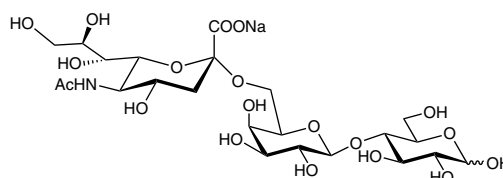
>98.0%(HPLC)  $C_{23}H_{38}NNaO_{19}$  = 655.53 [128596-80-5]



## New **S0886 6'-Sialyllactose Sodium Salt**

20mg 100mg

>98.0%(HPLC)  $C_{23}H_{38}NNaO_{19}$  = 655.53 [157574-76-0]

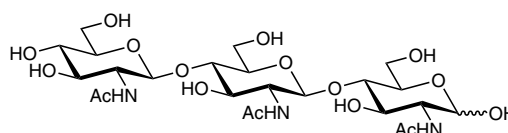


## **T2912 N,N',N''-Triacetylchitotriose**

20mg

>98.0%(HPLC)  $C_{24}H_{41}N_3O_{16}$  = 627.60 [38864-21-0] MFCD00136047

NMR P.385



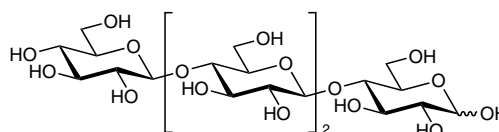


**C2796 Cellotetraose**

10mg

>94.0%(HPLC)  $C_{24}H_{42}O_{21} = 666.58$  [38819-01-1] MFCD00079079

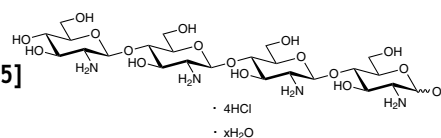
NMR P.386



**C2641 Chitotetraose Tetrahydrochloride Hydrate**

25mg

>95.0%(HPLC)  $C_{24}H_{46}N_4O_{17} \cdot 4HCl \cdot xH_2O = 808.48(Anh)$  [117399-50-5]



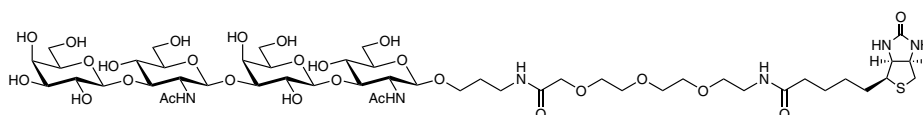
New

**G0511 Gal  $\beta$  (1-3)GlcNAc  $\beta$  (1-3)Gal  $\beta$  (1-3)GlcNAc- $\beta$ -PEG<sub>3</sub>-biotin**

Price on request

$C_{49}H_{84}N_6O_{27}S = 1221.29$

NMR P.387



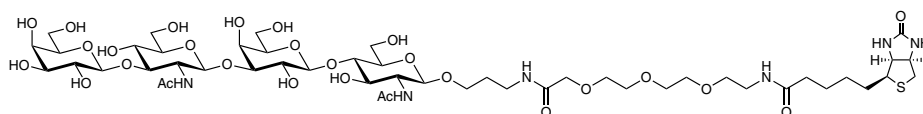
New

**G0513 Gal  $\beta$  (1-3)GlcNAc  $\beta$  (1-3)Gal  $\beta$  (1-4)GlcNAc- $\beta$ -PEG<sub>3</sub>-biotin**

Price on request

$C_{49}H_{84}N_6O_{27}S = 1221.29$

NMR P.388



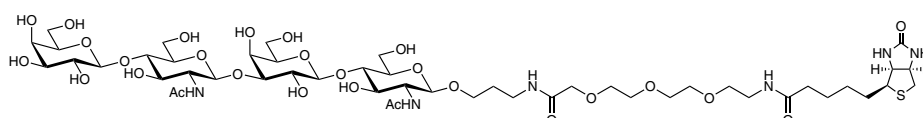
New

**G0515 Gal  $\beta$  (1-4)GlcNAc  $\beta$  (1-3)Gal  $\beta$  (1-4)GlcNAc- $\beta$ -PEG<sub>3</sub>-biotin**

Price on request

$C_{49}H_{84}N_6O_{27}S = 1221.29$

NMR P.389



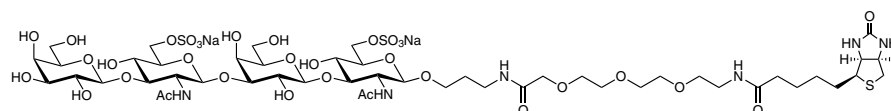
New

**G0512 Gal  $\beta$  (1-3)GlcNAc[6S]  $\beta$  (1-3)Gal  $\beta$  (1-3)GlcNAc[6S]- $\beta$ -PEG<sub>3</sub>-biotin**

Price on request

$C_{49}H_{82}N_6Na_2O_{33}S_3 = 1425.36$

NMR P.390



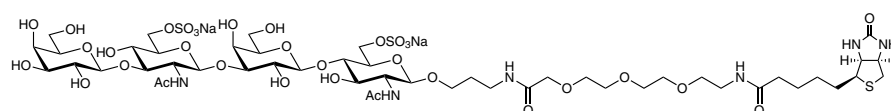
New

**G0514 Gal  $\beta$  (1-3)GlcNAc[6S]  $\beta$  (1-3)Gal  $\beta$  (1-4)GlcNAc[6S]- $\beta$ -PEG<sub>3</sub>-biotin**

Price on request

$C_{49}H_{82}N_6Na_2O_{33}S_3 = 1425.36$

NMR P.391



The chemical, physical and toxicological properties of the new chemicals have not been thoroughly investigated. Please handle with care.

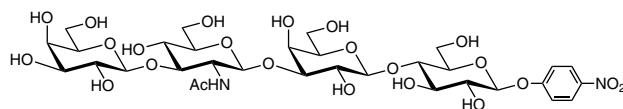
## Tetrasaccharide-②

### G0348 Gal $\beta$ (1-3)GlcNAc $\beta$ (1-3)Gal $\beta$ (1-4)Glc- $\beta$ -pNP

5mg

>97.0%(HPLC)  $C_{32}H_{48}N_2O_{23} = 828.73$  [148705-09-3]

NMR P.392

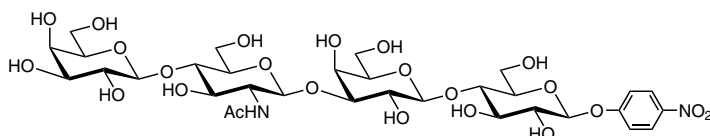


### G0351 Gal $\beta$ (1-4)GlcNAc $\beta$ (1-3)Gal $\beta$ (1-4)Glc- $\beta$ -pNP

Price on request

$C_{32}H_{48}N_2O_{23} = 828.73$  [197526-33-3]

NMR P.393

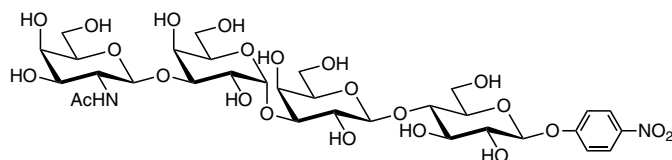


### G0380 GalNAc $\beta$ (1-3)Gal $\alpha$ (1-3)Gal $\beta$ (1-4)Glc- $\beta$ -pNP

Price on request

$C_{32}H_{48}N_2O_{23} = 828.73$

NMR P.394

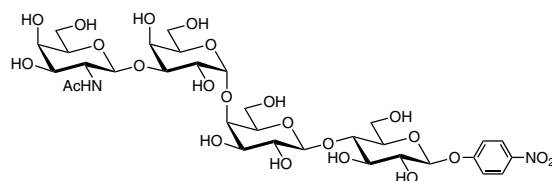


### G0354 GalNAc $\beta$ (1-3)Gal $\alpha$ (1-4)Gal $\beta$ (1-4)Glc- $\beta$ -pNP

5mg

>88.0%(HPLC)  $C_{32}H_{48}N_2O_{23} = 828.73$  [1134635-03-2]

NMR P.395

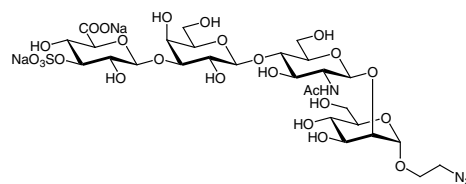


### G0372 GlcA[3S] $\beta$ (1-3)Gal $\beta$ (1-4)GlcNAc $\beta$ (1-2)Man- $\alpha$ -ethylazide

Price on request

$C_{28}H_{44}N_4Na_2O_{25}S = 914.70$

NMR P.396



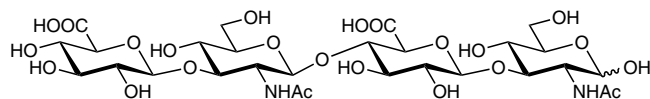
### H1284 Hyaluronate Tetrasaccharide

1mg 5mg

$C_{28}H_{44}N_2O_{23} = 776.65$  [57282-61-8]

Beil. 18(4)7588

NMR P.397

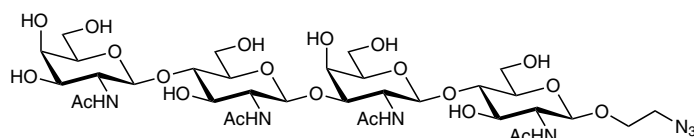


### L0237 LacDiNAc Dimer Ethylazide

Price on request

$C_{34}H_{57}N_7O_{21} = 899.86$

NMR P.398

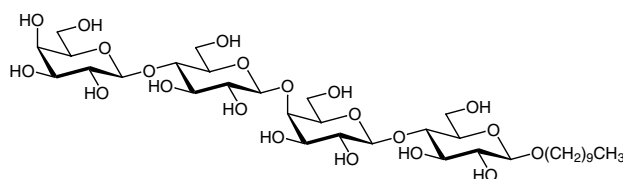


多くの試薬は、その危険性・有害性に関する知見が十分に得られていません。従って、試薬の使用は化学知識を持った専門家に限られ、それ以外の方の使用は避けください。なお、ご使用の際には安全面に十分注意し、開封・保管から廃棄に至るまで責任を持って管理してください。

**L0229 Lac β (1-4)Lac-β-C<sub>10</sub>**

10mg 100mg

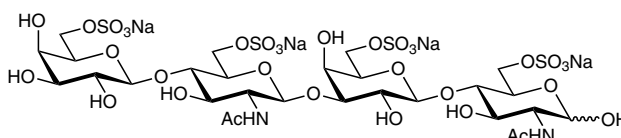
>98.0%(HPLC) C<sub>34</sub>H<sub>62</sub>O<sub>21</sub> = 806.85



**New L0286 L4-L4**

Price on request

C<sub>28</sub>H<sub>44</sub>N<sub>2</sub>Na<sub>4</sub>O<sub>33</sub>S<sub>4</sub> = 1156.84 [321897-67-0]

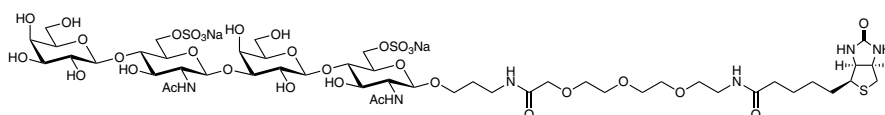


**New G0516 L2-L2-β-PEG<sub>3</sub>-biotin**

Price on request

C<sub>49</sub>H<sub>82</sub>N<sub>6</sub>Na<sub>2</sub>O<sub>33</sub>S<sub>3</sub> = 1425.36

NMR P.399

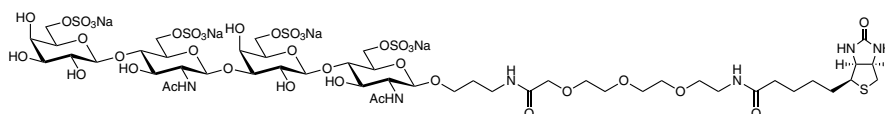


**New G0517 L4-L4-β-PEG<sub>3</sub>-biotin**

Price on request

C<sub>49</sub>H<sub>80</sub>N<sub>6</sub>Na<sub>4</sub>O<sub>39</sub>S<sub>5</sub> = 1629.44

NMR P.400

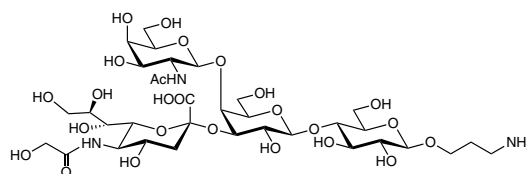


**New N0971 Neu5Gc α (2-3)[GalNAc β (1-4)]Gal β (1-4)Glc-β-propylamine**

Price on request

C<sub>34</sub>H<sub>59</sub>N<sub>3</sub>O<sub>25</sub> = 909.84

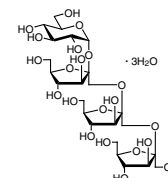
NMR P.401



**N0571 Nistose Trihydrate**

1g

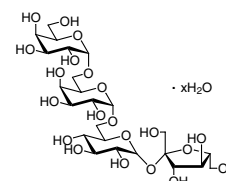
>99.0%(HPLC) C<sub>24</sub>H<sub>42</sub>O<sub>21</sub> · 3H<sub>2</sub>O = 666.58(Anh) [13133-07-8] MFCD00191672  
Beil. 17(5)8,417



**S0397 Stachyose Hydrate**

1g 5g

>98.0%(HPLC) C<sub>24</sub>H<sub>42</sub>O<sub>21</sub> · xH<sub>2</sub>O = 666.58(Anh) [54261-98-2] MFCD00071593



# Tetrasaccharide-④

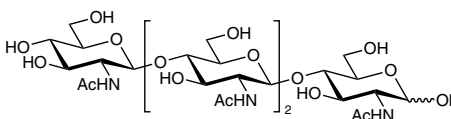
## T2910 N,N',N'',N'''-Tetraacetylchitotetraose

10mg

>98.0%(HPLC) C<sub>32</sub>H<sub>54</sub>N<sub>4</sub>O<sub>21</sub> = 830.79 [2706-65-2] MFCD00136030

mp 300°C

NMR P.402

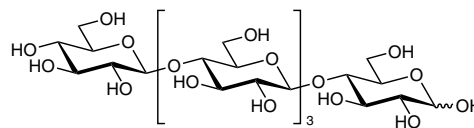


**C2644 Cellopentaose**

25mg

>95.0%(HPLC) C<sub>30</sub>H<sub>52</sub>O<sub>26</sub> = 828.72 [2240-27-9] MFCD00151164

NMR P.403



New

**C2762 Chitin Oligosaccharides**  
(contains *N*-Acetylglucosamine)

25g 100g

New

**C2849 Chitosan Oligosaccharides**

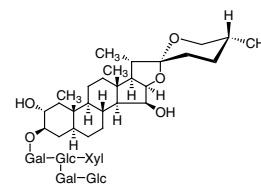
25g 100g

**D0540 Digitonin**

100mg

C<sub>56</sub>H<sub>92</sub>O<sub>29</sub> = 1229.32 [11024-24-1] MFCD00077729

Beil. 19(3/4)1243 MI14-3161 RTECS IH2050050

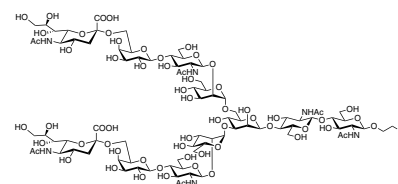


**D4217 Disialylnonasaccharide-β-ethylazide**

Price on request

C<sub>86</sub>H<sub>141</sub>N<sub>9</sub>O<sub>62</sub> = 2293.08 [1621001-68-0]

NMR P.404

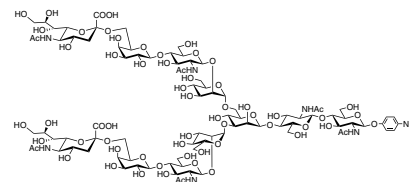


**N0913 Disialylnonasaccharide-β-pNP**

Price on request

C<sub>90</sub>H<sub>141</sub>N<sub>7</sub>O<sub>64</sub> = 2345.10 [1408055-26-4]

NMR P.405

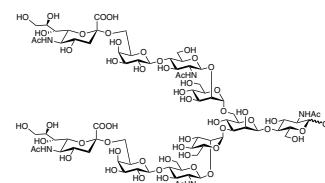


**D4065 Disialyloctasaccharide**

Price on request

C<sub>76</sub>H<sub>125</sub>N<sub>5</sub>O<sub>57</sub> = 2020.81 [58902-60-6]

NMR P.406



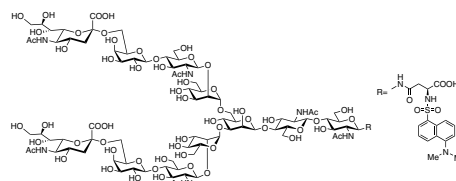
The chemical, physical and toxicological properties of the new chemicals have not been thoroughly investigated.  
Please handle with care.

# Oligosaccharide-②

## D3690 DNS-SGN

1mg

$C_{100}H_{155}N_9O_{66}S = 2571.40$

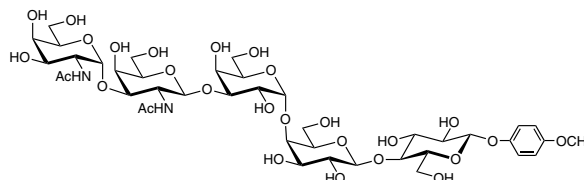


## F0584 Forssman Pentaose MP Glycoside

Price on request

$C_{41}H_{64}N_2O_{27} = 1016.95$

NMR P.407



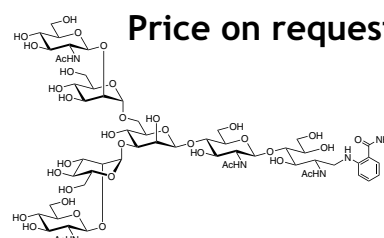
New

## G0490 GO 2AB

Price on request

$C_{57}H_{92}N_6O_{36} = 1437.37$  [959159-21-8]

NMR P.408



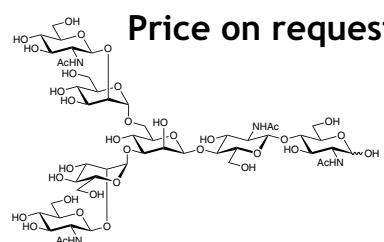
New

## G0484 GO Glycan

Price on request

$C_{50}H_{84}N_4O_{36} = 1317.21$  [84808-02-6] MFCD01310890

NMR P.409



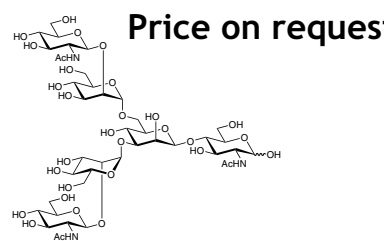
New

## G0530 GO Glycan (GN<sub>1</sub> type)

Price on request

$C_{42}H_{71}N_3O_{31} = 1114.02$  [61687-27-2]

NMR P.410



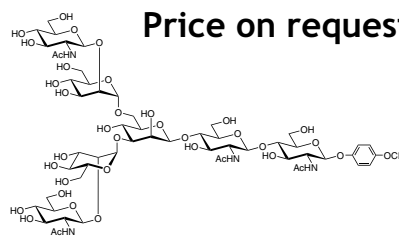
New

## G0470 GO MP Glycoside

Price on request

$C_{57}H_{90}N_4O_{37} = 1423.34$

NMR P.411



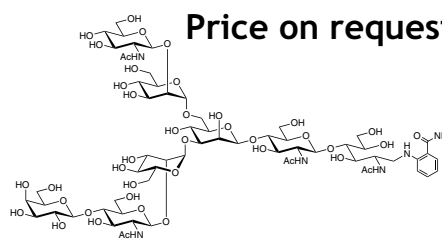
New

## G0491 3-G1 2AB

Price on request

$C_{63}H_{102}N_6O_{41} = 1599.51$

NMR P.412

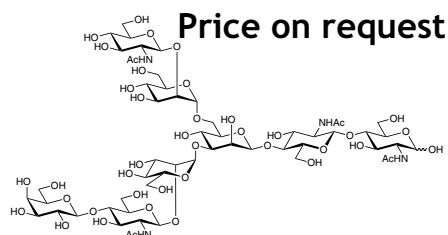


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New **G0485 3-G1 Glycan**

$C_{56}H_{94}N_4O_{41} = 1479.36$  [103584-68-5]

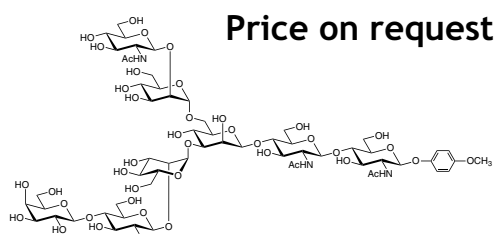
NMR P.413



New **G0471 3-G1 MP Glycoside**

$C_{63}H_{100}N_4O_{42} = 1585.48$

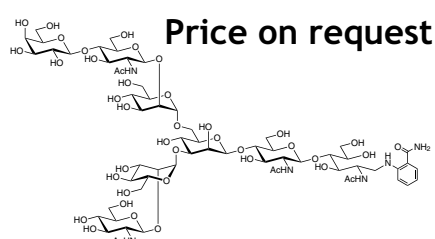
NMR P.414



New **G0492 6-G1 2AB**

$C_{63}H_{102}N_6O_{41} = 1599.51$

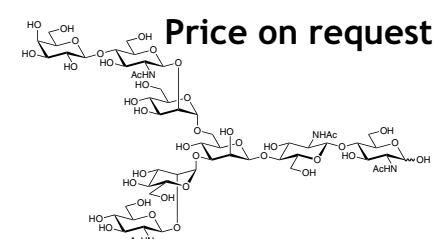
NMR P.415



New **G0486 6-G1 Glycan**

$C_{56}H_{94}N_4O_{41} = 1479.36$  [109050-95-5]

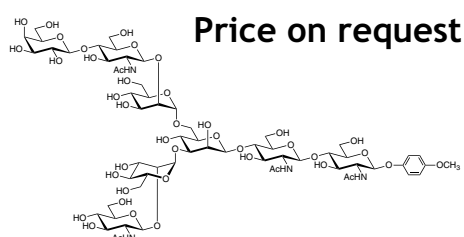
NMR P.416



New **G0472 6-G1 MP Glycoside**

$C_{63}H_{100}N_4O_{42} = 1585.48$

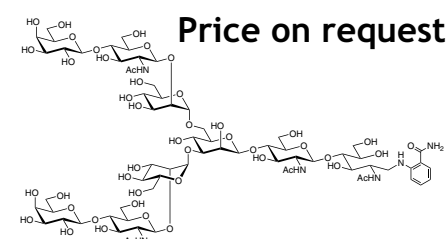
NMR P.417



New **G0493 G2 2AB**

$C_{69}H_{112}N_6O_{46} = 1761.65$  [263902-58-5]

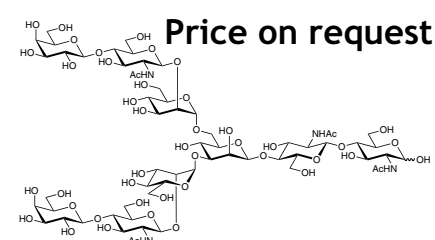
NMR P.418



New **G0487 G2 Glycan**

$C_{62}H_{104}N_4O_{46} = 1641.50$  [71496-53-2] MFCD01310893

NMR P.419

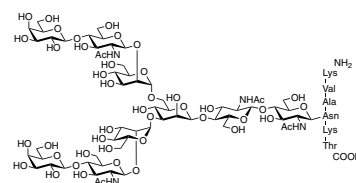


New **G0466 G2-peptide**

$C_{90}H_{155}N_{13}O_{54} = 2283.27$  [361443-81-4]

NMR P.420

Price on request

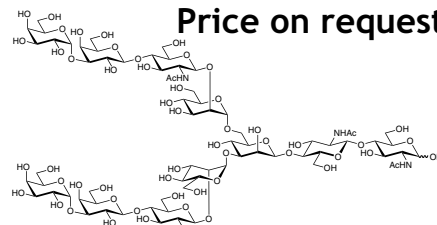


New **G0488 Gal α (1-3) N-Glycan**

$C_{74}H_{124}N_4O_{56} = 1965.78$  [115973-45-0]

NMR P.421

Price on request

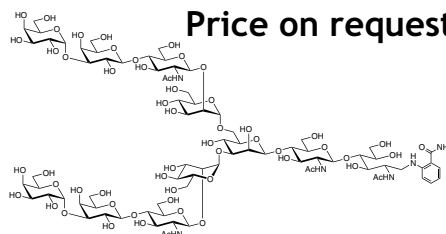


New **G0494 Gal α (1-3) N-Glycan 2AB**

$C_{81}H_{132}N_6O_{56} = 2085.93$

NMR P.422

Price on request

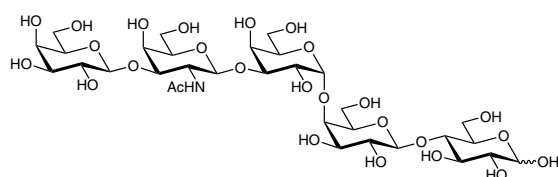


New **G0434 Gal β (1-3)GalNAc β (1-3)Gal α (1-4)Gal β (1-4)Glc**

$C_{32}H_{55}NO_{26} = 869.77$  [145882-74-2]

NMR P.423

Price on request

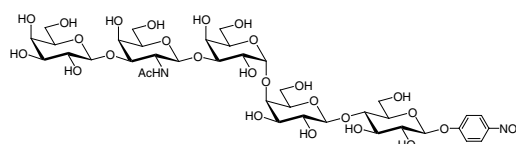


**G0355 Gal β (1-3)GalNAc β (1-3)Gal α (1-4)Gal β (1-4)Glc- β -pNP**

>95.0%(HPLC)  $C_{38}H_{58}N_2O_{28} = 990.87$

NMR P.424

5mg



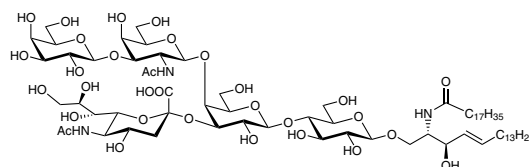
New **G0483 Ganglioside GM<sub>1</sub>**

$C_{73}H_{131}N_3O_{31} = 1546.84$  [37758-47-7] MFCD00466936

MI14-4364 RTECS FK1200000

NMR P.425

Price on request

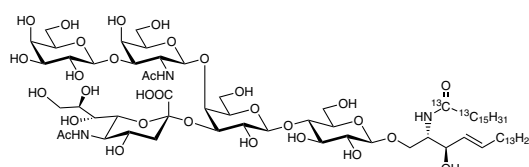


**G0421 Ganglioside GM<sub>1</sub> [d18:1, (Carbon-13)C16:0]**

$^{13}C_{16}C_{55}H_{127}N_3O_{31} = 1534.66$

NMR P.426

Price on request



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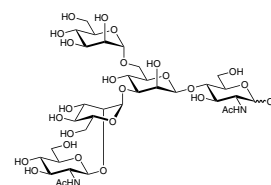
New

**G0531 GlcNAc β (1-2)Man α (1-3)  
[Man α (1-6)]Man β (1-4)GlcNAc-OH**

Price on request

C<sub>34</sub>H<sub>58</sub>N<sub>2</sub>O<sub>26</sub> = 910.83 [76786-13-5]

NMR P.427

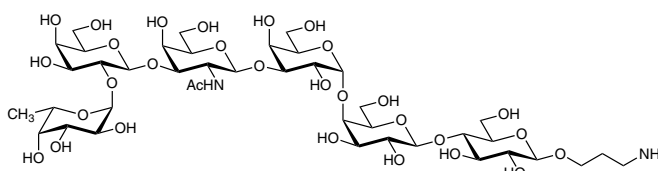


New

**G0447 Globo-H-PrNH<sub>2</sub>**

Price on request

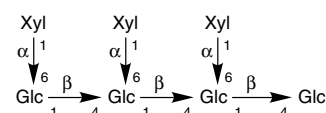
C<sub>41</sub>H<sub>72</sub>N<sub>2</sub>O<sub>30</sub> = 1073.01 [260363-35-7]



**H1044 Heptasaccharide Glc<sub>4</sub>Xyl<sub>3</sub>**

100mg

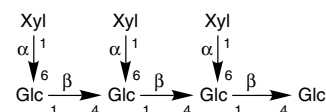
>93.0%(HPLC) C<sub>39</sub>H<sub>66</sub>O<sub>33</sub> = 1062.92 [121591-98-8] MFCD04040861



**H1041 Heptasaccharide Glc<sub>4</sub>Xyl<sub>3</sub>**

100mg

>95.0%(HPLC) C<sub>39</sub>H<sub>66</sub>O<sub>33</sub> = 1062.92 [121591-98-8] MFCD04040861



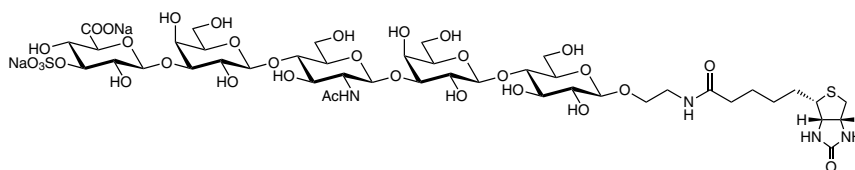
New

**H1487 HNK-1 Biotin**

Price on request

C<sub>44</sub>H<sub>70</sub>N<sub>4</sub>Na<sub>2</sub>O<sub>32</sub>S<sub>2</sub> = 1277.14

NMR P.428

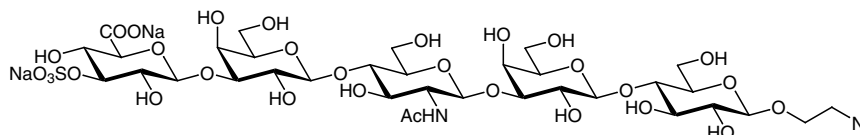


**H1333 HNK-1 Ethylazide**

Price on request

C<sub>34</sub>H<sub>54</sub>N<sub>4</sub>Na<sub>2</sub>O<sub>30</sub>S = 1076.84

NMR P.429

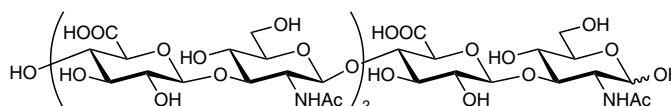


**H1285 Hyaluronate Hexasaccharide**

1mg 5mg

C<sub>42</sub>H<sub>65</sub>N<sub>3</sub>O<sub>34</sub> = 1155.97 [73603-40-4]

NMR P.430

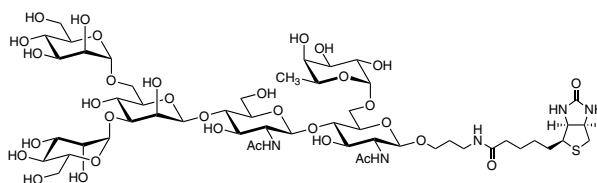


# Oligosaccharide-⑥

## New **M2986 M3(Fuc<sub>6</sub>)-biotin**

$C_{53}H_{89}N_5O_{32}S = 1340.36$  [1995898-20-8]

**NMR** P.431

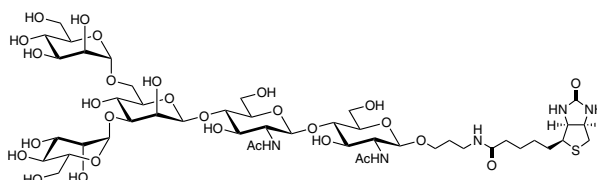


Price on request

## New **M2985 M3-biotin**

$C_{47}H_{79}N_5O_{28}S = 1194.22$  [1995898-22-0]

**NMR** P.432

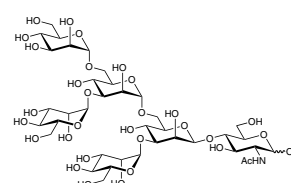


Price on request

## New **M3086 M5 Glycan (GN<sub>1</sub> type)**

$C_{38}H_{65}NO_{31} = 1031.91$  [74385-50-5] MFCD01076417

**NMR** P.433



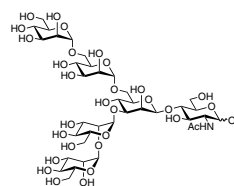
Price on request

## **M2439 Man α (1-2)Man α (1-3) [Man α (1-6)Man α (1-6)] Man β (1-4)GlcNAc**

$C_{38}H_{65}NO_{31} = 1031.91$

**NMR** P.434

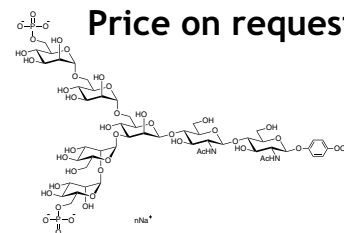
Price on request



## New **M3087 Man[6P] α (1-2)Man α (1-3)[Man[6P] α (1-6)Man α (1-6)]Man β (1-4)GlcNAc β (1-4)GlcNAc- β -MP**

**NMR** P.435

Price on request

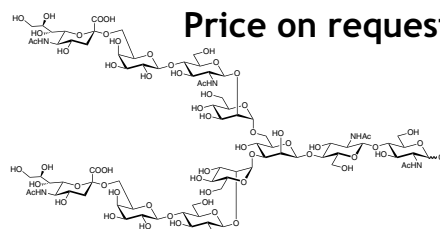


## New **N1065 Neu5Ac α (2-6) N-Glycan**

$C_{84}H_{138}N_6O_{62} = 2224.01$  [1125602-44-9]

**NMR** P.436

Price on request

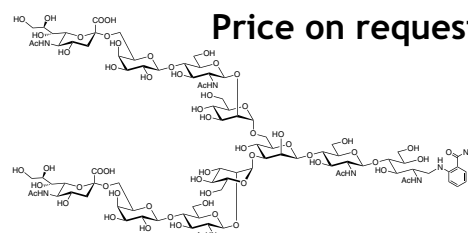


## New **N1073 Neu5Ac α (2-6) N-Glycan 2AB**

$C_{91}H_{146}N_8O_{62} = 2344.16$  [1107646-22-9]

**NMR** P.437

Price on request



多くの試薬は、その危険性・有害性に関する知見が十分に得られていません。従って、試薬の使用は化学知識を持った専門家に限られ、それ以外の方の使用はお避けください。なお、ご使用の際には安全面に十分注意し、開封・保管から廃棄に至るまで責任を持って管理してください。

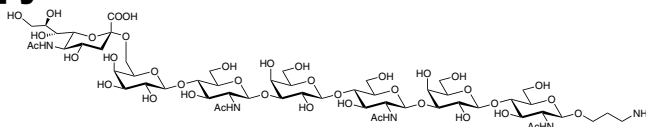
New

**N1118 Neu5Ac  $\alpha$  (2-6)Gal  $\beta$  (1-4)GlcNAc  $\beta$  (1-3)Gal  $\beta$  (1-4)GlcNAc  $\beta$  (1-3)Gal  $\beta$  (1-4)GlcNAc- $\beta$ -propylamine**

Price on request

$C_{56}H_{95}N_5O_{39} = 1462.37$  [1342819-25-3]

NMR P.438



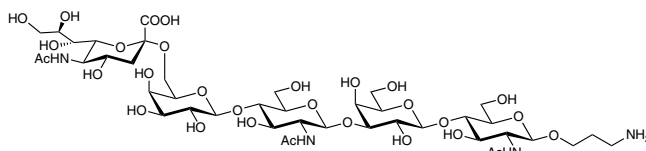
New

**N1117 Neu5Ac  $\alpha$  (2-6)Gal  $\beta$  (1-4)GlcNAc  $\beta$  (1-3)Gal  $\beta$  (1-4)GlcNAc- $\beta$ -propylamine**

Price on request

$C_{42}H_{72}N_4O_{29} = 1097.04$  [1015760-62-9]

NMR P.439



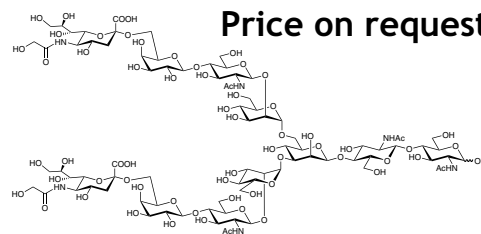
New

**N1064 Neu5Gc  $\alpha$  (2-6) N-Glycan**

Price on request

$C_{84}H_{138}N_6O_{64} = 2256.01$  [125139-41-5]

NMR P.440



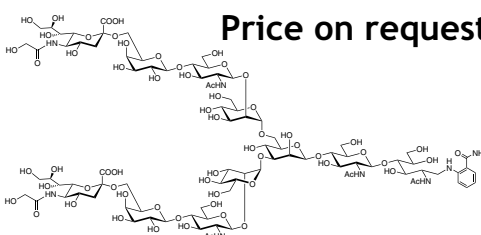
New

**N1075 Neu5Gc  $\alpha$  (2-6) N-Glycan 2AB**

Price on request

$C_{91}H_{146}N_8O_{64} = 2376.16$

NMR P.441



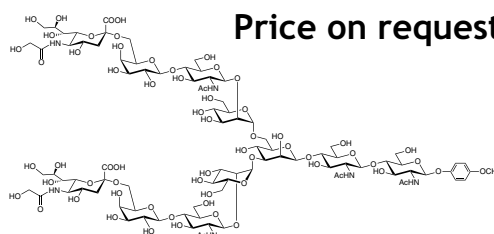
New

**N1046 Neu5Gc  $\alpha$  (2-6) N-Glycan MP Glycoside**

Price on request

$C_{91}H_{144}N_6O_{65} = 2362.13$

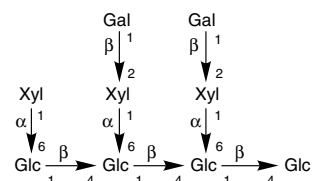
NMR P.442



**N0693 Nonasaccharide Glc<sub>4</sub>Xyl<sub>3</sub>Gal<sub>2</sub>**

100mg

>75.0%(HPLC)  $C_{51}H_{86}O_{43} = 1387.21$  [129865-06-1] MFCD04040971

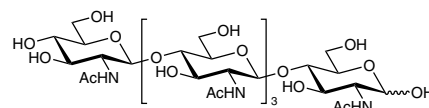


**P2027 N,N',N'',N''',N''''-Pentaacetyl-chitopentaose**

10mg

>97.0%(HPLC)  $C_{40}H_{67}N_5O_{26} = 1033.99$  [36467-68-2] MFCD00210240  
mp 295°C

NMR P.443

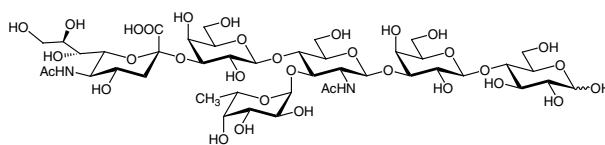


## S0849 Sialyl Lewis X-Lactose

1mg 5mg

>97.0%(HPLC)  $C_{43}H_{72}N_2O_{33} = 1145.03$  [127923-85-7]

NMR P.444

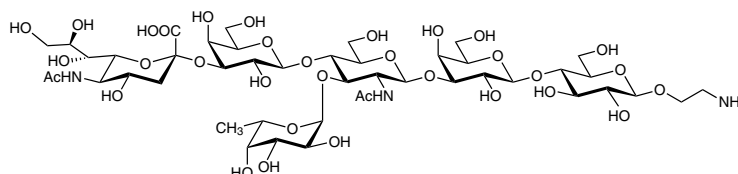


New

## S0923 Sialyl Lewis X-Lactose Ethylamine

Price on request

$C_{45}H_{77}N_3O_{33} = 1188.10$

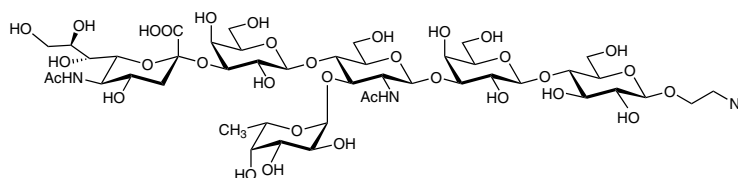


New

## S0922 Sialyl Lewis X-Lactose Ethylazide

Price on request

$C_{45}H_{75}N_5O_{33} = 1214.10$

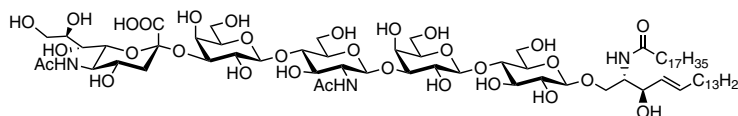


## S0910 Sialyl Neolactotetraosylceramide (=Sialyl nLc<sub>4</sub>Cer)

Price on request

$C_{73}H_{131}N_3O_{31} = 1546.84$  [128529-29-3]

NMR P.445

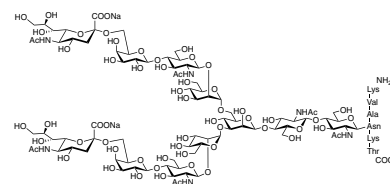


## S0523 Sialylglycopeptide

10mg

>95.0%(HPLC)  $C_{112}H_{187}N_{15}Na_2O_{70} = 2909.74$  [189035-43-6]

NMR P.446



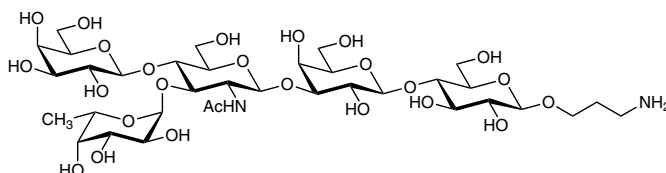
New

## S0946 SSEA-1-PrNH<sub>2</sub>

Price on request

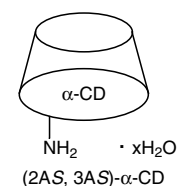
$C_{35}H_{62}N_2O_{25} = 910.87$  [959862-91-0]

NMR P.447

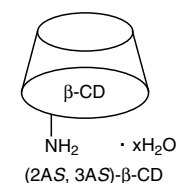


**A2122 3A-Amino-3A-deoxy-(2AS,3AS)- $\alpha$ -cyclodextrin Hydrate**>90.0%(HPLC)  $C_{36}H_{61}NO_{29} \cdot xH_2O = 971.86(\text{Anh})$  [121916-94-7]

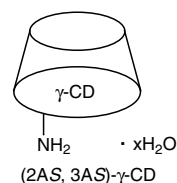
200mg 1g

**A1916 3A-Amino-3A-deoxy-(2AS,3AS)- $\beta$ -cyclodextrin Hydrate**>97.0%(T)  $C_{42}H_{71}NO_{34} \cdot xH_2O = 1134.00(\text{Anh})$  [117194-77-1]

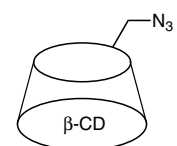
200mg 1g

**A2123 3A-Amino-3A-deoxy-(2AS,3AS)- $\gamma$ -cyclodextrin Hydrate**>95.0%(HPLC)  $C_{48}H_{81}NO_{39} \cdot xH_2O = 1296.14(\text{Anh})$  [189307-64-0]

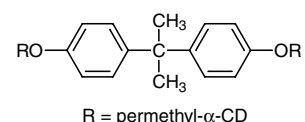
200mg 1g

**New A3090 6A-Azido-6A-deoxy- $\beta$ -cyclodextrin**>85.0%(HPLC)  $C_{42}H_{69}N_3O_{34} = 1160.00$  [98169-85-8] MFCD05864973

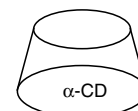
100mg

**New B3026 2,2-Bis[4-(per-O-methyl- $\alpha$ -cyclodextrin-6-yloxy)phenyl]propane** $C_{121}H_{200}O_{60} = 2614.87$ 

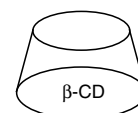
10mg

**C0776  $\alpha$ -Cyclodextrin**>98.0%(HPLC)  $C_{36}H_{60}O_{30} = 972.85$  [10016-20-3] MFCD00078207  
MI14-2718 F&F 9,129 RTECS GU2292000

10g 25g 100g

**C0777  $\beta$ -Cyclodextrin**>99.0%(HPLC)  $C_{42}H_{70}O_{35} = 1134.99$  [7585-39-9] MFCD00078139  
MI14-2718 F&F 9,129 RTECS GU2293000

25g 100g

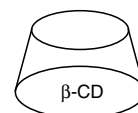


# Cyclodextrin-②

## C0900 β-Cyclodextrin

25g 100g 500g

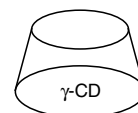
>98.0%(HPLC) C<sub>42</sub>H<sub>70</sub>O<sub>35</sub> = 1134.99 [7585-39-9] MFCD00078139  
MI14-2718 F&F 9,129 RTECS GU2293000



## C0869 γ-Cyclodextrin

5g 25g 100g

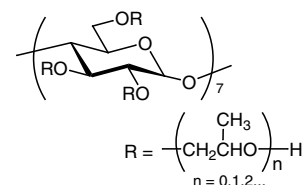
>99.0%(HPLC) C<sub>48</sub>H<sub>80</sub>O<sub>40</sub> = 1297.13 [17465-86-0] MFCD00009595  
MI14-2718 F&F 9,129 RTECS GU2293080



## H0979 Hydroxypropyl-β-cyclodextrin

25g 100g

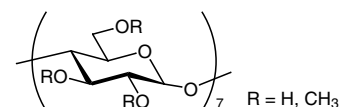
[128446-35-5] MFCD00074978



## M1356 Methyl-β-cyclodextrin (mixture of several Methylated)

25g 250g

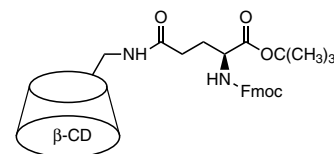
[128446-36-6] MFCD00074980



## New M2978 Mono-6-(Fmoc-Gln-OtBu)-β-CD

100mg

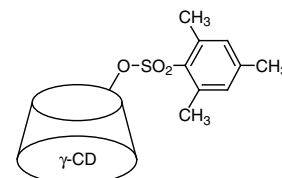
>85.0%(HPLC) C<sub>66</sub>H<sub>96</sub>N<sub>2</sub>O<sub>39</sub> = 1541.47



## M1212 Mono-6-O-mesitylenesulfonyl-γ-cyclodextrin

1g

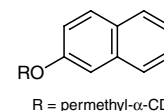
>90.0%(HPLC) C<sub>57</sub>H<sub>90</sub>O<sub>42</sub>S = 1479.37 [174010-62-9] MFCD00671559



## New M1876 Mono-6-O-(2-naphthyl)-per-O-methyl-α-cyclodextrin

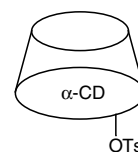
10mg

C<sub>63</sub>H<sub>100</sub>O<sub>30</sub> = 1337.46 [1019999-18-8]



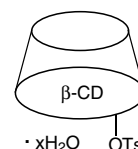
New **M1956 Mono-2-O-(p-toluenesulfonyl)- $\alpha$ -cyclodextrin** 200mg 1g

>98.0%(HPLC)  $C_{43}H_{66}O_{32}S = 1127.03$  [93184-10-2]  
mp 176°C



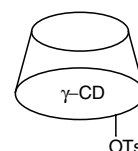
**M1741 Mono-2-O-(p-toluenesulfonyl)- $\beta$ -cyclodextrin Hydrate** 200mg 1g

>97.0%(HPLC)  $C_{49}H_{76}O_{37}S \cdot xH_2O = 1289.17(\text{Anh})$  [84216-71-7]



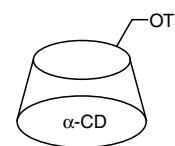
New **M1957 Mono-2-O-(p-toluenesulfonyl)- $\gamma$ -cyclodextrin** 200mg 1g

>95.0%(HPLC)  $C_{55}H_{86}O_{42}S = 1451.31$  [97227-32-2]



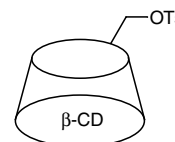
New **M1644 Mono-6-O-(p-toluenesulfonyl)- $\alpha$ -cyclodextrin** 200mg 1g

>85.0%(HPLC)  $C_{43}H_{66}O_{32}S = 1127.03$  [32860-56-3]



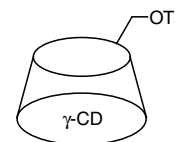
New **M1381 Mono-6-O-(p-toluenesulfonyl)- $\beta$ -cyclodextrin** 200mg

>85.0%(HPLC)  $C_{49}H_{76}O_{37}S = 1289.17$  [67217-55-4]



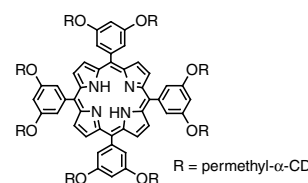
New **M1645 Mono-6-O-(p-toluenesulfonyl)- $\gamma$ -cyclodextrin** 200mg

>90.0%(HPLC)  $C_{55}H_{86}O_{42}S = 1451.31$  [97227-33-3]



New **T2452 5,10,15,20-Tetrakis[3,5-bis(per-O-methyl- $\alpha$ -cyclodextrin-6-yloxy)phenyl]-21H,23H-porphine** 10mg

$C_{468}H_{766}N_4O_{240} = 10289.06$

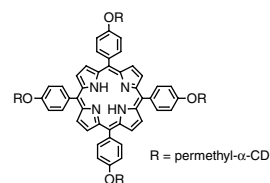


## Cyclodextrin-④

New **T2451** 5,10,15,20-Tetrakis[4-(per-O-methyl- $\alpha$ -cyclodextrin-6-yloxy)phenyl]porphyrin

$C_{256}H_{398}N_4O_{120} = 5451.91$

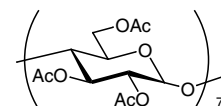
10mg



**T1844** Triacetyl- $\beta$ -cyclodextrin

>97.0%(HPLC)  $C_{84}H_{112}O_{56} = 2017.76$  [23739-88-0] MFCD00074981

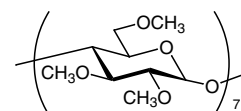
25g



New **T1094** Trimethyl- $\beta$ -cyclodextrin

>98.0%(HPLC)  $C_{63}H_{112}O_{35} = 1429.55$  [55216-11-0] MFCD00010728  
mp 159°C

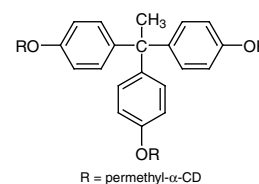
1g



New **T2450** 1,1,1-Tris[4-(per-O-methyl- $\alpha$ -cyclodextrin-6-yloxy)phenyl]ethane

$C_{179}H_{294}O_{90} = 3886.23$

10mg





**A0733 Alginic Acid**

25g 500g

[9005-32-7] MFCD00081309  
MI14-242 RTECS AZ5775000**A0456 Amylopectin Hydrate (Amylose free), from Waxy Corn**

25g 500g

 $(C_6H_{10}O_5)_n \cdot xH_2O$  [9037-22-3] MFCD00130510  
MI14-481**A1328 (+)-Arabinogalactan from Larch Wood**

25g 100g

 $[(C_5H_8O_4)(C_6H_{10}O_5)_6]_x$  [9036-66-2] MFCD00062638**A0738 Calcium Alginate**

25g 500g

[9005-35-0] MFCD00143567  
MI14-242 RTECS AZ5810000**New C0045 Carboxymethyl Cellulose Sodium Salt**  
(n=approx. 500)

25g 500g

 $[C_6H_7O_2(OH)_x(OCH_2COONa)_y]_n$  [9004-32-4] MFCD00081472  
MI14-1829 RTECS FJ5950000**New C0603 Carboxymethyl Cellulose Sodium Salt**  
(n=approx. 1,050)

25g 500g

 $[C_6H_7O_2(OH)_x(OCH_2COONa)_y]_n$  [9004-32-4] MFCD00081472  
MI14-1829 RTECS FJ5950000**New C3250 Carboxymethyldextran Sodium Salt**  
(Mw.=ca. 10,000)

1g 5g

[39422-83-8] MFCD00146477

# Polysaccharide-②

New

**C3251 Carboxymethyldextran Sodium Salt**  
(Mw.=ca. 40,000)

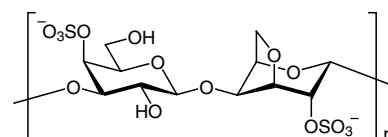
1g 5g

[39422-83-8] MFCD00146477

**C1805 ι-Carrageenan**

25g 500g

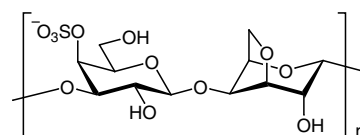
[9062-07-1] MFCD00151512  
MI14-1858



**C1804 κ-Carrageenan**

25g 500g

[11114-20-8] MFCD00151514  
MI14-1864 RTECS FI0703000

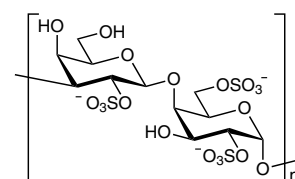


New

**C3313 λ-Carrageenan (High-viscosity)**

25g 500g

[9064-57-7] MFCD00151513  
MI14-1864 RTECS FI0704000

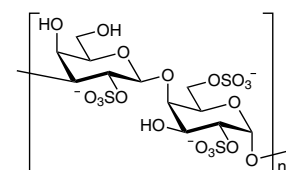


New

**C2871 λ-Carrageenan (Low-viscosity)**

1g 5g

[9064-57-7] MFCD00151513  
MI14-1864 RTECS FI0704000



New

**C0064 Cellulose PAB** Capacity: 0.20meq/g

10g

[9032-51-3] MFCD00146347

New

**C0068 Cellulose TEAE** Capacity:0.72 meq/g

10g

MFCD00146355

試験, 研究を目的とした弊社収載化学品は, その使用により発生した特許法上の諸問題をユーザーの方々に保証するものではありません。

**C0072 Chitin**

25g 250g

$(C_8H_{13}NO_5)_n$  [1398-61-4] MFCD00466914  
MI14-2065 RTECS FM6125000

**C2395 Chitosan**

25g 100g 500g

(5-20mPa·s, 0.5% in 0.5% Acetic Acid at 20°C)

[9012-76-4] MFCD00161512

**C2396 Chitosan**

25g 100g

(20-100mPa·s, 0.5% in 0.5% Acetic Acid at 20°C)

[9012-76-4] MFCD00161512

**C0831 Chitosan**

25g 500g

(200-600mPa·s, 0.5% in 0.5% Acetic Acid at 20°C)

[9012-76-4] MFCD00161512

**C0335 Chondroitin Sulfate Sodium Salt**

25g 100g

[9082-07-9] MFCD01310245  
RTECS GA8410000

**D3672 Dermatan Sulfate Sodium Salt**

20mg 100mg

[54328-33-5] MFCD00151683

**D1448 Dextran 40** (Mw.=ca. 40,000)

25g 100g 500g

[9004-54-0] MFCD00130935  
MI14-2948 RTECS HH9246000

## Polysaccharide-④

**D1449 Dextran 70** (Mw.=ca. 70,000)

25g 100g 500g

[9004-54-0] MFCD00130935  
MI14-2948 RTECS HH9247500

New **D4657 Dextrin**

100g 500g

[9004-53-9] MFCD00081554  
MI14-2953 RTECS HH9450000

New **E0265 Ethyl Cellulose**

25g 500g

[9-11mPa·s, 5% in Toluene + Ethanol (80:20) at 25°C]

[9004-57-3] MFCD00131037  
MI14-3781 RTECS FJ5950500

New **E0072 Ethyl Cellulose**

25g 500g

[18-22mPa·s, 5% in Toluene + Ethanol (80:20) at 25°C]

[9004-57-3] MFCD00131037  
MI14-3781 RTECS FJ5950500

New **E0266 Ethyl Cellulose**

25g 500g

[45-55mPa·s, 5% in Toluene + Ethanol (80:20) at 25°C]

[9004-57-3] MFCD00131037  
MI14-3781 RTECS FJ5950500

New **E0290 Ethyl Cellulose**

25g 500g

[90-110mPa·s, 5% in Toluene + Ethanol (80:20) at 25°C]

[9004-57-3] MFCD00131037  
MI14-3781 RTECS FJ5950500

New **F0918 Fluorescein Isothiocyanate Dextran**  
(Mw.=ca. 10,000)

100mg

[60842-46-8] MFCD00131092

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**G0331 Glucan** from Black Yeast

1g 5g

[9012-72-0] MFCD00466924  
RTECS LZ3982600

New

**G0478 Guar Gum**

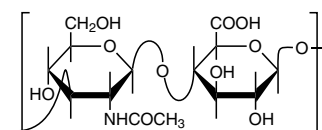
25g 500g

[9000-30-0] MFCD00131250  
MI14-4571 RTECS MG0185000**H0393 Heparin Sodium Salt** from Hog Intestine

100mg 1g

[9041-08-1] MFCD00081689  
RTECS MI0850000**H0595 Hyaluronic Acid** from Cockscomb

1g

[9004-61-9] MFCD00131348  
MI14-4757

New

**H0242 Hydroxyethyl Cellulose**  
(200-300mPa·s, 2% in Water at 20°C)

25g 500g

[9004-62-0] MFCD00072770  
MI14-4673 RTECS FJ5958000

New

**H0418 Hydroxyethyl Cellulose**  
(800-1,500mPa·s, 2% in Water at 20°C)

25g 500g

[9004-62-0] MFCD00072770  
MI14-4673 RTECS FJ5958000

New

**H0392 Hydroxyethyl Cellulose**  
(4,500-6,500mPa·s, 2% in Water at 25°C)

25g 500g

[9004-62-0] MFCD00072770  
MI14-4673 RTECS FJ5958000

## Polysaccharide-⑥

New **H0473 Hydroxypropyl Cellulose** 25g 500g  
(3-6mPa·s, 2% in Water at 20°C)

[9004-64-2] MFCD00132688  
MI14-4841 RTECS NF9050000

New **H0474 Hydroxypropyl Cellulose** 25g 500g  
(6-10mPa·s, 2% in Water at 20°C)

[9004-64-2] MFCD00132688  
MI14-4841 RTECS NF9050000

New **H0386 Hydroxypropyl Cellulose** 25g 500g  
(150-400mPa·s, 2% in Water at 20°C)

[9004-64-2] MFCD00132688  
MI14-4841 RTECS NF9050000

New **H0475 Hydroxypropyl Cellulose** 25g 500g  
(1,000-4,000mPa·s, 2% in Water at 20°C)

[9004-64-2] MFCD00132688  
MI14-4841 RTECS NF9050000

New **I1067 Inulin** (by Enzymatic Synthesis) 25g 500g

[9005-80-5] MFCD00131407  
MI14-5004

New **M0290 Methyl Cellulose** 25g 500g  
(13-18mPa·s, 2% in Water at 20°C)

[9004-67-5] MFCD00081763  
MI14-6040 RTECS FJ5959000

New **M0291 Methyl Cellulose** 25g 500g  
(20-30mPa·s, 2% in Water at 20°C)

[9004-67-5] MFCD00081763  
MI14-6040 RTECS FJ5959000

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New **M0292 Methyl Cellulose** 25g 500g  
(80-120mPa·s, 2% in Water at 20°C)

[9004-67-5] MFCD00081763  
MI14-6040 RTECS FJ5959000

New **M0293 Methyl Cellulose** 25g 500g  
(350-550mPa·s, 2% in Water at 20°C)

[9004-67-5] MFCD00081763  
MI14-6040 RTECS FJ5959000

New **M0294 Methyl Cellulose** 25g 500g  
(1,000-1,800mPa·s, 2% in Water at 20°C)

[9004-67-5] MFCD00081763  
MI14-6040 RTECS FJ5959000

New **M0185 Methyl Cellulose** 25g 500g  
(3,500-5,600mPa·s, 2% in Water at 20°C)

[9004-67-5] MFCD00081763  
MI14-6040 RTECS FJ5959000

New **M0295 Methyl Cellulose** 25g 500g  
(7,000-10,000mPa·s, 2% in Water at 20°C)

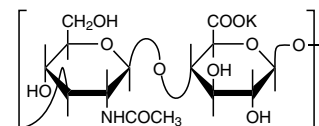
[9004-67-5] MFCD00081763  
MI14-6040 RTECS FJ5959000

**P0024 Pectin** from Citrus 25g 500g

[9000-69-5] MFCD00081838  
MI14-7063

**H0652 Potassium Hyaluronate** from Cockscomb 1g

[31799-91-4] MFCD00131349

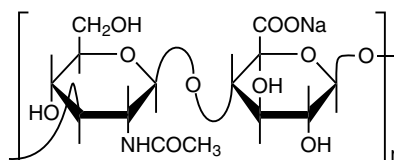


New **P0978 Pullulan** 25g 100g 500g

[9057-02-7] MFCD00081940  
RTECS U05470000

**H0603 Sodium Hyaluronate** from Cockscomb 100mg 1g

[9067-32-7] MFCD00875848  
MI14-4757 RTECS MT7250000



New **T0909 Tamarind Gum** 25g 500g  
from Tamarind seed, Polysaccharide

[39386-78-2] MFCD00148561

**X0048 Xanthan Gum** 25g 100g 500g

[11138-66-2] MFCD00131256  
MI14-10057

New **X0078 Xylan** from Corn Core 25g 100g

[9014-63-5] MFCD00082148

**Z0008 Zymosan** [Immunological Reagent] 100mg 1g

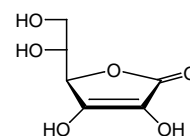
[9010-72-4] MFCD00082157  
MI14-10200 RTECS ZI2750000



**A0520 D-Araboascorbic Acid**

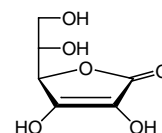
25g 500g

>98.0%(T)  $C_6H_8O_6 = 176.12$  [89-65-6] MFCD00005378  
MI14-5126 RTECS KF3015000

**A0537 L-Ascorbic Acid**

25g 500g

>99.0%(T)  $C_6H_8O_6 = 176.12$  [50-81-7] MFCD00064328  
mp 192°C  
Beil. 18(3/4)3038 MI14-830 RTECS CI7650000

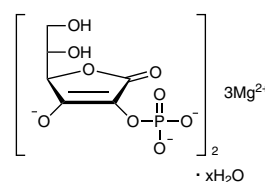


New

**A2521 L-Ascorbic Acid 2-Phosphate Sesquimagnesium Salt Hydrate**

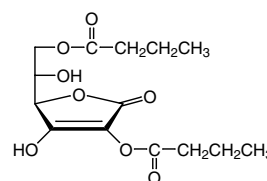
5g 25g

>98.0%(HPLC)  $C_{12}H_{12}Mg_3O_{18}P_2 \cdot xH_2O = 579.07(Anh)$  [113170-55-1]

**A1205 L-Ascorbyl 2,6-Dibutyrate**

1g

>98.0%(T)  $C_{14}H_{20}O_8 = 316.31$  [4337-04-6] MFCD00144561  
mp 125°C

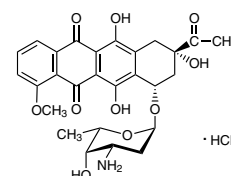


New

**D4532 Daunorubicin Hydrochloride**

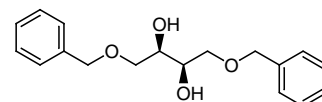
20mg 100mg

>98.0%(HPLC)(N)  $C_{27}H_{29}NO_{10} \cdot HCl = 563.98$  [23541-50-6] MFCD04974507  
MI14-2832 RTECS HB7878000

**D2239 (+)-1,4-Di-O-benzyl-D-threitol**

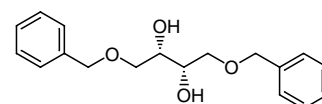
1g

>98.0%(GC)  $C_{18}H_{22}O_4 = 302.37$  [91604-41-0] MFCD00077722  
mp 56°C

**D2240 (-)-1,4-Di-O-benzyl-L-threitol**

1g 5g

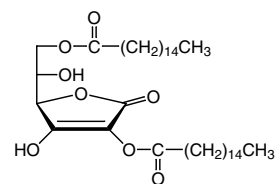
>98.0%(GC)  $C_{18}H_{22}O_4 = 302.37$  [17401-06-8] MFCD00077723  
mp 56°C



**A0757 2,6-Di-O-palmitoyl-L-ascorbic Acid**

25g

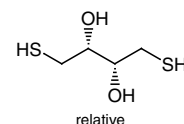
>97.0%(T)  $C_{38}H_{68}O_8 = 652.95$  [4218-81-9] MFCD00059738  
mp 113°C



**D1071 DL-Dithiothreitol**

1g 5g 25g

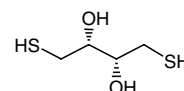
>98.0%(T)  $C_4H_{10}O_2S_2 = 154.24$  [3483-12-3] MFCD00004877  
mp 43°C bp 130°C /2mmHg  
Beil. 1(3)2360 MI14-3376 RTECS X08576500



**D1589 L-Dithiothreitol**

1g 5g

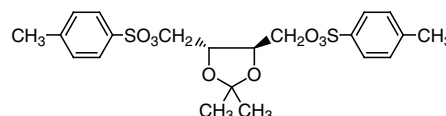
>95.0%(T)  $C_4H_{10}O_2S_2 = 154.24$  [16096-97-2] MFCD00064305  
mp 51°C  
RTECS EK1612000



**D1622 (+)-1,4-Di-O-tosyl-2,3-O-isopropylidene-threitol**

1g

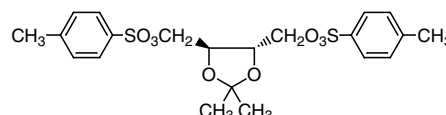
>97.0%(HPLC)  $C_{21}H_{26}O_8S_2 = 470.55$  [51064-65-4] MFCD00063235  
mp 90°C



**D1623 (-)-1,4-Di-O-tosyl-2,3-O-isopropylidene-L-threitol**

1g 5g

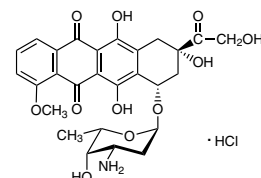
>98.0%(HPLC)  $C_{21}H_{26}O_8S_2 = 470.55$  [37002-45-2] MFCD00003212  
mp 93°C



New **D4193 Doxorubicin Hydrochloride**

25mg 100mg

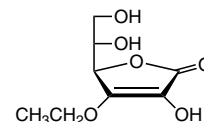
>95.0%(HPLC)  $C_{27}H_{29}NO_{11} \cdot HCl = 579.98$  [25316-40-9] MFCD00077757  
MI14-3439 RTECS QI9295900



**E0926 3-O-Ethyl-L-ascorbic Acid**

5g 25g

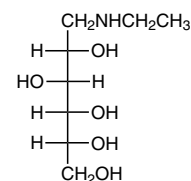
>98.0%(HPLC)(T)  $C_8H_{12}O_6 = 204.18$  [86404-04-8] MFCD09261382  
mp 114°C



**E0923 N-Ethyl-D-glucamine**

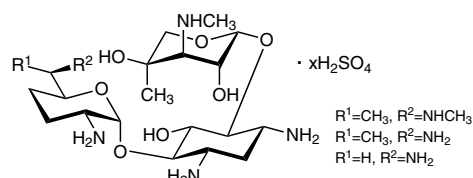
25g 250g

>98.0%(T)  $C_8H_{19}NO_5 = 209.24$  [14216-22-9] MFCD03789564  
mp 139°C

**G0383 Gentamicin Sulfate**

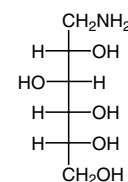
1g 5g

[1405-41-0] MFCD00270181  
RTECS LY2625000

**G0252 D-Glucamine**

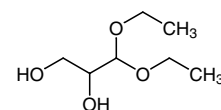
5g 25g

>97.0%(T)  $C_6H_{15}NO_5 = 181.19$  [488-43-7] MFCD00077776  
Beil. 4(4)1913 MI14-4449

**G0216 DL-Glyceraldehyde Diethyl Acetal**

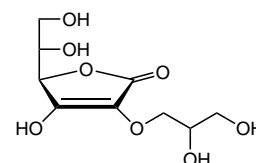
5g 25g

>95.0%(GC)  $C_7H_{16}O_4 = 164.20$  [10487-05-5] MFCD00059599  
bp 136°C /27mmHg d 1.06

**New G0451 Glyceryl Ascorbate**

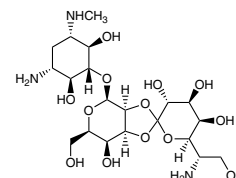
5g 25g

>95.0%(T)  $C_9H_{14}O_8 = 250.20$  [1120360-13-5]  
mp 159°C

**New H1509 Hygromycin B**

200mg 1g

>80.0%(HPLC)  $C_{20}H_{37}N_3O_{13} = 527.52$  [31282-04-9] MFCD06795479  
MI14-4852 RTECS WK2130000

**I0043 Invertose**

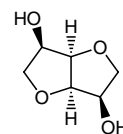
25g

[8013-17-0] MFCD00148911  
MI14-5006

**I0406 Isomannide**

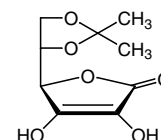
5g 25g

>98.0%(GC)  $C_6H_{10}O_4 = 146.14$  [641-74-7] MFCD00064818  
 mp 86°C bp 150°C /12mmHg  
 Beil. 19(3/4)990

**I0507 (+)-5,6-O-Isopropylidene-L-ascorbic Acid**

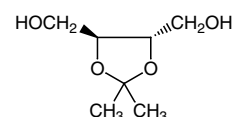
5g 25g

>98.0%(HPLC)(T)  $C_9H_{12}O_6 = 216.19$  [15042-01-0] MFCD00010552  
 Beil. 19(5)10,501

**I0376 (+)-2,3-O-Isopropylidene-L-threitol**

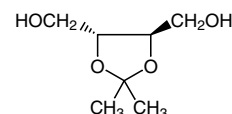
1g 5g

>97.0%(GC)  $C_7H_{14}O_4 = 162.19$  [50622-09-8] MFCD00063761  
 mp 46°C  
 Beil. 19(5)3,157

**I0375 (-)-2,3-O-Isopropylidene-D-threitol**

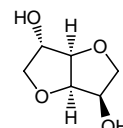
1g 5g

>98.0%(GC)  $C_7H_{14}O_4 = 162.19$  [73346-74-4] MFCD00009761  
 mp 50°C bp 96°C /0.7mmHg  
 Beil. 19(3/4)971

**I0407 Isosorbide**

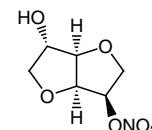
25g 100g 500g

>98.0%(GC)  $C_6H_{10}O_4 = 146.14$  [652-67-5] MFCD00064827  
 mp 61°C  
 MI14-5224 RTECS LZ4380000

**I0403 Isosorbide 5-Nitrate**

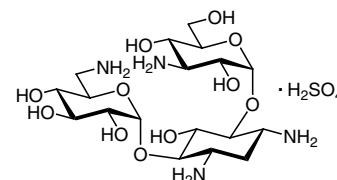
10g

>98.0%(N)  $C_6H_9NO_6 = 191.14$  [16051-77-7] MFCD00143462  
 mp 92°C  
 MI14-5225 RTECS LZ4386500

**New K0047 Kanamycin Monosulfate**

5g 25g

>94.0%(N)  $C_{18}H_{36}N_4O_{11} \cdot H_2SO_4 = 582.58$  [25389-94-0] MFCD00070253  
 Beil. 18(4)7631 MI14-5281 RTECS NZ3225030

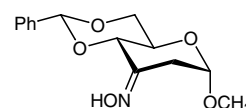


New

**M2081 Methyl 4,6-O-Benzylidene-2-deoxy- $\alpha$ -D-erythro-hexopyranosid-3-ulose Oxime**

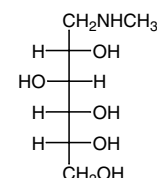
1g

>98.0%(HPLC)(T)  $C_{14}H_{17}NO_5 = 279.29$  [63598-32-3]  
mp 200°C

**M0227 N-Methyl-D-glucamine**

25g 500g

>99.0%(T)  $C_7H_{17}NO_5 = 195.22$  [6284-40-8] MFCD00004707  
mp 131°C  
MI14-6078

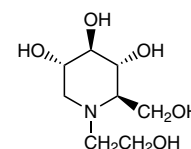


New

**M2302 Miglitol**

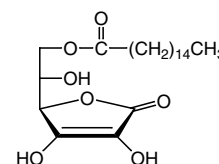
1g 5g

>98.0%(GC)(T)  $C_8H_{17}NO_5 = 207.23$  [72432-03-2] MFCD00867240  
mp 146°C  
MI14-6187 RTECS TN4350170

**A0540 6-O-Palmitoyl-L-ascorbic Acid**

25g

>97.0%(T)  $C_{22}H_{38}O_7 = 414.54$  [137-66-6] MFCD00005377  
mp 114°C  
RTECS CI7671040

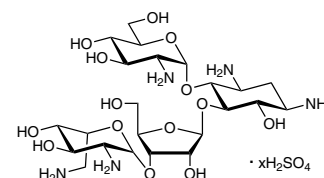


New

**P2092 Paromomycin Sulfate**

1g 5g

>94.0%(HPLC)  $C_{23}H_{45}N_5O_{14} \cdot xH_2SO_4$  [1263-89-4] MFCD00079278  
MI14-7041 RTECS WK2320000

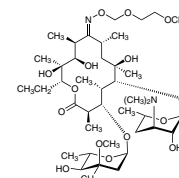


New

**R0164 Roxithromycin**

5g 25g

>95.0%(HPLC)  $C_{41}H_{76}N_2O_{15} = 837.06$  [80214-83-1] MFCD00214389  
mp 120°C  
MI14-8276 RTECS KF4990000

**S0019 Saponin**

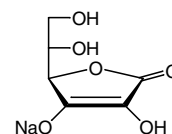
25g 250g

[8047-15-2] MFCD00081981  
RTECS VQ1400000

**A0539 Sodium L-Ascorbate**

25g 500g

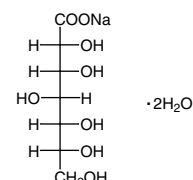
>98.0%(T)  $C_6H_7NaO_6 = 198.11$  [134-03-2] MFCD00082340  
RTECS CI7671000



**G0214 Sodium Glucoheptonate Dihydrate**

25g 500g

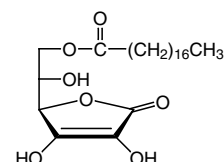
>98.0%(T)  $C_7H_{13}NaO_8 \cdot 2H_2O = 248.16(Anh)$  [31138-65-5] MFCD00013425



**A0617 6-O-Stearoyl-L-ascorbic Acid**

5g

>95.0%(T)  $C_{24}H_{42}O_7 = 442.59$  [10605-09-1] MFCD00059739  
mp 117°C  
RTECS CI7671310

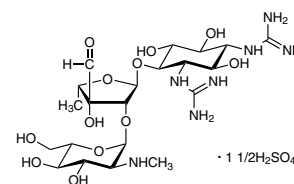


New

**S0834 Streptomycin Sulfate**  
[for Protein Research]

5g 25g

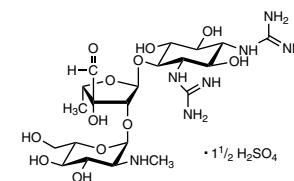
>95.0%(N)  $C_{21}H_{39}N_7O_{12} \cdot 1\frac{1}{2}H_2SO_4 = 728.69$  [3810-74-0] MFCD00037023  
Beil. 18(5)11,82 MI14-8826 RTECS WK4990000



**S0585 Streptomycin Sulfate**

25g 500g

>95.0%(T)(N)  $C_{21}H_{39}N_7O_{12} \cdot 1\frac{1}{2}H_2SO_4 = 728.69$  [3810-74-0] MFCD00037023  
Beil. 18(5)11,82 MI14-8826 RTECS WK4990000



**S0112 Sucrose Fatty Acid Ester**

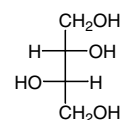
25g 500g

MFCD00148531

**T1647 L-Threitol**

1g

>98.0%(GC)  $C_4H_{10}O_4 = 122.12$  [2319-57-5] MFCD00064294  
mp 90°C  
Beil. 1(4)2808

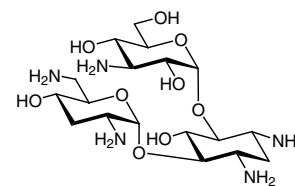


New

**T2503 Tobramycin**

>94.0%(T)  $C_{18}H_{37}N_5O_9$  = 467.52 [32986-56-4] MFCD00077885  
mp 178°C  
MI14-9490 RTECS WK2100000

5g 25g



# Reagents for Oligosaccharide Synthesis-①

## A1668 Acetic Anhydride

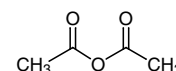
(ca. 1mol/L in Dichloromethane)

$C_4H_6O_3 = 102.09$  [108-24-7] MFCD00008705

d 1.30

Beil. 2(4)386 MI14-56 F&F 15,1

100mL 500mL



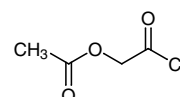
## A1500 Acetoxyacetyl Chloride

>95.0%(GC)(T)  $C_4H_5ClO_3 = 136.53$  [13831-31-7] MFCD00011535

bp 160°C d 1.27 flp 71°C

Beil. 3,240

25g 100g



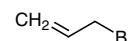
## B0643 Allyl Bromide

>98.0%(GC)  $C_3H_5Br = 120.98$  [106-95-6] MFCD00000244

bp 71°C d 1.43 flp 12°C

Beil. 1,201 MI14-288 RTECS UC7090000

25g 500g



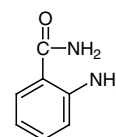
## A0262 2-Aminobenzamide

>98.0%(HPLC)(T)  $C_7H_8N_2O = 136.15$  [88-68-6] MFCD00007981

mp 111°C

Beil. 14(3)889 RTECS CU8993000

25g 100g 500g



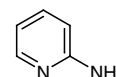
## A0411 2-Aminopyridine

>99.0%(GC)(T)  $C_5H_6N_2 = 94.12$  [504-29-0] MFCD00006312

mp 61°C bp 105°C /20mmHg

Beil. 22(3/4)3840 MI14-473 F&F 9,18 RTECS US1575000

25g 100g 500g

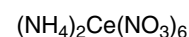


## C1806 Ammonium Cerium(IV) Nitrate

>98.0%(T)  $H_8CeN_8O_{18} = 548.22$  [16774-21-3] MFCD00151121

MI14-1992 F&F 20,73

50g 500g



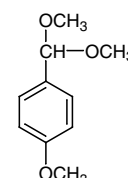
## A1247 p-Anisaldehyde Dimethyl Acetal

>97.0%(GC)  $C_{10}H_{14}O_3 = 182.22$  [2186-92-7] MFCD00036507

d 1.07 flp 98°C

Beil. 8,74

25mL 500mL



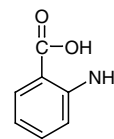


## Reagents for Oligosaccharide Synthesis-②

### A0497 Anthranilic Acid

25g 100g 500g

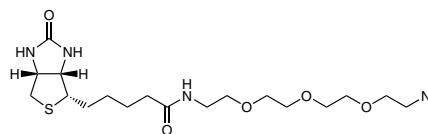
>99.0%(HPLC)(T)  $C_7H_7NO_2 = 137.14$  [118-92-3] MFCD00007712  
mp 146°C  
Beil. 14(3)879 RTECS CB2450000



### A2523 N-[2-[2-[2-(2-Azidoethoxy)ethoxy]ethoxy]ethyl]biotinamide

100mg

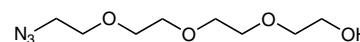
>95.0%(HPLC)  $C_{18}H_{32}N_6O_5S = 444.55$  [875770-34-6] MFCD20134145  
mp 110°C



### A2294 11-Azido-3,6,9-trioxaundecanol

100mg

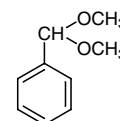
>97.0%(GC)  $C_8H_{17}N_3O_4 = 219.24$  [86770-67-4] MFCD03701128



### B1197 Benzaldehyde Dimethyl Acetal

25mL 100mL 500mL

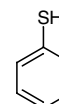
>98.0%(GC)  $C_9H_{12}O_2 = 152.19$  [1125-88-8] MFCD00008491  
bp 196°C d 1.02 flp 71°C  
Beil. 7,209 RTECS CU5774000



### B0041 Benzenethiol

25mL 100mL 500mL

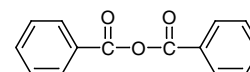
>98.0%(GC)  $C_6H_6S = 110.17$  [108-98-5] MFCD00004826  
d 1.08 flp 76°C  
Beil. 6,294 MI14-9355 F&F 10,399 RTECS DC0525000



### B0078 Benzoic Anhydride

25g 100g 500g

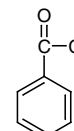
>97.0%(GC)(T)  $C_{14}H_{10}O_3 = 226.23$  [93-97-0] MFCD00003073  
mp 42°C bp 158°C /1mmHg  
Beil. 9,164 MI14-1092 F&F 5,23



### B0105 Benzoyl Chloride

25mL 500mL

>98.0%(GC)(T)  $C_7H_5ClO = 140.57$  [98-88-4] MFCD00000653  
bp 198°C d 1.22 flp 72°C  
Beil. 9,182 MI14-1112 F&F 5,24 RTECS DM6600000

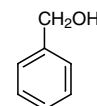


# Reagents for Oligosaccharide Synthesis-③

## B2378 Benzyl Alcohol

>99.0%(GC) C<sub>7</sub>H<sub>8</sub>O = 108.14 [100-51-6] MFCD00004599  
 bp 200°C d 1.05 flp 100°C  
 Beil. 6(4)2222 MI14-1124 RTECS DN3150000

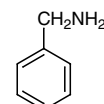
500g



## B0406 Benzylamine

>99.0%(GC) C<sub>7</sub>H<sub>9</sub>N = 107.16 [100-46-9] MFCD00008106  
 bp 184°C d 0.98 flp 60°C  
 Beil. 12,1013 MI14-1125 F&F 10,26 RTECS DP1488500

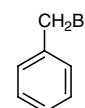
25mL 500mL



## B0411 Benzyl Bromide (stabilized with Propylene Oxide)

>98.0%(GC) C<sub>7</sub>H<sub>7</sub>Br = 171.04 [100-39-0] MFCD00000172  
 d 1.44 flp 79°C  
 Beil. 5,306 MI14-1128 F&F 5,25 RTECS XS7965000

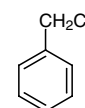
25g 100g 500g



## B0412 Benzyl Chloride (stabilized with ε-Caprolactam)

>99.0%(GC) C<sub>7</sub>H<sub>7</sub>Cl = 126.58 [100-44-7] MFCD00000889  
 bp 179°C d 1.10 flp 67°C  
 Beil. 5,292 MI14-1129 RTECS XS8925000

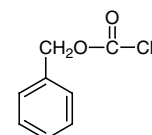
25g 500g



## C0176 Benzyl Chloroformate (30-35% in Toluene)

C<sub>8</sub>H<sub>7</sub>ClO<sub>2</sub> = 170.59 [501-53-1] MFCD00000640  
 d 0.96  
 Beil. 6(4)2278 MI14-1801 F&F 2,59

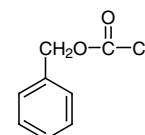
25mL 500mL



## B3021 Benzyl Chloroformate

>96.0%(T) C<sub>8</sub>H<sub>7</sub>ClO<sub>2</sub> = 170.59 [501-53-1] MFCD00000640  
 bp 103°C /20mmHg d 1.21 flp 80°C  
 Beil. 6(4)2278 MI14-1801 F&F 2,59 RTECS LQ5860000

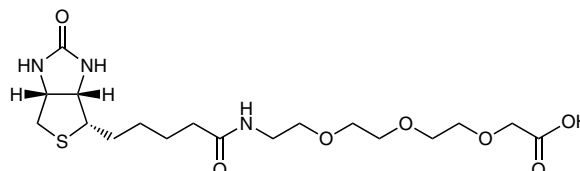
25g 250g



## New B5711 Biotin-PEG<sub>3</sub>-acetic Acid

C<sub>18</sub>H<sub>31</sub>N<sub>3</sub>O<sub>7</sub>S = 433.52 [1189560-96-0]

Price on request

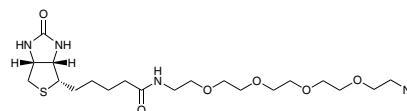


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## B5546 Biotin-PEG<sub>4</sub>-Azide

100mg

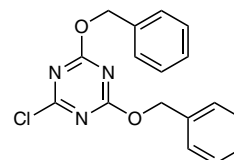
>96.0%(HPLC) C<sub>20</sub>H<sub>36</sub>N<sub>6</sub>O<sub>6</sub>S = 488.60 [1309649-57-7] MFCD29495433  
mp 104°C



## B4587 2,4-Bis(benzyloxy)-6-chloro-1,3,5-triazine

200mg 1g

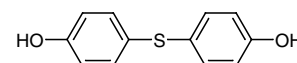
>95.0%(HPLC)(T) C<sub>17</sub>H<sub>14</sub>ClN<sub>3</sub>O<sub>2</sub> = 327.77 [851030-18-7]  
mp 66°C



## D1356 Bis(4-hydroxyphenyl) Sulfide

25g 500g

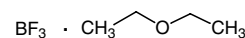
>98.0%(GC) C<sub>12</sub>H<sub>10</sub>O<sub>2</sub>S = 218.27 [2664-63-3] MFCD00002349  
mp 152°C  
Beil. 6,860 RTECS SN0800000



## B0527 Boron Trifluoride-Ethyl Ether Complex

25mL 100mL 500mL

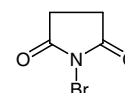
>98.0%(W) BF<sub>3</sub> · C<sub>4</sub>H<sub>10</sub>O = 141.93 [109-63-7] MFCD00013194  
bp 124°C d 1.13  
MI14-1350 F&F 9,64



## B0656 N-Bromosuccinimide

25g 100g 500g

>98.0%(T) C<sub>4</sub>H<sub>4</sub>BrNO<sub>2</sub> = 177.99 [128-08-5] MFCD00005510  
Beil. 21(5)9,543 MI14-1438 F&F 9,70

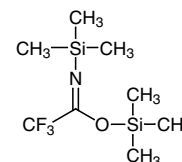


## A5603 BSTFA

5mL

[=N,O-Bis(trimethylsilyl)trifluoroacetamide]  
[for Gas Chromatography]

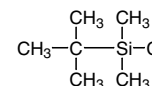
>95.0%(GC) C<sub>8</sub>H<sub>18</sub>F<sub>3</sub>NOSi<sub>2</sub> = 257.40 [25561-30-2] MFCD00008269  
bp 142°C flp 24°C



## B0995 tert-Butyldimethylchlorosilane [tert-Butyldimethylsilylating Agent]

5g 25g 100g

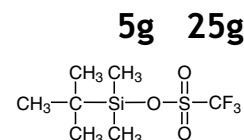
>98.0%(GC) C<sub>6</sub>H<sub>15</sub>ClSi = 150.72 [18162-48-6] MFCD00000501  
mp 88°C bp 125°C  
F&F 10,62 RTECS VV2000000



# Reagents for Oligosaccharide Synthesis-⑤

## T1525 tert-Butyldimethylsilyl Trifluoromethanesulfonate

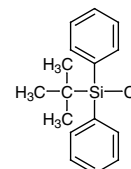
>98.0%(T) C<sub>7</sub>H<sub>15</sub>F<sub>3</sub>O<sub>3</sub>SSi = 264.33 [69739-34-0] MFCD00000405  
d 1.15 flp 36°C  
F&F 15,54



## B1223 tert-Butyldiphenylchlorosilane

>95.0%(GC) C<sub>16</sub>H<sub>19</sub>ClSi = 274.86 [58479-61-1] MFCD00000497  
bp 125°C /0.06mmHg d 1.07 flp 112°C  
F&F 6,81

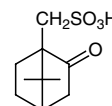
5mL 25mL 100mL



## C0016 (±)-10-Camphorsulfonic Acid

>98.0%(T) C<sub>10</sub>H<sub>16</sub>O<sub>4</sub>S = 232.29 [5872-08-2] MFCD00074827  
Beil. 11,316

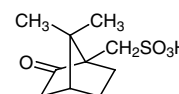
25g 100g 500g



## C0015 (+)-10-Camphorsulfonic Acid

>98.0%(T) C<sub>10</sub>H<sub>16</sub>O<sub>4</sub>S = 232.29 [3144-16-9] MFCD00064157  
Beil. 11,314 MI14-1734 F&F 4,68 RTECS ED1550000

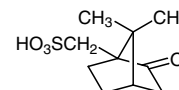
25g 100g 500g



## C0972 (-)-10-Camphorsulfonic Acid

>98.0%(T) C<sub>10</sub>H<sub>16</sub>O<sub>4</sub>S = 232.29 [35963-20-3] MFCD00064158  
Beil. 11(3)585

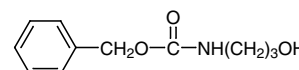
25g 100g 500g



## C1932 3-(Carbobenzoxyamino)-1-propanol

>98.0%(HPLC)(N) C<sub>11</sub>H<sub>15</sub>NO<sub>3</sub> = 209.25 [34637-22-4] MFCD01321351  
mp 54°C

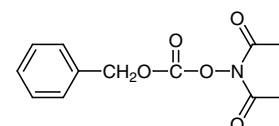
5g 25g



## C1124 N-Carbobenzoxyoxsuccinimide

>98.0%(N) C<sub>12</sub>H<sub>11</sub>NO<sub>5</sub> = 249.22 [13139-17-8] MFCD00005513  
mp 81°C

25g 250g



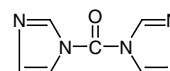
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# Reagents for Oligosaccharide Synthesis-⑥

## C0119 1,1'-Carbonyldiimidazole [Coupling Agent for Peptides Synthesis]

5g 25g 250g

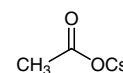
>97.0%(W)  $C_7H_6N_4O = 162.15$  [530-62-1] MFCD00005286  
mp 118°C  
Beil. 23(3/4)575 MI14-1819 F&F 9,96



## C2430 Cesium Acetate

25g 100g

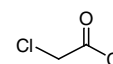
>98.0%(T)  $C_2H_3CsO_2 = 191.95$  [3396-11-0] MFCD00013056  
mp 193°C  
Beil. 2(3)134



## C0098 Chloroacetyl Chloride

25g 100g 500g

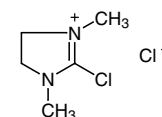
>98.0%(GC)(T)  $C_2H_2Cl_2O = 112.94$  [79-04-9] MFCD00000725  
bp 105°C d 1.42  
Beil. 2,199 MI14-2067 F&F 3,46 RTECS AO6475000



## C1408 2-Chloro-1,3-dimethylimidazolinium Chloride

5g 25g

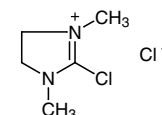
>98.0%(HPLC)  $C_5H_{10}Cl_2N_2 = 169.05$  [37091-73-9] MFCD00137463



## C1639 2-Chloro-1,3-dimethylimidazolinium Chloride (ca. 25% in Dichloromethane)

25g

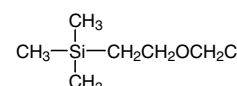
$C_5H_{10}Cl_2N_2 = 169.05$  [37091-73-9] MFCD00137463



## C1339 2-(Chloromethoxy)ethyltrimethylsilane (stabilized with Diisopropylethylamine)

5mL 25mL

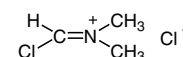
>95.0%(GC)  $C_6H_{15}ClOSi = 166.72$  [76513-69-4] MFCD00009919  
bp 59°C /8mmHg d 0.95 flp 46°C  
F&F 10,431



## C1545 (Chloromethylene)dimethyliminium Chloride

25g 250g

>95.0%(T)  $C_3H_7Cl_2N = 128.00$  [3724-43-4] MFCD00011868  
Beil. 4(4)175 F&F 13,341

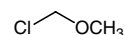


# Reagents for Oligosaccharide Synthesis-⑦

## C0202 Chloromethyl Methyl Ether

25g 100g 500g

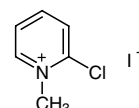
>95.0%(GC) C<sub>2</sub>H<sub>5</sub>ClO = 80.51 [107-30-2] MFCD00000885  
 bp 59°C d 1.07 flp -6°C  
 Beil. 1,580 MI14-2146 F&F 9,107 RTECS KN6650000



## C0903 2-Chloro-1-methylpyridinium Iodide

25g

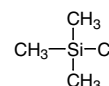
>98.0%(T) C<sub>6</sub>H<sub>7</sub>ClIN = 255.48 [14338-32-0] MFCD00011984  
 MI14-6301 F&F 8,95



## C0306 Chlorotrimethylsilane

25mL 100mL 500mL

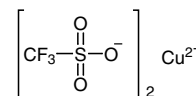
>98.0%(GC) C<sub>3</sub>H<sub>9</sub>ClSi = 108.64 [75-77-4] MFCD00000502  
 bp 57°C d 0.86 flp -28°C  
 Beil. 4(3)1857 F&F 10,96 RTECS VV2710000



## T1292 Copper(II) Trifluoromethanesulfonate

5g 25g

>98.0%(T) C<sub>2</sub>CuF<sub>6</sub>O<sub>6</sub>S<sub>2</sub> = 361.67 [34946-82-2] MFCD00077492



## C0491 Cyclohexene

25mL 500mL

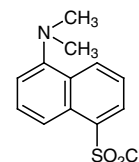
>99.0%(GC) C<sub>6</sub>H<sub>10</sub> = 82.15 [110-83-8] MFCD00001539  
 bp 82°C d 0.81 flp -6°C  
 Beil. 5,63 MI14-2727 RTECS GW2500000



## D0656 Dansyl Chloride

1g 5g 25g

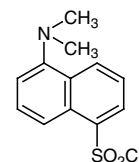
>98.0%(HPLC)(T) C<sub>12</sub>H<sub>12</sub>ClNO<sub>2</sub>S = 269.74 [605-65-2] MFCD00003985  
 mp 70°C  
 MI14-2814 RTECS QK3688000



## D0005 Dansyl Chloride (10% in Acetone)

10mL

C<sub>12</sub>H<sub>12</sub>ClNO<sub>2</sub>S = 269.74 [605-65-2] MFCD00003985  
 MI14-2814



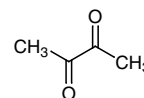
多くの試薬は、その危険性・有害性に関する知見が十分に得られていません。従って、試薬の使用は化学知識を持った専門家に限られ、それ以外の方の使用は避けください。なお、ご使用の際には安全面に十分注意し、開封・保管から廃棄に至るまで責任を持って管理してください。

# Reagents for Oligosaccharide Synthesis-⑧

## B0682 Diacetyl

25mL 100mL 500mL

>98.0%(GC) C<sub>4</sub>H<sub>6</sub>O<sub>2</sub> = 86.09 [431-03-8] MFCD00008756  
 bp 88°C d 0.98 flp 11°C  
 Beil. 1,769 MI14-2966 F&F 7,21 RTECS EK2625000



## D0134 1,4-Diazabicyclo[2.2.2]octane

25g 100g 500g

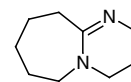
>98.0%(GC)(T) C<sub>6</sub>H<sub>12</sub>N<sub>2</sub> = 112.18 [280-57-9] MFCD00006689  
 mp 155°C  
 MI14-9669 F&F 7,86 RTECS HM0354200



## D1270 1,8-Diazabicyclo[5.4.0]-7-undecene

25g 100g 500g

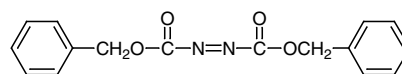
>98.0%(GC)(T) C<sub>9</sub>H<sub>16</sub>N<sub>2</sub> = 152.24 [6674-22-2] MFCD00006930  
 bp 83°C /0.6mmHg d 1.02 flp 116°C  
 F&F 7,87



## A0776 Dibenzyl Azodicarboxylate (40% in Dichloromethane, ca. 1.7mol/L)

5g 25g

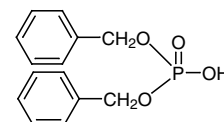
C<sub>16</sub>H<sub>14</sub>N<sub>2</sub>O<sub>4</sub> = 298.30 [2449-05-0] MFCD00016737



## P1120 Dibenzyl Phosphate

5g 25g

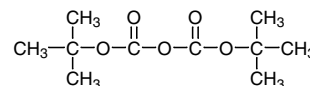
>98.0%(HPLC)(T) C<sub>14</sub>H<sub>15</sub>O<sub>4</sub>P = 278.24 [1623-08-1] MFCD00004775  
 mp 81°C  
 Beil. 6,439



## D3878 Di-tert-butyl Dicarbonate (ca. 30% in Dioxane)

100g 500g

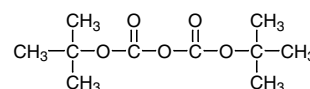
C<sub>10</sub>H<sub>18</sub>O<sub>5</sub> = 218.25 [24424-99-5] MFCD00008805



## D3879 Di-tert-butyl Dicarbonate (ca. 30% in Tetrahydrofuran)

100mL 500mL

C<sub>10</sub>H<sub>18</sub>O<sub>5</sub> = 218.25 [24424-99-5] MFCD00008805

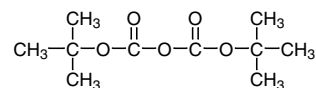


# Reagents for Oligosaccharide Synthesis-⑨

## D3880 Di-tert-butyl Dicarbonate (ca. 30% in Toluene)

$C_{10}H_{18}O_5 = 218.25$  [24424-99-5] MFCD00008805

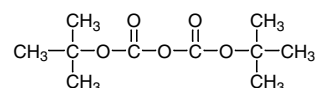
100g 400g



## D1547 Di-tert-butyl Dicarbonate [Boc-reagent for Amino Acid]

>95.0%(T)  $C_{10}H_{18}O_5 = 218.25$  [24424-99-5] MFCD00008805  
fp 23°C flp 47°C  
F&F 10,122 RTECS HT0230000

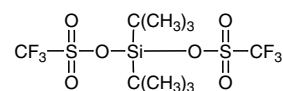
25g 100g 500g



## D3135 Di-tert-butylsilyl Bis(trifluoromethanesulfonate)

>97.0%(T)  $C_{10}H_{18}F_6O_6S_2Si = 440.44$  [85272-31-7]  
d 1.36 flp 90°C

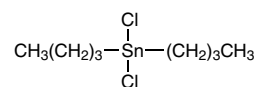
1g 5g



## D0223 Dibutyltin Dichloride

>97.0%(T)  $C_8H_{18}Cl_2Sn = 303.84$  [683-18-1] MFCD00000518  
mp 42°C  
F&F 1,213 RTECS WH7100000

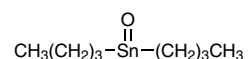
25g 100g 500g



## D0305 Dibutyltin Oxide

>95.0%(W)  $C_8H_{18}OSn = 248.94$  [818-08-6] MFCD00001992  
Beil. 4(1)588 F&F 9,141 RTECS WH7175000

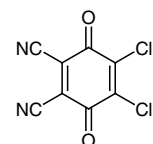
25g 100g



## D1070 2,3-Dichloro-5,6-dicyano- 1,4-benzoquinone

>97.0%(T)  $C_8Cl_2N_2O_2 = 227.00$  [84-58-2] MFCD00001593  
mp 214°C  
Beil. 10,902 MI14-3063 F&F 10,135 RTECS GU4825000

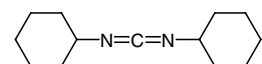
25g 250g



## D0436 N,N'-Dicyclohexylcarbodiimide

>98.0%(GC)  $C_{13}H_{22}N_2 = 206.33$  [538-75-0] MFCD00011659  
fp 34°C  
Beil. 9,156 MI14-3096 F&F 10,142 RTECS FF2160000

25g 400g



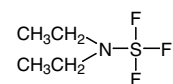


# Reagents for Oligosaccharide Synthesis-10

## D1868 (Diethylamino)sulfur Trifluoride [Fluorinating Reagent]

5g 25g 100g

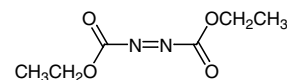
>90.0%(T) C<sub>4</sub>H<sub>10</sub>F<sub>3</sub>NS = 161.19 [38078-09-0] MFCD00000363  
bp 32°C /10mmHg d 1.23 flp 23°C  
MI14-3113 F&F 10,142



## A0705 Diethyl Azodicarboxylate (40% in Toluene, ca. 2.2mol/L)

25g 100g 250g

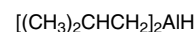
C<sub>8</sub>H<sub>10</sub>N<sub>2</sub>O<sub>4</sub> = 174.16 [1972-28-7] MFCD00009103  
d 0.96 flp 41°C  
Beil. 3,123 F&F 9,160



## D2971 Diisobutylaluminum Hydride (19% in Hexane, ca. 1.0mol/L)

100mL 500mL

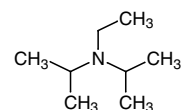
C<sub>8</sub>H<sub>19</sub>Al = 142.22 [1191-15-7] MFCD00008928  
flp -23°C  
Beil. 4(4)4400 F&F 17,123



## D1599 N,N-Diisopropylethylamine

25mL 100mL 500mL

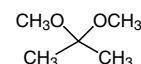
>99.0%(GC) C<sub>8</sub>H<sub>19</sub>N = 129.25 [7087-68-5] MFCD00008868  
bp 127°C d 0.76 flp 12°C  
Beil. 4(4)511 F&F 10,151



## A0057 2,2-Dimethoxypropane

25mL 500mL

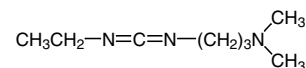
>98.0%(GC) C<sub>5</sub>H<sub>12</sub>O<sub>2</sub> = 104.15 [77-76-9] MFCD00008479  
bp 80°C d 0.85 flp -9°C  
Beil. 1,648 F&F 5,226



## D4029 1-(3-Dimethylaminopropyl)- 3-ethylcarbodiimide

5g 25g

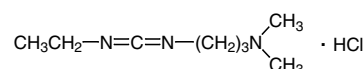
>98.0%(GC)(T) C<sub>8</sub>H<sub>17</sub>N<sub>3</sub> = 155.25 [1892-57-5] MFCD00044916  
bp 45°C /0.3mmHg d 0.88



## D1601 1-(3-Dimethylaminopropyl)- 3-ethylcarbodiimide Hydrochloride [Coupling Agent for Peptides Synthesis]

5g 25g 250g

>98.0%(T) C<sub>8</sub>H<sub>17</sub>N<sub>3</sub> · HCl = 191.70 [25952-53-8] MFCD00012503  
mp 115°C  
RTECS FF2200000

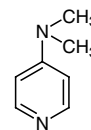


# Reagents for Oligosaccharide Synthesis-⑪

## D1450 4-Dimethylaminopyridine

25g 100g 500g

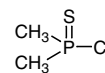
>99.0%(T)  $C_7H_{10}N_2 = 122.17$  [1122-58-3] MFCD00006418  
 mp 110°C bp 190°C /150mmHg  
 Beil. 22(2)341 MI14-3389 F&F 10,155 RTECS US9230000



## D2159 Dimethylthiophosphinoyl Chloride

1g 5g

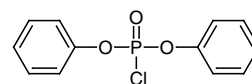
>97.0%(GC)  $C_2H_6CIPS = 128.55$  [993-12-4] MFCD00014454  
 bp 78°C /15mmHg d 1.22



## D1059 Diphenyl Chlorophosphate

25g 100g 500g

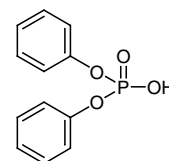
>95.0%(GC)  $C_{12}H_{10}ClO_3P = 268.63$  [2524-64-3] MFCD00003030  
 d 1.30  
 Beil. 6,179 F&F 3,133



## P0801 Diphenyl Phosphate

1g 25g

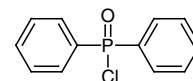
>99.0%(HPLC)(T)  $C_{12}H_{11}O_4P = 250.19$  [838-85-7] MFCD00003033  
 mp 69°C  
 Beil. 6,178 RTECS TC5470000



## C1415 Diphenylphosphinic Chloride

10g 25g

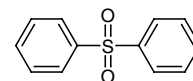
>98.0%(GC)(T)  $C_{12}H_{10}ClOP = 236.63$  [1499-21-4] MFCD00002077  
 bp 222°C /16mmHg d 1.27 flp 26°C  
 Beil. 16(4)1038 F&F 15,150



## P0231 Diphenyl Sulfone

25g 500g

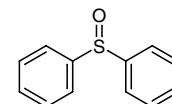
>99.0%(GC)  $C_{12}H_{10}O_2S = 218.27$  [127-63-9] MFCD00007548  
 mp 127°C  
 Beil. 6,300 MI14-3332 RTECS SX2400000



## D1002 Diphenyl Sulfoxide

5g 25g 100g

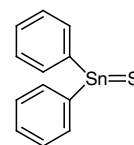
>99.0%(GC)  $C_{12}H_{10}OS = 202.27$  [945-51-7] MFCD00002085  
 mp 71°C bp 198°C /10mmHg  
 Beil. 6,300 F&F 1,348 RTECS DA9185000



**D2358 Diphenyltin Sulfide**  
[Activator for *O*-Glycoside Synthesis]

1g

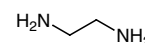
>97.0%(W)  $C_{12}H_{10}SSn = 304.98$  [20332-10-9] MFCD00058856  
mp 185°C



**E0077 Ethylenediamine** Anhydrous

25mL 500mL

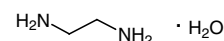
>98.0%(GC)(T)  $C_2H_8N_2 = 60.10$  [107-15-3] MFCD00008204  
fp 10°C bp 116°C d 0.90 flp 34°C  
Beil. 4,230 MI14-3795 F&F 4,231 RTECS KH8575000



**E0081 Ethylenediamine** Monohydrate

25mL 500mL

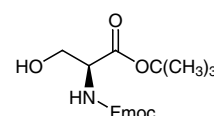
>98.0%(T)  $C_2H_8N_2 \cdot H_2O = 60.10(Anh)$  [6780-13-8] MFCD00149563  
bp 118°C d 0.96  
Beil. 4,230 MI14-3795 F&F 4,231



**F0516 *N*<sup>α</sup>-[(9*H*-Fluoren-9-ylmethoxy)carbonyl]-*L*-serine *tert*-Butyl Ester**

1g 5g

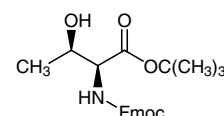
>98.0%(HPLC)(N)  $C_{22}H_{25}NO_5 = 383.44$  [110797-35-8]  
mp 127°C



**F0517 *N*<sup>α</sup>-[(9*H*-Fluoren-9-ylmethoxy)carbonyl]-*L*-threonine *tert*-Butyl Ester**

1g 5g

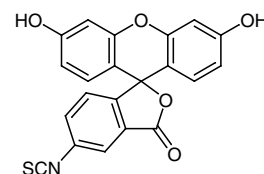
>98.0%(HPLC)(N)  $C_{23}H_{27}NO_5 = 397.47$  [120791-76-6]  
mp 100°C



**F0026 Fluorescein 5-Isothiocyanate** (isomer I)

100mg 1g

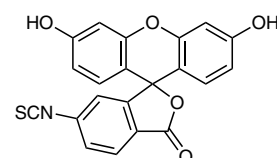
>97.0%(HPLC)(T)  $C_{21}H_{11}NO_5S = 389.38$  [3326-32-7]



**F0783 Fluorescein 6-Isothiocyanate** (isomer II)

100mg

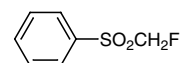
>97.0%(HPLC)(T)  $C_{21}H_{11}NO_5S = 389.38$  [18861-78-4] MFCD00041838



## F0341 Fluoromethyl Phenyl Sulfone

>98.0%(GC) C<sub>7</sub>H<sub>7</sub>FO<sub>2</sub>S = 174.19 [20808-12-2] MFCD00191650  
mp 53°C

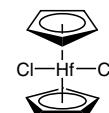
1g 5g



## H0914 Hafnocene Dichloride

>98.0%(T) C<sub>10</sub>H<sub>10</sub>Cl<sub>2</sub>Hf = 379.58 [12116-66-4] MFCD00001438  
F&F 16,120 RTECS MG4815000

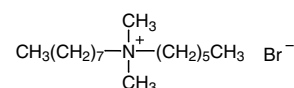
1g 5g 25g



## H0989 Hexyldimethyloctylammonium Bromide

>97.0%(T) C<sub>16</sub>H<sub>36</sub>BrN = 322.38 [187731-26-6] MFCD03093632

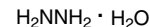
5g 25g



## H0172 Hydrazine Monohydrate

>98.0%(T) H<sub>4</sub>N<sub>2</sub> · H<sub>2</sub>O = 32.05(Anh) [7803-57-8] MFCD00149931  
d 1.03 flp 75°C  
MI14-4771 F&F 9,236 RTECS MV8050000

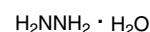
25mL 500mL



## H0204 Hydrazine Monohydrate (79%)

H<sub>4</sub>N<sub>2</sub> · H<sub>2</sub>O = 32.05(Anh) [7803-57-8] MFCD00149931  
d 1.03 flp 75°C  
MI14-4771 F&F 9,236 RTECS MV8050000

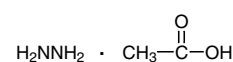
25g 500g



## H1112 Hydrazine Acetate

>98.0%(T) H<sub>4</sub>N<sub>2</sub> · C<sub>2</sub>H<sub>4</sub>O<sub>2</sub> = 92.10 [13255-48-6]  
mp 101°C  
Beil. 2,107 F&F 1,445

5g 25g



## H0182 Hydrogen Bromide (30% in Acetic Acid, ca. 5.1mol/L) [for Peptide research]

HBr = 80.91 [10035-10-6] MFCD00011323  
d 1.40  
MI14-4778

25g 100g 500g

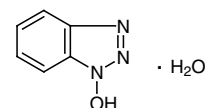


# Reagents for Oligosaccharide Synthesis-14

## H0468 1-Hydroxybenzotriazole Monohydrate

>97.0%(T)  $C_6H_5N_3O \cdot H_2O = 135.13$  (Anh) [80029-43-2] MFCD00005805  
 mp 160°C  
 Beil. 26,41 F&F 6,288 RTECS DM1288000

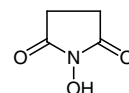
25g 500g



## H0623 N-Hydroxysuccinimide

>98.0%(T)  $C_4H_5NO_3 = 115.09$  [6066-82-6] MFCD00005516  
 mp 98°C  
 Beil. 21,380 F&F 9,246

25g 100g 500g



## I0001 Imidazole

>98.0%(T)  $C_3H_4N_2 = 68.08$  [288-32-4] MFCD00005183  
 mp 90°C  
 Beil. 23(3/4)564 MI14-4912 F&F 2,220 RTECS NI3325000

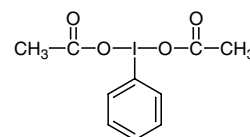
25g 100g 500g



## I0330 Iodobenzene Diacetate

>97.0%(T)  $C_{10}H_{11}IO_4 = 322.10$  [3240-34-4] MFCD00008692  
 F&F 4,266 RTECS DA3525000

10g 25g 250g



## I0060 Iodomethane (stabilized with Copper chip) 10mL 100mL 300mL

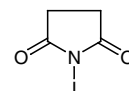
>99.5%(GC)  $CH_3I = 141.94$  [74-88-4] MFCD00001073  
 bp 43°C d 2.28  
 Beil. 1,69 MI14-6087 F&F 9,308 RTECS PA9450000

$CH_3I$

## I0074 N-Iodosuccinimide

>98.0%(T)  $C_4H_4INO_2 = 224.99$  [516-12-1] MFCD00005512  
 Beil. 21(5)9,544 MI14-5045 RTECS WN2817000

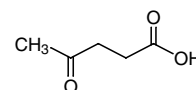
5g 25g 100g



## L0042 Levulinic Acid

>97.0%(GC)(T)  $C_5H_8O_3 = 116.12$  [123-76-2] MFCD00002796  
 fp 29°C  
 Beil. 3,671 MI14-5472 F&F 10,230 RTECS OI1575000

25g 500g

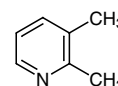


# Reagents for Oligosaccharide Synthesis-⑮

## L0063 2,3-Lutidine

25mL

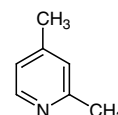
>98.0%(GC)(T) C<sub>7</sub>H<sub>9</sub>N = 107.16 [583-61-9] MFCD00009605  
 bp 161°C d 0.95 flp 50°C  
 Beil. 20(3/4)2765



## L0085 2,4-Lutidine

25mL 500mL

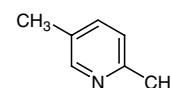
>98.0%(GC) C<sub>7</sub>H<sub>9</sub>N = 107.16 [108-47-4] MFCD00006337  
 bp 157°C d 0.93 flp 37°C  
 Beil. 20(3/4)2768 F&F 6,224 RTECS OK9400000



## L0065 2,5-Lutidine

5mL 25mL 500mL

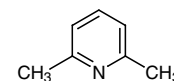
>98.0%(GC) C<sub>7</sub>H<sub>9</sub>N = 107.16 [589-93-5] MFCD00006343  
 bp 157°C d 0.93 flp 48°C  
 Beil. 20(3/4)2774 RTECS OK9625000



## L0067 2,6-Lutidine

25mL 500mL

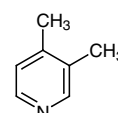
>98.0%(GC) C<sub>7</sub>H<sub>9</sub>N = 107.16 [108-48-5] MFCD00006345  
 bp 144°C d 0.92 flp 33°C  
 Beil. 20(3/4)2776 MI14-5616 F&F 1,626 RTECS OK9700000



## L0066 3,4-Lutidine

25mL 500mL

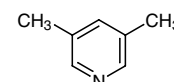
>98.0%(GC) C<sub>7</sub>H<sub>9</sub>N = 107.16 [583-58-4] MFCD00006403  
 bp 179°C d 0.96 flp 61°C  
 Beil. 20(3/4)2787 RTECS OK9800000



## L0068 3,5-Lutidine

25mL 500mL

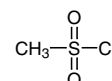
>98.0%(GC) C<sub>7</sub>H<sub>9</sub>N = 107.16 [591-22-0] MFCD00006404  
 bp 172°C d 0.94 flp 47°C  
 Beil. 20(3/4)2788



## M0094 Methanesulfonyl Chloride

25g 500g

>99.0%(T) CH<sub>3</sub>ClO<sub>2</sub>S = 114.54 [124-63-0] MFCD00007454  
 bp 160°C d 1.48 flp 92°C  
 Beil. 4,5 MI14-5955 F&F 7,225 RTECS PB2790000

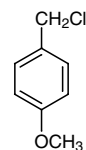


# Reagents for Oligosaccharide Synthesis-16

## M0676 4-Methoxybenzyl Chloride (stabilized with Amylene)

>98.0%(GC)(T) C<sub>8</sub>H<sub>9</sub>ClO = 156.61 [824-94-2] MFCD00000915  
bp 127°C /24mmHg d 1.15 flp 109°C  
Beil. 6(4)2137 F&F 1,668

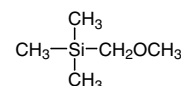
25mL



## M1264 Methoxymethyltrimethylsilane

>95.0%(GC) C<sub>5</sub>H<sub>14</sub>O<sub>2</sub>Si = 118.25 [14704-14-4] MFCD00009843  
bp 85°C d 0.76 flp -5°C  
Beil. 4(3)1844

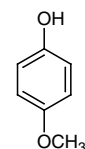
5mL



## M0123 4-Methoxyphenol

>99.0%(GC) C<sub>7</sub>H<sub>8</sub>O<sub>2</sub> = 124.14 [150-76-5] MFCD00002332  
mp 57°C bp 243°C  
Beil. 6,843 RTECS SL7700000

25g 100g 500g



## M0137 Methylamine (ca. 40% in Water, ca. 12mol/L)

CH<sub>5</sub>N = 31.06 [74-89-5] MFCD00008104  
d 0.90 flp -10°C  
RTECS PF6300000

25mL 500mL



## M0558 Methylhydrazine

>98.0%(GC) CH<sub>6</sub>N<sub>2</sub> = 46.07 [60-34-4] MFCD00007621  
bp 87°C d 0.87  
Beil. 4(2)957 M114-6086 F&F 4,340 RTECS MV5600000

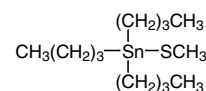
25mL 100mL



## M1494 Methyl Tributylstannyl Sulfide

>98.0%(W) C<sub>13</sub>H<sub>30</sub>SSn = 337.15 [17314-32-8]  
d 1.16

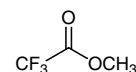
25g 100g



## T0680 Methyl Trifluoroacetate

>98.0%(GC) C<sub>3</sub>H<sub>3</sub>F<sub>3</sub>O<sub>2</sub> = 128.05 [431-47-0] MFCD00000417  
bp 43°C d 1.29 flp -20°C  
Beil. 2(4)463

25g 500g

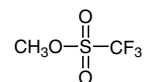


# Reagents for Oligosaccharide Synthesis-⑰

## T2029 Methyl Trifluoromethanesulfonate

5g 25g

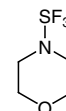
>98.0%(GC)  $C_2H_3F_3O_3S = 164.10$  [333-27-7] MFCD00000409  
 bp 99°C d 1.50 flp 38°C  
 Beil. 3(4)34 F&F 17,191



## M1573 Morpholinosulfur Trifluoride

1g 5g

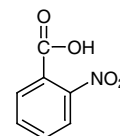
>93.0%(T)  $C_4H_8F_3NOS = 175.17$  [51010-74-3] MFCD00037057  
 bp 42°C /0.5mmHg flp 76°C



## N0155 2-Nitrobenzoic Acid

25g 500g

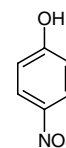
>90.0%(GC)  $C_7H_5NO_4 = 167.12$  [552-16-9] MFCD00007137  
 mp 144°C  
 Beil. 9,370 MI14-6588 RTECS DH5050000



## N0220 4-Nitrophenol

25g 500g

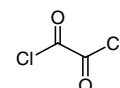
>99.0%(GC)  $C_6H_5NO_3 = 139.11$  [100-02-7] MFCD00007331  
 mp 114°C  
 Beil. 6,226 MI14-6620 F&F 2,297 RTECS SM2275000



## O0082 Oxalyl Chloride

25g 100g 500g

>98.0%(GC)(T)  $C_2Cl_2O_2 = 126.92$  [79-37-8] MFCD00000704  
 bp 64°C d 1.48  
 Beil. 2,542 MI14-6914 F&F 8,366 RTECS KI2950000



## P1785 Palladium

5g 25g

10% on Carbon (wetted with ca. 55% Water)  
 [Useful catalyst for coupling reaction, etc.]

Pd

Pd = 106.42 [7440-05-3] MFCD00011167  
 MI14-6989 F&F 15,245 RTECS RT3480500

## P1491 Palladium

5g 25g

10% on Carbon (wetted with ca. 55% Water)

Pd

Pd = 106.42 [7440-05-3] MFCD03457879  
 MI14-6989 F&F 15,245 RTECS RT3480500



# Reagents for Oligosaccharide Synthesis-18

## P1490 Palladium

5% on Carbon (wetted with ca. 55% Water)

5g 25g

Pd = 106.42 [7440-05-3] MFCD00011167  
MI14-6989 F&F 15,245 RTECS RT3480500

Pd

## P1489 Palladium(II) Chloride

1g 5g

>98.0%(T) PdCl<sub>2</sub> = 177.32 [7647-10-1] MFCD00003558  
MI14-6990 F&F 20,293 RTECS RT3500000

PdCl<sub>2</sub>

## P1528 Palladium Hydroxide (contains Pd, PdO) on Carbon (wetted with ca. 50% Water)

10g 50g

Pd(OH)<sub>2</sub> = 140.43 [12135-22-7] MFCD00064599  
MI14-7060 F&F 20,299

Pd(OH)<sub>2</sub>

## P1743 Phosphorus Tribromide

300g

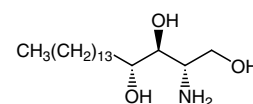
>98.0%(T) PBr<sub>3</sub> = 270.69 [7789-60-8] MFCD00011436  
d 2.85  
MI14-7357 RTECS TH4460000

PBr<sub>3</sub>

## New P1765 Phytosphingosine

1g 5g

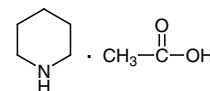
>98.0%(T) C<sub>18</sub>H<sub>39</sub>NO<sub>3</sub> = 317.51 [554-62-1] MFCD00079232  
mp 102°C  
Beil. 4(4)1906



## P1481 Piperidinium Acetate

5g 25g

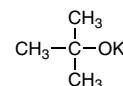
>98.0%(T) C<sub>5</sub>H<sub>11</sub>N · C<sub>2</sub>H<sub>4</sub>O<sub>2</sub> = 145.20 [4540-33-4] MFCD06797161  
mp 106°C  
Beil. 20(2)6



## P1008 Potassium tert-Butoxide

25g 100g 500g

>97.0%(T) C<sub>4</sub>H<sub>9</sub>KO = 112.21 [865-47-4] MFCD00012162  
Beil. 1(2)413 F&F 10,323

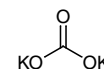


# Reagents for Oligosaccharide Synthesis-⑱

## P1748 Potassium Carbonate

300g

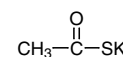
>99.0%(T)  $K_2CO_3 = 138.20$  [584-08-7] MFCD00011382  
MI14-7619 RTECS TS7750000



## T2030 S-Potassium Thioacetate

25g 250g

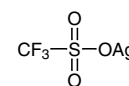
>97.0%(T)  $C_2H_3KOS = 114.20$  [10387-40-3] MFCD00083065  
Beil. 2,230 F&F 10,325



## T1331 Silver Trifluoromethanesulfonate

1g 10g 25g

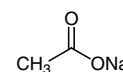
>98.0%(T)  $CAgF_3O_3S = 256.93$  [2923-28-6] MFCD00013226  
Beil. 3(4)34 F&F 12,435



## S0559 Sodium Acetate

300g

>98.5%(T)  $C_2H_3NaO_2 = 82.03$  [127-09-3] MFCD00012459  
Beil. 2(4)94 MI14-8571 RTECS AJ4300010



## S0489 Sodium Azide

100g

>99.0%(T)  $NaN_3 = 65.01$  [26628-22-8] MFCD00003536  
MI14-8581 RTECS JY8050000



## S0480 Sodium Borohydride

25g 100g 500g

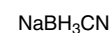
>95.0%(T)  $NaBH_4 = 37.83$  [16940-66-2] MFCD00003518  
MI14-8592 F&F 17,314 RTECS ED3325000



## S0396 Sodium Cyanoborohydride [Reducing Agent]

5g 25g 250g

>95.0%(T)  $CH_3BNNa = 62.84$  [25895-60-7] MFCD00003516  
MI14-8606 F&F 14,286



# Reagents for Oligosaccharide Synthesis-20

**S0481 Sodium Hydride** 100g 500g  
(60%, dispersion in Paraffin Liquid)

NaH = 24.00 [7646-69-7] MFCD00003471  
MI14-8625 F&F 16,307 RTECS WB3910000

NaH

**S0486 Sodium Methoxide** 100mL 500mL  
(ca. 5mol/L in Methanol)

CH<sub>3</sub>NaO = 54.02 [124-41-4] MFCD00012179  
flp 33°C  
MI14-8643 F&F 18,335

CH<sub>3</sub>ONa

**S0394 Sodium Triacetoxyborohydride** 25g 100g

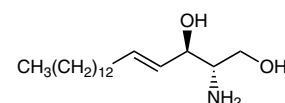
>80.0%(T) C<sub>6</sub>H<sub>10</sub>BNaO<sub>6</sub> = 211.94 [56553-60-7] MFCD00012211  
MI14-8695 F&F 13,283

NaBH(OCOCH<sub>3</sub>)<sub>3</sub>

**New S0874 D-Sphingosine**

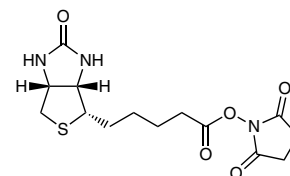
25mg

>96.0%(GC) C<sub>18</sub>H<sub>37</sub>NO<sub>2</sub> = 299.50 [123-78-4] MFCD00036751  
mp 74°C  
MI14-8747



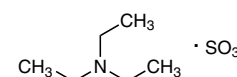
**S0491 N-Succinimidyl D-Biotinate** 100mg 1g

>97.0%(HPLC)(N) C<sub>14</sub>H<sub>19</sub>N<sub>3</sub>O<sub>5</sub>S = 341.38 [35013-72-0] MFCD00078531  
mp 140°C



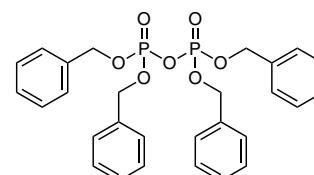
**T2136 Sulfur Trioxide - Triethylamine Complex** 5g 25g

>96.0%(N) C<sub>6</sub>H<sub>15</sub>N · SO<sub>3</sub> = 181.25 [761-01-3]  
mp 93°C



**P1223 Tetrabenzyl Pyrophosphate** 1g

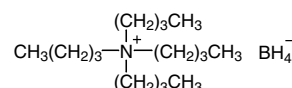
>98.0%(HPLC) C<sub>28</sub>H<sub>28</sub>O<sub>7</sub>P<sub>2</sub> = 538.47 [990-91-0] MFCD00051941  
mp 64°C



## T0917 Tetrabutylammonium Borohydride [Reducing Reagent]

5g 25g

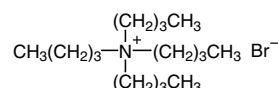
>96.0%(T) C<sub>16</sub>H<sub>40</sub>BN = 257.31 [33725-74-5] MFCD00012035  
mp 126°C  
F&F 10,378



## T0054 Tetrabutylammonium Bromide

25g 100g 500g

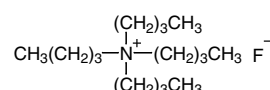
>98.0%(T) C<sub>16</sub>H<sub>36</sub>BrN = 322.38 [1643-19-2] MFCD00011633  
mp 103°C  
F&F 7,353



## T1338 Tetrabutylammonium Fluoride (ca. 1mol/L in Tetrahydrofuran)

25mL 100mL 500mL

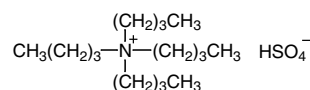
C<sub>16</sub>H<sub>36</sub>FN = 261.47 [429-41-4] MFCD00011747  
d 0.92 flp -17°C  
Beil. 4(4)557 MI14-9187 F&F 12,458



## T0835 Tetrabutylammonium Hydrogen Sulfate

25g 100g 500g

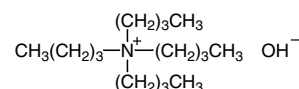
>98.0%(T) C<sub>16</sub>H<sub>37</sub>NO<sub>4</sub>S = 339.54 [32503-27-8] MFCD00011637  
mp 173°C  
F&F 7,354



## T1685 Tetrabutylammonium Hydroxide (40% in Water)

25g 100g 500g

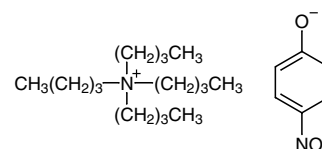
C<sub>16</sub>H<sub>37</sub>NO = 259.48 [2052-49-5] MFCD00009425  
d 1.00  
Beil. 4(2)634 F&F 11,500 RTECS BS5425000



## T2669 Tetrabutylammonium p-Nitrophenoxide

5g 25g

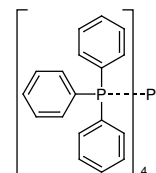
>98.0%(HPLC)(T) C<sub>22</sub>H<sub>40</sub>N<sub>2</sub>O<sub>3</sub> = 380.57 [3002-48-0]  
mp 145°C



## T1350 Tetrakis(triphenylphosphine)- palladium(0)

1g 5g 25g

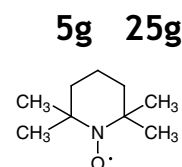
>97.0%(T) C<sub>72</sub>H<sub>60</sub>P<sub>4</sub>Pd = 1155.59 [14221-01-3] MFCD00010012  
Beil. 16(4)954 F&F 12,468



# Reagents for Oligosaccharide Synthesis-22

## T1560 2,2,6,6-Tetramethylpiperidine 1-Oxyl Free Radical

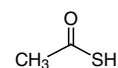
>98.0%(GC)(T) C<sub>9</sub>H<sub>18</sub>NO = 156.25 [2564-83-2] MFCD00009599  
MI14-9140 F&F 14,302 RTECS TN8991900



## T0189 Thioacetic Acid

25mL 100mL 500mL

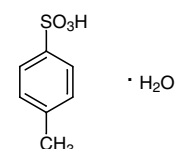
>95.0%(GC) C<sub>2</sub>H<sub>4</sub>OS = 76.11 [507-09-5] MFCD00004853  
bp 93°C d 1.07 flp 5°C  
Beil. 2,230 MI14-9320 F&F 1,1154 RTECS AJ5600000



## T0267 p-Toluenesulfonic Acid Monohydrate

25g 500g

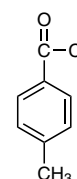
>98.0%(HPLC)(T) C<sub>7</sub>H<sub>8</sub>O<sub>3</sub>S · H<sub>2</sub>O = 172.20(Anh) [6192-52-5] MFCD00064387  
mp 106°C  
Beil. 11,97 MI14-9533 F&F 9,471 RTECS DB7164000



## T0311 p-Toluoyl Chloride

25g 100g 500g

>98.0%(GC)(T) C<sub>8</sub>H<sub>7</sub>ClO = 154.59 [874-60-2] MFCD00000696  
bp 216°C d 1.17 flp 82°C  
Beil. 9,486 RTECS XV1660000



## T0372 Trichloroacetonitrile

25g 100g 500g

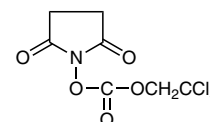
>98.0%(GC) C<sub>2</sub>Cl<sub>3</sub>N = 144.38 [545-06-2] MFCD00001842  
bp 85°C d 1.43 flp 195°C  
Beil. 2,212 MI14-9628 F&F 7,381 RTECS AM2450000



## T2713 N-(2,2,2-Trichloroethoxycarbonyloxy)-succinimide

5g

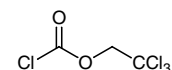
>98.0%(GC)(N) C<sub>7</sub>H<sub>6</sub>Cl<sub>3</sub>NO<sub>5</sub> = 290.48 [66065-85-8] MFCD00075216  
mp 113°C



## C0795 2,2,2-Trichloroethyl Chloroformate

25g 250g

>98.0%(GC) C<sub>3</sub>H<sub>2</sub>Cl<sub>4</sub>O<sub>2</sub> = 211.85 [17341-93-4] MFCD00000810  
bp 172°C d 1.58  
F&F 7,383

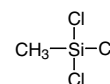


# Reagents for Oligosaccharide Synthesis-23

## M0450 Trichloro(methyl)silane

25g 100g 500g

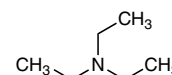
>98.0%(GC)(T)  $\text{CH}_3\text{Cl}_3\text{Si}$  = 149.47 [75-79-6] MFCD00000481  
 bp 65°C d 1.28 flp -8°C  
 Beil. 4(3)1896 RTECS VV4550000



## T0424 Triethylamine

25mL 100mL 500mL

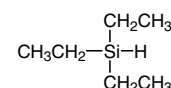
>99.0%(GC)(T)  $\text{C}_6\text{H}_{15}\text{N}$  = 101.19 [121-44-8] MFCD00009051  
 bp 89°C d 0.73 flp -8°C  
 Beil. 4,99 MI14-9666 F&F 9,481 RTECS YE0175000



## T0662 Triethylsilane

25mL 250mL

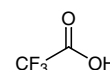
>98.0%(GC)  $\text{C}_6\text{H}_{16}\text{Si}$  = 116.28 [617-86-7] MFCD00009018  
 bp 108°C d 0.73 flp -3°C  
 Beil. 4,625 F&F 5,694



## T0431 Trifluoroacetic Acid

25g 100g 500g

>99.0%(T)  $\text{C}_2\text{HF}_3\text{O}_2$  = 114.02 [76-05-1] MFCD00004169  
 bp 73°C d 1.49  
 Beil. 2(4)458 MI14-9681 F&F 9,483 RTECS AJ9625000



## T0751 Trifluoromethanesulfonic Acid

10g 25g 250g

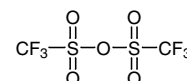
>98.0%(T)  $\text{CHF}_3\text{O}_3\text{S}$  = 150.07 [1493-13-6] MFCD00007514  
 bp 162°C d 1.71  
 Beil. 3(4)34 MI14-9676 F&F 9,485



## T1100 Trifluoromethanesulfonic Anhydride

10g 25g 250g

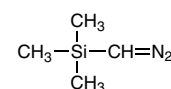
>98.0%(T)  $\text{C}_2\text{F}_6\text{O}_5\text{S}_2$  = 282.13 [358-23-6] MFCD00000408  
 bp 84°C d 1.72



## T1146 Trimethylsilyldiazomethane (ca. 10% in Hexane, ca. 0.6mol/L)

10mL 25mL 100mL

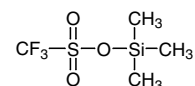
$\text{C}_4\text{H}_{10}\text{N}_2\text{Si}$  = 114.22 [18107-18-1] MFCD00053946



# Reagents for Oligosaccharide Synthesis-24

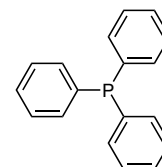
**T0871 Trimethylsilyl Trifluoromethanesulfonate** 5g 25g 250g  
 [Trimethylsilylating Agent]

>98.0%(T) C<sub>4</sub>H<sub>9</sub>F<sub>3</sub>O<sub>3</sub>SSi = 222.25 [27607-77-8] MFCD00000406  
 bp 140°C d 1.23 flp 25°C  
 MI14-9719 F&F 10,438



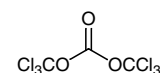
**T0519 Triphenylphosphine** 25g 100g 500g

>95.0%(T) C<sub>18</sub>H<sub>15</sub>P = 262.29 [603-35-0] MFCD00003043  
 mp 81°C  
 Beil. 16,759 MI14-9743 F&F 7,403 RTECS SZ3500000



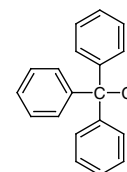
**T1467 Triphosgene** 25g 250g

>98.0%(T) C<sub>3</sub>Cl<sub>6</sub>O<sub>3</sub> = 296.73 [32315-10-9] MFCD00062848  
 mp 80°C bp 206°C  
 Beil. 3(4)33



**C0308 Trityl Chloride** 25g 100g 500g

>98.0%(T) C<sub>19</sub>H<sub>15</sub>Cl = 278.78 [76-83-5] MFCD00000813  
 mp 113°C  
 Beil. 5(3)2315 F&F 6,656 RTECS PA6450000



**Z0015 Zinc (Powder)** 300g

>96.0%(T) Zn = 65.38 [7440-66-6] MFCD00011291  
 MI14-10127 RTECS ZG8600000

Zn

**Z0013 Zinc Bromide** 25g 300g

>98.0%(T) ZnBr<sub>2</sub> = 225.19 [7699-45-8] MFCD00011294  
 MI14-1029 RTECS ZH1150000

ZnBr<sub>2</sub>

**Z0014 Zinc Chloride** 25g 300g

>98.0%(T) ZnCl<sub>2</sub> = 136.28 [7646-85-7] MFCD00011295  
 MI14-10132 RTECS ZH1400000

ZnCl<sub>2</sub>

# The Industrial Production of Oligosaccharides

## The Industrial Production of Oligosaccharides by TCI TCIの実用化を指向した工業的糖鎖製造

New

Since the relationship between sugar chains and their life phenomena has been elucidated, the practical uses of functional oligosaccharides become more important. However, it is not easy to obtain sufficient amount of oligosaccharides in high purity because of limited quantities and heterogeneity of naturally occurring oligosaccharides.

We established the manufacturing process of "sugar building blocks" which are key intermediates for oligosaccharides synthesis (Fig. 1), and by using these sugar building blocks as the starting materials, the number of processes of oligosaccharide synthesis can be reduced. Then we have achieved the large scale synthesis of a variety of biofunctional oligosaccharides such as *N*- and *O*-glycans of glycoproteins, Globo-H and sLe<sup>x</sup> which are cancer antigens, and glycosaminoglycan oligomers which are concerned with iPS cells or the nervous system (Fig. 2). These oligosaccharides have well-defined structures, and can be introduced with functional groups such as the azido group, carboxyl group, or biotin at the reducing terminal for use as powerful tools for research into glycoscience.

糖鎖の様々な生命現象への関与が解明され、基礎研究から実用化に向けた展開への重要性が増しています。このような糖鎖ですが、少量しか存在しない、また多様な構造を持つことから、単一で大量に得ることは容易ではありません。

TCIではこれまでのノウハウを生かし実用化に向けた糖鎖の製造に挑戦し、大幅に工程が短縮される鍵中間体（糖鎖ブロック）の大量合成法を確立してその生産体制を構築しています（図1）。そこから量産された糖鎖ブロックは組み合わせを利用して、有用な機能性糖鎖へと誘導しています（図2）。タンパク質上に存在し様々な生命現象にかかわる*N*-Link糖鎖及び*O*-Link糖鎖、Globo-HやsLe<sup>x</sup>等のがん関連糖鎖、血液型糖鎖、iPS細胞や神経系で重要な役割を果たすグルコサミノグリカン等、グラム〜キログラムスケールでの製造が可能です。各糖鎖は明確な構造を持ち還元末端のアグリコンをアジド基やカルボキシル基、ビオチン基等の様々な官能基に修飾が可能です。糖鎖の研究開発の有用なツールとして応用いただけます。TCIの合成糖鎖を是非ご利用ください。

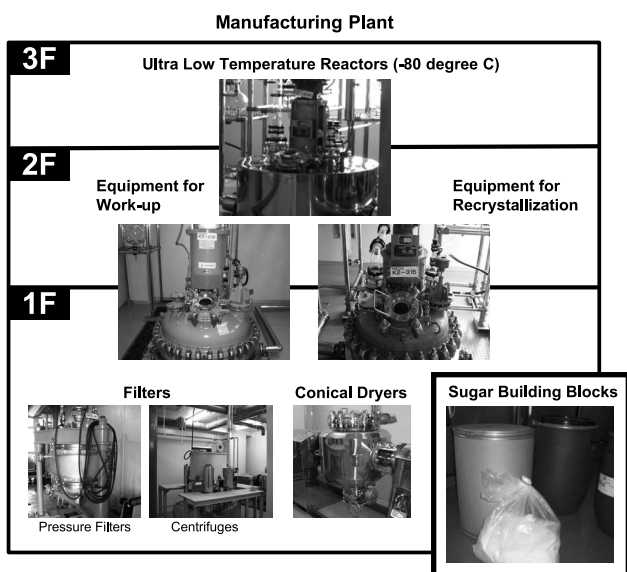


Fig. 1 Production system of TCI

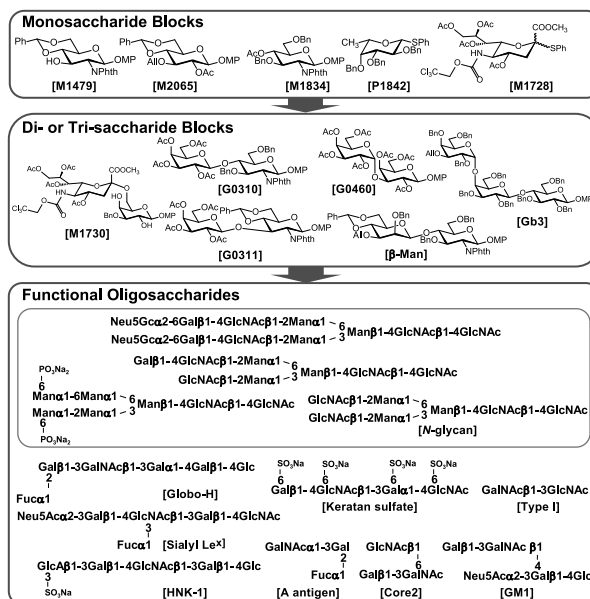


Fig. 2 TCI's oligosaccharides



New

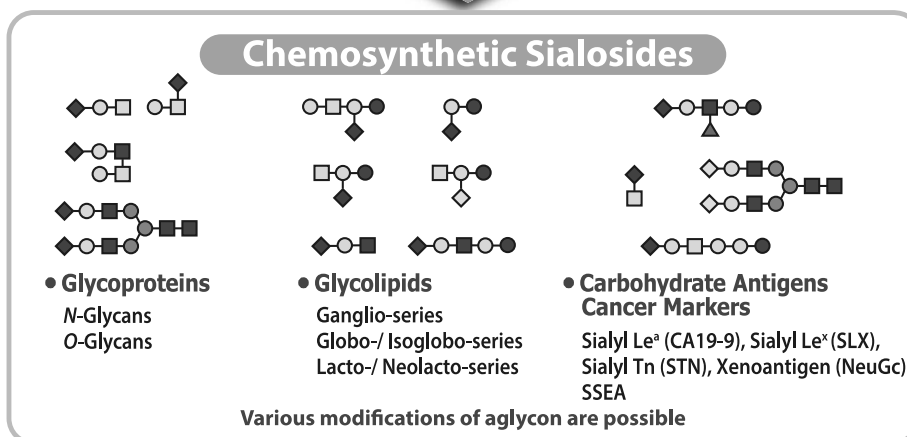
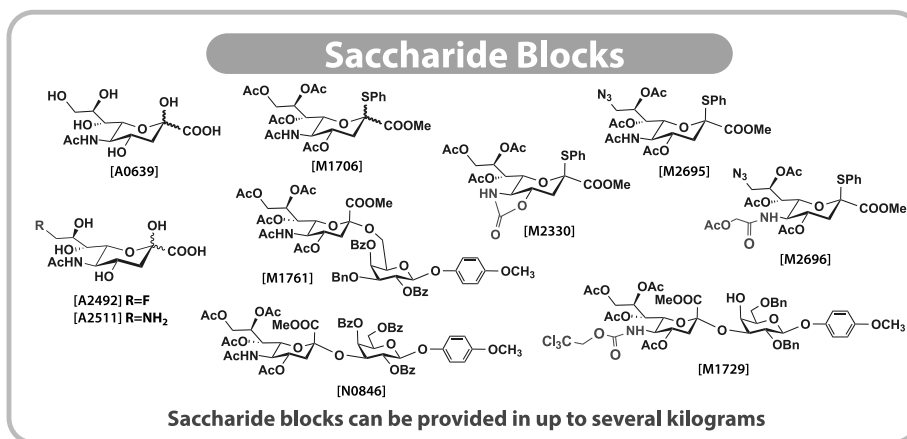
## Chemosynthesis of Sialoside シアロ糖鎖の化学合成

Sialic acid locates the terminal of sugar chains in glycoproteins, glycolipids, and milk oligosaccharides. Also, sialosides are associated with cell-cell interaction, cell differentiation, and infection of bacteria or viruses. For example, in influenza infections, hemagglutinin on the virus surface links to sialic acid, and the infectious process begins. Also, cancer markers such as CA19-9 (sialyl Le<sup>a</sup>), SLX (sialyl Le<sup>x</sup>), STN (sialyl Tn) are carbohydrate antigens that have sialic acid, and are used in cancer diagnosis. However, since the complex sialo-oligosaccharides are obtained in limited quantity from natural sources, for the sake of research promotion, sugar chains of sufficient amount are required. TCI has developed the manufacturing procedure of functional oligosaccharides to supply a variety of sialosides.

In TCI, kilogram scaled glycosidation of sialic acid is carried out using thioglycoside as the glycosyl donor. Sialic acid and sialyl  $\alpha$ (2-3/6) galactose are used as the sugar building blocks for complex sialo-oligosaccharide synthesis. We can prepare the various oligosaccharides having not only *N*-acetyl neuraminic acid but also *N*-glycolyl neuraminic acid which does not exist in normal human cells. Chemically synthesized sialo-oligosaccharides having ceramide (ganglioside) and other kind of aglycons such as *p*-nitrophenyl and aminoalkyl group are prepared. TCI synthesizes a wide range of sugar chains for your daily research. Please feel free to contact us.

シアル酸は糖タンパク質、糖脂質、ミルクオリゴ糖の糖鎖の末端に存在し、細胞間の認識、細胞の分化、細菌やウィルスの感染に関わっていることが明らかになってきました。たとえば、インフルエンザの感染ではウィルス表面にあるヘマグルチニンがシアル酸と結合して感染プロセスが始まります。またCA19-9 (sialyl Le<sup>a</sup>), SLX (sialyl Le<sup>x</sup>), STN (sialyl Tn)といった腫瘍マーカーはシアル酸を有する糖鎖抗原であり、がんの診断に使われています。しかしながら複雑なシアル酸含有糖鎖は天然にはごくわずかしか存在していないため、その研究の推進のためには十分な量の糖鎖が必要となります。TCIでは化学合成を中心とした機能性糖鎖の大量製造法を開発し、さまざまなシアル酸含有糖鎖を供給できるようになりました。

TCIではチオグリコシド誘導体をシアル酸供与体として、kgスケールでのシアル酸のグリコシド化を達成しています。シアル酸誘導体やシアリル $\alpha$ (2-3/6)ガラクトース誘導体は保護基の変換により、ビルディングブロックとして複雑なシアロ糖鎖の合成に使用することができます。シアル酸部分も通常の*N*-アセチル型のほか通常ヒトには存在しない*N*-グリコリル型を有する糖鎖にも対応し、さらにガングリオシドにみられるセラミドのほか、*p*NP基やアミノアルキル基などのアグリコン部分を導入したシアロ糖鎖もラインアップしています。製品カタログにないシアロ糖鎖についても対応致しますので、是非お問い合わせください。



Chemicals itemized in our catalog are for testing or research purpose only. Therefore, please note those chemicals are not guaranteed in the user's favor relating to various problems under the Patent Law that might occur through their use.

## Applications for Sugar-conjugates 糖鎖コンジュゲートへの応用

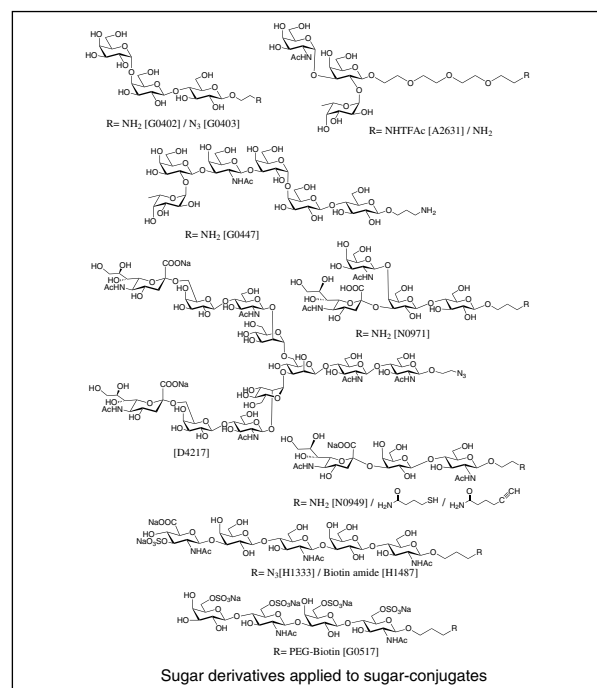
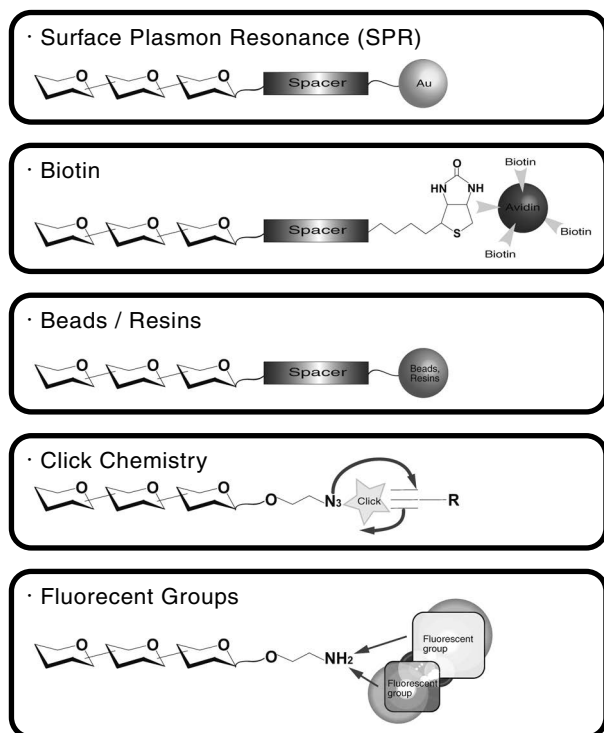
Through the research in carbohydrate field, various biological functions of oligosaccharides have been elucidated in life phenomena such as infection, cell-cell recognition, information transmission, fertilization and cell division. The materials containing sugar chains are expected as new functional bioengineering materials which can be applied to medical materials, for example biosensors which specifically bind to toxins or pathogens, composite materials used for surface plasmon resonance (SPR) or crystal oscillator (QCM), or affinity chromatography for the purification of various biopolymers.

Sugar chains having a thiol group, carboxyl group, amino group or azido group at the reducing terminal can be applied to immobilization onto resin beads and gold substrates, introduction of fluorescent groups or biotin, or the use of click chemistry as shown below. Sugar-conjugates are expected as important tools for new bioengineering building materials. Please make use of TCI's functional oligosaccharides.

近年の糖鎖機能解明に向けた研究により、感染、細胞間認識、情報伝達、受精、細胞分裂に関わる役割など、生命現象における糖鎖の新たな機能が解明されてきています。このような糖鎖を効果的に利用することで、新しい機能を持たせた生命工学分材料が構築できると期待されています。

例えば、病原体や毒素に特異的に結合する機能性糖鎖をビーズやナノ粒子等の固相担体に固定化することによりバイオセンサーなど医療材料への応用が可能と考えられます。固定化担体に金基板、金粒子を用いれば表面プラズモン共鳴 (SPR)、水晶振動子 (QCM) を利用することができるなど、生体認識性を持った複合材料とすることができます。また、機能性糖鎖をクロマトグラフィー担体に固定化することでアフィニティークロマトグラフィーとして様々な生体高分子の分離・精製に応用することも可能となります。その他、DDSや蛍光分析などにも利用可能と考えられます。

還元末端にチオール基、カルボキシル基、アミノ基やアジド基を有する糖鎖は、その官能基の性質を利用して金基板や樹脂・ビーズへの固定化、ビオチンや蛍光基の導入、クリックケミストリーの利用など、以下のような応用が可能新たな生命工学分材料構築のツールとして期待されます。図にはTCIの製品の一例を示しました。R部位は様々な官能基に修飾可能です。その他の糖鎖にも対応していますので、お問い合わせください。



# N-Glycan / Labeled N-Glycan based on Chemical Synthesis-①

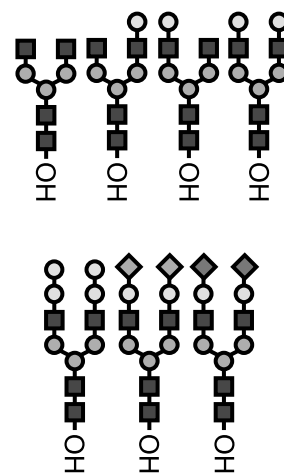
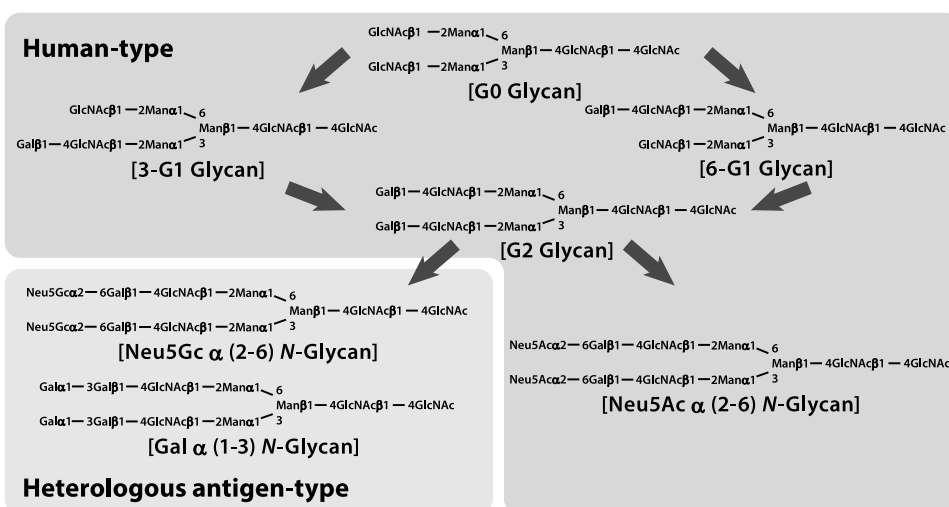
New

## N-Glycan / Labeled N-Glycan based on Chemical Synthesis 化学合成技術を基盤としたN型糖鎖・標識化N型糖鎖

### N-Glycan

Our chemical synthesis of oligosaccharide using various sugar building blocks provides various structure-defined N-glycans such as human type glycans (G0, G2 and SG), uniform isomer (each 3-G1 and 6-G1) and heterogenic antigen (including  $\alpha$ Gal or NeuGc).

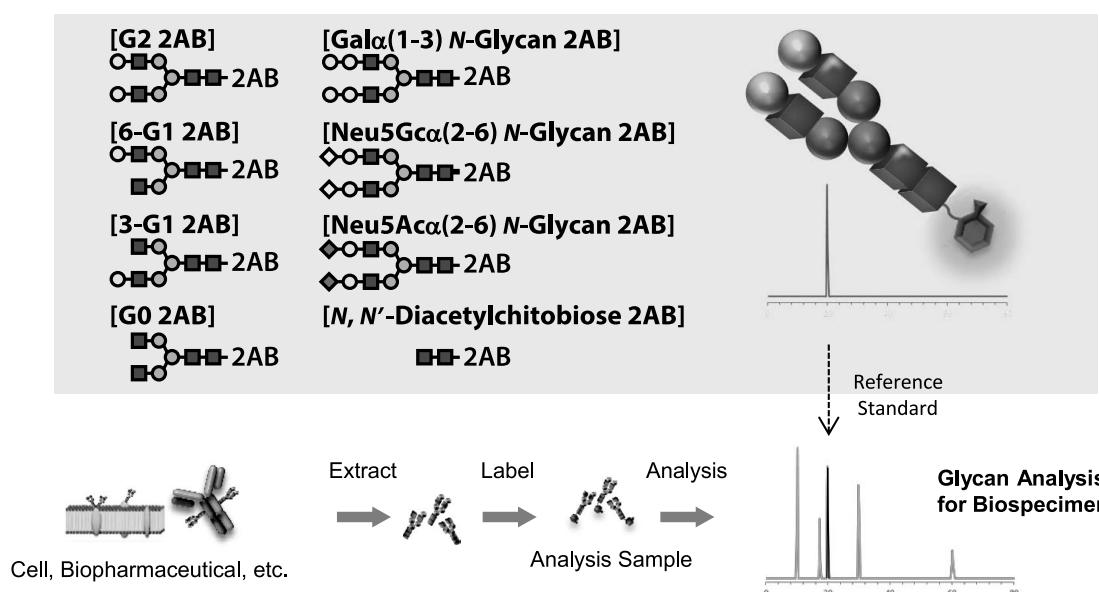
糖鎖ブロックを用いた系統的な化学合成技術により、位置異性体を作り分けた異性体の混在がない均一糖鎖 (3-G1 and 6-G1)、非ヒト型の異種抗原 ( $\alpha$ Gal or NeuGc) を含む糖鎖など構造が明確なN型糖鎖をご提供します。



### Labeled N-Glycan

We produce high grade 2-AB labeled N-glycans. Please take advantage of our fluorescent-labeled product portfolio as a standard glycan for MS, CE and HPLC analyses.

化学合成を基盤とした各種糖鎖を2-ABで標識化した高純度品です。蛍光検出による高感度分析用標品や基準試料として、MS、キャピラリー電気泳動やHPLCの分析標品などにお役立て下さい。



The chemical, physical and toxicological properties of the new chemicals have not been thoroughly investigated. Please handle with care.

# N-Glycan / Labeled N-Glycan based on Chemical Synthesis-②

## Applications

Glycans analyses for glycoscience and medicine development

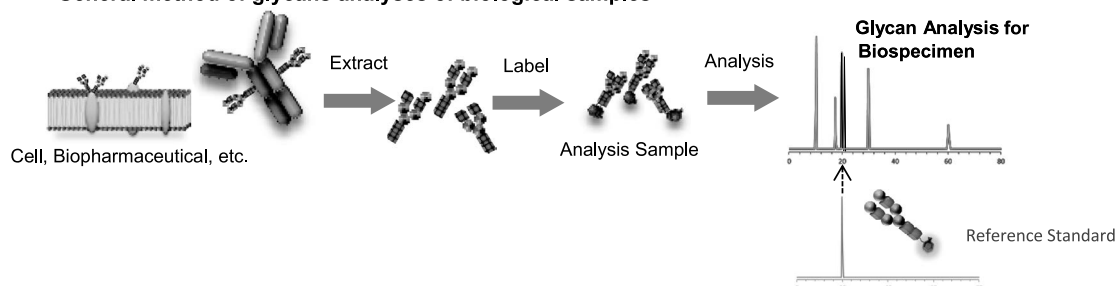
- Standard for HPLC, CE and MS analyses
- Qualitative analyses of *N*-glycans on the cell surface and on Fc region of antibodies

## 用途

糖鎖科学研究・医薬品開発における糖鎖解析

- MS, キャピラリー電気泳動, HPLC分析などの標品
- 抗体や細胞表面に発現している*N*型糖鎖の定性分析

## General method of glycans analyses of biological samples



*N*-Glycans on the cell surface relate to various types of physiological functions such as cancer metastasis, infectious disease, aging of living organisms, etc. Since there is a lot of analytical knowledge of *N*-glycans, comparative analyses between reference standards and labeled *N*-glycans released from biological samples and biopharmaceuticals are widely used by HPLC, CE and MS analyses.

細胞上の糖鎖は生物の生理機能に深く関与すると考えられ、がんや感染症および老化など生体の恒常性との相関が示唆されています。糖タンパク質の*N*型糖鎖については分析の知見が多く、生体試料やバイオ医薬品から遊離した*N*型糖鎖を標識化してMS, キャピラリー電気泳動, HPLCなどにより標品と比較する方法が広く用いられています。

## Features

The unique products on the organic synthesis technology

- Separately-created uniform isomers (3-G1 and 6-G1) by chemical synthesis
- Various *N*-glycans including heterologous antigens
- Purity > 95% with HPLC
- Structure determination with NMR and MS analyses

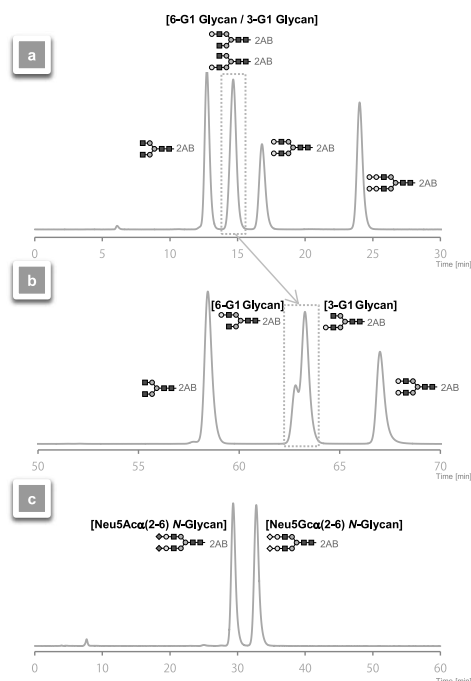
## 特徴

有機合成技術を基盤とした製法によるユニークなラインナップ

- 有機合成技術によって位置異性体を作り分けているため、抽出品を精製した製品とは違って異性体の混在がない。
- 非ヒト型の異種抗原を含む*N*型糖鎖をラインナップ。
- HPLCにおける純度95%以上。
- NMR, MS分析による構造確認。

## Example of use of labeled glycans

HPLC analyses of uniform isomer ([6-G1 2AB]/[3-G1 2AB]) and heterogenic antigen ([Gal $\alpha$ (1-3) *N*-glycan 2AB]/[Neu5Gc $\alpha$ (2-6) *N*-glycan 2AB]) provided by organic synthesis



[Column] Asahipak NH2P-50 4E (Φ4.6×250 mm)

[Detection] FL (Ex: 330 nm, Em: 420 nm)

[Inject] 5  $\mu$ L (10  $\mu$ g/mL except for 5  $\mu$ g/mL of 6-G1 2AB)

[Flow rate] 0.5 mL/min

[Temp.] 40°C

[Solvent] A : Acetonitrile

B : 50 mM Ammonium formate (pH4.4)

[Condition]

- |              |                       |
|--------------|-----------------------|
| (A) 0~10 min | B: 40%                |
| 10~30 min    | B: 40% (gradient)→50% |
| (B) 0~20 min | B: 20%                |
| 20~60 min    | B: 20% (gradient)→40% |
| 60~80 min    | B: 20%                |
| (C) 0~60 min | B: 100%               |

(A) The labeled neutral *N*-glycan mixture was individually separated based on the distinctive features of glycan structure. (However, each G1 isomer was not separated.)

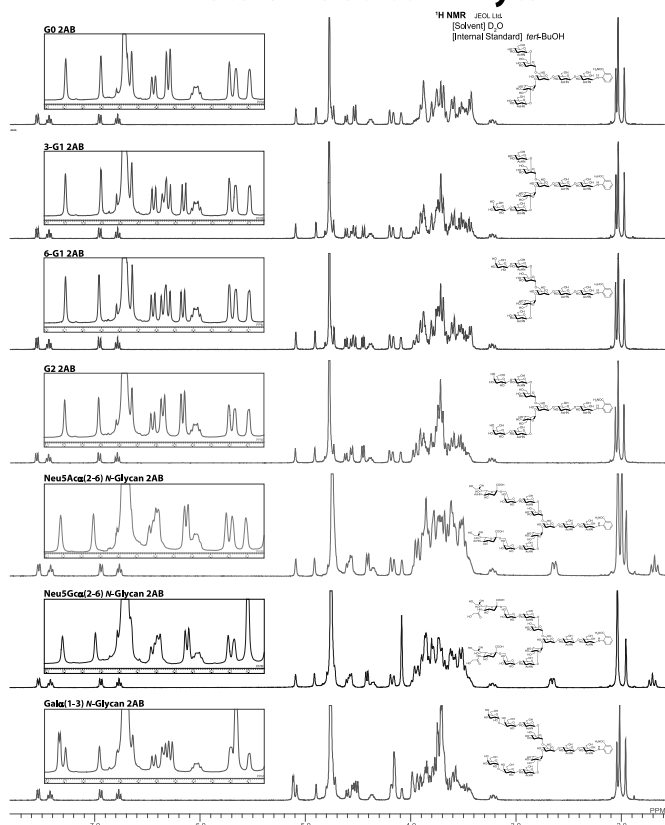
(B) Each G1 isomer; 6-G1 and 3-G1, is modestly detached in this condition.

(C) The acidic *N*-glycan; Heterologous antigen-type Neu5Gc $\alpha$ (2-6) *N*-glycan was completely separated from Neu5Ac $\alpha$ (2-6) *N*-glycan due to the minimal difference of sialic acid.

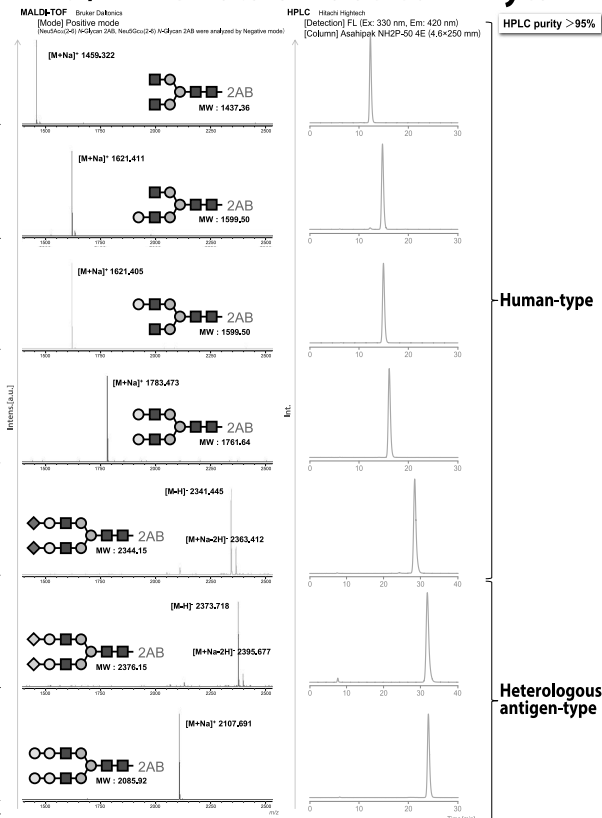
多くの試薬は、その危険性・有害性に関する知見が十分に得られていません。従って、試薬の使用は化学知識を持った専門家に限られ、それ以外の方の使用は避けください。なお、ご使用の際には安全面に十分注意し、開封・保管から廃棄に至るまで責任を持って管理してください。

# N-Glycan / Labeled N-Glycan based on Chemical Synthesis-③

## NMR Data of Labeled N-Glycan

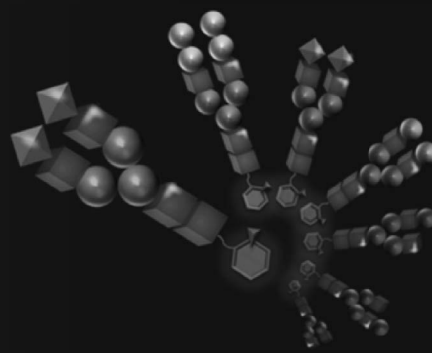
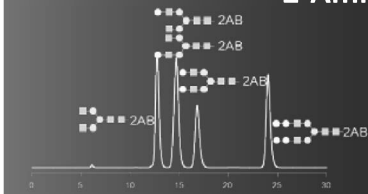


## MS / HPLC Data of Labeled N-Glycan



## Labeled N-Glycans based on Chemical Synthesis

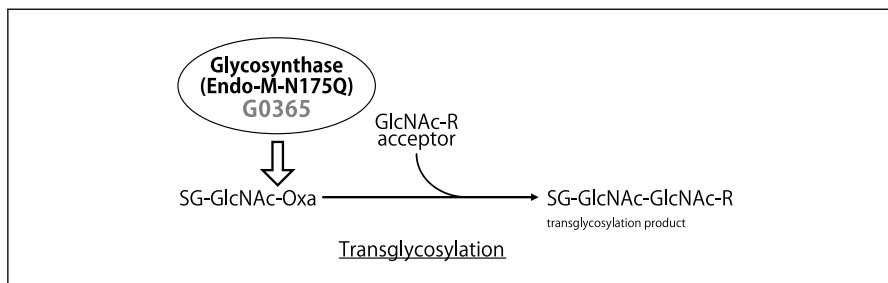
### 2-Aminobenzamide (2-AB) label



A part of the products was commercialized by support from the projects of New Energy and Industrial Technology Development Organization (NEDO) and the Japan Agency for Medical Research and Development (AMED) implementation of manufacturing technology association of biologics.

# Glycosynthase (Endo-M-N175Q)-①

## An Enzyme That Adds Whole Sugar Chains without Breaking Down Products 糖鎖を丸ごと付加し，生成物を分解しない酵素 —Endo-M-N175Q—



**G0365** Glycosynthase (Endo-M-N175Q) is an enzyme developed by Yamamoto, Umekawa, *et al.* through site-directed mutation of areas around the active center of **A1651** Endo-M<sup>1)</sup> which is already marketed. Since the feature of Glycosynthase is efficient transglycosylation activity by using oxazoline derivatives as glycosyl donors while suppressing sugar hydrolysis activity, the resulting glycosylated products are obtained in high yield with less digestion of the products by the enzyme. Due to this feature Glycosynthase is expected to be applied as useful tool in glycotecchnology.

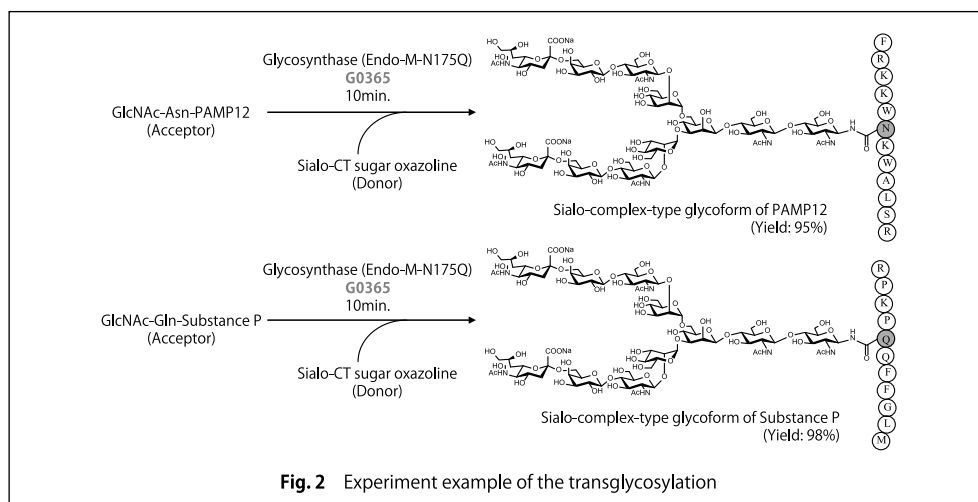
Umekawa and her colleagues caused transglycosylation reactions at the GlcNAc site of sperm antigen CD52 using oxazoline derivatives of the high-mannose type sugar chains or the complex type sugar chains as glycosyl donors<sup>2)</sup>. They succeeded in obtaining glycosylated products in high yield of 84% and 76%, respectively. Moreover, they also achieved transglycosylation reactions using two biologically active blood-pressure-lowering peptides, PAMP12 and Substance P, as glycosyl acceptors and the oxazoline derivative of a complex type sugar chain containing sialic acids as a glycosyl donor in 95% and 98% yield, respectively<sup>3)</sup> (Fig. 2). The articles in 2009 describe the advantages of this glycosylation method using sugar-oxazoline derivatives<sup>4-5)</sup>.

Practical realization of efficient transglycosylation reactions would also be useful for expansion into glycoprotein synthesis, such as the area of biosimilars, and creation of new functional sugar complexes can be expected.

**G0365** グライコシンターゼ (Endo-M-N175Q) は山本・梅川らによって開発され、TCIで先に販売している **A1651** Endo-M<sup>1)</sup> の活性中心付近を部位特異的に変異させた酵素です。この酵素は糖供与体としてオキサゾリン体を用いることによって糖鎖を効率よく付加転移させる一方で、糖加水分解活性が抑制されている特長を持っています。このため糖転移生成物は酵素によって分解されにくく、生成物を高収率で得ることができます。この特長によって本酵素は糖鎖工学の有用なツールとして応用が期待されています。

梅川らは精子抗原CD52のGlcNAc部分に高マンノース型糖鎖のオキサゾリン体または複合型糖鎖のオキサゾリン体を糖供与体として糖転移反応を行い、それぞれ84%、76%と高い転移率で糖転移生成物を得ることに成功しました<sup>2)</sup>。また血圧降下作用を持つ2つの生理活性ペプチドPAMP12と Substance Pを受容体とし、シアロ複合糖鎖のオキサゾリン体を糖供与体とした糖転移反応においてもそれぞれ95%、98%の高い転移率を示しています (Fig. 2)<sup>3)</sup>。2009年の論文ではこの糖-オキサゾリン体を用いた糖鎖合成反応の優位性が報告されています<sup>4-5)</sup>。

効率の良い糖転移反応の実用化はバイオシミラーなどの糖タンパク質合成への展開にも有効であり、新しい機能性糖鎖複合体の創製が期待されます。



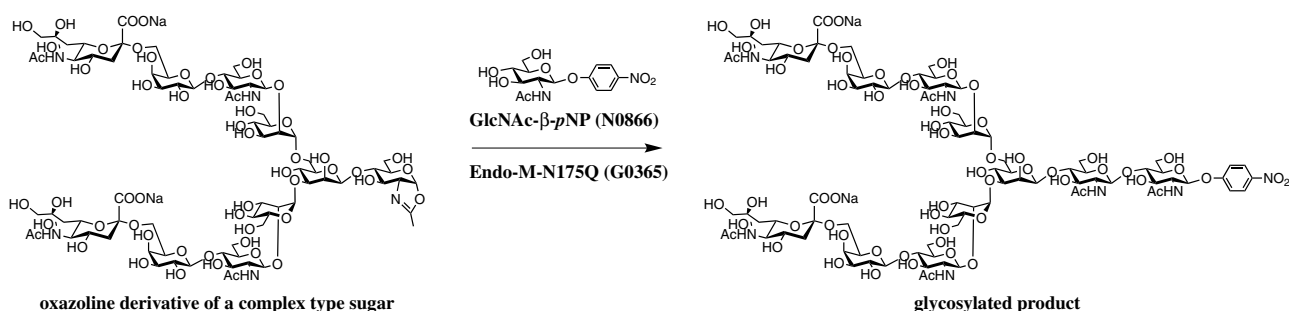
- References
- 1) K. Yamamoto, S. Kadowaki, J. Watanabe, H. Kumagai, *Biochem. Biophys. Res. Commun.* **1994**, *203*, 244.
  - 2) M. Umekawa, C. Li, T. Higashiyama, W. Huang, H. Ashida, K. Yamamoto, L.-X. Wang, *J. Biol. Chem.* **2010**, *285*, 511.
  - 3) M. Umekawa, T. Higashiyama, T. Tanaka, M. Noguchi, A. Kobayashi, S. Shoda, W. Huang, L.-X. Wang, H. Ashida, K. Yamamoto, *Biochimica et Biophysica Acta* **2010**, *1800*, 1203.
  - 4) P. Bojarova, V. Kren, *Trends in Biotechnology* **2001**, *92*, 493.
  - 5) J. R. Rich, S. G. Withers, *Nature Chemical Biology* **2009**, *5*, 206.

A set of the transglycosylation data using a glycosynthase (Endo-M-N175Q) is shown below (Fig. 3).

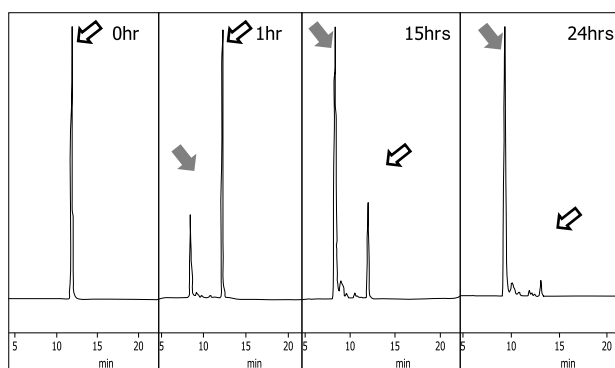
The oxazoline derivative of a complex type sugar as a glycosyl donor was transglycosylated with GlcNAc- $\beta$ -pNP as a glycosyl acceptor, and the glycosylated product was afforded in a high yield of 95% after 24 hours.

The sustained and effective production of the glycosylated compound was identified from HPLC profiles and MALDI-TOF MS as shown below (Fig. 4 and 5).

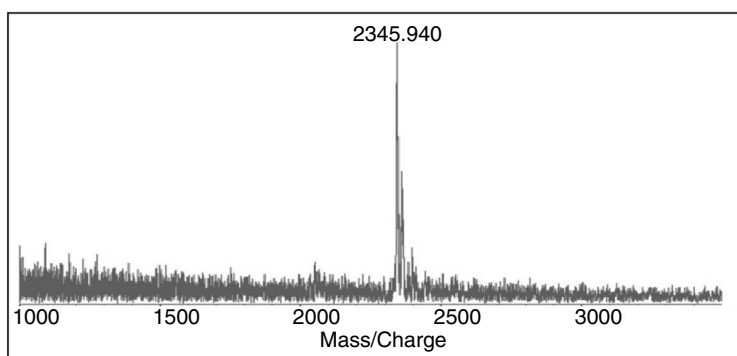
**G0365** グライコシンターゼ(Endo-M-N175Q)の糖転移反応の例をご紹介します。シアロ複合型糖鎖オキサゾリン体を糖供与体、**N0866** GlcNAc- $\beta$ -pNPを受容体とした糖転移反応を行ったところ、24時間後に95%という高い転移率で生成物が確認されています。以下その反応スキーム(Fig. 3)とHPLCによる反応追跡、生成物のMALDI-TOF-MSを示します(Fig. 4,5)。これらの結果をみるとオキサゾリン体から持続的かつ効率的に糖転移反応物が得られていることがわかります。



**Fig. 3** Transglycosylation of oxazoline derivative and GlcNAc- $\beta$ -pNP

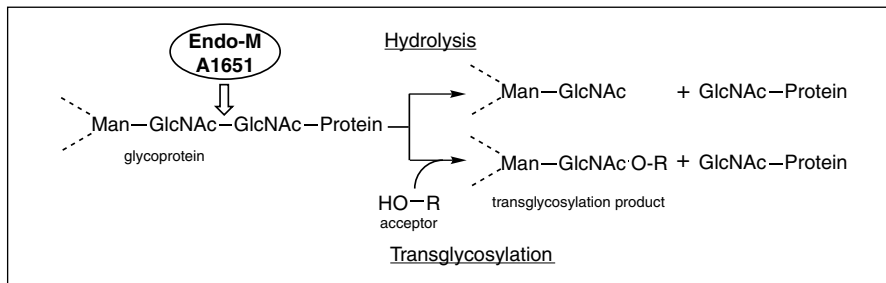


**Fig. 4** HPLC profiles of transglycosylation reaction. HPLC: ODS, CH<sub>3</sub>CN / H<sub>2</sub>O, UV 260nm  
 $\Rightarrow$  : GlcNAc- $\beta$ -pNP     $\Rightarrow$  : glycosylated product



**Fig. 5** MALDI-TOF MS spectrum of transglycosylated product.

## An Enzyme Transfers the Intact Oligosaccharides 糖鎖を丸ごと付加する酵素 —Endo-M—



**A1651 Endo-M** is one of the enzymes called endo- $\beta$ -*N*-acetylglucosaminidases (endo- $\beta$ -GlcNAc-ases). This enzyme was found by Yamamoto *et al.*, in the culture fluid of *Mucor hiemalis* isolated from soil<sup>1)</sup>. Endo-M hydrolyzes *N,N*-diacetylchitobiose moiety in oligosaccharides bound to the asparaginy residue of various glycoproteins through *N*-glycosidic linkage. The efficacy of this enzyme comes from the fact that one *N*-acetylglucosamine residue remains bound to the protein while cleaving the *N,N*-diacetylchitobiose moiety. The enzyme is thus able to transfer the intact oligosaccharide to suitable acceptors (Fig.1).

Haneda *et al.* have transferred oligosaccharides to 9-fluorenylmethoxycarbonyl-asparaginy-*N*-acetylglucosaminide [Fmoc-Asn(GlcNAc)] by incubating sialotransferrin glycopeptide, asialotransferrin glycopeptide and Man<sub>6</sub>GlcNAc<sub>2</sub>-Asn-peptide with Endo-M<sup>2)</sup>. Furthermore, synthetic hCG ( $\beta$ 12-16)-GlcNAc-peptide has been subjected to transglycosylate of sialo complex type oligosaccharide. An alternative synthetic method of peptide containing GlcNAc has been developed by Inazu *et al.*<sup>3)</sup>. This method uses Fmoc-Asn(GlcNAc), which is synthesized from *N*-Fmoc aspartic acid (Fmoc-Asp-OH) and azide of GlcNAc, instead of Fmoc-Asn-OH, and it is applied to a mixed acid anhydride method using dimethylphosphothioic acid (Mpt-MA) which generally shows poor responses toward hydroxyl group. By combining this method with Endo-M, many glycopeptides can be designed and easily prepared. Yamamoto has compiled the outline of this methodology as the Chemo-Enzymatic Synthesis in his review<sup>4)</sup>. Endo-M can also be used to create new functions, by introducing oligosaccharides, to the substances that originally do not have the oligosaccharide<sup>5)</sup>.

Unlike the conventional endo- $\beta$ -GlcNAc-ase, it has been found that Endo-M is an enzyme with a broad substrate specificity, cleaving not only the high mannose type and hybrid type of asparagine-linked oligosaccharides but also the complex type oligosaccharides in glycoproteins. Especially, the transglycosylation reaction of sialo complex type oligosaccharides was possible only by using Endo-M. Therefore, Endo-M is expected to be applied to various fields.

**A1651 Endo-M**は、山本らが糸状菌*Mucor hiemalis*の培養液より見出したエンド- $\beta$ -*N*-アセチルグルコサミニダーゼで、糖タンパク質のアスパラギン結合糖鎖のジアセチルキトビオース結合を加水分解し、タンパク質側に*N*-アセチルグルコサミン1残基を残して糖鎖を遊離させます。その際、適当な受容体が存在すると遊離した糖鎖がその受容体に転移します<sup>1)</sup>。

羽田ら<sup>2)</sup>はシアロトランスフェリン糖ペプチド、アシアロトランスフェリン糖ペプチド、高マンノース型糖鎖を有するペプチドにEndo-Mを作用させ、9-フルオレニルメトキシカルボニルアスパラギニル-*N*-アセチルグルコサミン (Fmoc-Asn(GlcNAc)) に糖鎖を転移させています。また、稲津らの開発した方法によりヒト絨毛性腺刺激ホルモン (hCG) の部分ペプチドhCG( $\beta$ 12-16)にGlcNAcを導入したペプチドを合成し、これにシアロ複合型糖鎖を転移させています。稲津ら<sup>3)</sup>の開発した方法は、アミノ基をFmocで保護したアスパラギン酸とGlcNAcのアジドから合成されるFmoc-Asn(GlcNAc)をFmoc-Asn-OHの代わりに使用し、ジメチルチオホスフィン酸混合酸無水物 (Mpt-MA) 法を用いるもので、GlcNAcを有する人工ペプチドの簡便な合成法といえます。この方法とEndo-Mを組み合わせることにより、糖鎖ペプチドを自由に設計し、調製することができます。この方法は、化学-酵素合成法として、山本の総説にまとめられています<sup>4)</sup>。また、Endo-Mは、本来糖鎖を持たない物質に糖鎖を導入し、新たな機能の発現にも利用されています<sup>5)</sup>。

Endo-Mは、従来から知られているEndo- $\beta$ -GlcNAc-aseと異なり、高マンノース型糖鎖、混成型糖鎖のみならず複合型糖鎖にも作用する基質特異性の広い酵素で、適当な受容体に糖鎖を転移させることができることから多方面での応用が期待されています。

This Endo-M was merchandised as the fruition of NEDO project under licenses from patent-holding companies of Takara Bio Inc. and Kirin Brewery Co., LTD.

本酵素は、タカラバイオ株式会社、麒麟麦酒株式会社の所有の特許を利用し、NEDO プロジェクトの成果として製品化しました。

- References
- 1) S. Kadowaki, K. Yamamoto, M. Fujisaki, K. Izumi, T. Tochikura, T. Yokoyama, *Agric. Biol. Chem.* **1990**, *54*, 97; K. Yamamoto, S. Kadowaki, J. Watanabe, H. Kumagai, *Biochem. Biophys. Res. Commun.* **1994**, *203*, 244.
  - 2) K. Haneda, T. Inazu, K. Yamamoto, H. Kumagai, Y. Nakahara, A. Kobata, *Carbohydr. Res.* **1996**, *292*, 61.
  - 3) M. Mizuno, I. Muramoto, T. Kawakami, M. Seike, S. Aimoto, K. Haneda, T. Inazu, *Tetrahedron Lett.* **1998**, *39*, 55.
  - 4) K. Yamamoto, *J. Biosci. Bioeng.* **2001**, *92*, 493.
  - 5) S. Kojima, T. Hasegawa, T. Yonemura, K. Sasaki, K. Yamamoto, Y. Makimura, T. Takahashi, T. Suzuki, Y. Suzuki, K. Kobayashi, *Chem. Commun.* **2003**, 1250.
  - 6) T. Onozawa, J. Kumada, *Trends in Glycoscience and Glycotechnology*, **2003**, *15*, 359.

多くの試薬は、その危険性・有害性に関する知見が十分に得られていません。従って、試薬の使用は化学知識を持った専門家に限られ、それ以外の方の使用はお避けください。なお、ご使用の際には安全面に十分注意し、開封・保管から廃棄に至るまで責任を持って管理してください。



## Oligosaccharide Replacement of a Therapeutic Antibody by using Endo-M and Glycosynthase

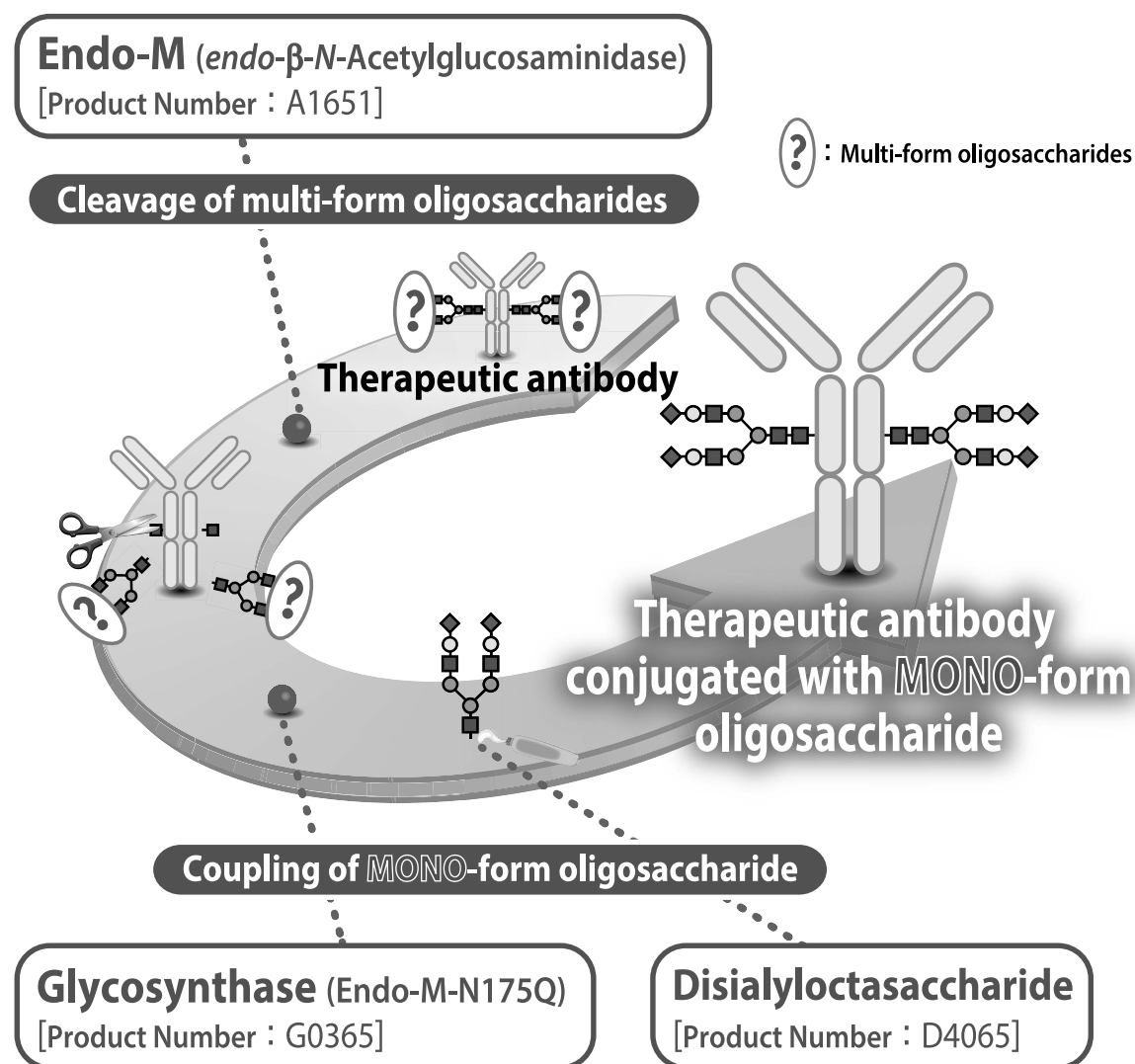
### Endo-MとGlycosynthaseを使った抗体医薬への均一糖鎖の転移

In recent years, the expectation of a therapeutic benefit for antibody drugs is growing and the development of industrial technology for antibody production is required. However, heterogeneity of glycosylation of antibody drugs has long been left unsolved.

In this context, TCI achieved introduction of a MONO-form oligosaccharide to a defucosylated therapeutic antibody by using our enzyme products, "Endo-M" and "Glycosynthase".

近年、疾患治療薬としての抗体医薬への期待が高まり、製造技術の進歩が求められていますが、抗体医薬の糖鎖構造の不均一性の問題は長い間解決されていませんでした。

TCIでは、既に試薬製品化しているEndo-MとGlycosynthaseを用い、コアフコースの無い抗体医薬に均一な糖鎖を転移することに成功しました。



References K. Yamamoto, S. Kadowaki, J. Watanabe, H. Kumagai, *Biochem. Biophys. Res. Commun.* **1994**, 203, 244.  
M. Umekawa, T. Higashiyama, T. Tanaka, M. Noguchi, A. Kobayashi, S. Shoda, W. Huang, L-X. Wang, H. Ashida, K. Yamamoto, *Biochim. Biophys. Acta, Gen. Subj.* **2010**, 1800, 1203.  
M. Umekawa, C. Li, T. Higashiyama, W. Huang, H. Ashida, K. Yamamoto, L-X. Wang, *J. Biol. Chem.* **2010**, 285, 511.

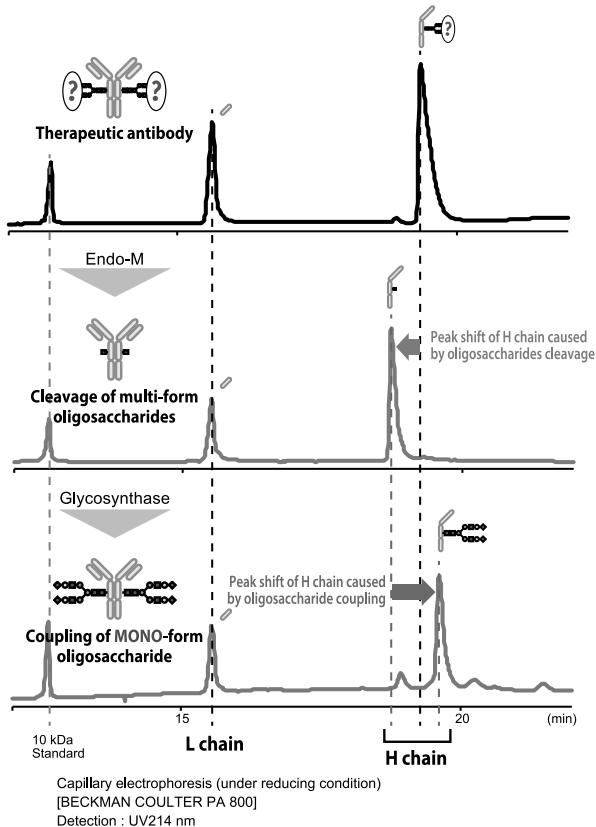
The chemical, physical and toxicological properties of the new chemicals have not been thoroughly investigated.  
Please handle with care.

## Experimental Example

Cleavage of multi-form oligosaccharides by Endo-M and coupling of MONO-form oligosaccharide by Glycosynthase were conducted under non-reducing condition. Verification of enzymatic reaction was performed with capillary electrophoresis (1) and SDS-PAGE (2A). The terminal sialic acid of the chemoenzymatically-transferred N-linked oligosaccharide to the therapeutic antibody was detected by lectin blotting using a sialic acid binding lectin (2B).

## 実験例

Endo-Mによる不均一な糖鎖の切断、Glycosynthaseによる均一なシアリル化N型糖鎖の転移は、非還元条件下で行いました。反応の追跡には還元条件下のキャピラリー電気泳動(1)とSDS-PAGEを用い(2A)、転移後の糖鎖の非還元末端にあるシアリル酸はシアリル酸結合レクチンを用いたレクチンブロット法で確認しました(2B)。



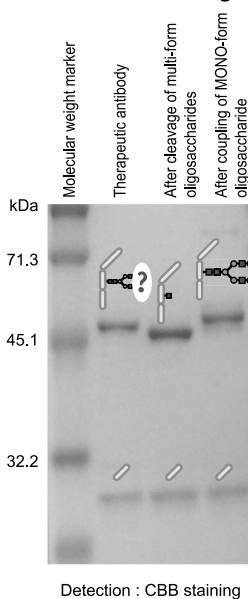
## 1. Verification of enzymatic reaction

After coupling of a MONO-form oligosaccharide to the Endo-M-treated antibody, a peak shift of the H chain of the therapeutic antibody was observed while a peak shift of L chain was not.

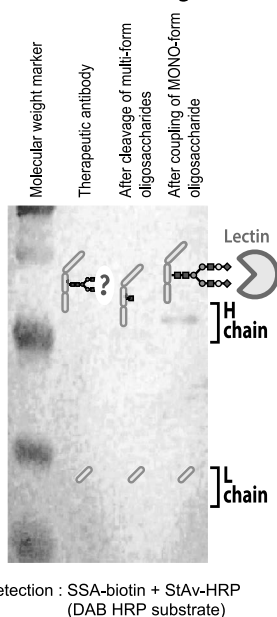
### 1. キャピラリー電気泳動による各反応の追跡

抗体医薬Aの糖鎖切断後とシアリル化N型糖鎖転移後を比較したところ、L鎖のピークには変化がほとんど見られず、H鎖のピークはシフトしていることが確認できました。

## A) SDS\_PAGE (15% gel)



## B) Lectin blotting



## 2. Detection of sialylated oligosaccharide

### A) SDS-PAGE

After coupling of a MONO-form oligosaccharide to the Endo-M-treated antibody, a band shift of the H chain of the therapeutic antibody was observed while a band shift of L chain was not.

### B) Lectin blotting

In this study, SSA (*Sambucus sieboldiana* agglutinin) was used. A band of H chain of the therapeutic antibody coupled with MONO-form oligosaccharide was significantly stained.

## 2. レクチンブロット法によるシアリル酸の検出

### A) SDS-PAGE

抗体医薬Aの糖鎖切断後とシアリル化N型糖鎖転移後を比較したところ、L鎖のバンドには変化がほとんど見られず、H鎖のバンドはシフトしていることが確認できました。

### B) レクチンブロット法

シアリル酸認識レクチンであるSSA (*Sambucus sieboldiana* agglutinin) を用いました。シアリル化N型糖鎖転移後のH鎖が、強く反応していることが確認できました。

- Mannose
- Galactose
- N-Acetyl glucosamine
- ◆ Sialic acid

多くの試薬は、その危険性・有害性に関する知見が十分に得られていません。従って、試薬の使用は化学知識を持った専門家に限られ、それ以外の方の使用は避けください。なお、ご使用の際には安全面に十分注意し、開封・保管から廃棄に至るまで責任を持って管理してください。

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**A1651 endo- $\beta$ -N-Acetylglucosaminidase (=Endo-M)** 1vial  
Recombinant: from *Mucor hiemalis* expressed in *Candida boidinii* [Purity: single band by SDS-PAGE(85KDa)]

[37278-88-9] MFCD00151069 EC 3.2.1.96

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**New E1339 Endo-M-W251N** Price on request  
Recombinant: from *Mucor hiemalis* expressed in *Escherichia coli*

[37278-88-9] MFCD00151069 EC 3.2.1.96

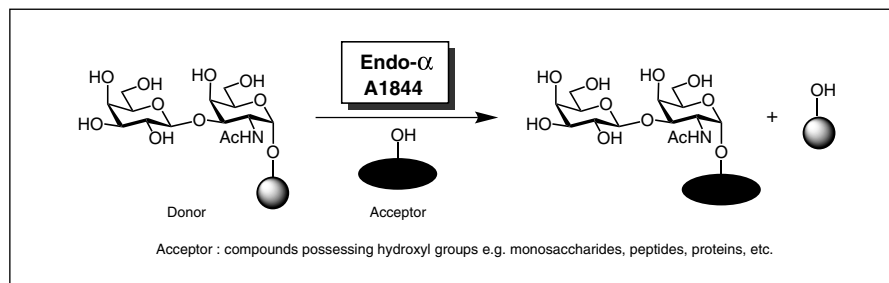
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**G0365 Glycosynthase (Endo-M-N175Q)** 1vial  
Recombinant: from *Mucor hiemalis* expressed in *Escherichia coli* (100m units/vial)

[37278-88-9] MFCD00151069 EC 3.2.1.96

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## An Enzyme Transfers the Intact Oligosaccharides 糖鎖を丸ごと付加する酵素 —Endo- $\alpha$ —



Yamamoto *et al.* have purified and isolated **A1844** endo- $\alpha$ -*N*-acetylgalactosaminidase (Endo- $\alpha$ ) found in the culture fluid of *Bifidobacterium longum*<sup>1)</sup>. Endo- $\alpha$  can recognize the structure of the Gal $\beta$ 1-3GalNAc disaccharide  $\alpha$ -linked with a hydroxyl group. It releases Gal $\beta$ 1-3GalNAc by hydrolysis. When a compound possessing a hydroxyl group coexists as an acceptor, the released Gal $\beta$ 1-3GalNAc is transferred to the acceptor<sup>2)</sup>.

Discovered by Yamamoto *et al.*, Endo- $\alpha$  can transfer Gal $\beta$ 1-3GalNAc to various compounds such as monosaccharides, peptides, and proteins, using core 1 contained in mucin-type oligosaccharide chains as a donor. As a tool for the enzymatic synthesis of glycoconjugates, it is expected that many applications for Endo- $\alpha$  will be found in a wide range of fields.

山本らは乳酸菌(*Bifidobacterium longum*)を培養し、その培養液中に**A1844** エンド- $\alpha$ -*N*-アセチルガラクトサミニダーゼ (Endo- $\alpha$ )の存在を見出し、精製単離しています<sup>1)</sup>。このEndo- $\alpha$ は、Gal $\beta$ 1-3GalNAcの二糖が水酸基と $\alpha$ 結合した構造を認識し、この結合を加水分解によりGal $\beta$ 1-3GalNAcを遊離させます。その際、水酸基を有する化合物を受容体として共存させると遊離したGal $\beta$ 1-3GalNAcがその受容体に転移します<sup>2)</sup>。

この山本らの見出したEndo- $\alpha$ は、ムチン型糖鎖に含まれるコア1をドナーとして、糖やペプチド・蛋白など幅広い化合物にGal $\beta$ 1-3GalNAcを転移させることができ、酵素法による複合糖鎖合成のツールとして多方面での応用が期待されています。

This Endo- $\alpha$  was merchandised as the fruition of NEDO project.  
本酵素は、NEDO プロジェクトの成果として製品化致しました。

- References
- 1) K. Fujita, F. Oura, N. Nagamine, T. Katayama, J. Hiratake, K. Sakata, H. Kumagai, K. Yamamoto, *J. Biol. Chem.* **2005**, *280*, 37415.
  - 2) H. Ashida, K. Yamamoto, T. Murata, T. Usui, H. Kumagai, *Arch. Biochem. Biophys.* **2000**, *373*, 394; T. Katayama, K. Fujita, K. Yamamoto, *J. Biosci. Bioeng.* **2005**, *99*, 457.

This product is not available for purchase in the U.S.

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**A1844 endo- $\alpha$ -N-Acetylgalactosaminidase** (=Endo- $\alpha$ )  
Recombinant: from *Bifidobacterium longum* expressed  
in *Escherichia coli*

1vial

[59793-96-3] MFCD00131003 EC 3.2.1.97

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## Glycohydase-①

**A0447  $\alpha$ -Amylase** 25g 500g  
diluted with Starch, from *Bacillus subtilis*

[9000-90-2] MFCD00081319 EC 3.2.1.1  
MI14-599 RTECS BU7432500

**A0448  $\beta$ -Amylase** from Soybean 25g

[9000-91-3] MFCD00081391 EC 3.2.1.2  
MI14-599 RTECS BU7435000

**C0057 Cellulase** from *Aspergillus niger* 1g 5g 25g

[9012-54-8] MFCD00081510 EC 3.2.1.4  
RTECS FJ5375000

**M0035 Glucoamylase** from *Rhizopus* 25g  
(contains 50% Diatomaceous earth)

[9032-08-0] MFCD00081321 EC 3.2.1.3

**G0050 Glucose Oxidase** from *Aspergillus niger* 1g

[9001-37-0] MFCD00131182 EC 1.1.3.4  
MI14-4460 RTECS RQ8452000

**G0035  $\beta$ -Glucosidase** from Almonds 100mg

[9001-22-3] MFCD00130628 EC 3.2.1.21

**H0164 Hyaluronidase** from Bovine Testes 100mg

[9001-54-1] MFCD00081705 EC 3.2.1.35  
MI14-4758 RTECS MT7260000

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**P0026 Pectinase** from *Aspergillus niger*

25g 100g

[9032-75-1] MFCD00131809 EC 3.2.1.15

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## Lectin, Fucose Specific L-フコース特異的レクチン

Lectins recognize oligosaccharides and specifically well reversibly binded ones. Thus, lectins are widely utilized in cell biology related fields such as blood-type studies and binding studies of oligosaccharides to cancer cell surfaces, and many other important studies<sup>1)</sup>. Lectins are widely distributed in nature and found from almost all types of living beings organisms like plants, microorganisms, fungus, invertebrates, vertebrates and viruses.

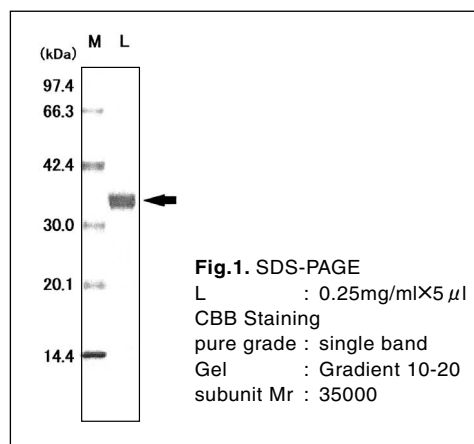
The product introduced today is a new-type of lectin isolated from *Aspergillus oryzae* in Japanese sake fermentation. This lectin has proven to have a strong affinity toward L-fucose according to the results of hemagglutination inhibition assay<sup>2)</sup>. The fucose bonding position shows the highest binding for oligosaccharides are the ones containing L-Fuc $\alpha$ 1-6 and  $\alpha$ 1-2. Fucosyl residues  $\alpha$ 1-3 and  $\alpha$ 1-4 also possess the specificity. The molecular weight of L-fucose specific lectin subunit, a dimeric substance, showed 35,000 (Fig. 1). This lectin shows 26% similarity to lectine isolated from *Aleuria aurantia*<sup>2)</sup>, and its substrate specificity is also thought to be relatively similar.<sup>3)</sup>

Generally, lectins have been applied for the detection and the analysis of complex-type oligosaccharides as they can specifically recognize oligosaccharides. Especially, the ones with fucose typically possess physiological properties. Therefore, these lectins are often used for such purposes. For example, fucosylated oligosaccharides are known to participate in the life processes such as embryonic growth, differentiation, cell recognition, canceration, and inflammation. When *in-vivo* transformations of the fucose to oligosaccharides take place, such reactions are recognized as important indications of the antigen epitopes for the Lewis blood-type and cancer related carbohydrate antigens<sup>4)</sup>. The *Aspergillus oryzae* fucose specific lectin is not only utilized as an analyzing tool for the sugar-binding specificity of complex-type oligosaccharides, but it is highly applicable for a wide spectrum of studies on oligosaccharides<sup>5)</sup>.

糖鎖を認識して特異的かつ可逆的に結合するレクチンは、血液型の研究をはじめ、癌細胞の表面糖鎖の研究など、細胞生物学関連分野で広く利用されています<sup>1)</sup>。その起源は、植物・微生物・キノコ・無脊椎動物・脊椎動物・ウイルスなど、あらゆる生物に広く分布することが明らかになってきています。

本品は、清酒醸造で用いられる麹菌 *Aspergillus oryzae* により単離された新規レクチンで、赤血球凝集阻害アッセイから、L-フコースに親和性を持つことが明らかとなっています<sup>2)</sup>。また、フコースの結合様式については、L-Fuc $\alpha$ 1-6に対して最も高い結合性を持ち、L-Fuc $\alpha$ 1-2, L-Fuc $\alpha$ 1-3, L-Fuc $\alpha$ 1-4残基に対しても結合性を有します。サブユニット分子量は35,000 (Fig.1) の2量体です。本レクチンは、遺伝子配列でヒドロキサンタレクチンと26%の相同性を持ち<sup>2)</sup>、基質特異性も比較的類似していると考えられています<sup>3)</sup>。

一般的に、レクチンは糖鎖を特異的に認識することから、複合糖鎖の検出・解析に応用されています。特にフコースを含む糖鎖は生理機能を持つ糖鎖が多く、検出・解析の対象となる場合が多いとされています。例えば、フコシル化糖鎖は胚発生・分化・細胞認識・癌化・炎症などの生命現象に関与していることが知られています。また人体においてもフコースが糖鎖に転移することは、ルイス式血液型や癌関連糖鎖抗原の抗原エピトープの重要な指標とされています<sup>4)</sup>。この麹菌フコースレクチンは、複合糖鎖の結合様式解析のツールにとどまらず、糖鎖研究に広く応用可能なレクチンです<sup>5)</sup>。



This lectin was merchandised under the technical tie-up with GEKKEIKAN SAKE COMPANY, LTD.  
本レクチンは、月桂冠株式会社との技術協力のもと製品化しました。

**L0169** Lectin, Fucose specific from *Aspergillus oryzae*  
**A2659** AOL-Biotin Conjugate

- References 1) N. Sharon, H. Lis, Lectins (Japanese translation), Japan Scientific Societies Press: Tokyo, 1990.  
2) Molecular cloning and overexpression of *fleA* gene encoding a fucose-specific lectin of *Aspergillus oryzae*  
H. Ishida, T. Moritani, Y. Hata, A. Kawato, K. Suginami, Y. Abe, S. Imayasu, *Biosci. Biotechnol. Biochem.* **2002**, 66(5), 1002.  
3) K. Matsumura, K. Higashida, H. Ishida, Y. Hata, K. Yamamoto, M. Shigeta, Y. Mizuno-Horikawa, X. Wang, E. Miyoshi, J. Gu, N. Taniguchi, *J. Biol. Chem.* **2007**, 282, 15700.  
4) H. Narimatsu, *Tanpakushitsu Kakusan Koso* **1998**, 43(16), 2394.  
5) A. Kuno, Y. Kato, A. Matsuda, M. K. Kaneko, H. Ito, K. Amano, Y. Chiba, H. Narimatsu, J. Hirabayashi, *Mol. Cell. Proteomics* **2009**, 8, 99.



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**New A2659 AOL-Biotin Conjugate**

1mL

AOL = *Aspergillus oryzae* L-fucose-specific lectin

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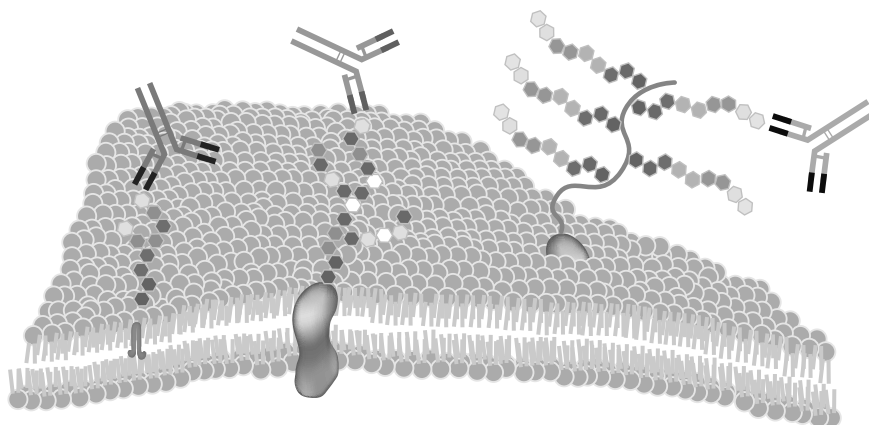
**L0169 Lectin, Fucose specific**  
from *Aspergillus oryzae* (5mg/mL, PBS pH6.5)

1mL

MFC06798677

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## Anti-glyco Antibodies 抗糖鎖抗体



Carbohydrate chains are called the third life chain following the protein and the nucleic acid and are one of the most important issues in the post genome research. TCI supports glycoscience research by providing useful anti-glyco antibodies.

Most carbohydrate chains attach to lipids or proteins and occur in the form of glycoproteins or glycolipids (*N*-glycan, *O*-glycans, proteoglycans and others). Carbohydrate chains are known to be expressed on brain, nerve, cancer, and endothelial cells. Some carbohydrate chains are known to relate to diseases (e.g., cancer, Alzheimer's disease, Guillain-Barré syndrome, Lysosome syndrome such as Fabry disease, gangliosidosis), differentiation and development (iPS/ES cells). Seasonal influenza viruses, annual epidemics that peak during winter, cause infection via cell-surface glycans. Anti-influenza virus drugs are structural mimics of sialic acid, because neuraminidase is a sialic acid hydrolase that is essential for the release of progeny virus particles from the surface of an infected cell.

Antibodies are proteins which are one of the components of the immune system. The specificity of antibodies is likened to the interaction between a key and a keyhole. Antibodies are useful reagents for research in many scientific disciplines including life science and diagnostic reagents.

Anti-glyco antibodies can recognize glycolipids or glycoproteins. TCI mainly produces antibodies against glycolipids; ganglio-series, globo-series, lacto-series, and neolacto-series. These antibodies can be used for immunohistochemistry, cell-staining, inhibition assay for cell adhesion, flow cytometry, ELISA, TLC-immunostaining and other methods. TCI antibodies are very useful tools for analyzing the expression of carbohydrate chains and their functions.

Labeled anti-glyco antibody is also available.

糖鎖は、生命第3の鎖としてその生物機能が重要視され、ポストゲノム研究の一端を担う領域として注目されています。TCIでは、ポストゲノム時代の糖鎖研究に有用な抗糖鎖抗体でお客様の研究をサポート致します。

多くの糖鎖は、脂質やタンパク質などに結合し、糖脂質あるいは糖タンパク質 (*N*型、*O*型、プロテオグリカンなど)として存在しています。糖鎖は、脳、神経、癌細胞、血管内皮細胞などに存在することが知られており、iPS/ES細胞、癌、アルツハイマー、ギランバレー症候群、ファブリー病やガングリオシドーシスなどのリソソーム病などの疾患、発生、分化などで重要な役割を担うと考えられ、その重要性が注目されています。また、冬になると毎年のように流行するインフルエンザウイルスは細胞表面の糖鎖を介して感染します。現在使用されている抗インフルエンザ薬の多くはシアル酸を加水分解する酵素であるノイラミニダーゼの活性阻害を狙って開発されたため、シアル酸の構造を基にデザインされています。このように糖鎖はウイルスの感染やその治療にも深い関わりがあります。

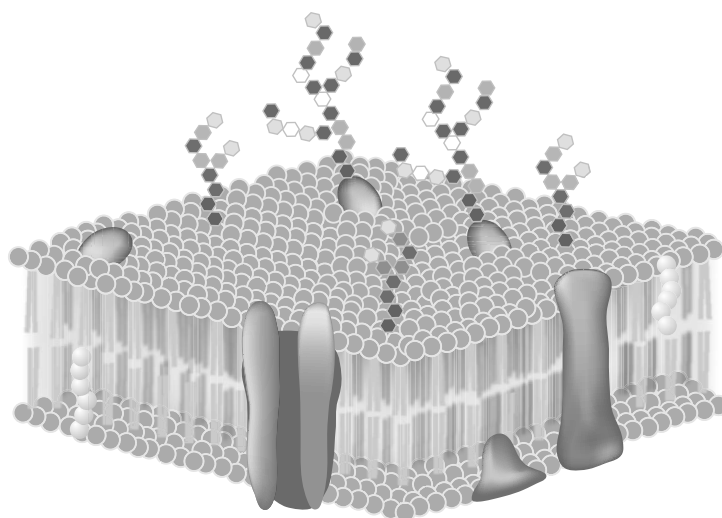
抗体は、免疫系を構成するタンパク質で、対応する抗原と鍵と鍵穴の関係のように高い特異性で結合します。抗体は、その高い特異性から生命科学の研究や診断薬の検出系として活用されています。

抗糖鎖抗体は、糖脂質、糖タンパク質などの糖鎖を特異的に認識できる抗体です。TCIでは、抗糖鎖抗体の中でもガングリオ系、グロボ系、ラクト系、ネオラクト系などの糖脂質に関連する抗体を中心に品揃えています。TCIの抗糖鎖抗体は、細胞、組織、生体試料での糖鎖(抗原)の局在、疾患や発生、分化過程での糖鎖の変化などを調べるツールとして有用で、組織染色、細胞染色、細胞接着阻害研究、フローサイトメトリー、ELISA、TLC免疫染色などの幅広い用途でご使用いただけます。

また、標識抗糖鎖抗体も発売しております。

New

## Anti-glycolipid Antibodies 糖脂質抗体



Glycolipids consist of a hydrophilic sugar chain moiety and a hydrophobic lipid moiety. There are over 100 molecular species of glycolipids, with important physiological functions. "Ganglioside" is a generic term to describe glycosphingolipids containing sialic acid. Gangliosides were discovered in the brain by the German scientist E. Klenk, approximately 70 years ago. TCI's anti-glycolipid antibody products will support your research.

糖脂質は疎水性の糖鎖部分と親水性の脂質部分からなり、その分子種は100種類を超え、生理機能も非常に多彩である。ガングリオシドはシアル酸を含むスフィンゴ糖脂質の総称で、約70年前にドイツのE. Klenkにより脳から発見されました。TCIでは、抗糖脂質抗体を取り揃えお客様の研究をサポート致します。

- A2505** Anti-GM<sub>1</sub> Monoclonal Antibody
- A2506** Anti-Gb<sub>3</sub> Monoclonal Antibody
- A2507** Anti-GD<sub>1a</sub> Monoclonal Antibody
- A2508** Anti-GD<sub>1b</sub> Monoclonal Antibody
- A2576** Anti-GM<sub>2</sub> Monoclonal Antibody
- A2580** Anti-GD<sub>3</sub> Monoclonal Antibody
- A2582** Anti-GM<sub>3</sub> Monoclonal Antibody
- A2662** Anti-GQ<sub>1b</sub> Monoclonal Antibody
- A2701** Anti-GalNAc-GD<sub>1a</sub> Monoclonal Antibody
- A2702** Anti-GT<sub>1a</sub> Monoclonal Antibody
- A2706** Anti-SGPG (HNK-1) Monoclonal Antibody
- A2732** Anti-GT<sub>1b</sub> Monoclonal Antibody
- A2822** Anti-Gb<sub>3</sub> Monoclonal Antibody Biotin Conjugate

## Anti-blood Group Antigen Antibodies 血液型および関連糖鎖抗体

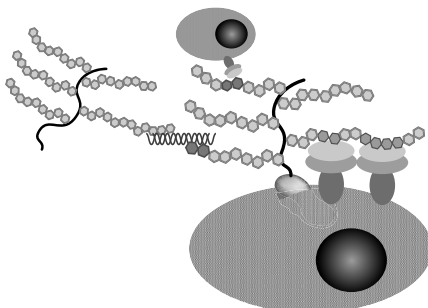
Blood group antigens are expressed on the surface of erythrocytes. Besides the well-known ABO antigens, other antigens also exist, such as Lewis antigens. For example, the sialyl-Le<sup>a</sup> antigen (also referred to as CA 19-9) is widely used as a cancer marker. Lewis antigens are also involved in cell adhesion and in the homing of lymphocytes to inflammation sites.

赤血球の表面には一群の糖鎖抗原が発現している。もっとも有名なA B O式血液型物質の他にもルイス式血液型物質などの分類がある。たとえばシアリルLe<sup>a</sup>抗原はCA19-9として癌の診断に利用されていることで有名であり、また細胞接着に重要な糖鎖構造として、リンパ球の炎症部位へのホーミングに関与することがわかっている。

- A2509** Anti-Sialyl Lewis A Monoclonal Antibody (2D3)
- A2510** Anti-Lewis Y Monoclonal Antibody
- A2578** Anti-Lewis X Monoclonal Antibody
- A2584** Anti-Sialyl Lewis A Monoclonal Antibody (1H4)
- A2849** Anti-Sialyl Lewis X Monoclonal Antibody

## Anti-glycosaminoglycan Antibodies グリコサミノグリカン抗体

New



The extracellular matrix (ECM) is an essential element for higher organisms to form cells, tissues, and organs; to control cell-cell connections and functions; and to control cellular activities (such as proliferation, differentiation, migration, metabolism, and morphogenesis). The ECM also greatly affects several biological phenomena (such as development, aging, inflammation, wound healing, and immunity). Glycosaminoglycans, such as chondroitin sulfate and hyaluronic acid, are major components of the ECM and play an important role. Analysis of glycosaminoglycans is very difficult, especially when performing *in situ* analysis of cells and tissues. Thus, antibodies are particularly important as a detection tool.

細胞外マトリックスはヒトなどの高等生物が細胞、組織、器官を形成する為に必須の要素で細胞間のつながりや、機能を制御する場を作り細胞の活動（増殖、分化、移動、代謝、形態）に影響を与えることで、生命現象（発生、加齢、炎症、創傷治癒、免疫）に大きく関わっている。その中で重要な役割を果たすのがコアプロテインに結合するコンドロイチン硫酸やヒアルロン酸などのグリコサミノグリカンである。多糖であるグリコサミノグリカンの機器分析は非常に難しく、特に細胞や組織の“生の場”での解析は抗体が検出ツールとして重要です。

- A2872** Anti-Chondroitin Sulfate D Monoclonal Antibody (MO-225)
- A2968** Anti-Keratan Sulfate Monoclonal Antibody (R-10G)
- A3143** Anti-Chondroitin Sulfate A Monoclonal Antibody (LY111)

## Secondary Antibody and Detection Protein 二次抗体および検出用タンパク質

Primary antibody bound to an antigen can be detected using a secondary antibody or a detection protein. TCI produces secondary antibodies from several animal species. Please select a label type according to the desired application.

二次抗体及び検出用タンパク質を用いて、抗原に結合する一次抗体を検出することが出来ます。TCIでは一次抗体に合わせて数種類の動物種の二次抗体をご用意しています。アプリケーションに応じて標識タイプをお選びください。

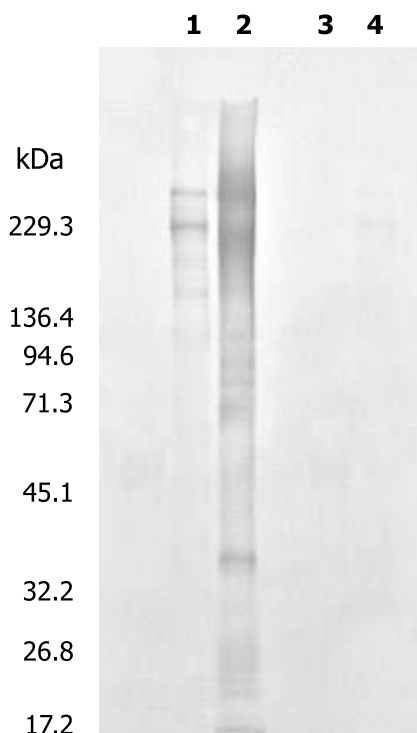
Label type \ Target	Plane	Biotin	HRP (酵素的)	FITC (蛍光)	DTBTA (希土類蛍光)
Mouse IgG	G0386	G0387	G0407	G0406	G0505
Mouse IgM	G0408	G0432	G0417	G0453	---
Rabbit IgG	G0388	G0389	G0418	G0452	G0506
Chicken IgY	S0998	H1619	S0999	---	---
Human IgG-Fc	M2977	M3053	---	---	---
Biotin-conjugate	S0951	---	S0972	S0966	S0993
Captured by protein A	P2366	P2407	P2466	---	---

## Anti- $\alpha$ Gal Polyclonal Antibody -Antibodies Capable of Detecting $\alpha$ Gal Epitope (Gal $\alpha$ 1-3Gal)- 抗 $\alpha$ Gal ポリクローナル抗体 — $\alpha$ Gal エピトープ (Gal $\alpha$ 1-3Gal) を検出可能な抗体—

Anti- $\alpha$ Gal antibody exists as a natural antibody in humans. Binding of this antibody to  $\alpha$ Gal antigens ( $\alpha$ Gal epitope) expressed on the porcine xenograft surface is a major factor for determining engrafts survival. Recently, it has been observed that therapeutic antibodies and cell processing material for reproductive medicine contain the  $\alpha$ Gal epitope; therefore, rapid detection of the  $\alpha$ Gal epitope is a very important.

ヒト生体内には自然抗体として抗 $\alpha$ Gal抗体 (anti- $\alpha$ Gal antibody) が存在する。この抗体がブタ移植片細胞表面等に発現している $\alpha$ Gal抗原 ( $\alpha$ Galエピトープ) を認識、反応することが異種移植片生着の大きな障壁になっていることがわかっている。また最近では、再生医療用の細胞加工品や抗体医薬品にこの $\alpha$ Galエピトープが含まれることが課題となっており、 $\alpha$ Galエピトープの存在を迅速に検出することは非常に重要なテクノロジーとなっている。

### Anti- $\alpha$ Gal antibody can be utilized for detection of the $\alpha$ Gal epitope on glycoproteins



Western blotting analysis is performed using an anti- $\alpha$ Gal polyclonal antibody biotin conjugate (TCI code A3144).

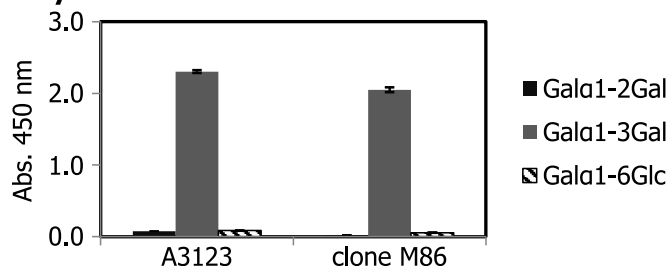
Lane 1: Thyroglobulin, porcine thyroid gland.

Lane 2: Laminin, Engelbreth-Holm-Swarm murine sarcoma basement membrane.

Lane 3: Thyroglobulin treated with  $\alpha$ 1-3, 4, 6 galactosidase.

Lane 4: Laminin treated with  $\alpha$ 1-3, 4, 6 galactosidase.

### Anti- $\alpha$ Gal antibody shows the same high specificity compared with an anti- $\alpha$ Gal monoclonal antibody.



These glycoconjugates were coated on ELISA plate. These epitope and anti- $\alpha$ Gal antibodies were reacted at an appropriate time, then 1st Abs were detected using appropriate secondary antibodies.

**A3123** Anti- $\alpha$ Gal Polyclonal Antibody (Chicken)

**A3144** Anti- $\alpha$ Gal Polyclonal Antibody Biotin Conjugate

## Anti-Glyco Antibody-①

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New **A3143 Anti-Chondroitin Sulfate A Monoclonal Antibody (LY111)** 1vial

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New **A2872 Anti-Chondroitin Sulfate D Monoclonal Antibody (MO-225)** 1vial

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New **A2701 Anti-GalNAc-GD<sub>1a</sub> Monoclonal Antibody** 1vial

---

New **A3144 Anti- $\alpha$ Gal Polyclonal Antibody Biotin Conjugate** 1vial

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New **A3123 Anti- $\alpha$ Gal Polyclonal Antibody (Chicken)** 1vial

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**A2586 Anti-Gb<sub>3</sub> Monoclonal Antibody (Culture Supernatant)** 0.2mL

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**A2506 Anti-Gb<sub>3</sub> Monoclonal Antibody** 1vial

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New **A2822 Anti-Gb<sub>3</sub> Monoclonal Antibody Biotin Conjugate** 1vial

**A2507 Anti-GD<sub>1a</sub> Monoclonal Antibody** 1vial

**A2508 Anti-GD<sub>1b</sub> Monoclonal Antibody** 1vial

**A2579 Anti-GD<sub>3</sub> Monoclonal Antibody** 0.2mL  
(Culture Supernatant)

**A2580 Anti-GD<sub>3</sub> Monoclonal Antibody** 1vial

**A2505 Anti-GM<sub>1</sub> Monoclonal Antibody** 1vial

**A2575 Anti-GM<sub>2</sub> Monoclonal Antibody** 0.2mL  
(Culture Supernatant)

## Anti-Glyco Antibody-③

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**A2576 Anti-GM<sub>2</sub> Monoclonal Antibody** 1vial

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**A2581 Anti-GM<sub>3</sub> Monoclonal Antibody** 0.2mL  
(Culture Supernatant)

---

**A2582 Anti-GM<sub>3</sub> Monoclonal Antibody** 1vial

---

New **A2662 Anti-GQ<sub>1b</sub> Monoclonal Antibody** 1vial

---

New **A2702 Anti-GT<sub>1a</sub> Monoclonal Antibody** 1vial

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New **A2732 Anti-GT<sub>1b</sub> Monoclonal Antibody** 1vial

---

New **A2968 Anti-Keratan Sulfate  
Monoclonal Antibody (R-10G)** 1vial

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**A2577 Anti-Lewis X Monoclonal Antibody** 0.2mL  
(Culture Supernatant)

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**A2578 Anti-Lewis X Monoclonal Antibody** 1vial

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**A2587 Anti-Lewis Y Monoclonal Antibody** 0.2mL  
(Culture Supernatant)

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**A2510 Anti-Lewis Y Monoclonal Antibody** 1vial

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*New* **A2706 Anti-SGPG(HNK-1) Monoclonal Antibody** 1vial

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**A2583 Anti-Sialyl Lewis A Monoclonal Antibody** 0.2mL  
**(1H4)** (Culture Supernatant)

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**A2509 Anti-Sialyl Lewis A Monoclonal Antibody (2D3)** 1vial

## Anti-Glyco Antibody-⑤

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**A2584 Anti-Sialyl Lewis A Monoclonal Antibody (1H4)** 1vial

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New **A2660 Anti-Sialyl Lewis X Monoclonal Antibody** 0.5mL  
(Culture Supernatant)

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New **A2849 Anti-Sialyl Lewis X Monoclonal Antibody** 1vial

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## Secondary Antibody-①

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New **G0386 Goat Anti-Mouse IgG** 1vial  
(1mg/vial)

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New **G0387 Goat Anti-Mouse IgG Biotin Conjugate** 1vial  
(0.1mg/vial)

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New **G0505 Goat Anti-Mouse IgG DTBTA-Eu<sup>3+</sup> Conjugate** 1vial

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**G0406 Goat Anti-Mouse IgG FITC Conjugate** 1vial

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**G0407 Goat Anti-Mouse IgG HRP Conjugate** 1vial

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**G0408 Goat Anti-Mouse IgM** 1vial

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New **G0432 Goat Anti-Mouse IgM Biotin Conjugate** 1vial

## Secondary Antibody-②

New **G0453 Goat Anti-Mouse IgM FITC Conjugate** 1vial

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**G0417 Goat Anti-Mouse IgM HRP Conjugate** 1vial

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**G0388 Goat Anti-Rabbit IgG** 1vial  
(Preservative : 0.07% NaN<sub>3</sub>) (1mg/vial)

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**G0389 Goat Anti-Rabbit IgG Biotin Conjugate** 1vial  
(Preservative : 0.05% NaN<sub>3</sub>, Stabilizer : 1% BSA) (0.1mg/vial)

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New **G0506 Goat Anti-Rabbit IgG DTBTA-Eu<sup>3+</sup> Conjugate** 1vial

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New **G0452 Goat Anti-Rabbit IgG FITC Conjugate** 1vial

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**G0418 Goat Anti-Rabbit IgG HRP Conjugate** 1vial

---

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## Secondary Antibody-③

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New **M2977 Mouse Anti-Human IgG Fc** 1vial

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New **M3053 Mouse Anti-Human IgG Fc Biotin Conjugate** 1vial

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New **S0998 Sheep Anti-Chicken IgY** 1vial

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New **H1619 Sheep Anti-Chicken IgY Biotin Conjugate** 1vial

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New **S0999 Sheep Anti-Chicken IgY HRP Conjugate** 1vial

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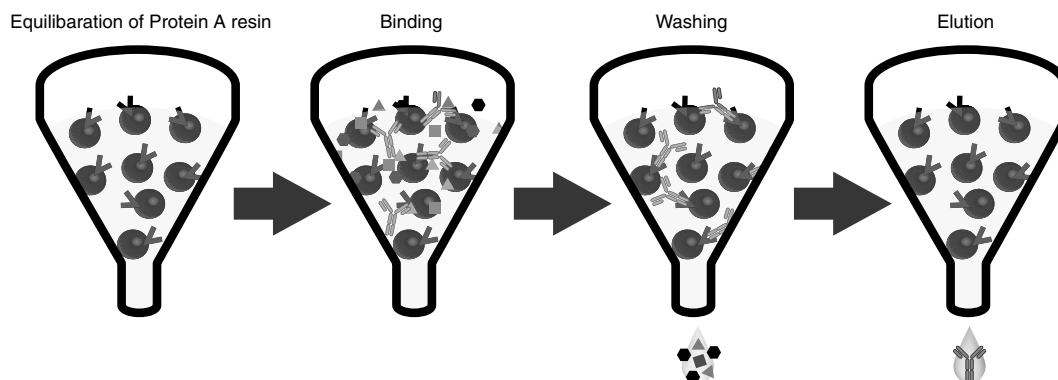
New

## Protein A プロテインA

Protein A is a membrane protein produced by several strains of *Staphylococcus aureus*. It has high-affinity binding sites that enable the purification of IgG obtained from various species such as humans, rabbit, mouse, and bovine. Protein A Agarose (P2461) is prepared using a covalent coupling method that maintains the stability and binding characteristics of the product. By using TCI resin, human IgGs can be eluted under milder conditions (such as at pH4.0) as compared to elution by conventional methods.

プロテインAは*Staphylococcus aureus*株より産生される膜タンパク質で、ヒト、ウサギ、マウスやウシなどの様々な動物種のIgGに結合する部位を持ち、精製に用いることが出来る。Protein A Agarose (P2461) は共有結合法により樹脂に結合されており、これを使うことにより抗体の精製が可能で、TCI製品は、従来製品と比べてヒトIgGを温和な条件 (pH4.0) で溶出することが可能です。

### Antibody purification procedure



- P2366 Protein A Recombinant, expressed in *Escherichia coli*
- P2407 Protein A Biotin Conjugate
- P2466 Protein A HRP Conjugate
- P2461 Protein A Agarose

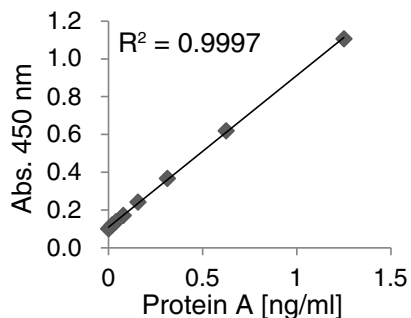
Protein A eluted from the purified resin may become a problem during the antibody purification process. By using TCI anti Protein A antibody, it is possible to quantify, with high sensitivity, the Protein A in solution.

抗体精製過程において、精製樹脂から溶出するプロテインAが問題となることがあります。

TCIの抗プロテインA抗体を使用すれば、高感度に溶液中のプロテインAを定量することが可能です。

### High-sensitive detection of Protein A by sandwich-ELISA

#### [Example of calibration curve]



- ◆ Anti-Protein A antibody (A3044) was diluted with sodium carbonate buffer (pH 8.5), and coated on an ELISA plate
- ◆ Blocking for 2 hours with 1% BSA / TBS-T
- ◆ After washing 3 times with TBS-T, the sample was added to each well and incubated for 30 minutes
- ◆ After washing 3 times with TBS-T, 1 µg / mL of anti-Protein A antibody biotin conjugate (A3045) was added to each well and incubated for 30 minutes
- ◆ After washing 3 times with TBS-T, SA-HRP (S0972) was added to each well and incubated for 30 minutes
- ◆ After washing 3 times with TBS-T, add TMB solution and react for 30 minutes
- ◆ The reaction was stopped by adding 1 N HCl, and the absorbance was measured at 450 nm

- A3044 Anti-Protein A Chicken Polyclonal Antibody
- A3045 Anti-Protein A Chicken Polyclonal Antibody Biotin Conjugate
- A3187 Anti-Protein A Chicken Polyclonal Antibody HRP Conjugate

## Related Products for Immunological Research-①

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New **A2958 Anti-Endo-M Polyclonal Antibody** 1vial

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New **A2959 Anti-Endo-M Polyclonal Antibody Biotin Conjugate** 1vial

---

**A2250 Anti-HRP Rabbit Polyclonal Antibody** 0.2mL

MFCD00162388

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New **A3044 Anti-Protein A Chicken Polyclonal Antibody** 1vial

---

New **A3045 Anti-Protein A Chicken Polyclonal Antibody Biotin Conjugate** 1vial

---

New **A3187 Anti-Protein A Chicken Polyclonal Antibody HRP Conjugate** 1vial

---

New **A2957 Anti-6xHis Monoclonal Antibody (6A12)** 1vial

## Related Products for Immunological Research-②

New **A3010 Anti-6xHis Monoclonal Antibody (6A12) Biotin Conjugate** 1vial

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New **P2366 Protein A** 1vial  
Recombinant, expressed in *Escherichia coli*

---

New **P2461 Protein A Agarose** 1vial  
MFCD00165563

---

New **P2407 Protein A Biotin Conjugate** 1vial

---

New **P2466 Protein A HRP Conjugate** 1vial

---

New **S0951 Streptavidin** 1vial  
from *Streptomyces avidinii*  
[9013-20-1] MFCD00082035

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**S0993 Streptavidin DTBTA-Eu<sup>3+</sup> Conjugate** 1vial

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## Related Products for Immunological Research-③

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New **S0966 Streptavidin FITC Conjugate** 1vial

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New **S0972 Streptavidin HRP Conjugate** 1vial  
MFCD00132387

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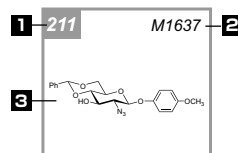


# NMR Data

250 main Glyco products among our glycochemistry-related products show  $^1\text{H}$  NMR spectrum.  
弊社糖鎖関連試薬のうち、主な製品250品の $^1\text{H}$  NMRスペクトルデータを掲載しています。

# NMR Data Index

## Layout of the Index / 凡例



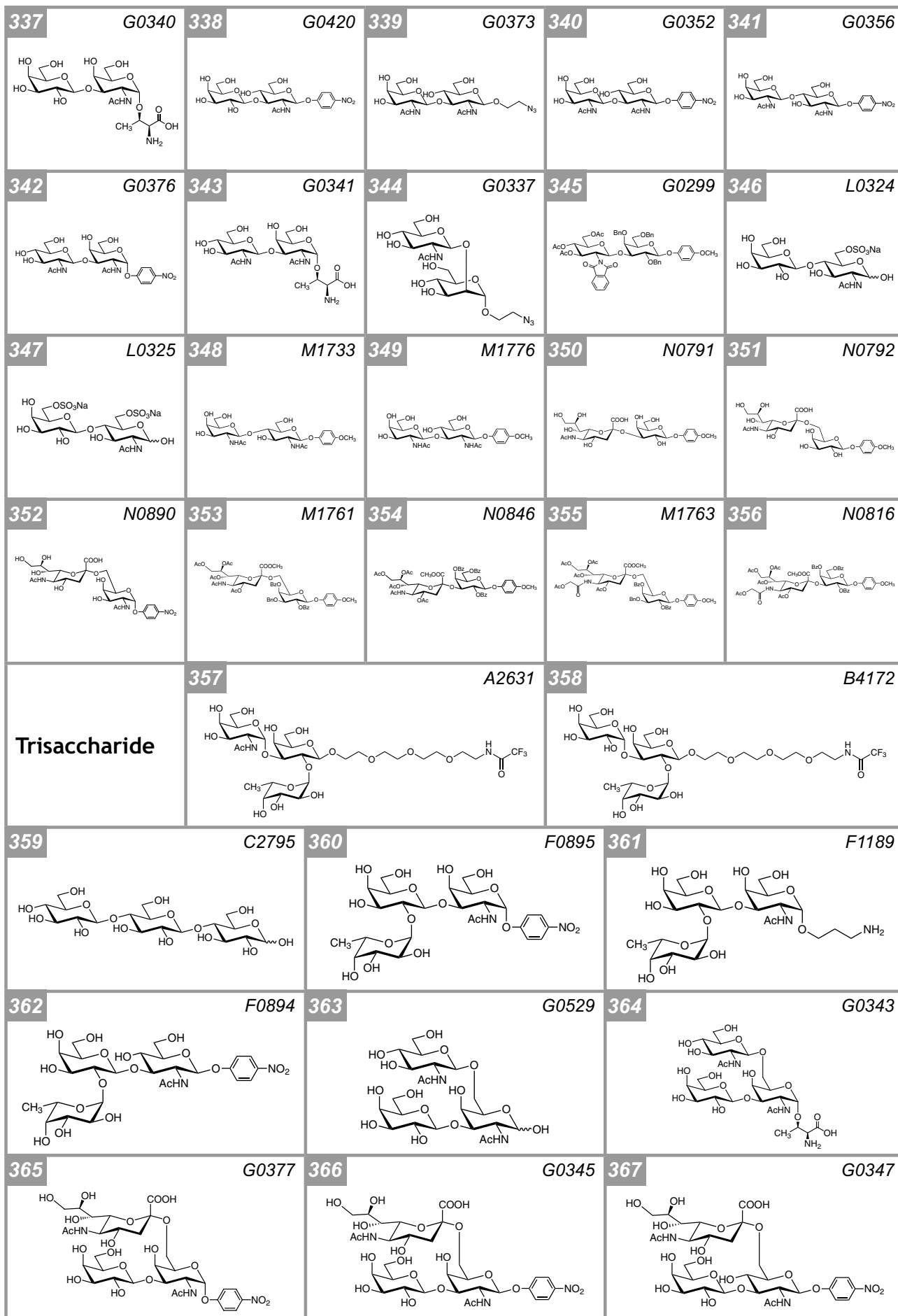
- 1** Page 掲載ページ  
**2** Product Number 製品コード  
**3** Structural Formula 構造式

<b>Arabinose</b>	<b>198</b> <i>T2695</i> 	<b>Fructose</b>	<b>199</b> <i>D5395</i> 	
<b>Fucose</b>	<b>200</b> <i>M1626</i> 	<b>201</b> <i>M1628</i> 	<b>Galactose</b>	<b>202</b> <i>A3167</i> 
<b>203</b> <i>D5458</i> 	<b>204</b> <i>M1620</i> 	<b>205</b> <i>M1589</i> 	<b>206</b> <i>M1590</i> 	<b>207</b> <i>M1482</i> 
<b>208</b> <i>M1725</i> 	<b>209</b> <i>M1710</i> 	<b>210</b> <i>M1597</i> 	<b>211</b> <i>M1634</i> 	<b>212</b> <i>M1633</i> 
<b>213</b> <i>M1481</i> 	<b>214</b> <i>M1596</i> 	<b>215</b> <i>M1593</i> 	<b>216</b> <i>M1594</i> 	<b>217</b> <i>M1477</i> 
<b>218</b> <i>M1588</i> 	<b>219</b> <i>M1592</i> 	<b>220</b> <i>M1933</i> 	<b>221</b> <i>P2078</i> 	<b>222</b> <i>P1477</i> 
<b>223</b> <i>P1679</i> 	<b>224</b> <i>P1680</i> 	<b>225</b> <i>T2295</i> 	<b>Galactosamine</b>	<b>226</b> <i>A1833</i> 

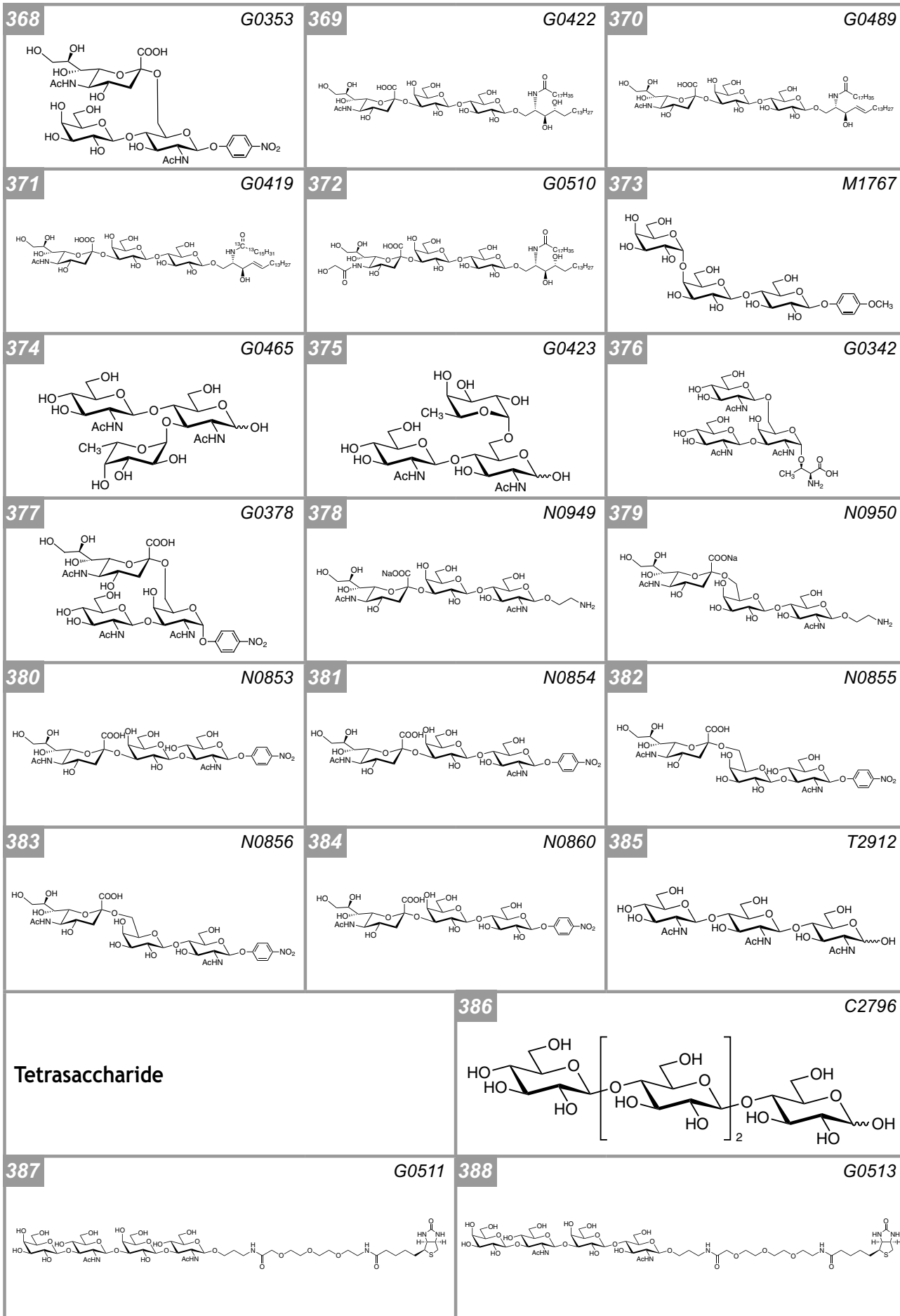
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<b>232</b>	<b>P1642</b>	<b>233</b>	<b>T1731</b>	<b>Glucose</b>		<b>234</b>	<b>A2253</b>	<b>235</b>	<b>A2377</b>
<b>236</b>	<b>B4170</b>	<b>237</b>	<b>B4171</b>	<b>238</b>	<b>G0339</b>	<b>239</b>	<b>M2434</b>	<b>240</b>	<b>M1640</b>
<b>241</b>	<b>M1641</b>	<b>242</b>	<b>M1631</b>	<b>243</b>	<b>M1630</b>	<b>244</b>	<b>M1642</b>	<b>245</b>	<b>M1682</b>
<b>246</b>	<b>M1487</b>	<b>247</b>	<b>M1488</b>	<b>248</b>	<b>A2638</b>	<b>249</b>	<b>P1475</b>	<b>250</b>	<b>P1476</b>
<b>251</b>	<b>P1736</b>	<b>252</b>	<b>T2449</b>	<b>253</b>	<b>T1995</b>	<b>254</b>	<b>T2491</b>	<b>255</b>	<b>P2079</b>
<b>256</b>	<b>P2080</b>	<b>257</b>	<b>T1991</b>	<b>258</b>	<b>T1922</b>	<b>259</b>	<b>T1923</b>	<b>260</b>	<b>T2197</b>
<b>261</b>	<b>T1999</b>	<b>Glucosamine</b>		<b>262</b>	<b>A1812</b>	<b>263</b>	<b>A1813</b>	<b>264</b>	<b>A1811</b>

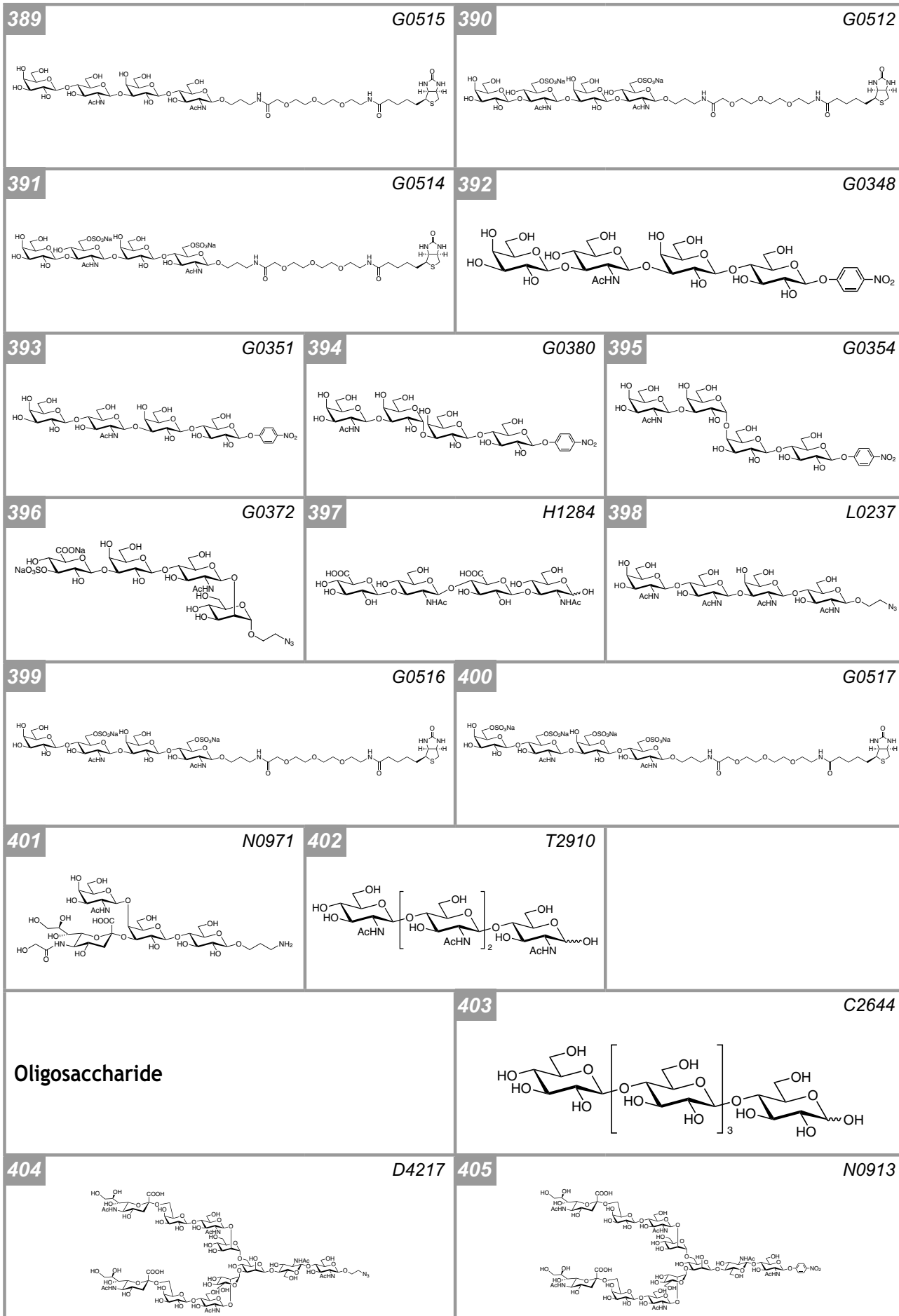
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<b>270</b>	<b>G0297</b>	<b>271</b>	<b>M2051</b>	<b>272</b>	<b>M1638</b>	<b>273</b>	<b>M1598</b>	<b>274</b>	<b>M1616</b>
<b>275</b>	<b>M1637</b>	<b>276</b>	<b>M1617</b>	<b>277</b>	<b>M1609</b>	<b>278</b>	<b>M1479</b>	<b>279</b>	<b>M1615</b>
<b>280</b>	<b>M1480</b>	<b>281</b>	<b>M1649</b>	<b>282</b>	<b>P1762</b>	<b>283</b>	<b>T2196</b>	<b>284</b>	<b>T2047</b>
<b>Glucuronic Acid</b>		<b>285</b>	<b>M1759</b>	<b>286</b>	<b>M1868</b>	<b>287</b>	<b>N0857</b>		
<b>Inositol</b>		<b>288</b>	<b>I0629</b>	<b>289</b>	<b>I0628</b>	<b>290</b>	<b>I0630</b>	<b>291</b>	<b>I0631</b>
<b>292</b>	<b>I0634</b>	<b>293</b>	<b>Q0070</b>	<b>294</b>	<b>Q0071</b>		<b>Mannose</b>	<b>295</b>	<b>D5294</b>
<b>296</b>	<b>M2435</b>	<b>297</b>	<b>M1646</b>	<b>298</b>	<b>M1647</b>	<b>299</b>	<b>M1501</b>	<b>300</b>	<b>P1514</b>

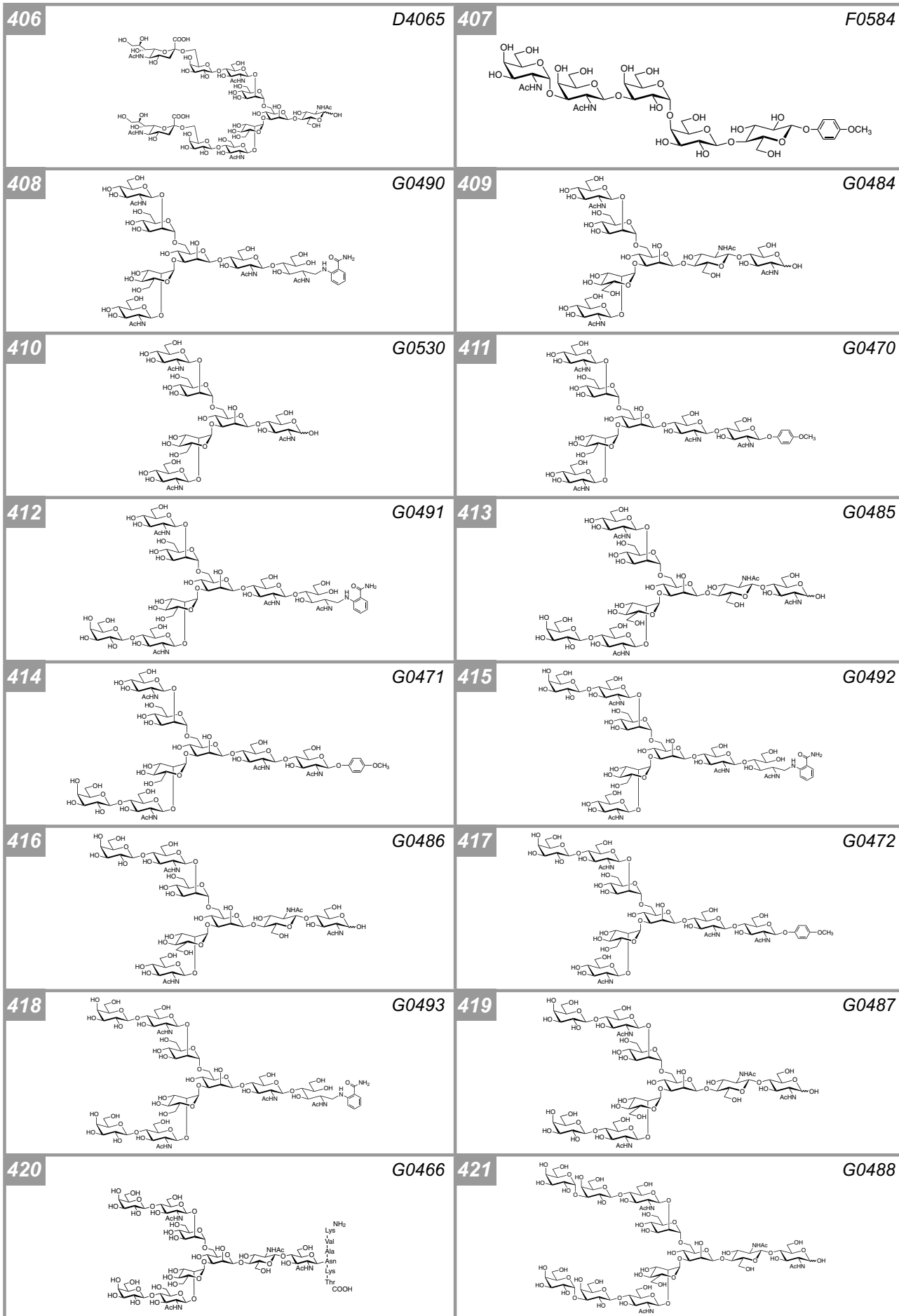
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<b>Mannosamine</b>		<b>306</b>	<b>G0463</b>	<b>307</b>	<b>T1733</b>	<b>Ribose</b>		<b>308</b>	<b>R0082</b>
<b>309</b>	<b>R0083</b>	<b>Sialic Acid</b>		<b>310</b>	<b>A2511</b>	<b>311</b>	<b>A2492</b>	<b>312</b>	<b>A1821</b>
<b>313</b>	<b>M1706</b>	<b>314</b>	<b>M2329</b>	<b>315</b>	<b>M2695</b>	<b>316</b>	<b>M2696</b>	<b>317</b>	<b>M2330</b>
<b>318</b>	<b>A1822</b>	<b>Disaccharide</b>		<b>319</b>	<b>A2630</b>	<b>320</b>	<b>D4215</b>	<b>321</b>	<b>D5372</b>
<b>322</b>	<b>F1030</b>	<b>323</b>	<b>F0897</b>	<b>324</b>	<b>F1021</b>	<b>325</b>	<b>G0460</b>	<b>326</b>	<b>G0330</b>
<b>327</b>	<b>G0329</b>	<b>328</b>	<b>G0309</b>	<b>329</b>	<b>G0311</b>	<b>330</b>	<b>M1686</b>	<b>331</b>	<b>M1727</b>
<b>332</b>	<b>G0461</b>	<b>333</b>	<b>G0439</b>	<b>334</b>	<b>G0375</b>	<b>335</b>	<b>G0344</b>	<b>336</b>	<b>G0528</b>

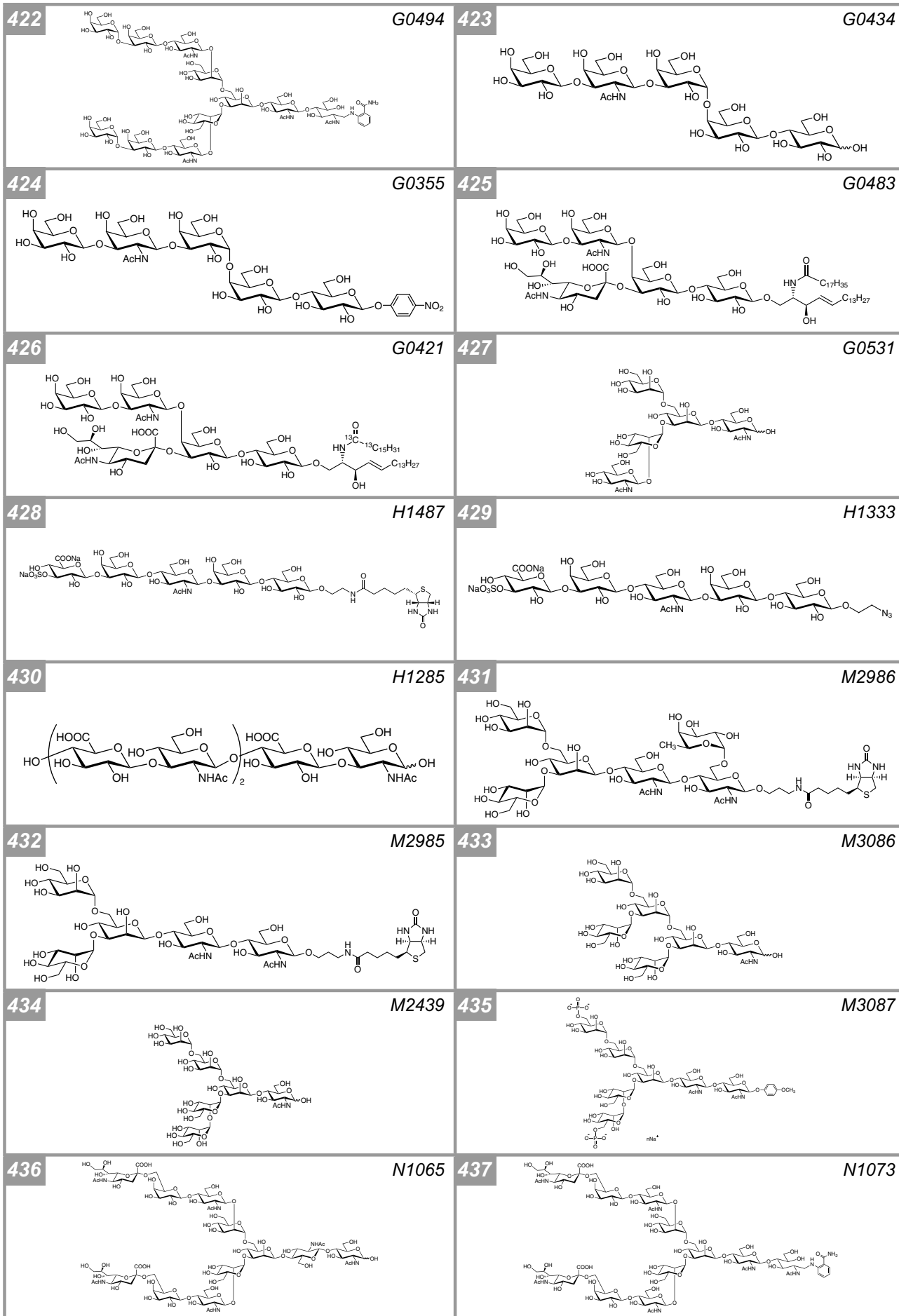




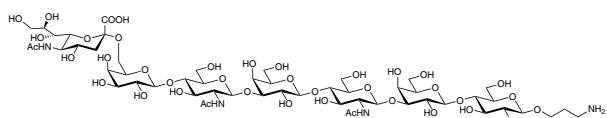






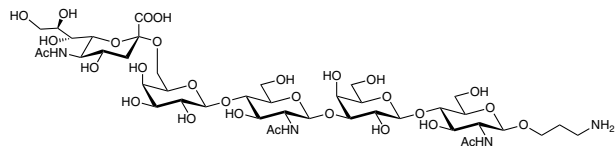


438



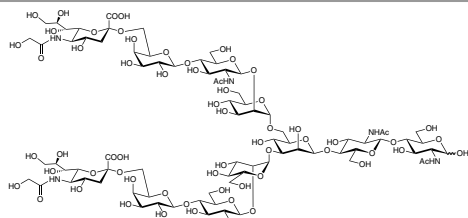
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439



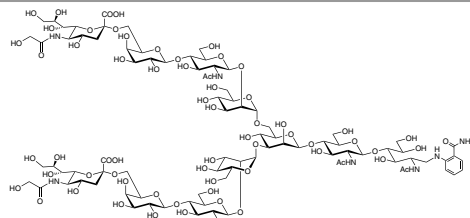
N1117

440



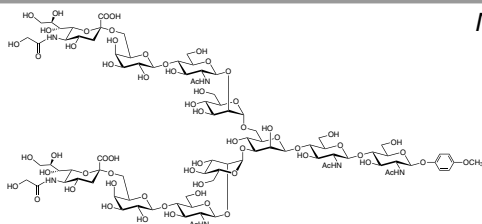
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441



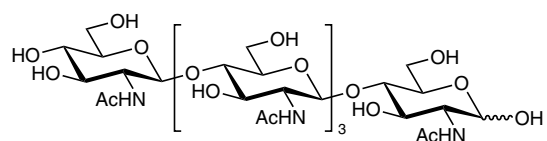
N1075

442



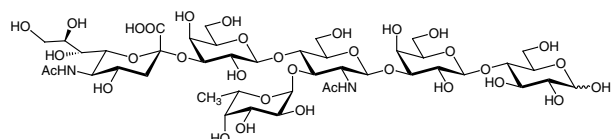
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443



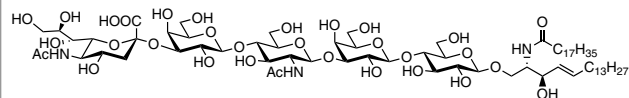
P2027

444



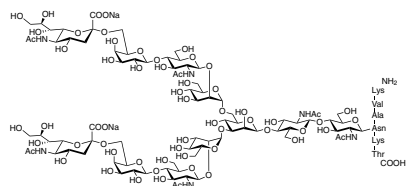
S0849

445



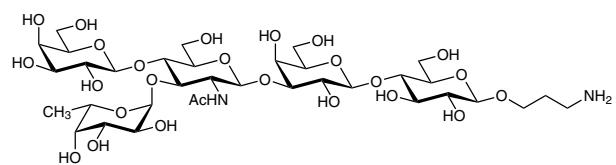
S0910

446



S0523

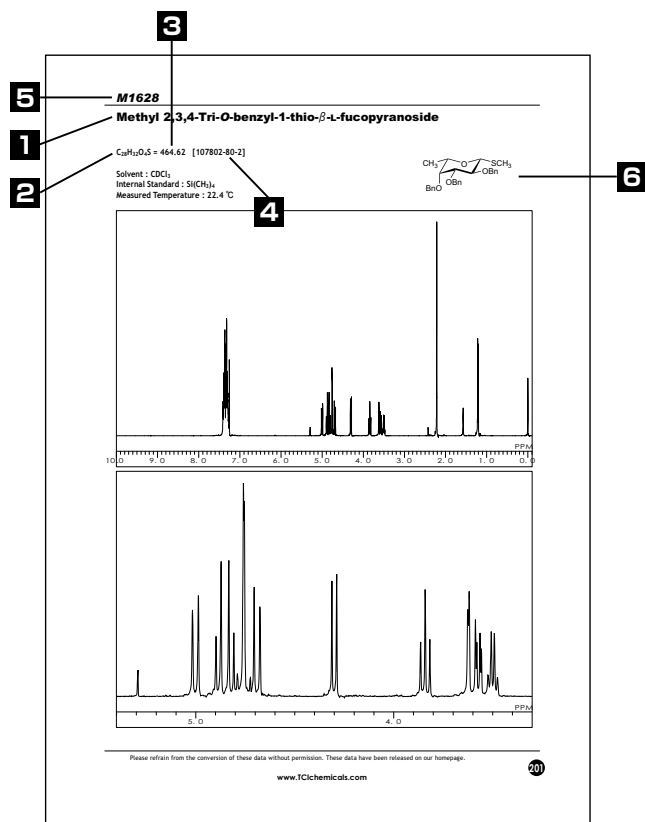
447



S0946



## Layout of the Sheet / 凡例



- |                              |       |
|------------------------------|-------|
| <b>1</b> Chemical Name       | 製品名   |
| <b>2</b> Molecular Formula   | 分子式   |
| <b>3</b> Molecular Weight    | 分子量   |
| <b>4</b> CAS Registry Number | CAS番号 |
| <b>5</b> Product Number      | 製品コード |
| <b>6</b> Structural Formula  | 構造式   |

<sup>1</sup>H-NMR Spectra were recorded on a JEOL JNM-ECX 400 spectrometer.  
<sup>1</sup>H-NMRスペクトルは、日本電子社製JNM-ECX 400型で測定しました。

T2695

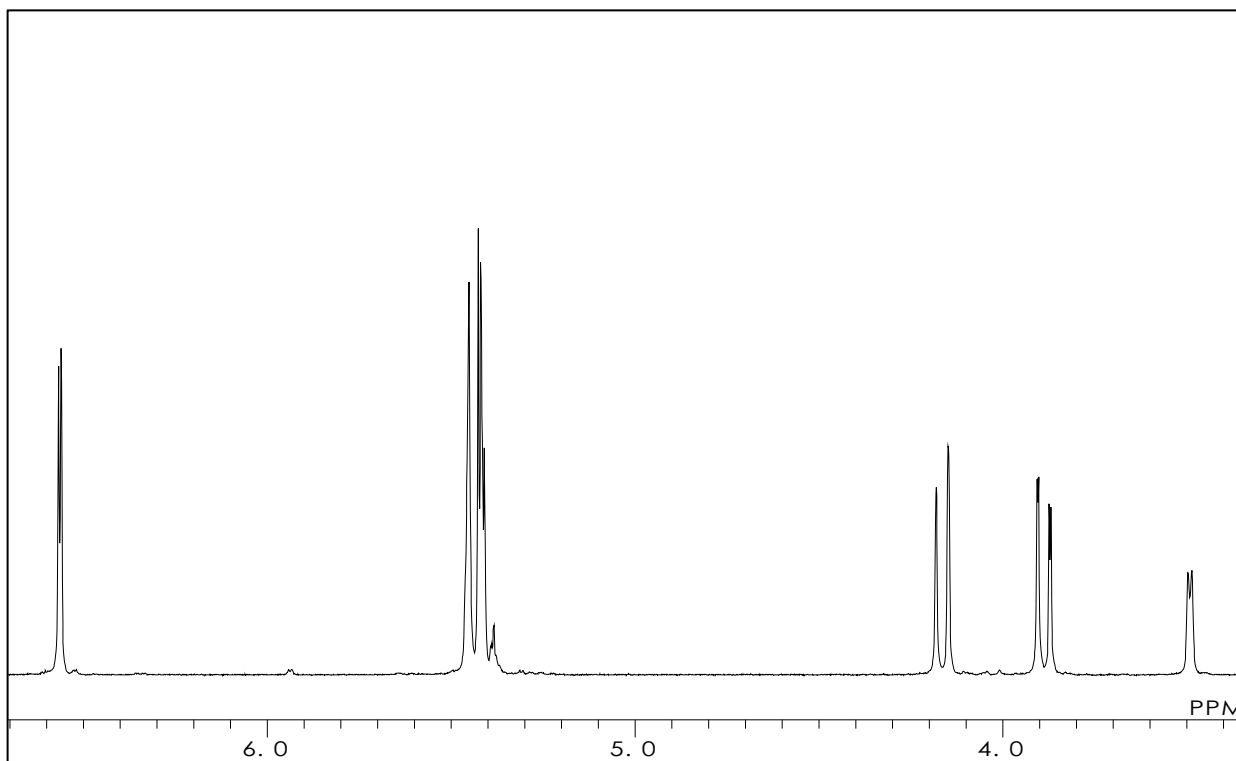
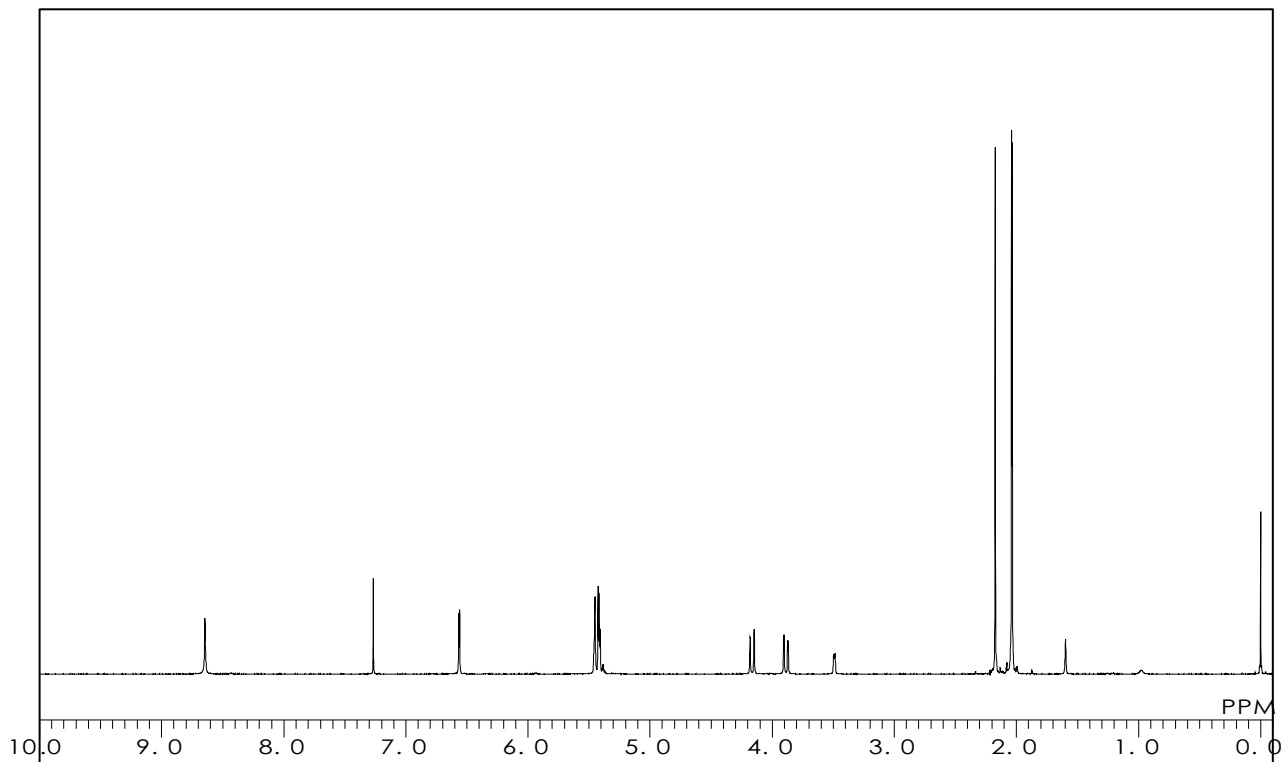
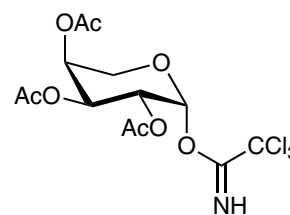
**2,3,4-Tri-O-acetyl-β-L-arabinopyranosyl  
2,2,2-Trichloroacetimidate**

C<sub>13</sub>H<sub>16</sub>Cl<sub>3</sub>NO<sub>8</sub> = 420.62 [869848-87-3]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 23.1 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。



**D5395**

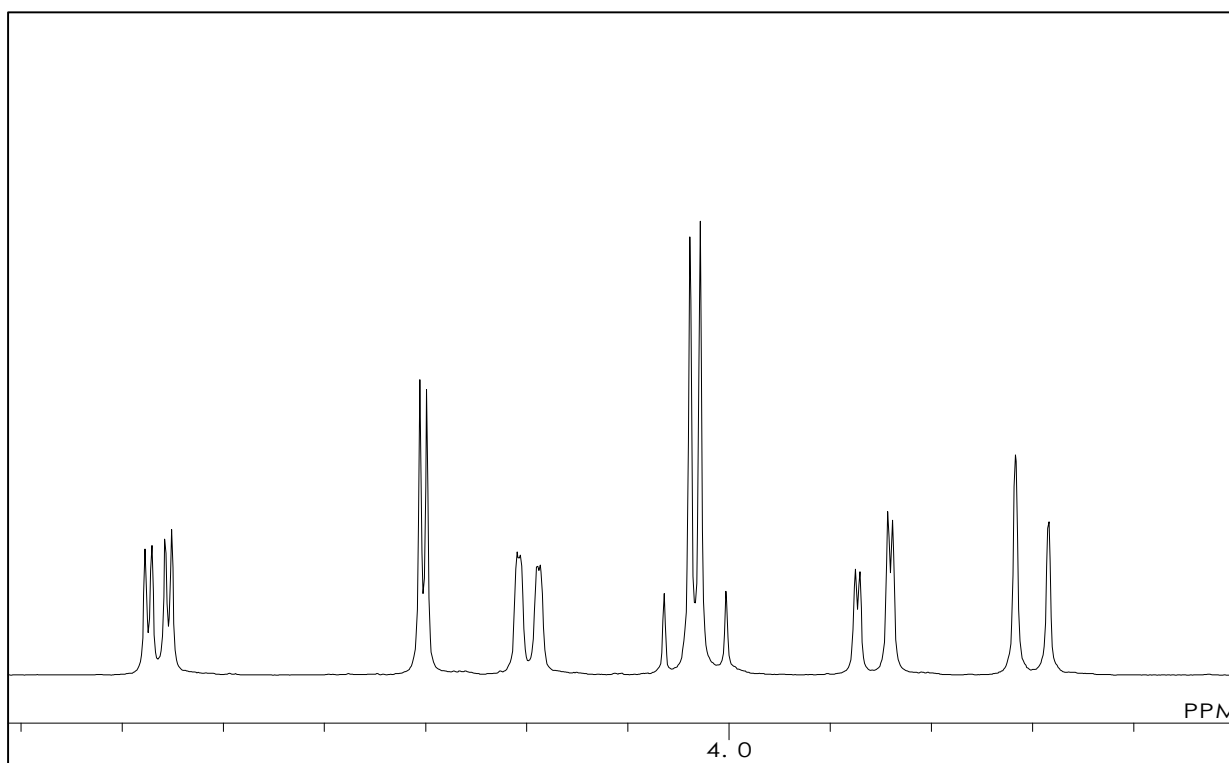
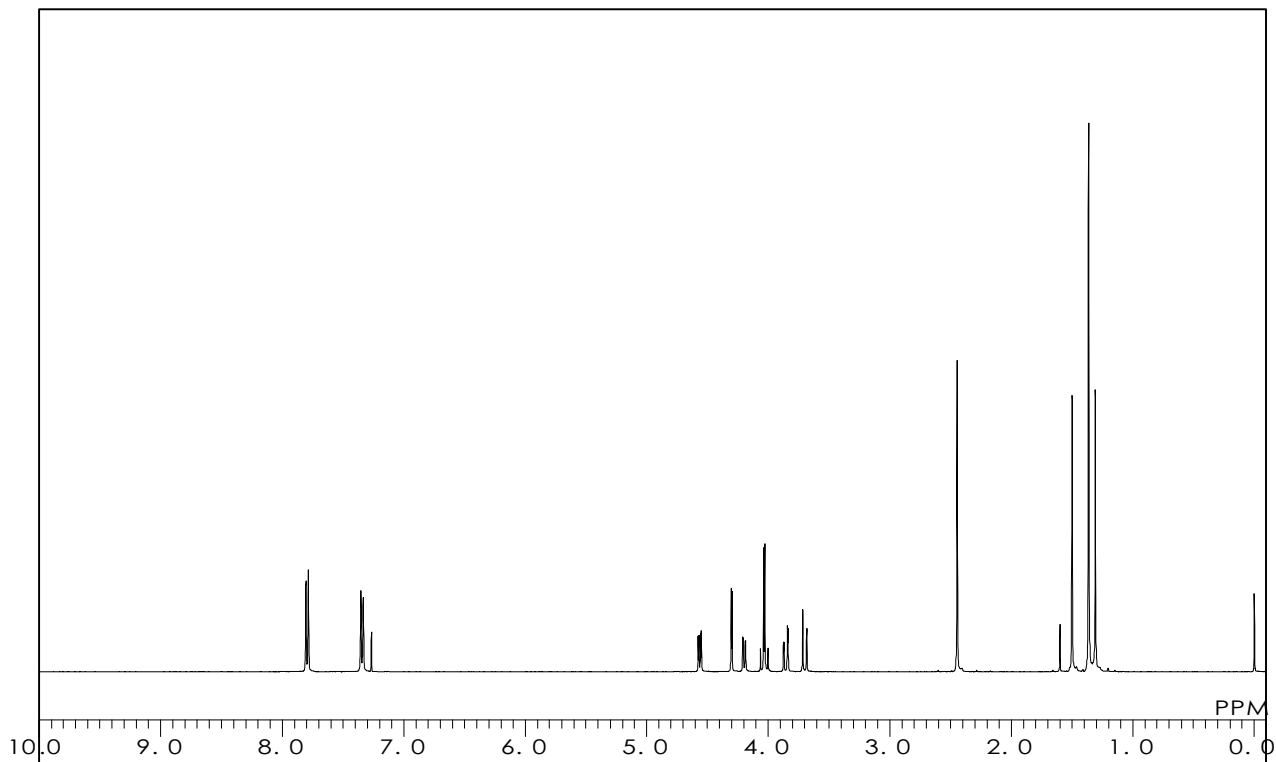
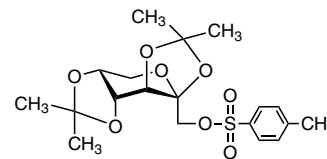
**2,3:4,5-Di-O-isopropylidene-1-O-*p*-toluenesulfonyl- $\beta$ -D-fructopyranose**

$C_{19}H_{26}O_8S = 414.47$  [78574-35-3]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 21.5 °C



**M1626**

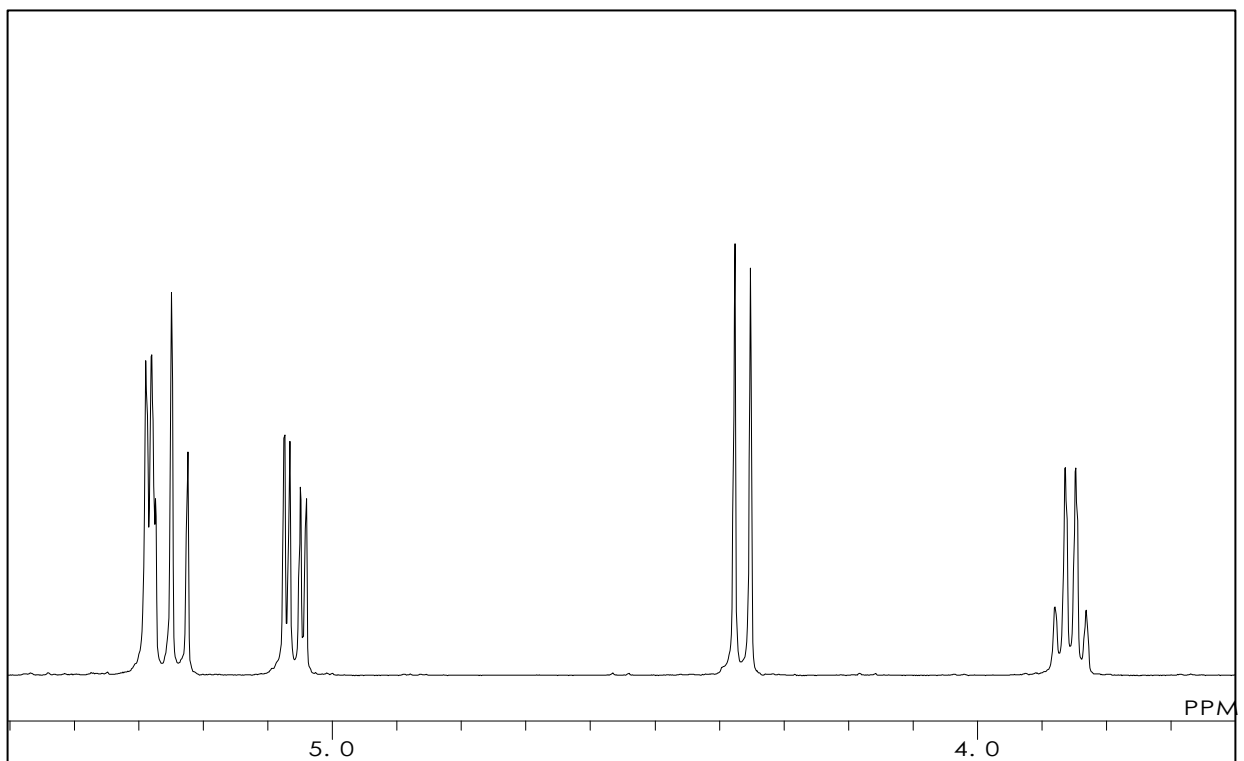
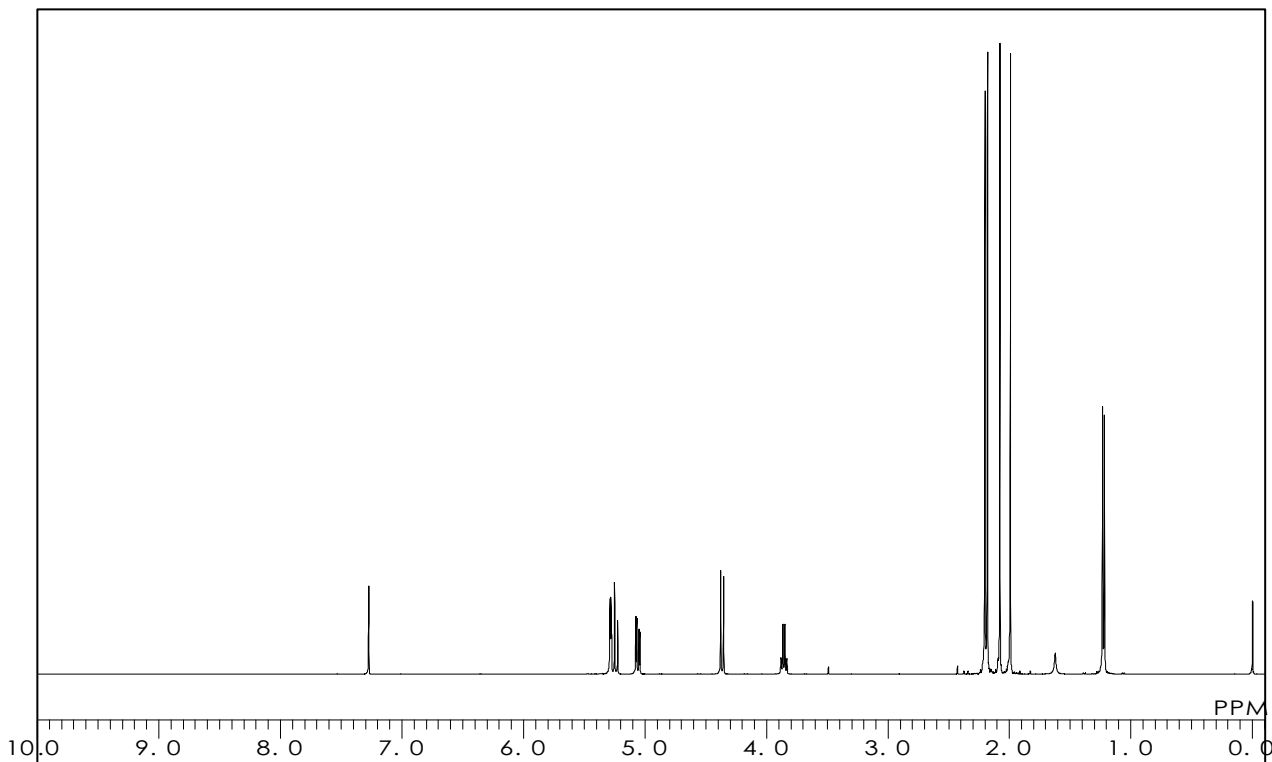
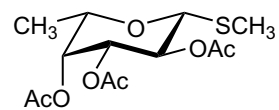
**Methyl 2,3,4-Tri-O-acetyl-1-thio-β-L-fucopyranoside**

C<sub>13</sub>H<sub>20</sub>O<sub>7</sub>S = 320.36 [84635-54-1]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 21.2 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**M1628**

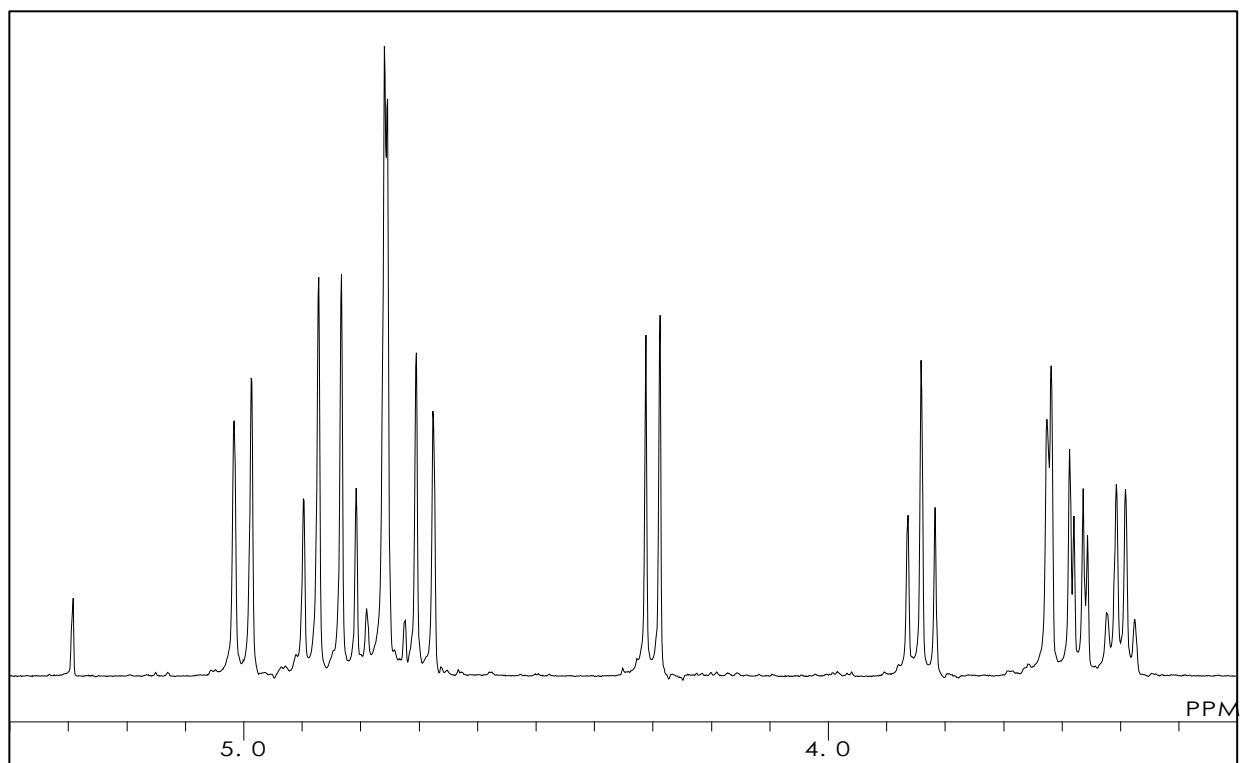
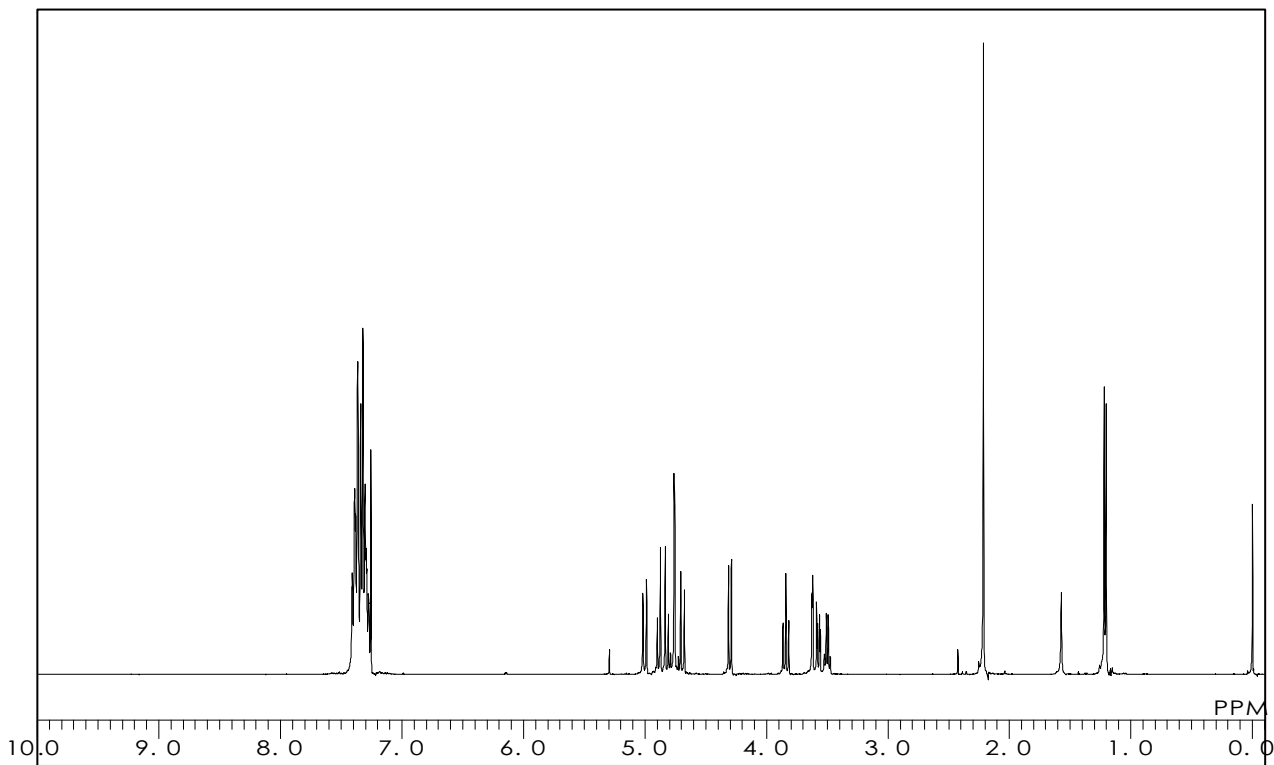
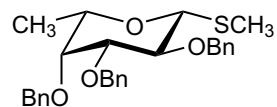
**Methyl 2,3,4-Tri-O-benzyl-1-thio-β-L-fucopyranoside**

C<sub>28</sub>H<sub>32</sub>O<sub>4</sub>S = 464.62 [107802-80-2]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 22.4 °C



**A3167**

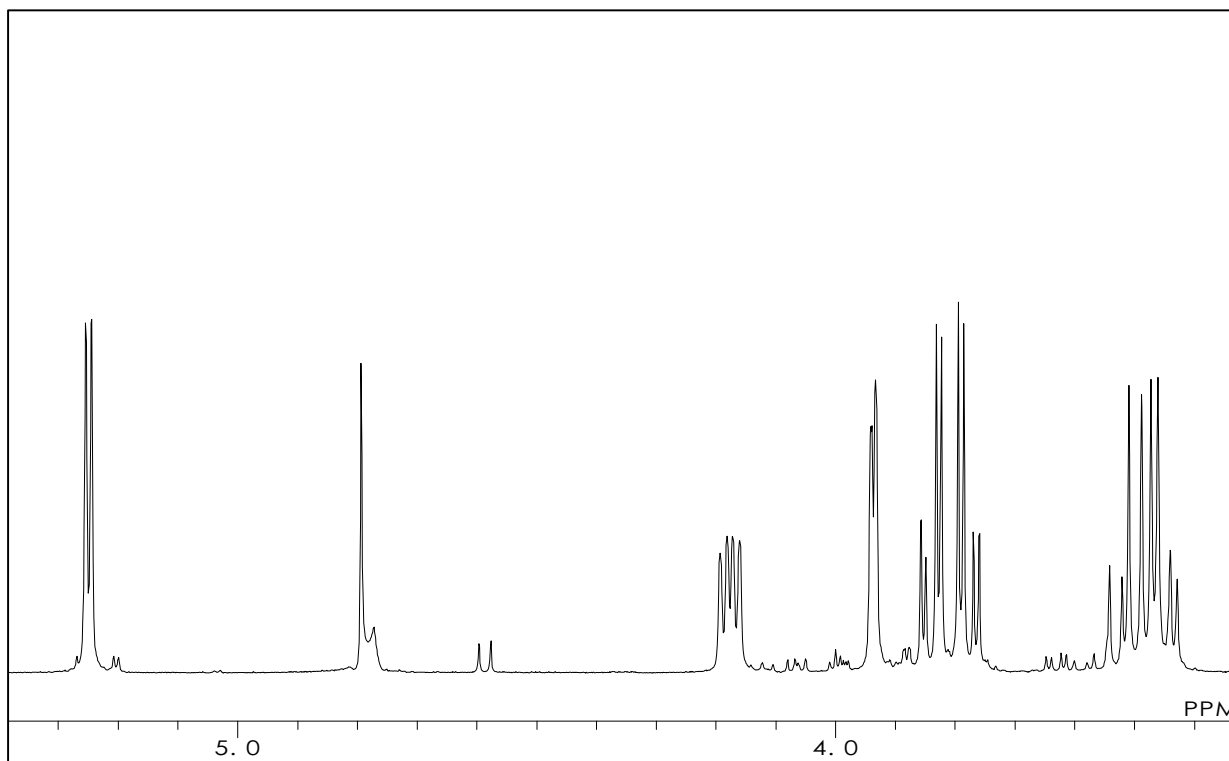
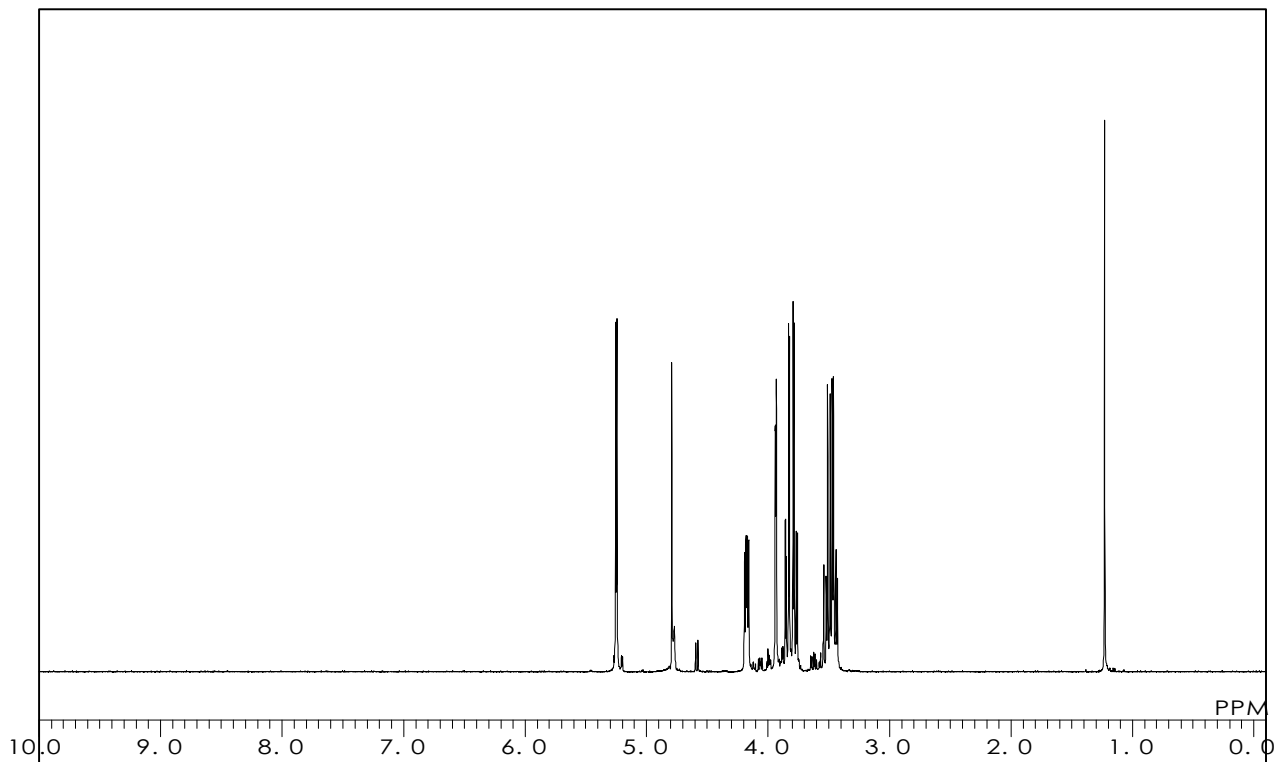
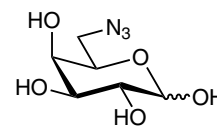
**6-Azido-6-deoxy-D-galactopyranose**

$C_6H_{11}N_3O_5 = 205.17$  [66927-03-5]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 22.2 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**D5458**

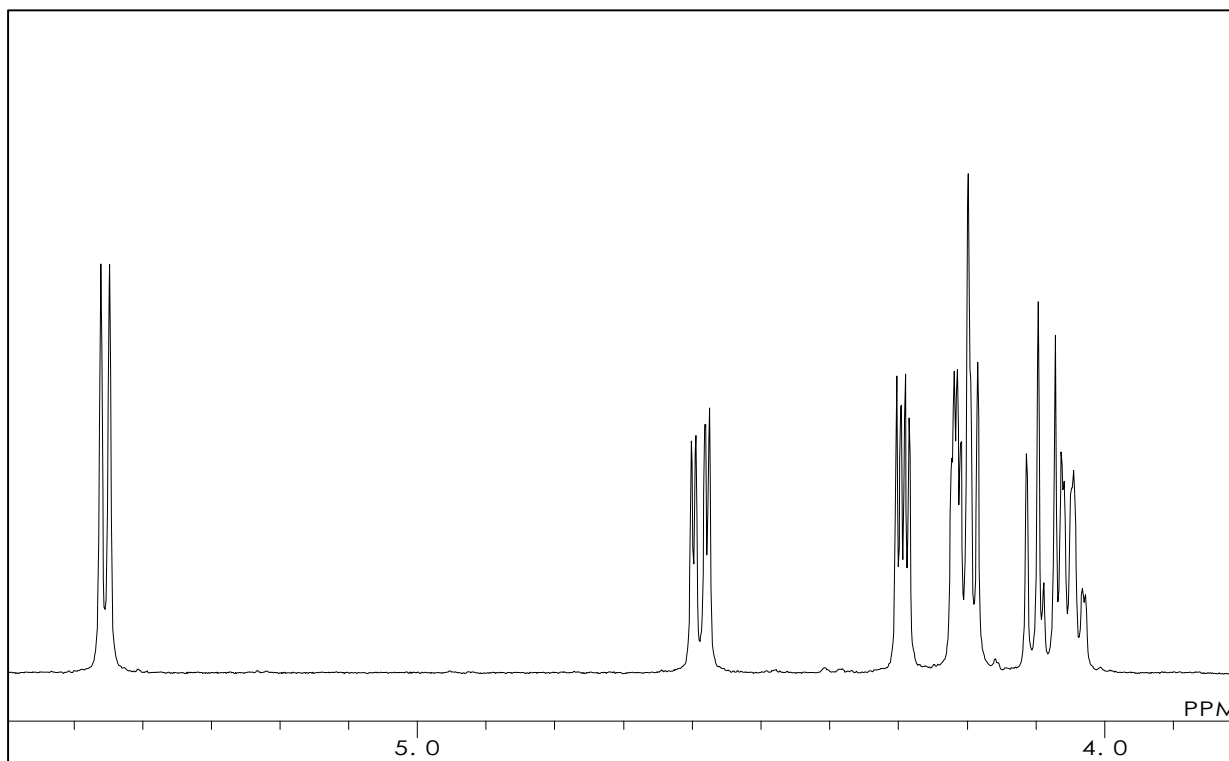
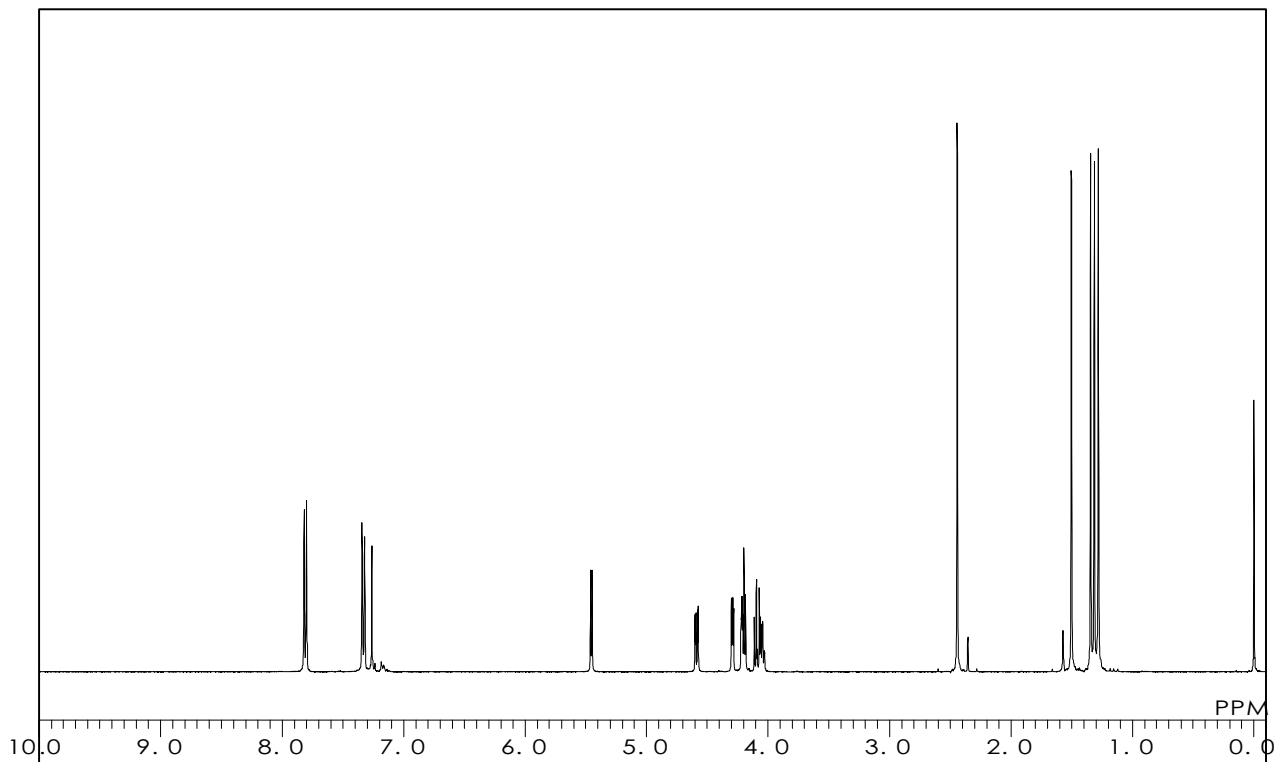
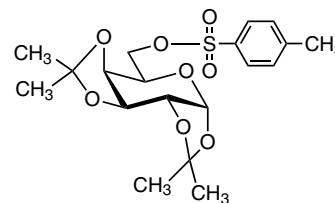
**1,2:3,4-Di-O-isopropylidene-6-O-(p-toluenesulfonyl)- $\alpha$ -D-galactopyranose**

$C_{19}H_{26}O_8S = 414.47$  [4478-43-7]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 24.8 °C



**M1620**

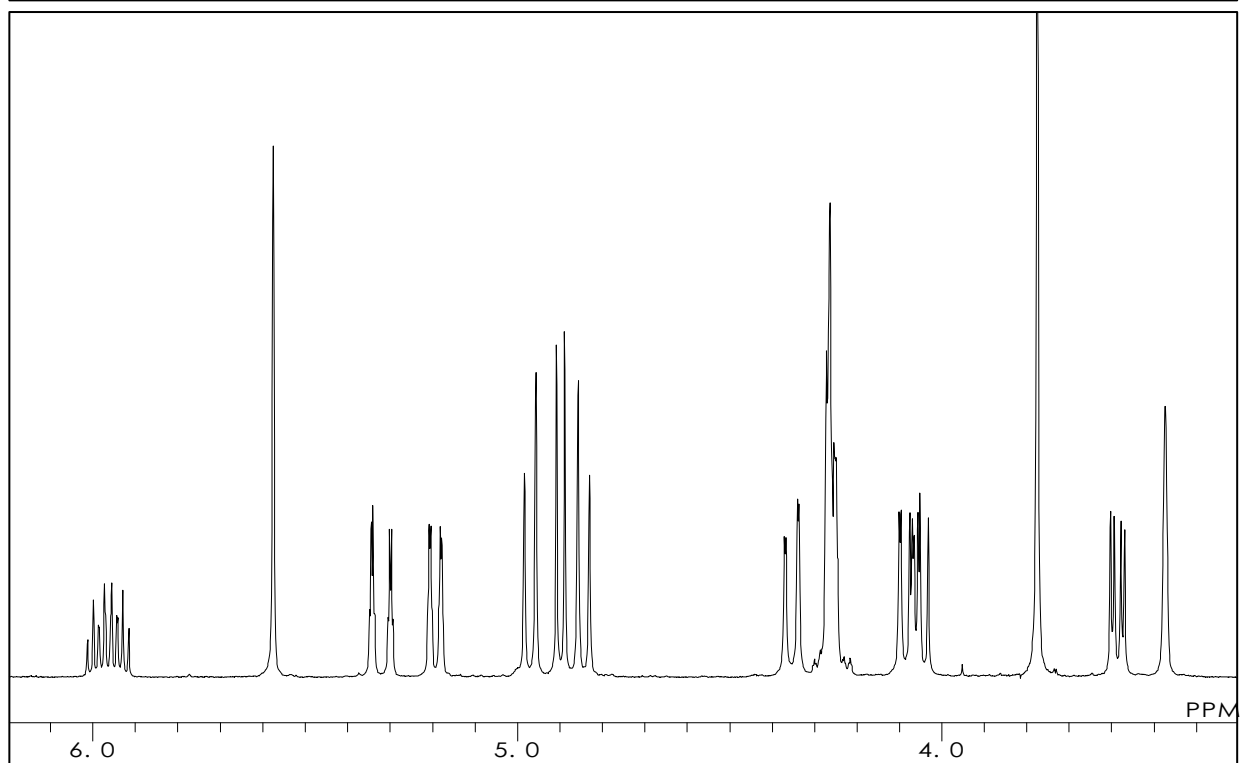
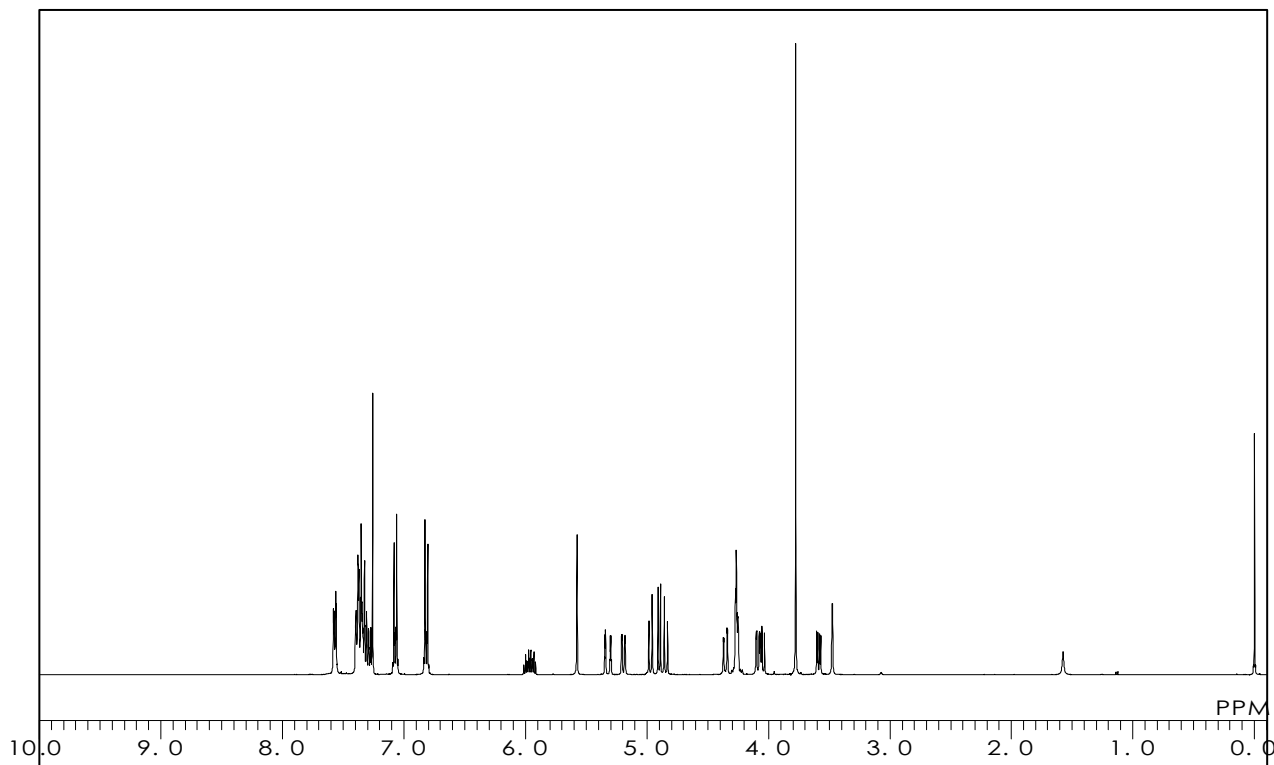
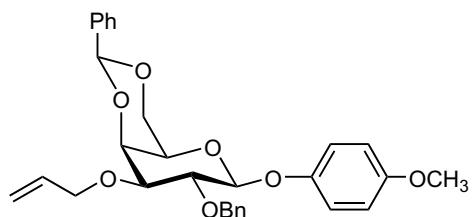
**4-Methoxyphenyl 3-O-Allyl-2-O-benzyl-4,6-O-benzylidene- $\beta$ -D-galactopyranoside**

$C_{30}H_{32}O_7 = 504.58$

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 20.7 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**M1589**

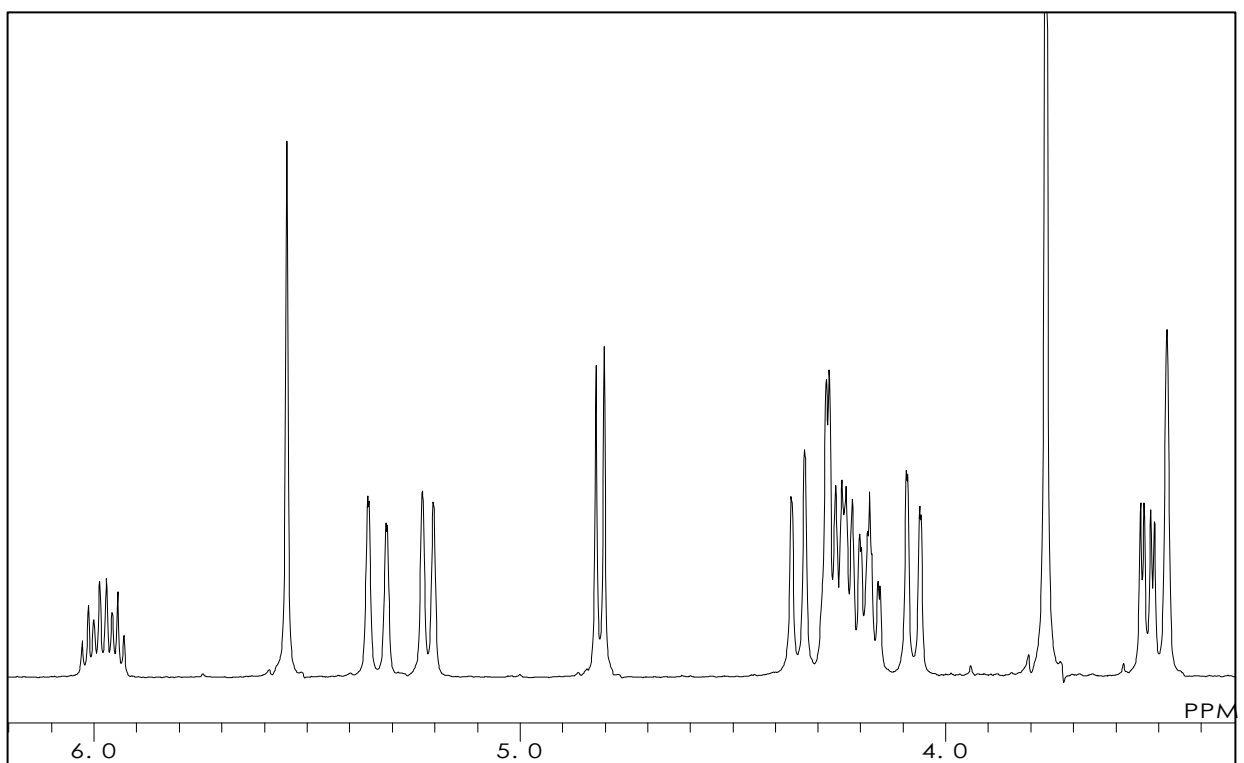
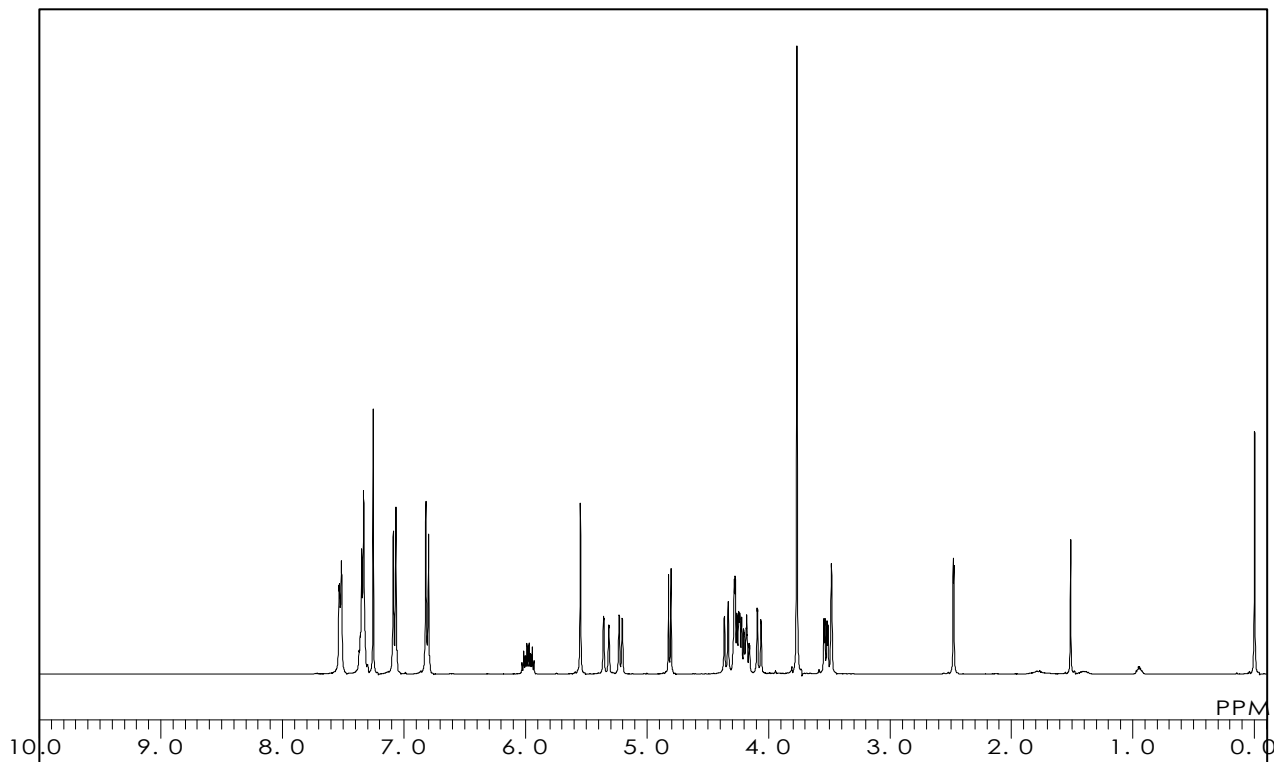
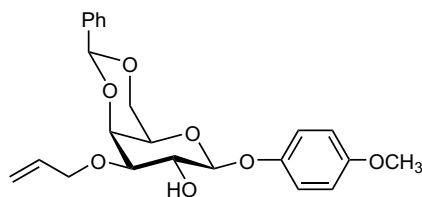
**4-Methoxyphenyl 3-O-Allyl-4,6-O-benzylidene-β-D-galactopyranoside**

C<sub>23</sub>H<sub>26</sub>O<sub>7</sub> = 414.45 [400091-05-6]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 40.0 °C



**M1590**

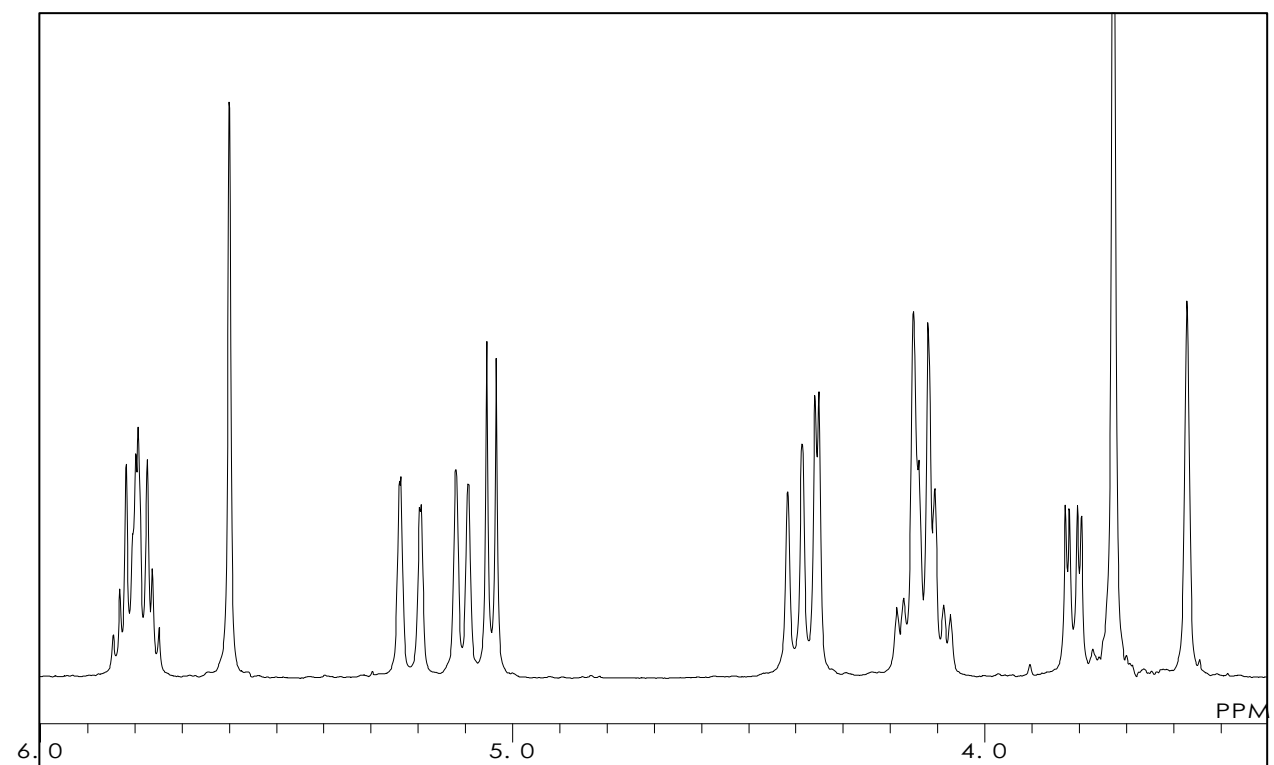
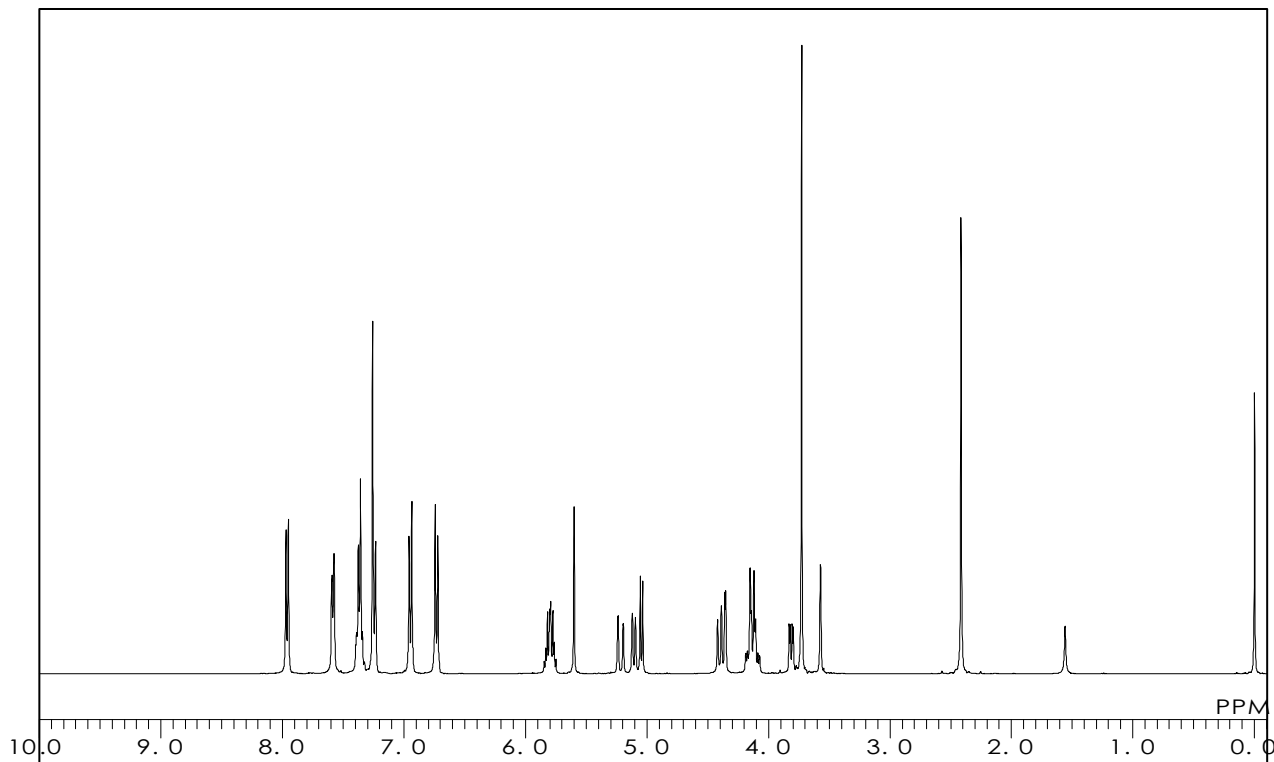
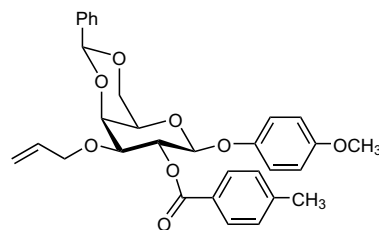
**4-Methoxyphenyl 3-O-Allyl-4,6-O-benzylidene-2-O-(4-methylbenzoyl)-β-D-galactopyranoside**

$C_{31}H_{32}O_8 = 532.59$

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 22.8 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。



**M1482**

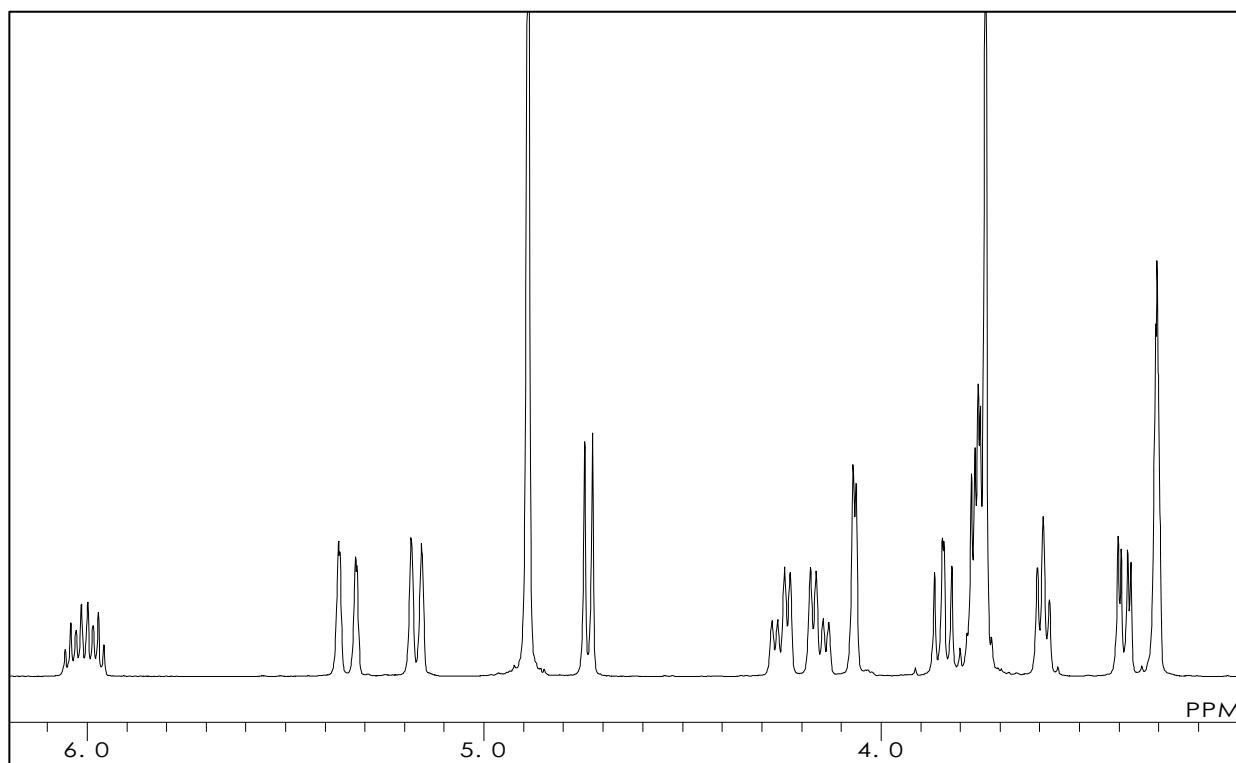
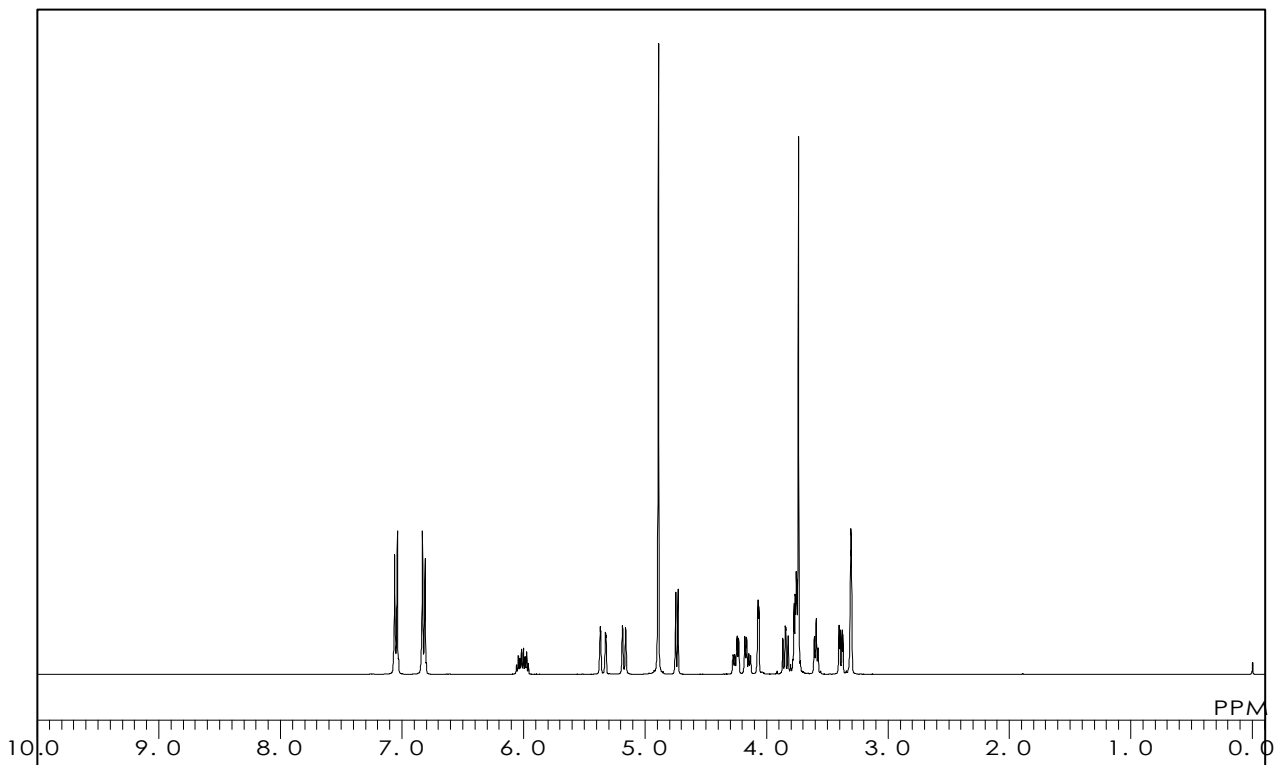
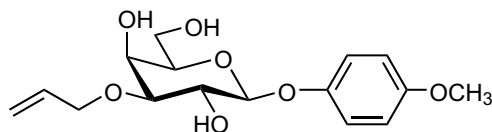
**4-Methoxyphenyl 3-O-Allyl-β-D-galactopyranoside**

$C_{16}H_{22}O_7 = 326.35$  [144985-19-3]

Solvent :  $CD_3OD$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 19.9 °C



**M1725**

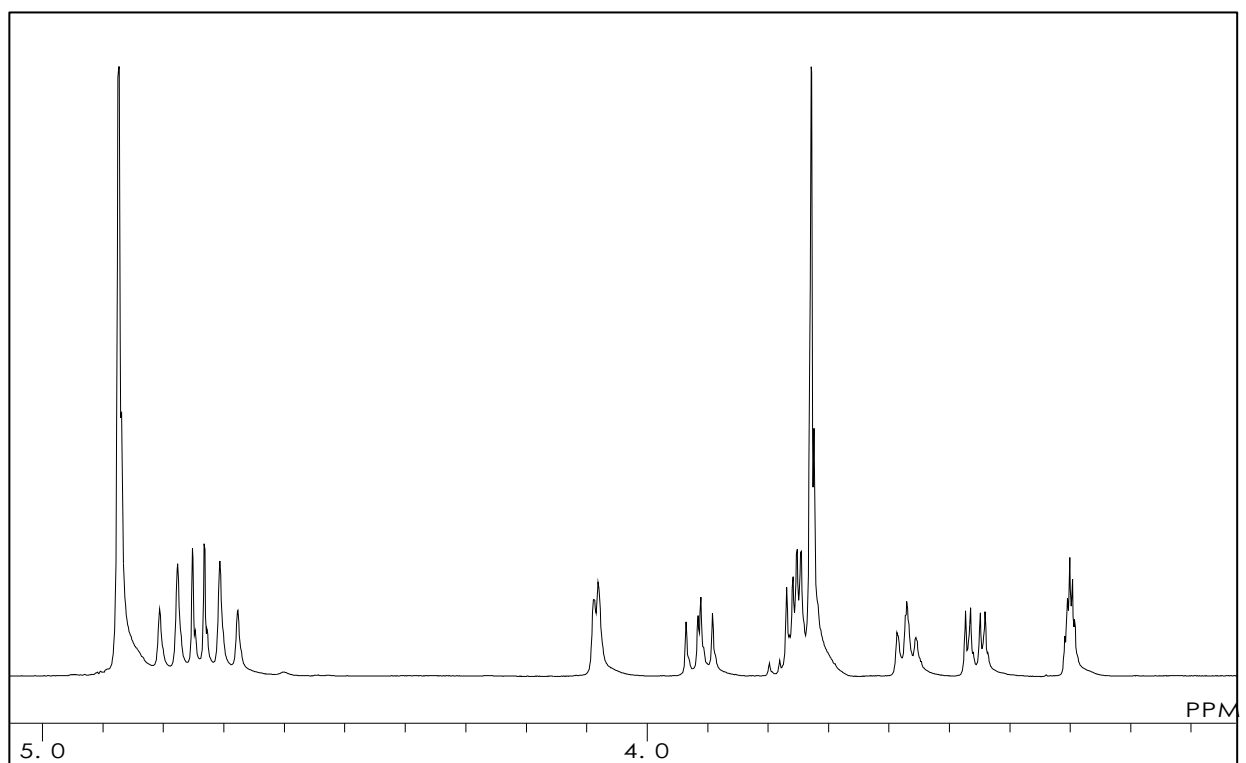
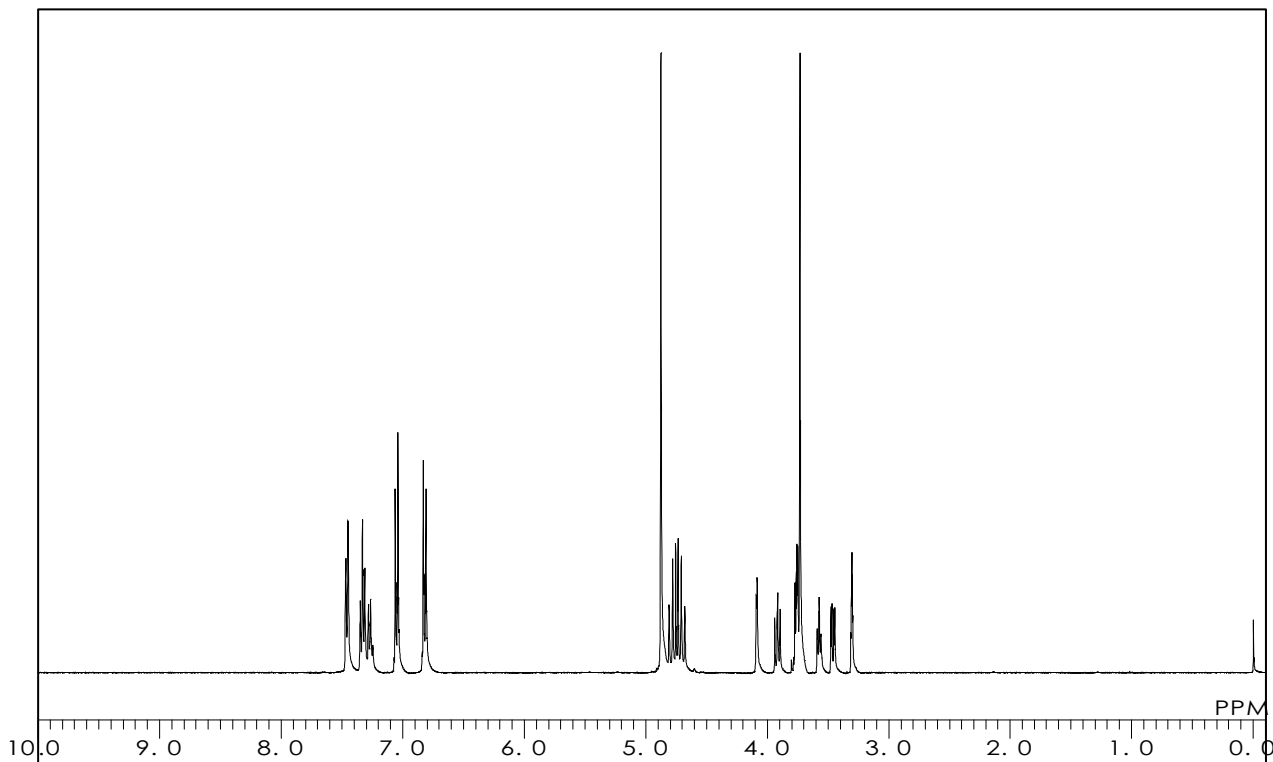
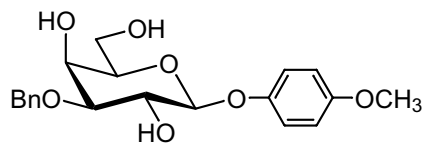
**4-Methoxyphenyl 3-O-Benzyl-β-D-galactopyranoside**

C<sub>20</sub>H<sub>24</sub>O<sub>7</sub> = 376.41 [383905-60-0]

Solvent : CD<sub>3</sub>OD

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 22.0 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**M1710**

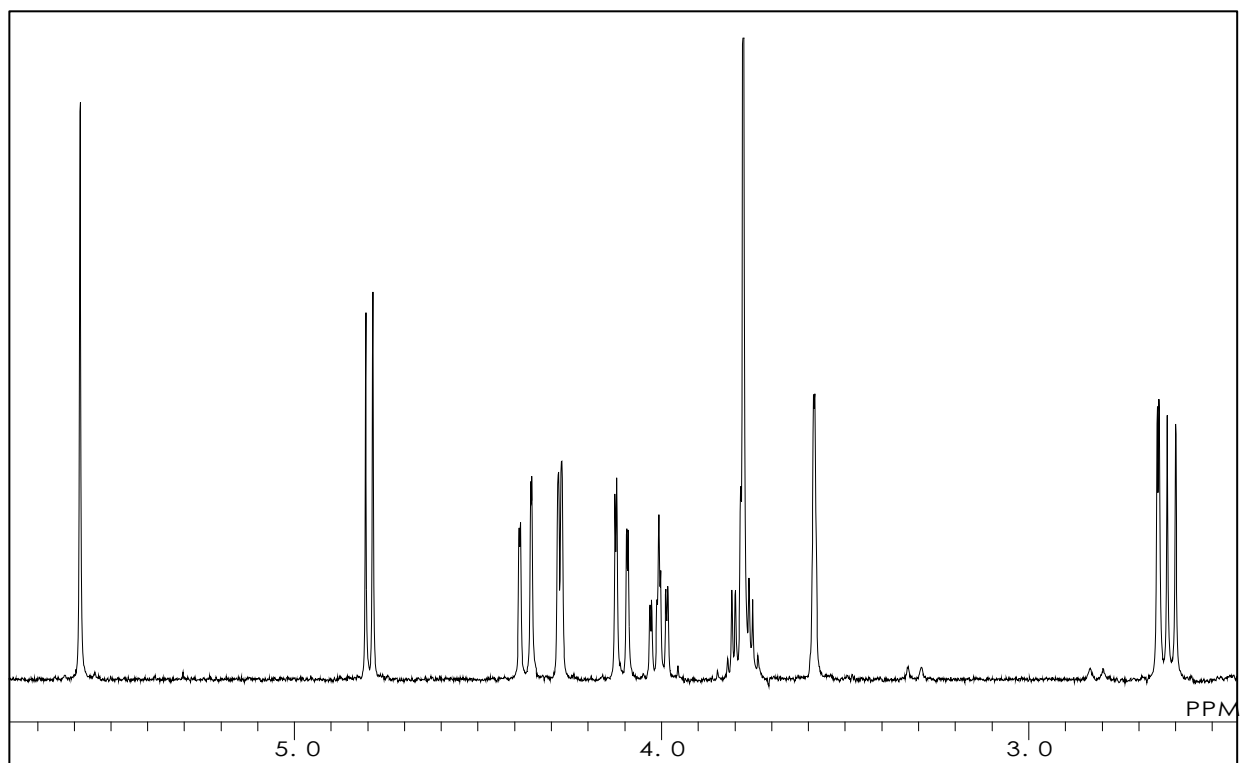
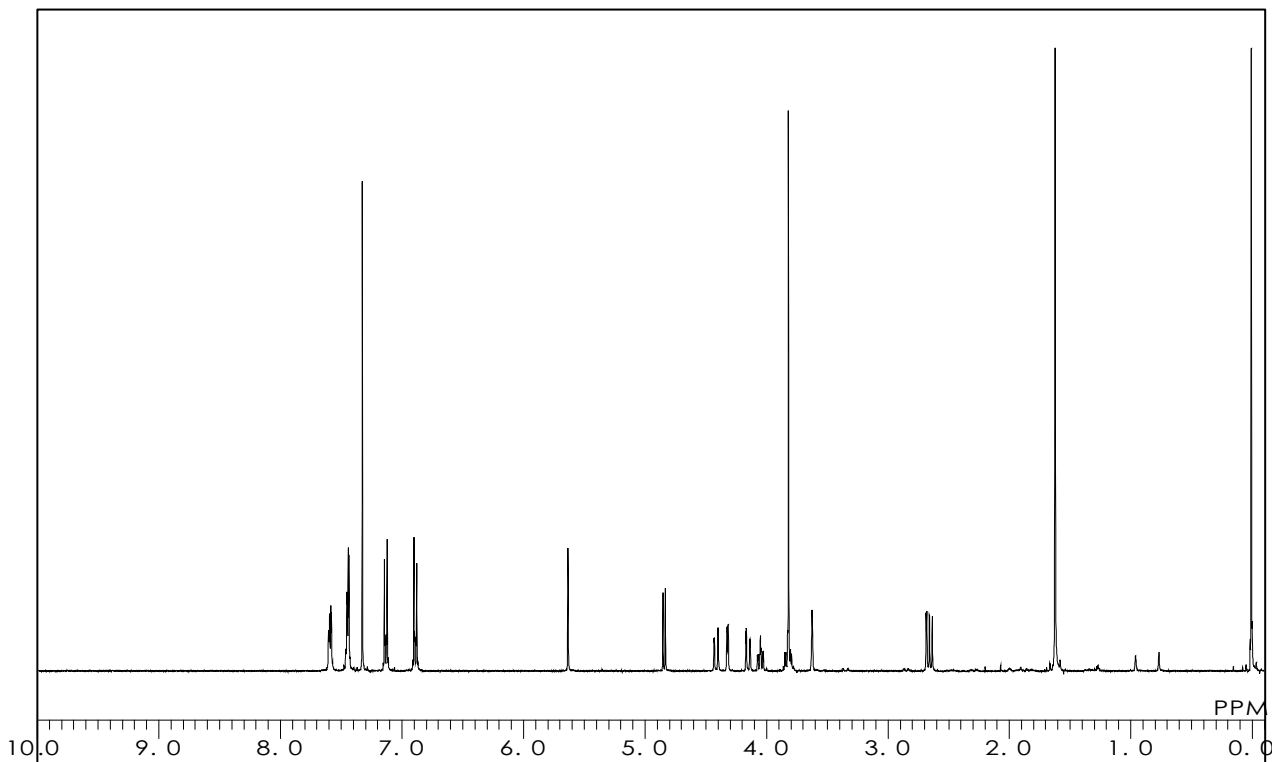
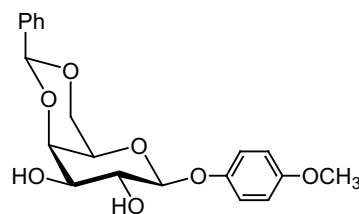
**4-Methoxyphenyl 4,6-O-Benzylidene-β-D-galactopyranoside**

C<sub>20</sub>H<sub>22</sub>O<sub>7</sub> = 374.39 [176299-96-0]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 20.0 °C



Please refrain from the conversion of these data without permission. These data have been released on our homepage.

**M1597**

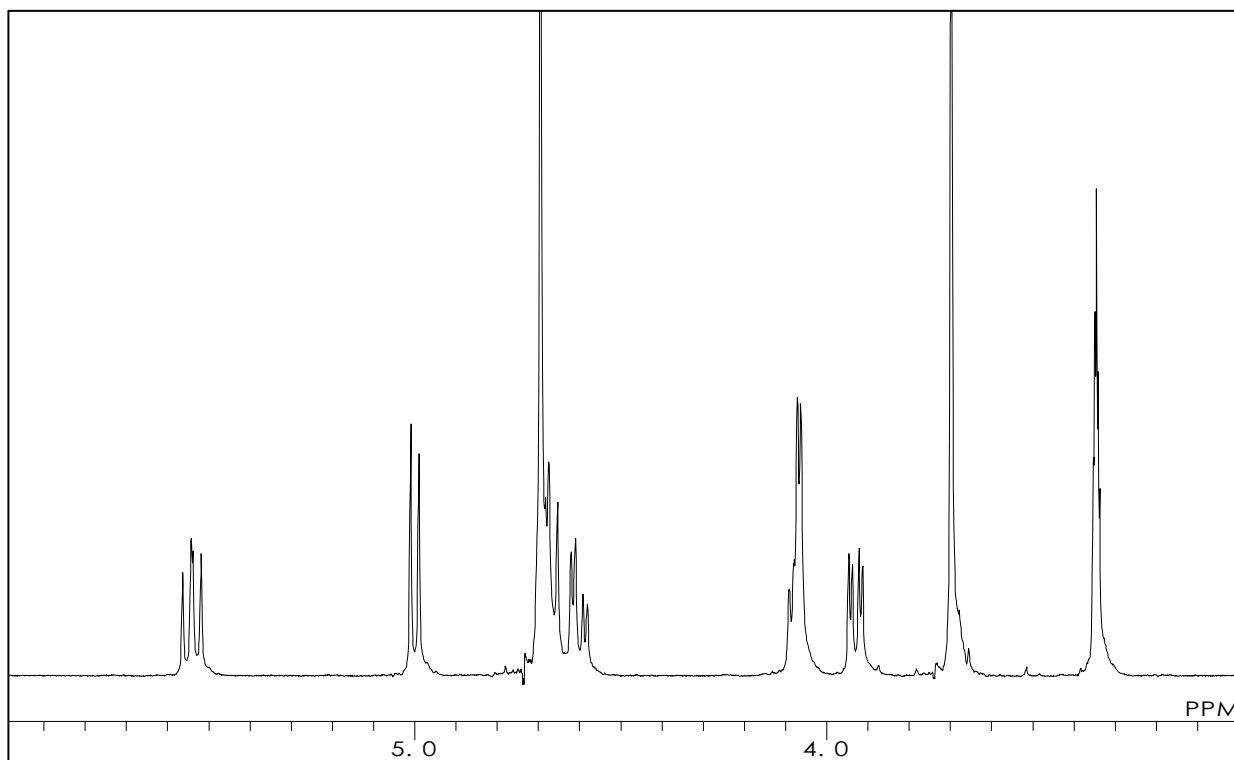
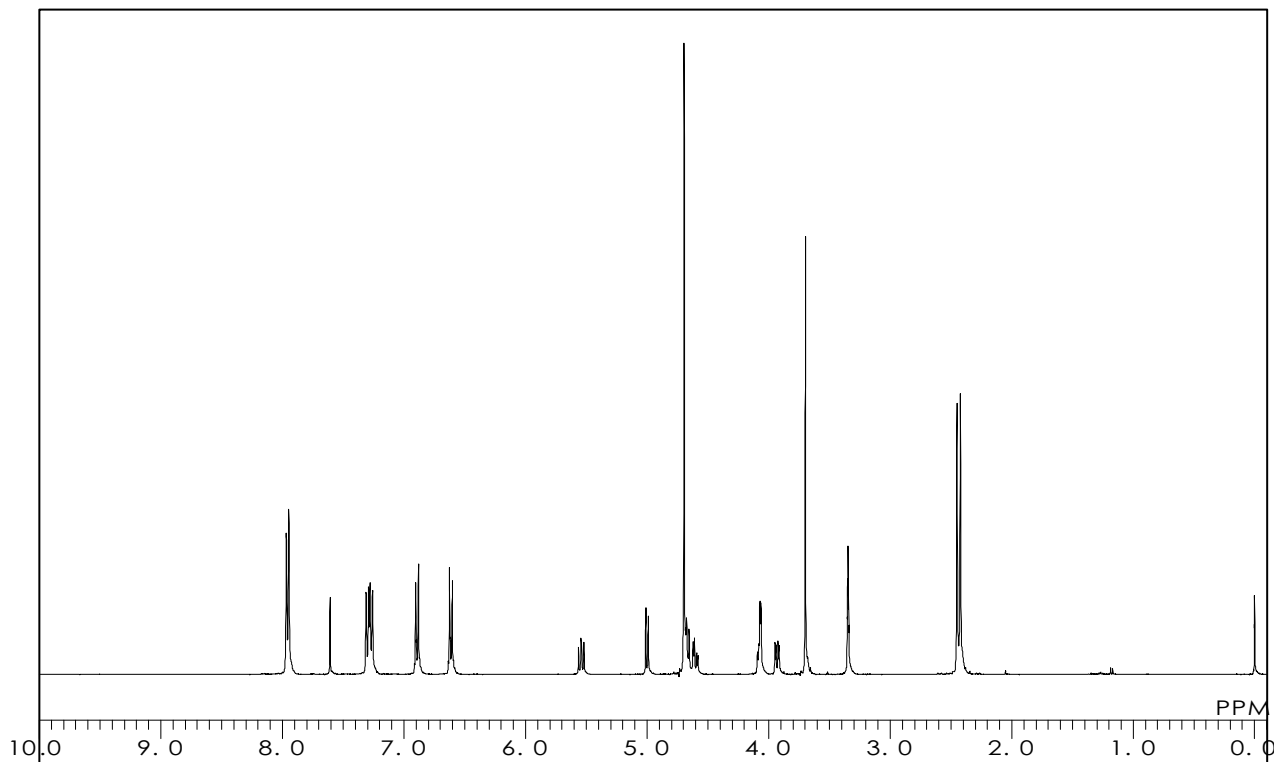
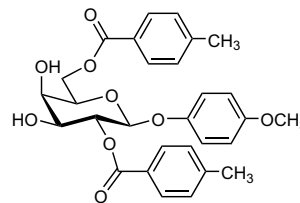
**4-Methoxyphenyl 2,6-Bis-O-(4-methylbenzoyl)- $\beta$ -D-galactopyranoside**

$C_{29}H_{30}O_9 = 522.55$

Solvent :  $CD_3OD/CDCl_3 = 1/1$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 21.8 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**M1634**

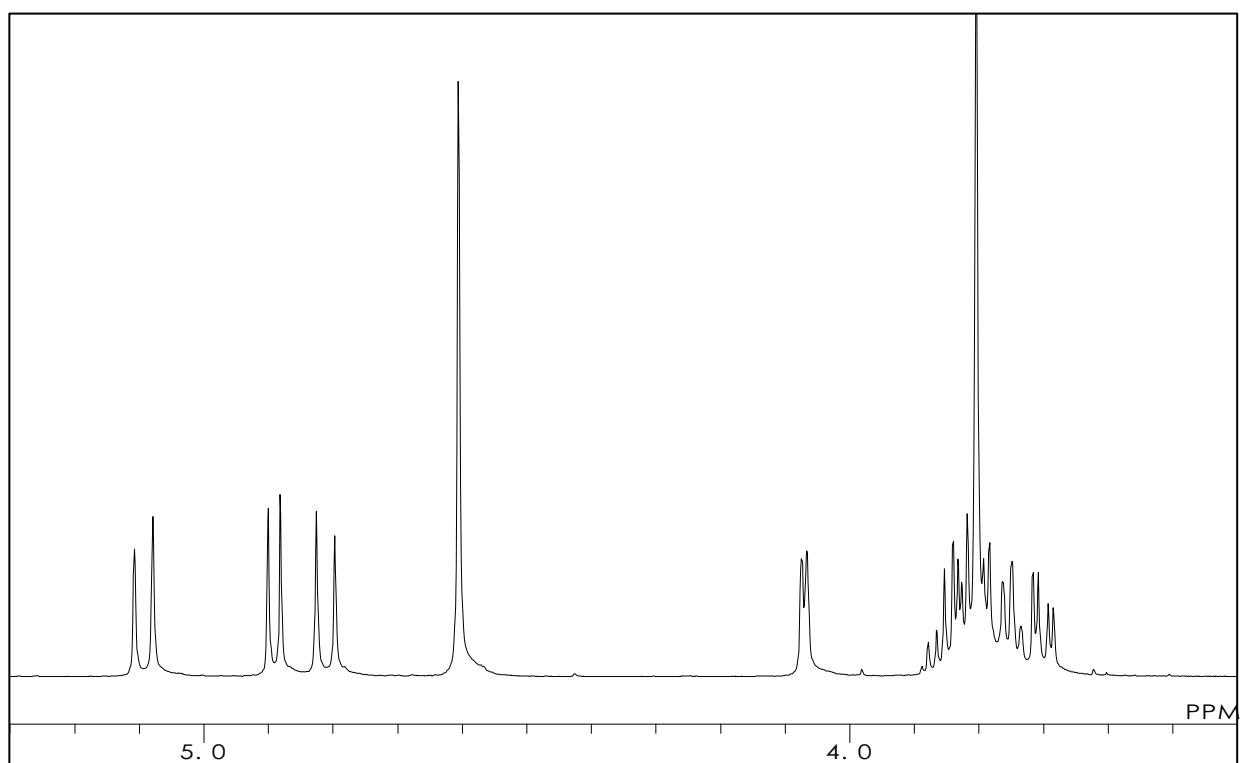
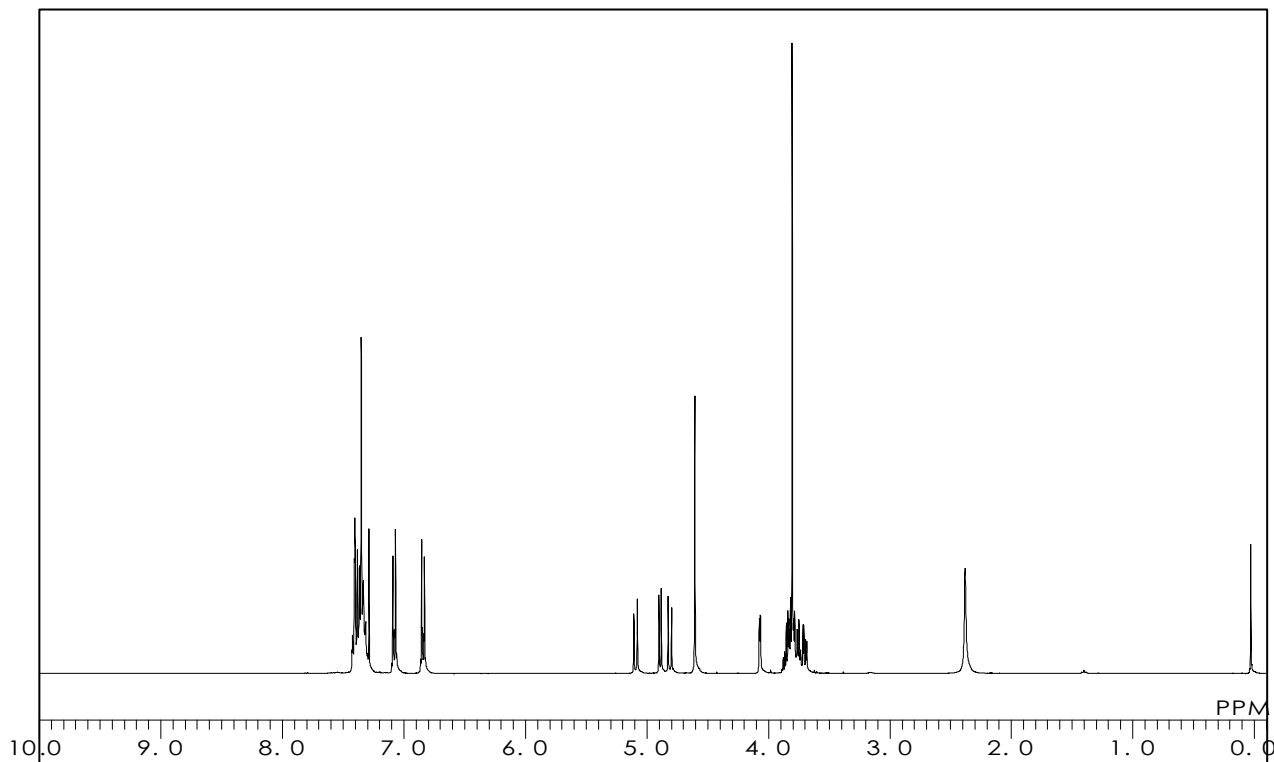
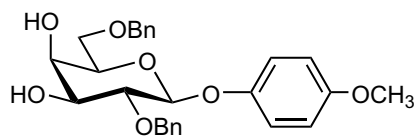
**4-Methoxyphenyl 2,6-Di-O-benzyl-β-D-galactopyranoside**

C<sub>27</sub>H<sub>30</sub>O<sub>7</sub> = 466.53 [159922-50-6]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 22.3 °C



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**M1633**

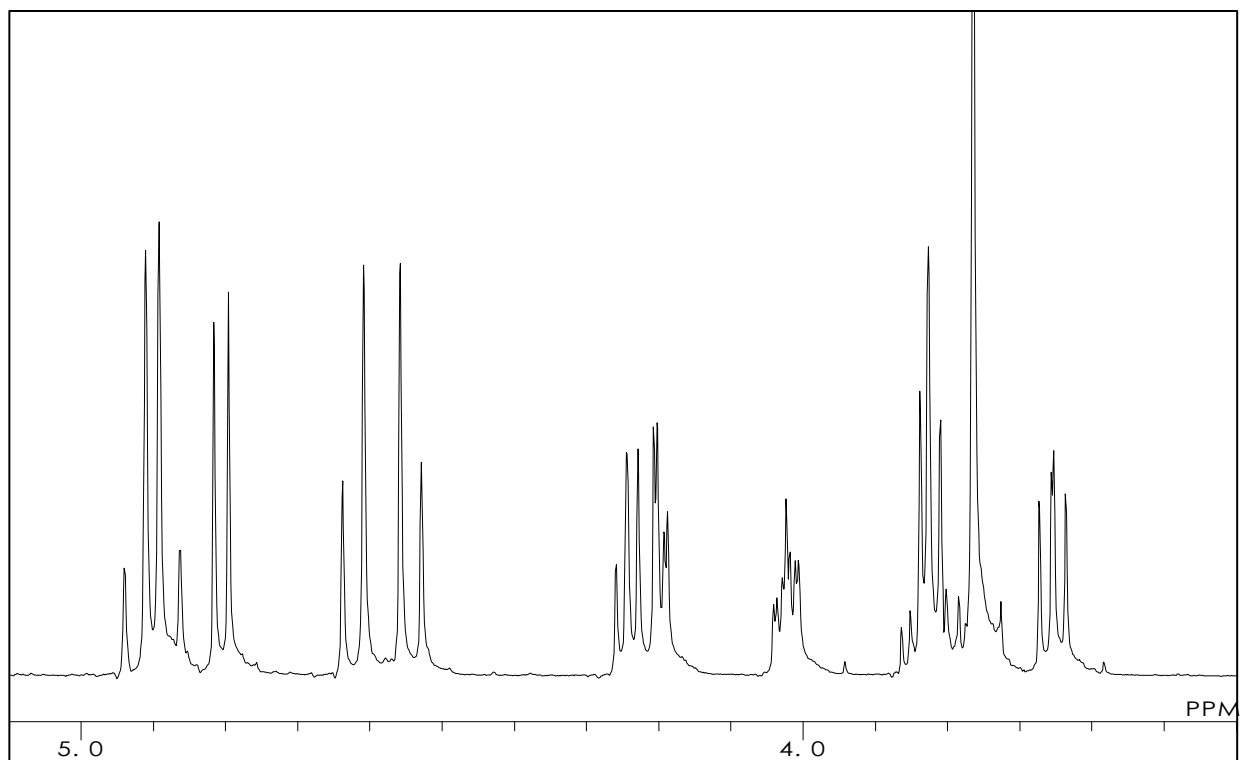
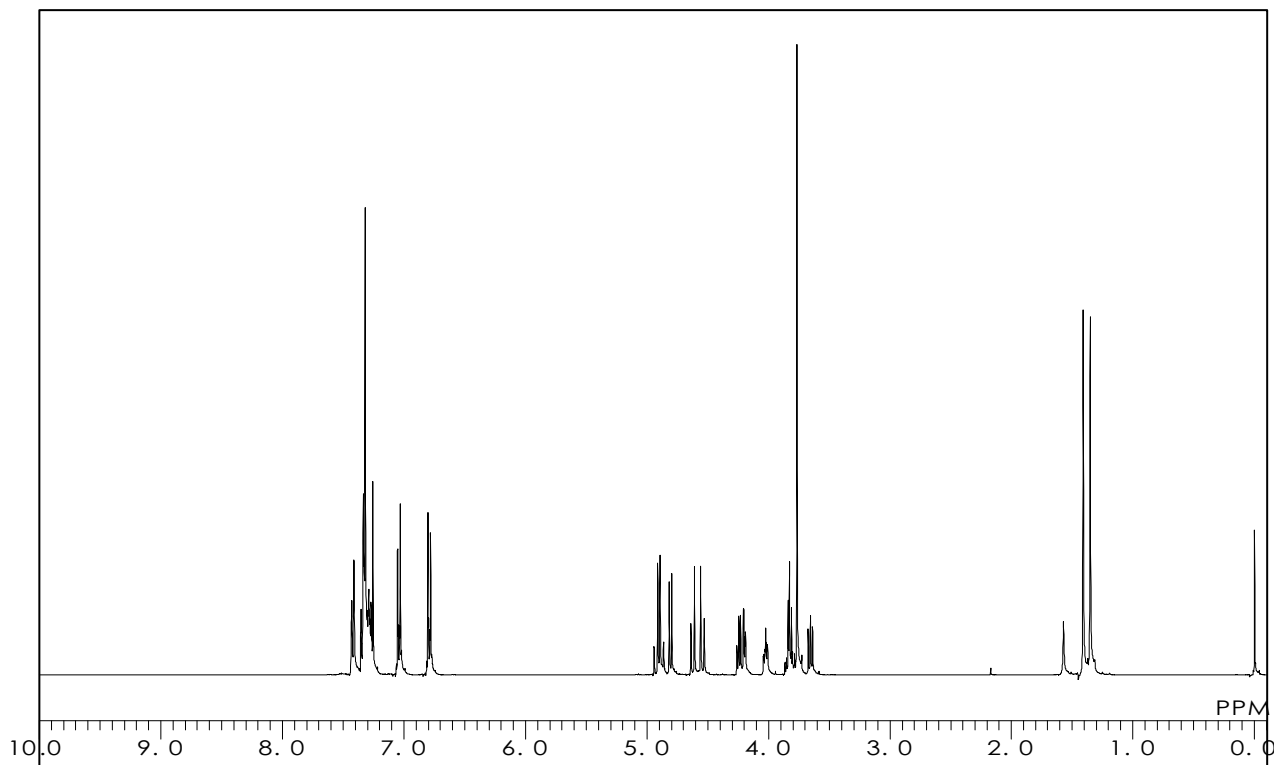
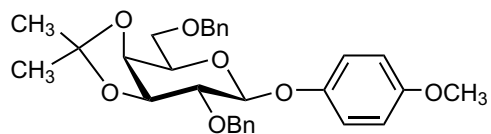
**4-Methoxyphenyl 2,6-Di-O-benzyl-3,4-O-isopropylidene- $\beta$ -D-galactopyranoside**

$C_{30}H_{34}O_7 = 506.60$  [159922-68-6]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 22.1 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**M1481**

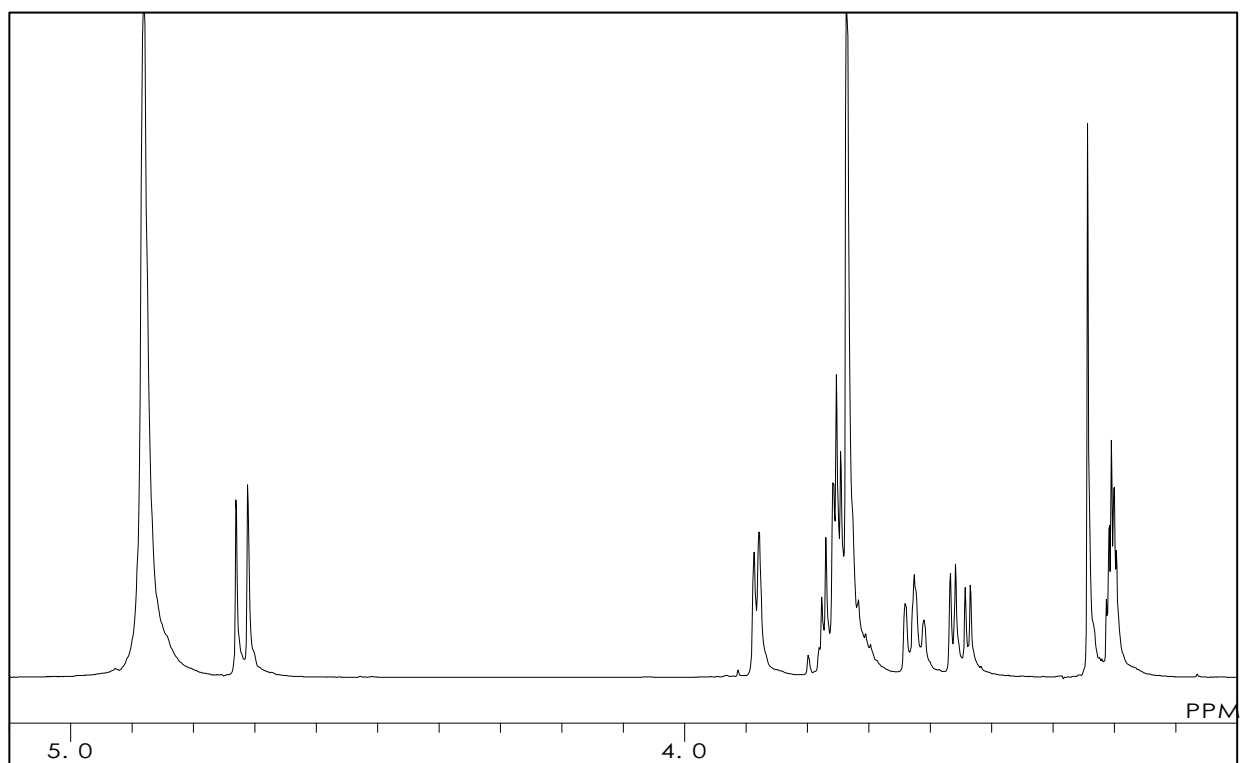
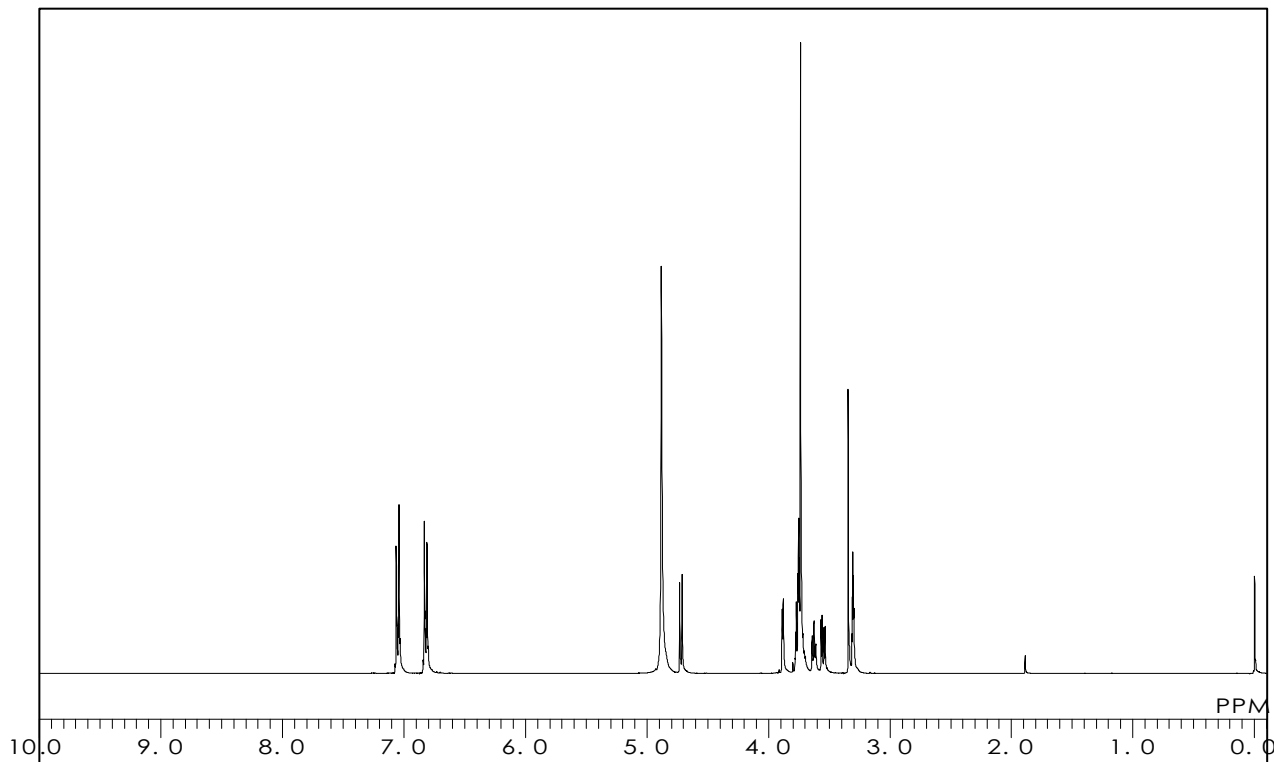
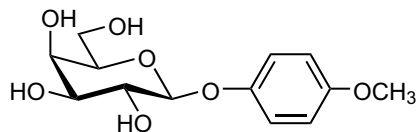
## 4-Methoxyphenyl $\beta$ -D-Galactopyranoside

$C_{13}H_{18}O_7 = 286.28$  [3150-20-7]

Solvent :  $CD_3OD$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 21.2 °C



Please refrain from the conversion of these data without permission. These data have been released on our homepage.

**M1596**

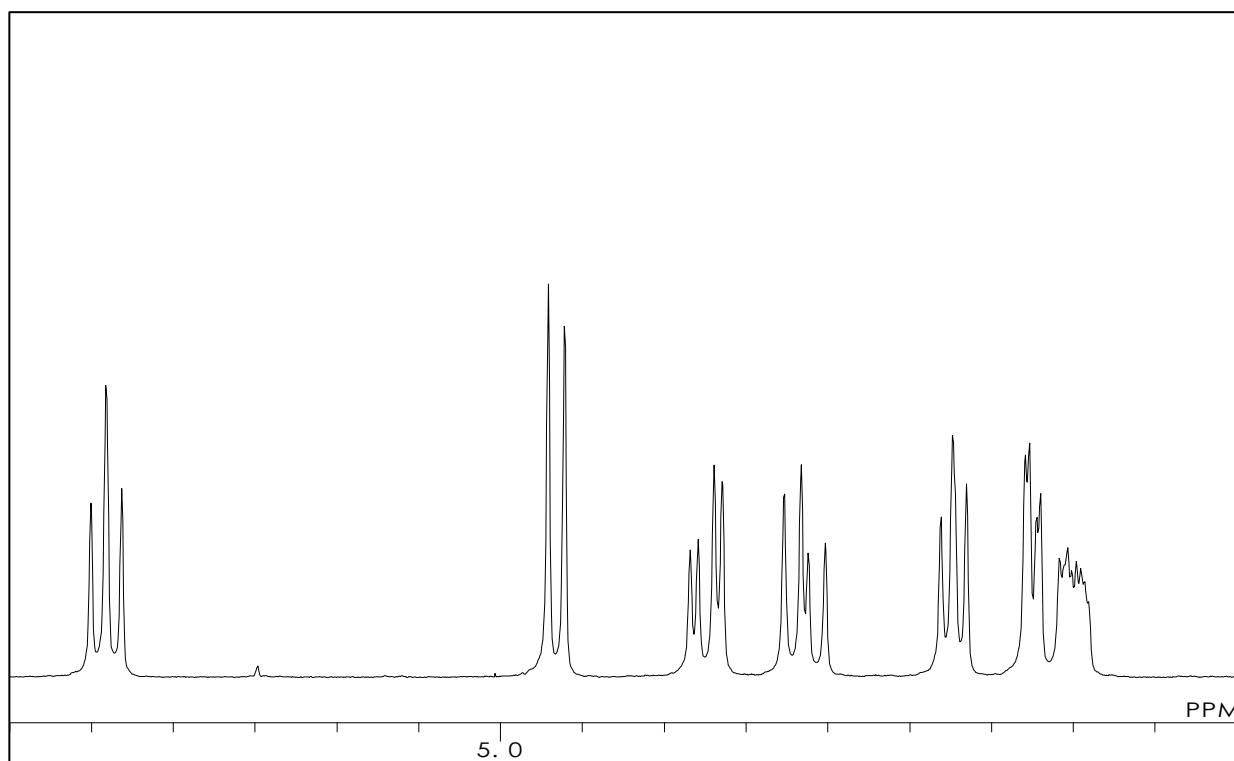
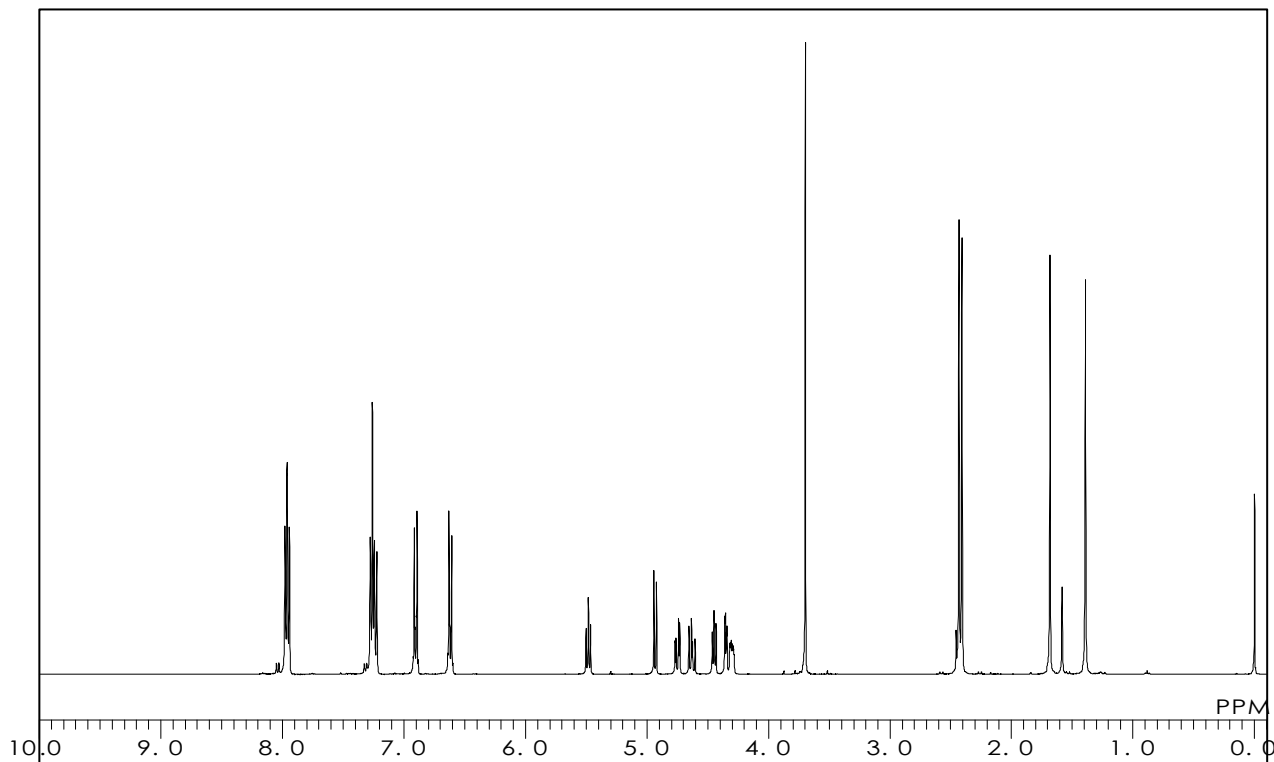
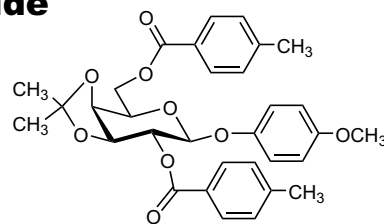
**4-Methoxyphenyl 3,4-O-Isopropylidene-2,6-bis-O-(4-methylbenzoyl)- $\beta$ -D-galactopyranoside**

$C_{32}H_{34}O_9 = 562.62$

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 22.2 °C



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**M1593**

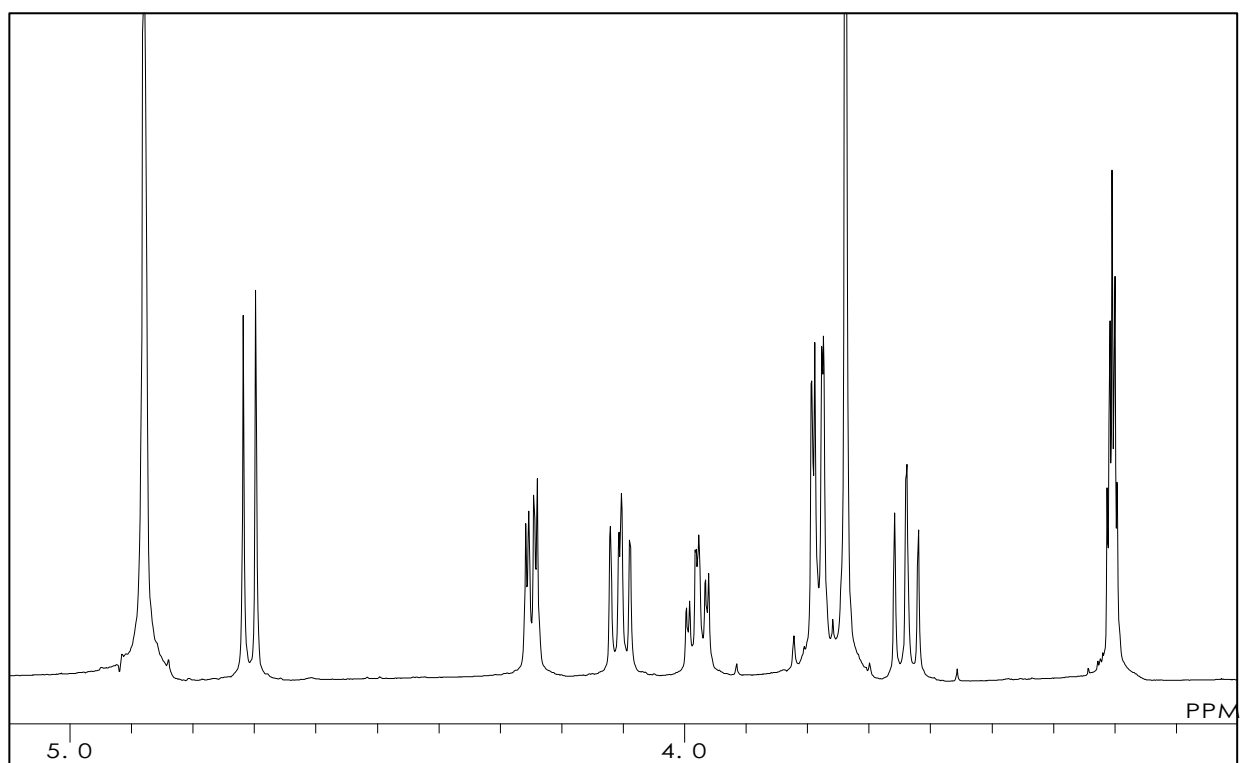
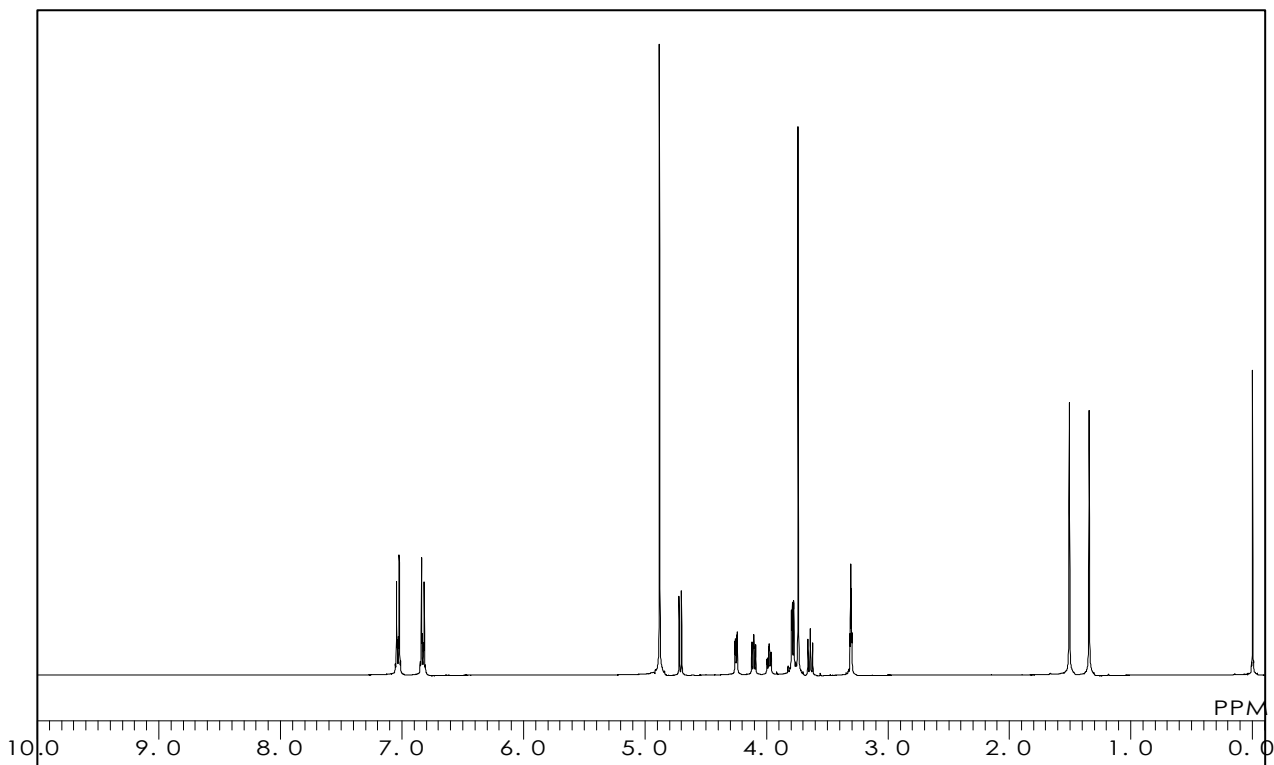
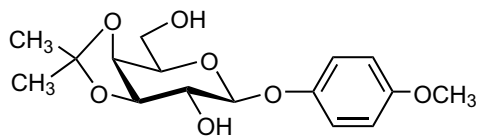
**4-Methoxyphenyl 3,4-O-Isopropylidene-β-D-galactopyranoside**

$C_{16}H_{22}O_7 = 326.35$  [159922-67-5]

Solvent :  $CD_3OD$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 21.0 °C



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**M1594**

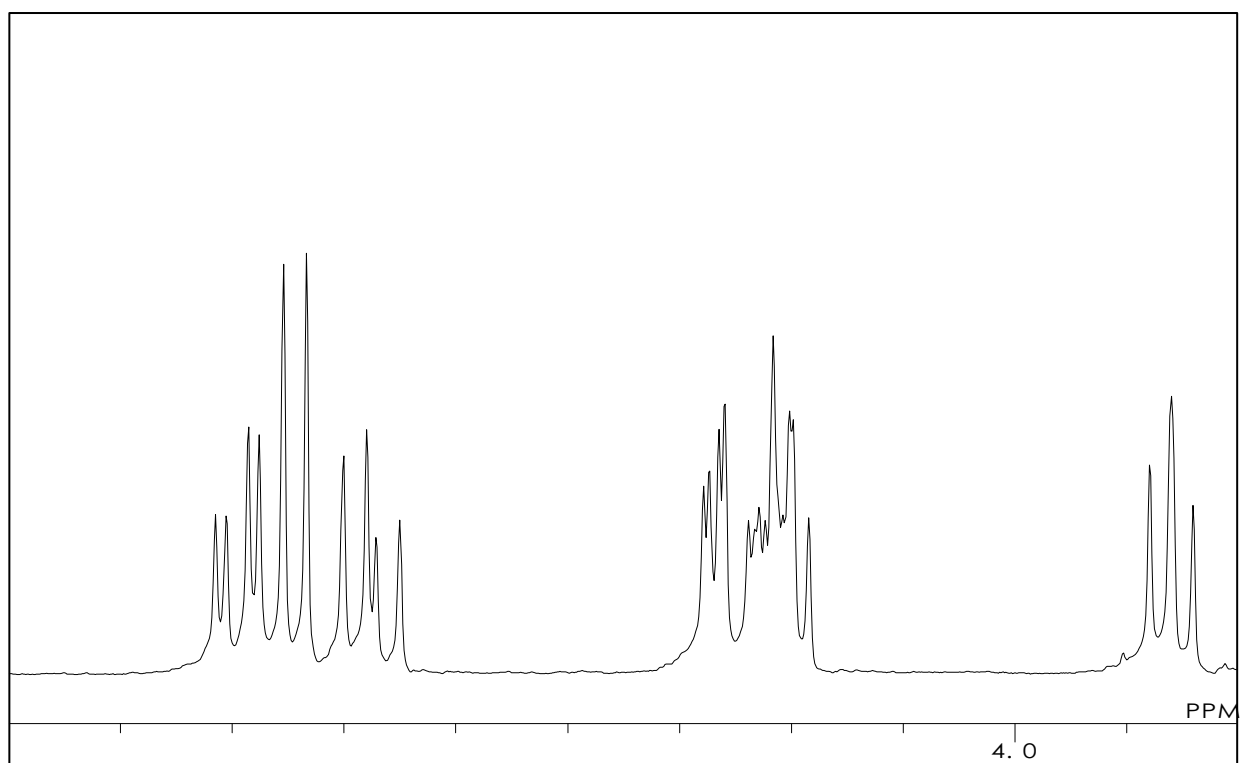
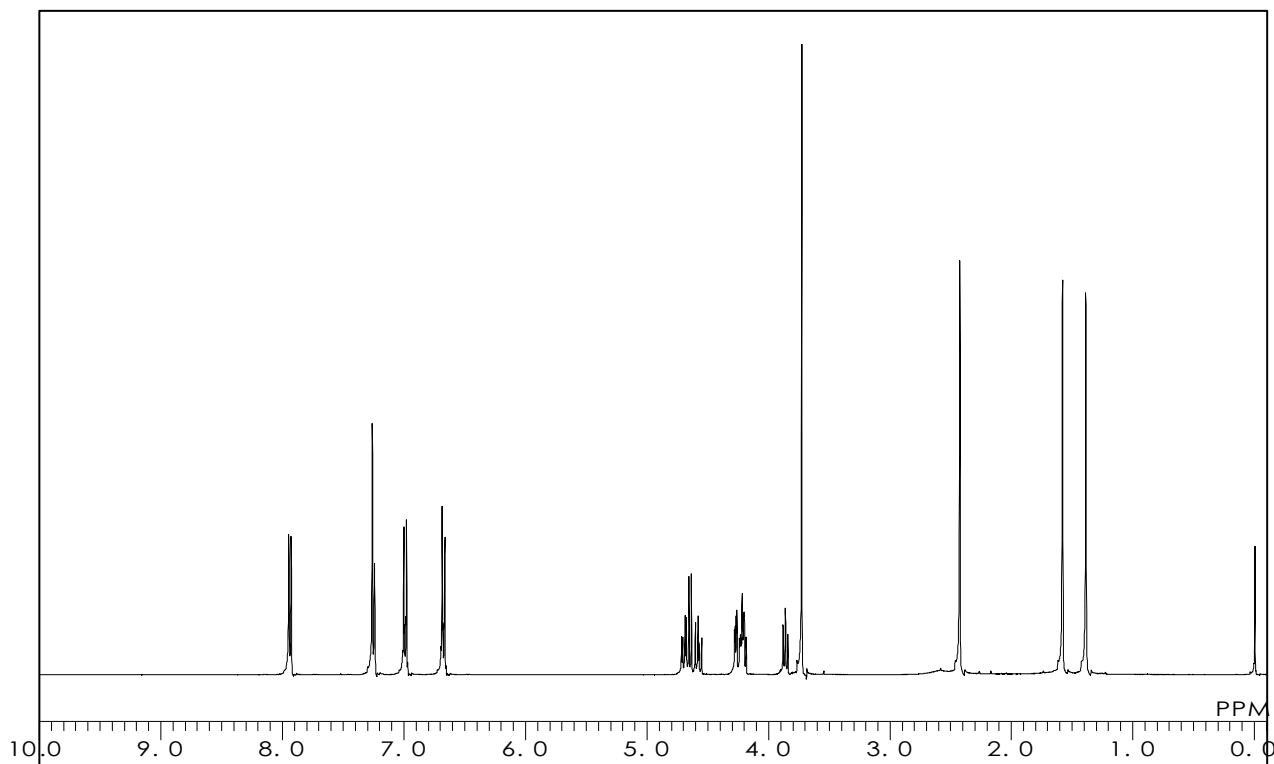
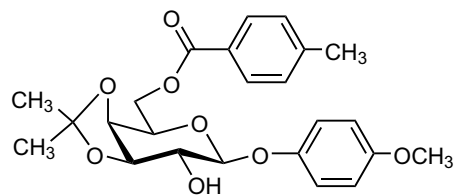
**4-Methoxyphenyl 3,4-O-Isopropylidene-6-O-(4-methylbenzoyl)- $\beta$ -D-galactopyranoside**

$C_{24}H_{28}O_8 = 444.48$

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 21.5 °C



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**M1477**

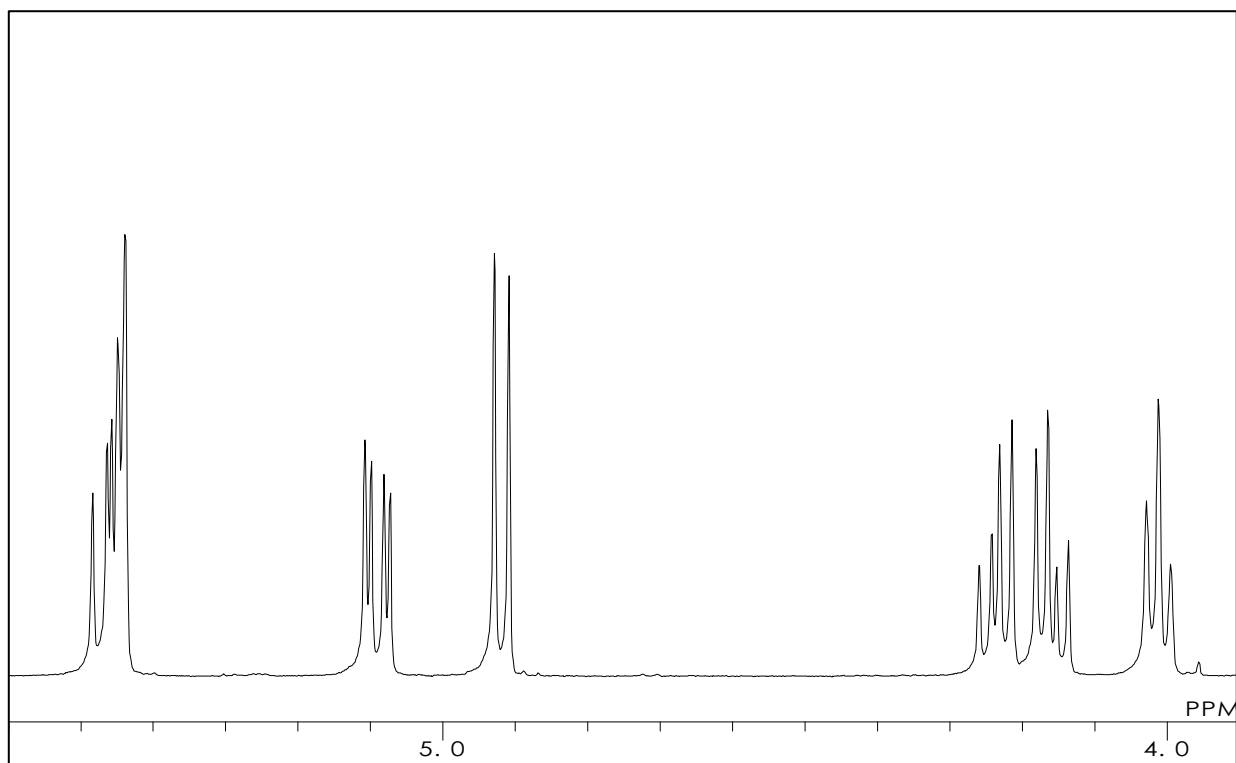
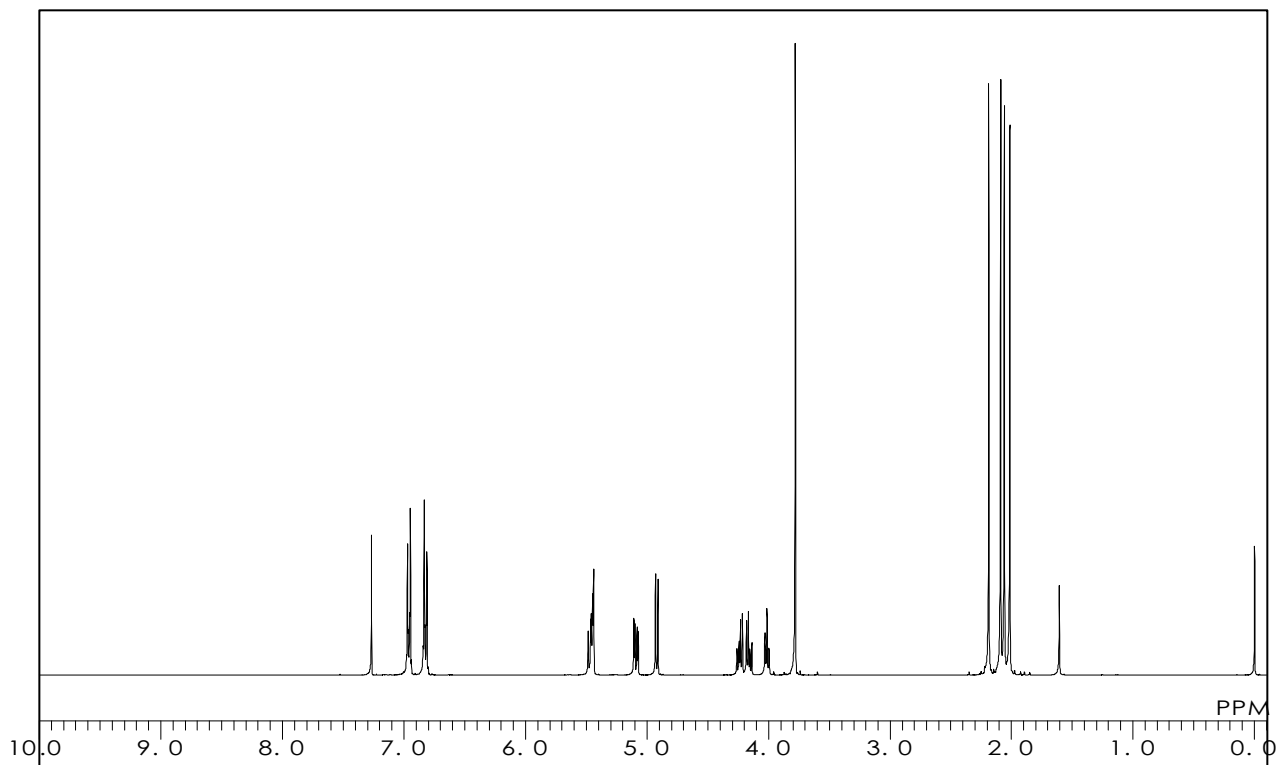
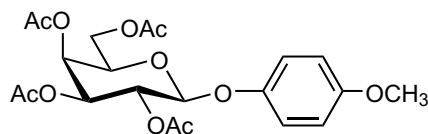
**4-Methoxyphenyl 2,3,4,6-Tetra-O-acetyl-β-D-galactopyranoside**

$C_{21}H_{26}O_{11} = 454.43$  [2872-65-3]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 21.4 °C



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**M1588**

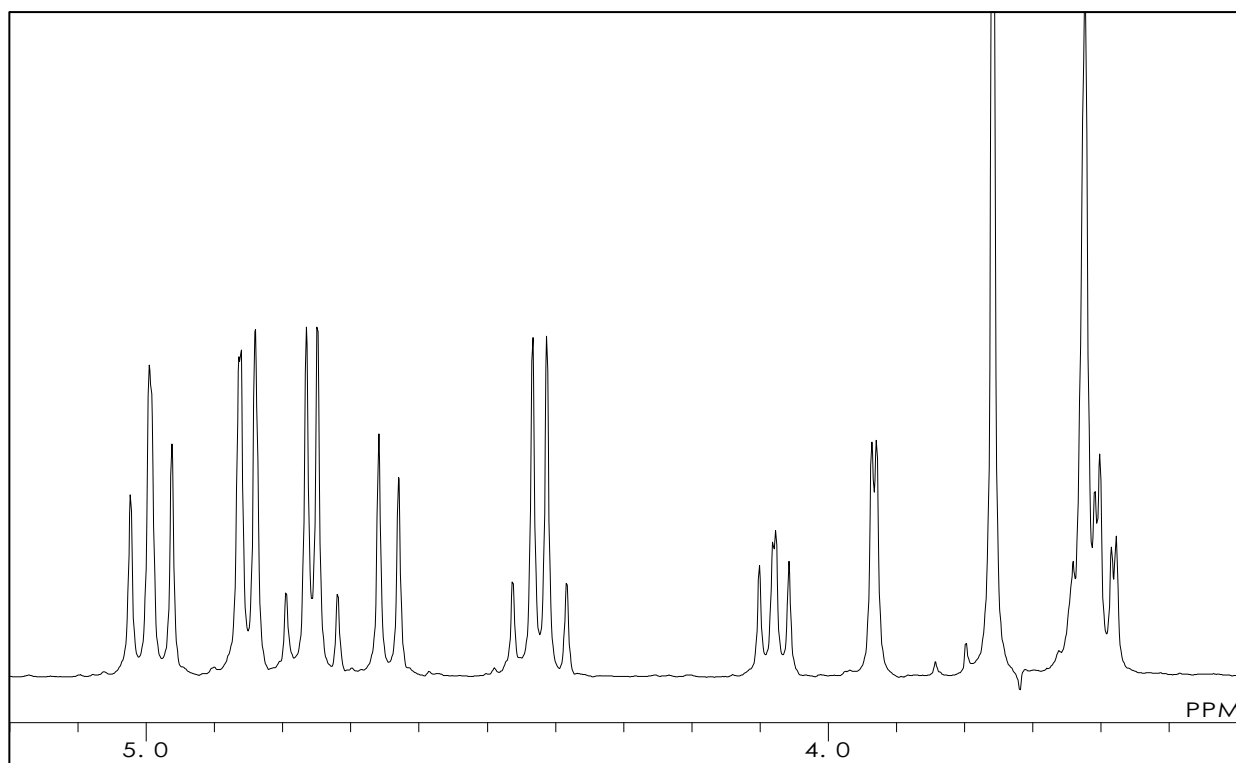
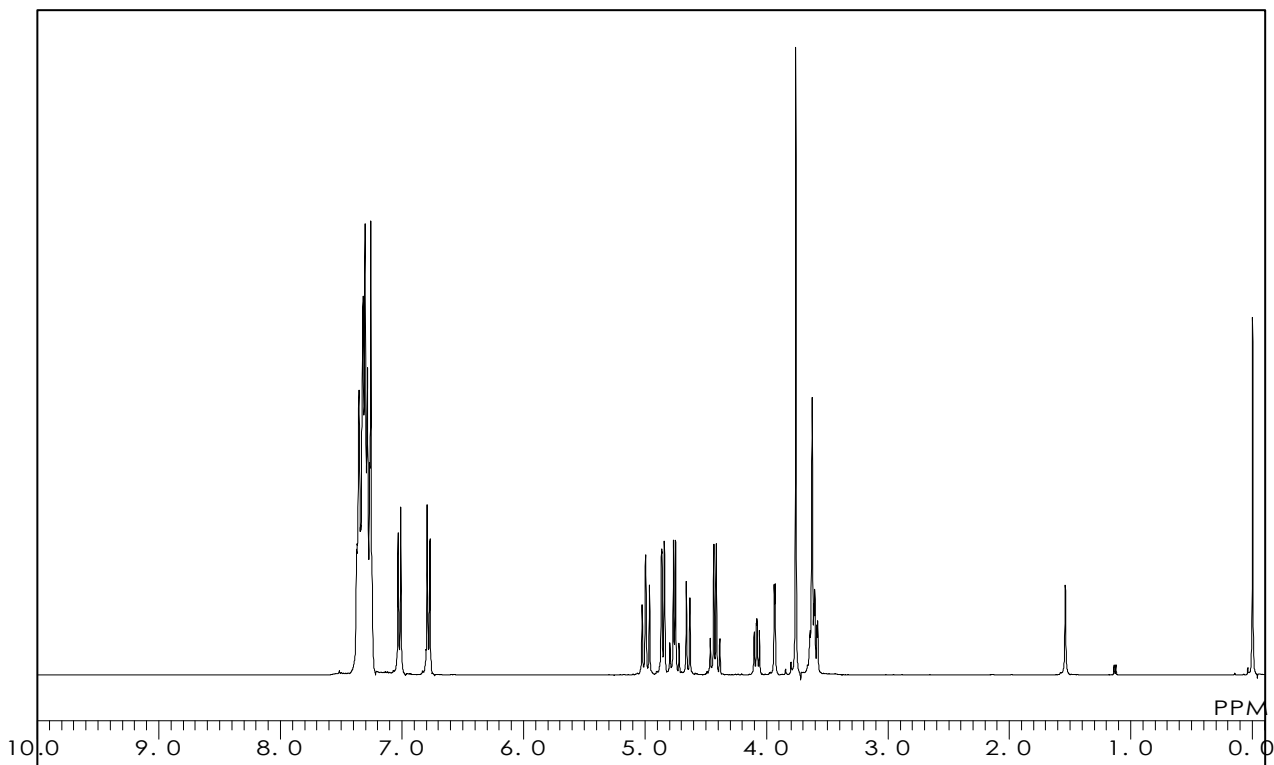
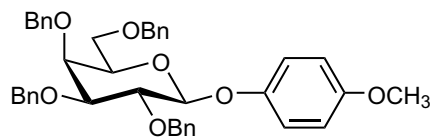
**4-Methoxyphenyl 2,3,4,6-Tetra-O-benzyl-β-D-galactopyranoside**

C<sub>41</sub>H<sub>42</sub>O<sub>7</sub> = 646.78 [143536-99-6]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 21.9 °C



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**M1592**

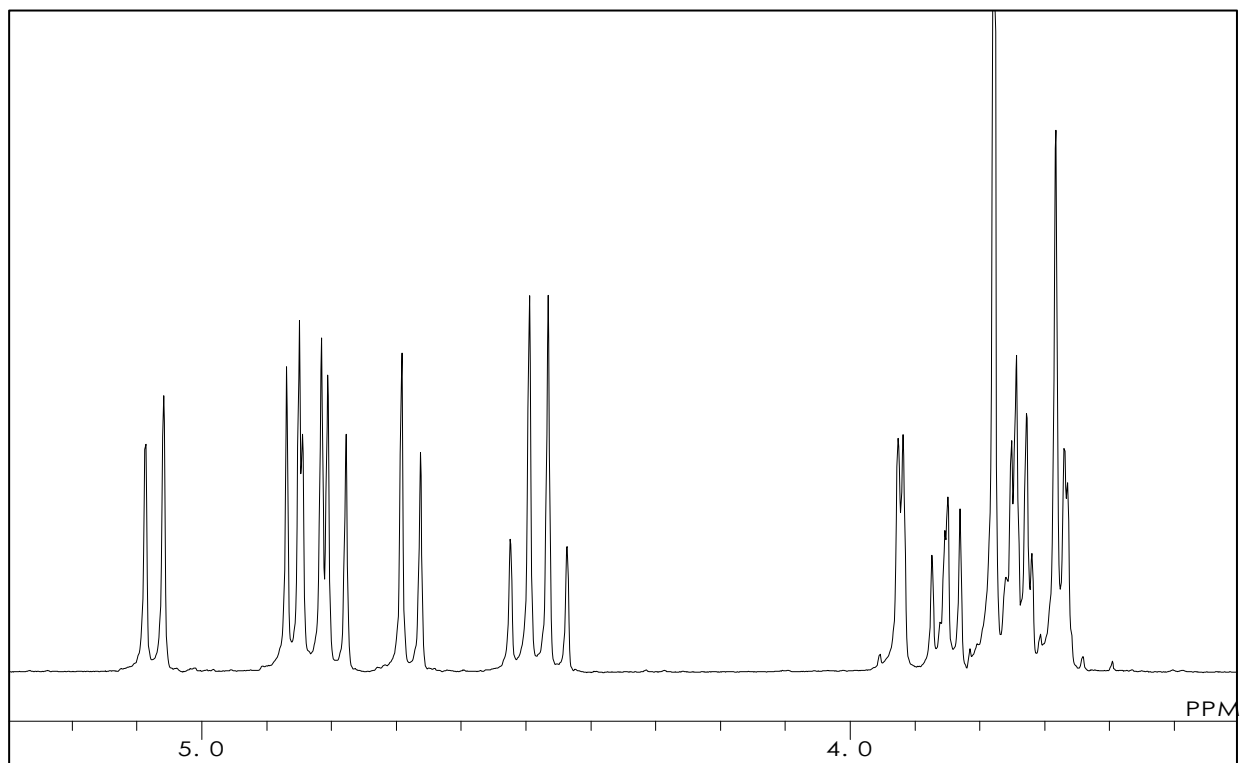
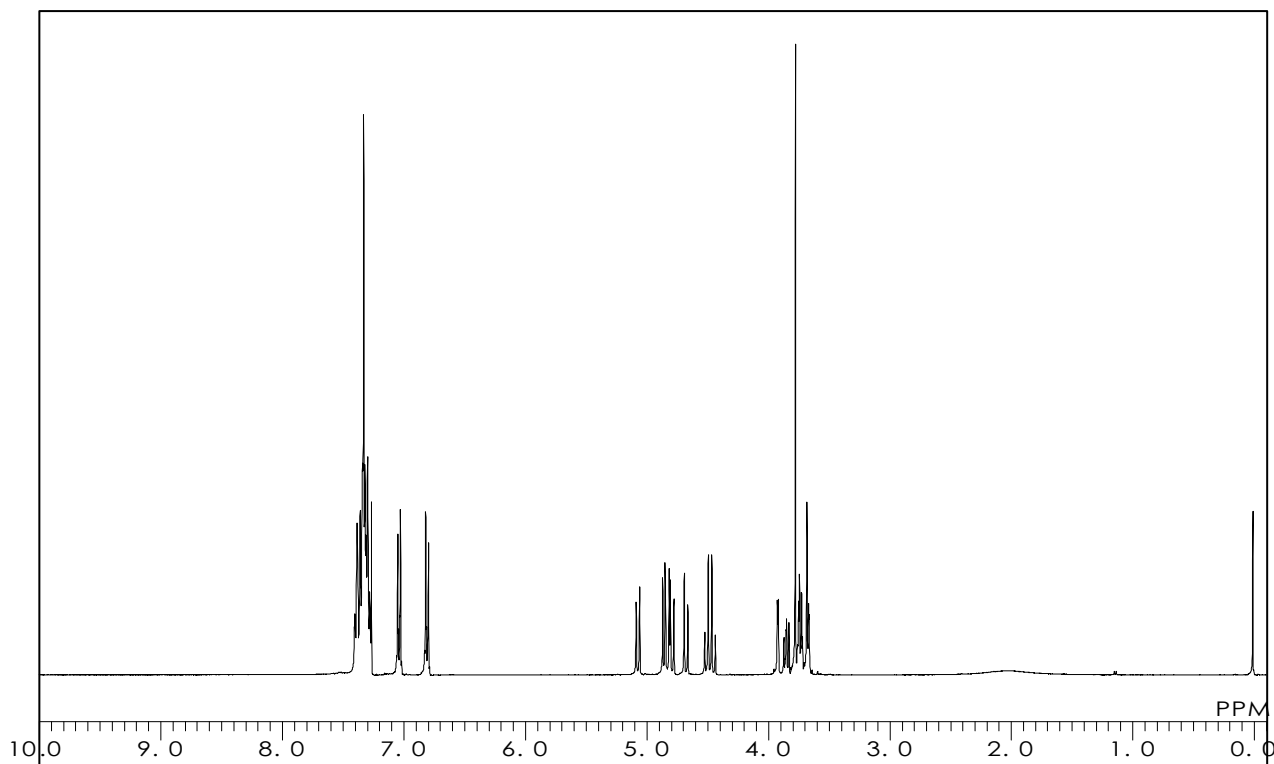
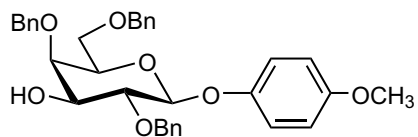
**4-Methoxyphenyl 2,4,6-Tri-O-benzyl-β-D-galactopyranoside**

C<sub>34</sub>H<sub>36</sub>O<sub>7</sub> = 556.66 [247027-79-8]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 22.0 °C



**M1933**

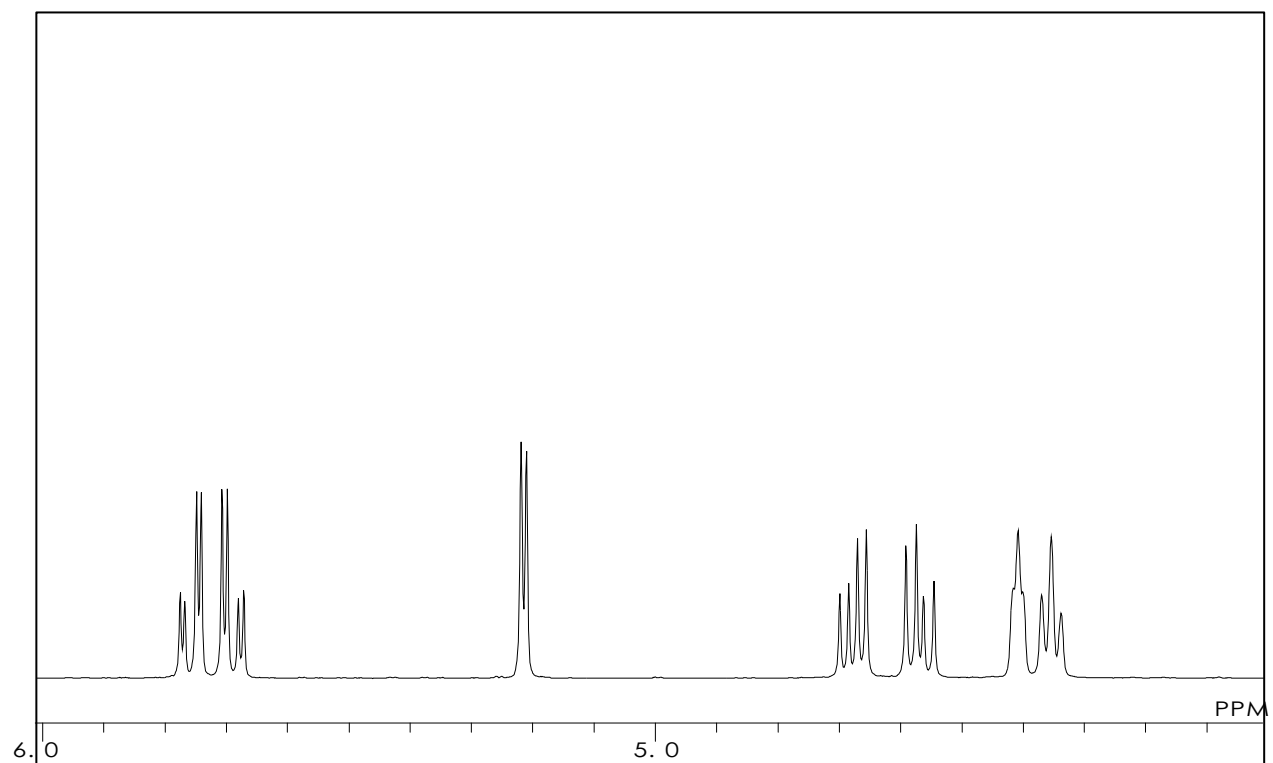
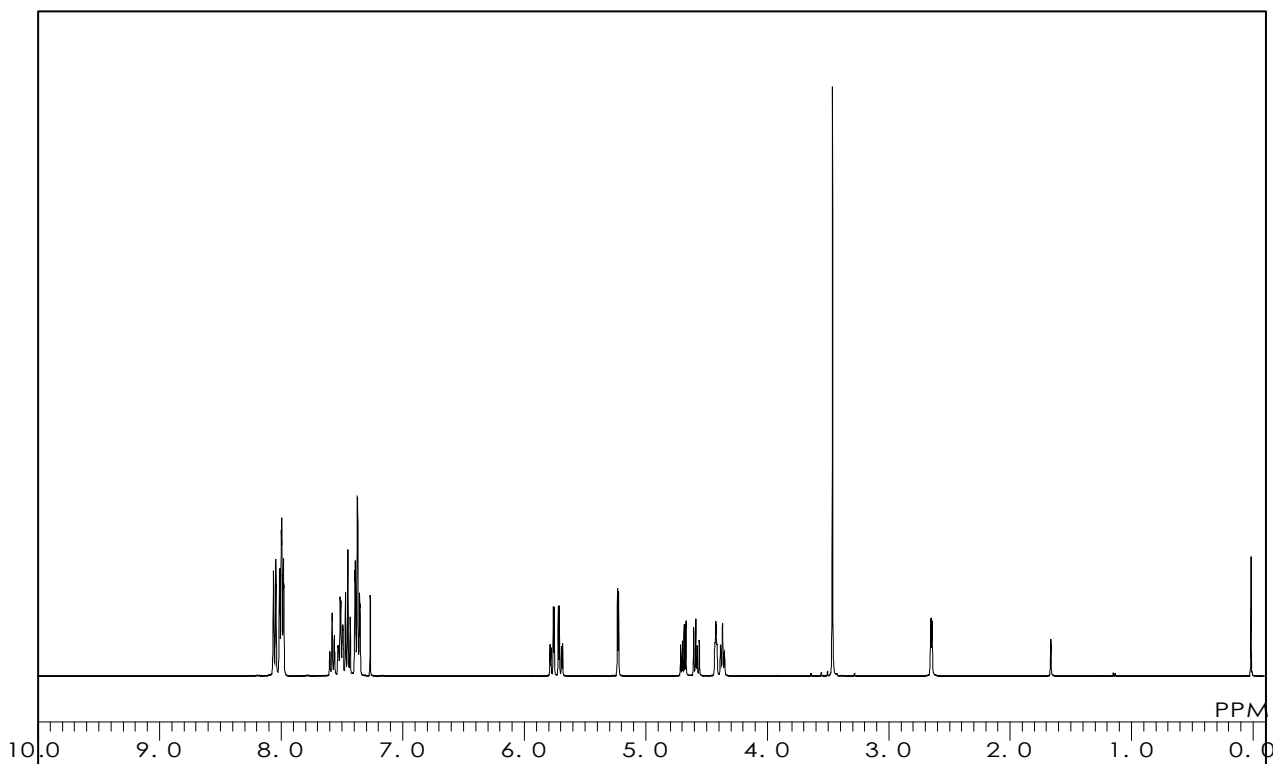
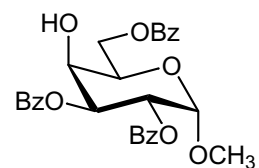
**Methyl 2,3,6-Tri-O-benzoyl- $\alpha$ -D-galactopyranoside**

$C_{28}H_{26}O_9 = 506.51$  [3601-36-3]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 25.9 °C



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**P2078**

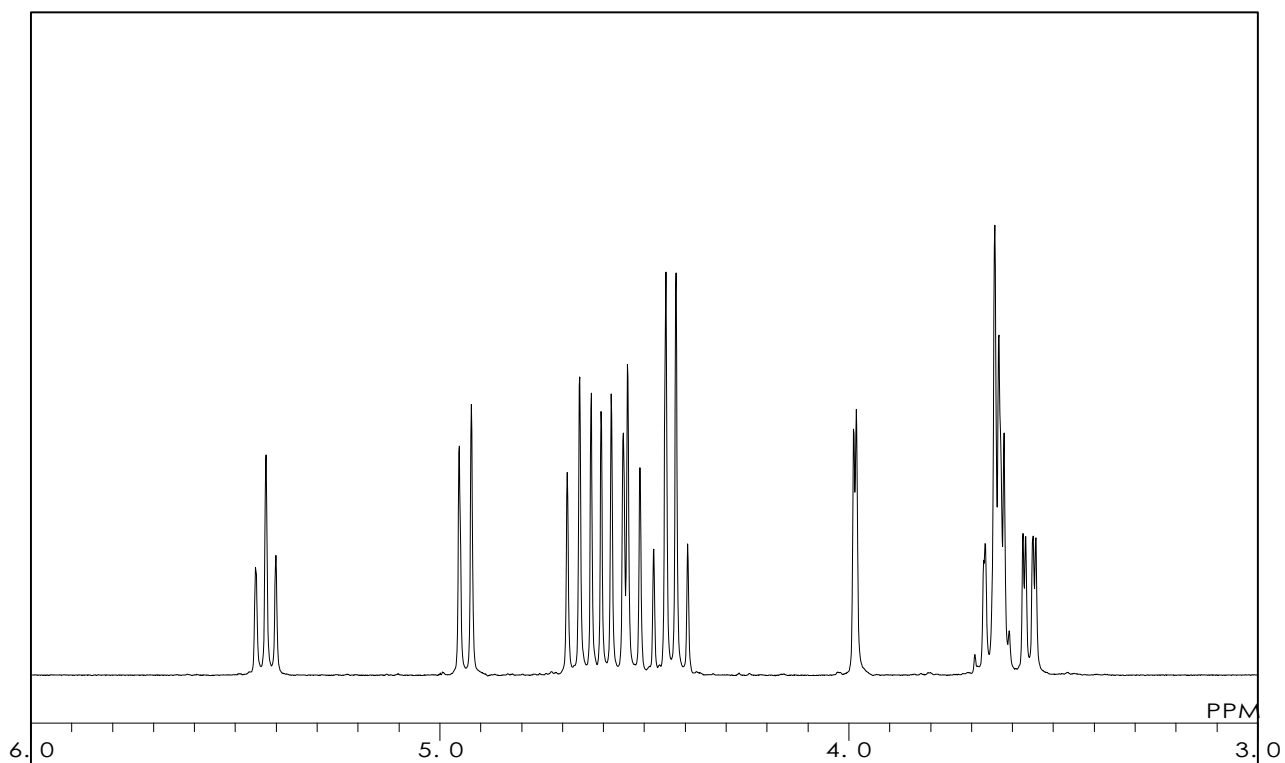
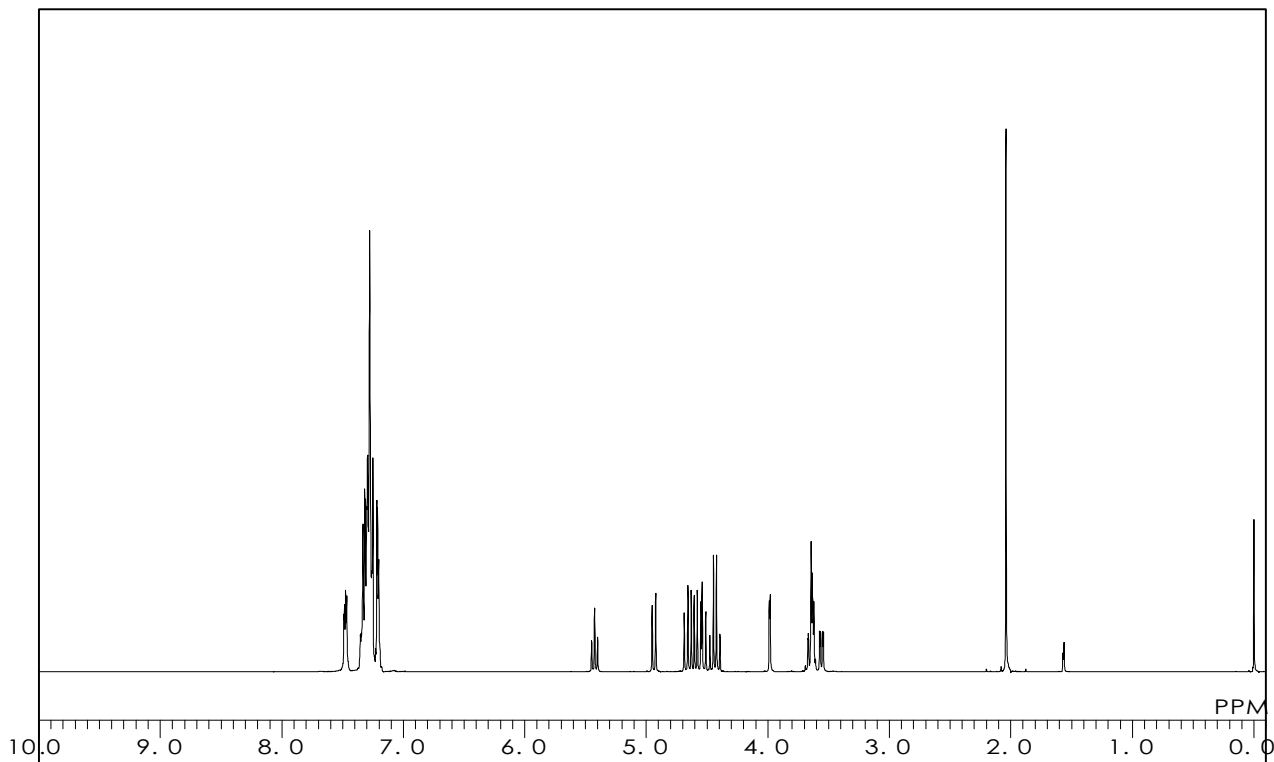
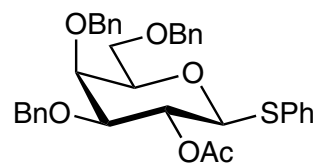
**Phenyl 2-O-Acetyl-3,4,6-tri-O-benzyl-  
1-thio-β-D-galactopyranoside**

C<sub>35</sub>H<sub>36</sub>O<sub>6</sub>S = 584.73 [183875-28-7]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 21.3 °C



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**P1477**

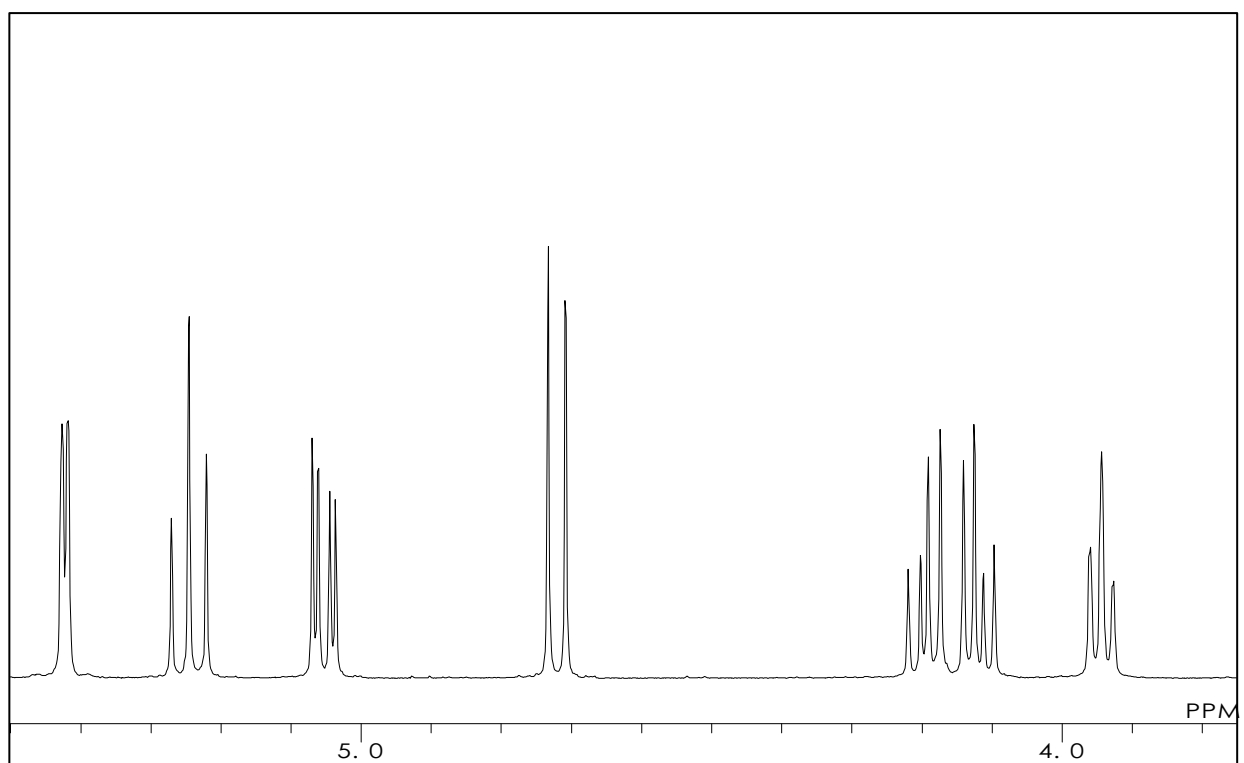
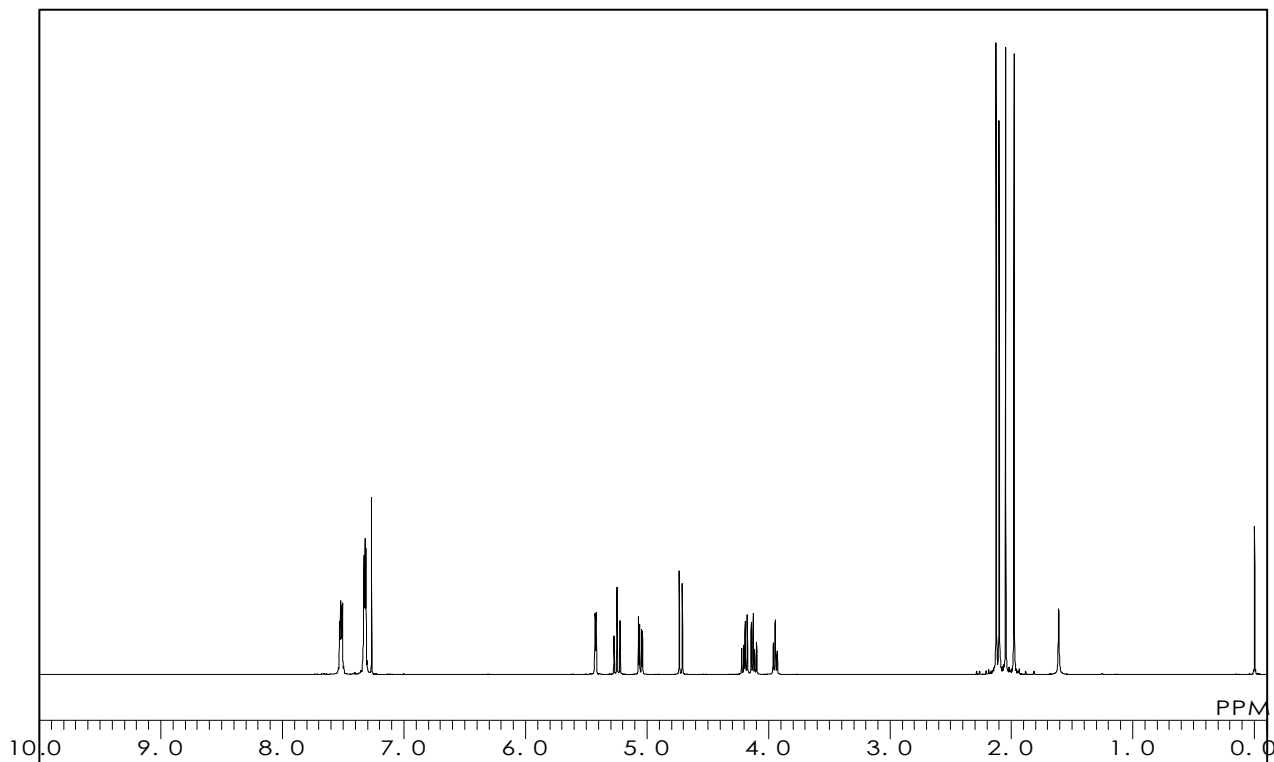
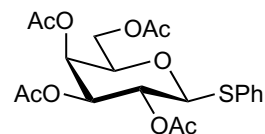
**Phenyl 2,3,4,6-Tetra-O-acetyl-1-thio-β-D-galactopyranoside**

C<sub>20</sub>H<sub>24</sub>O<sub>9</sub>S = 440.46 [24404-53-3]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 21.4 °C



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**P1679**

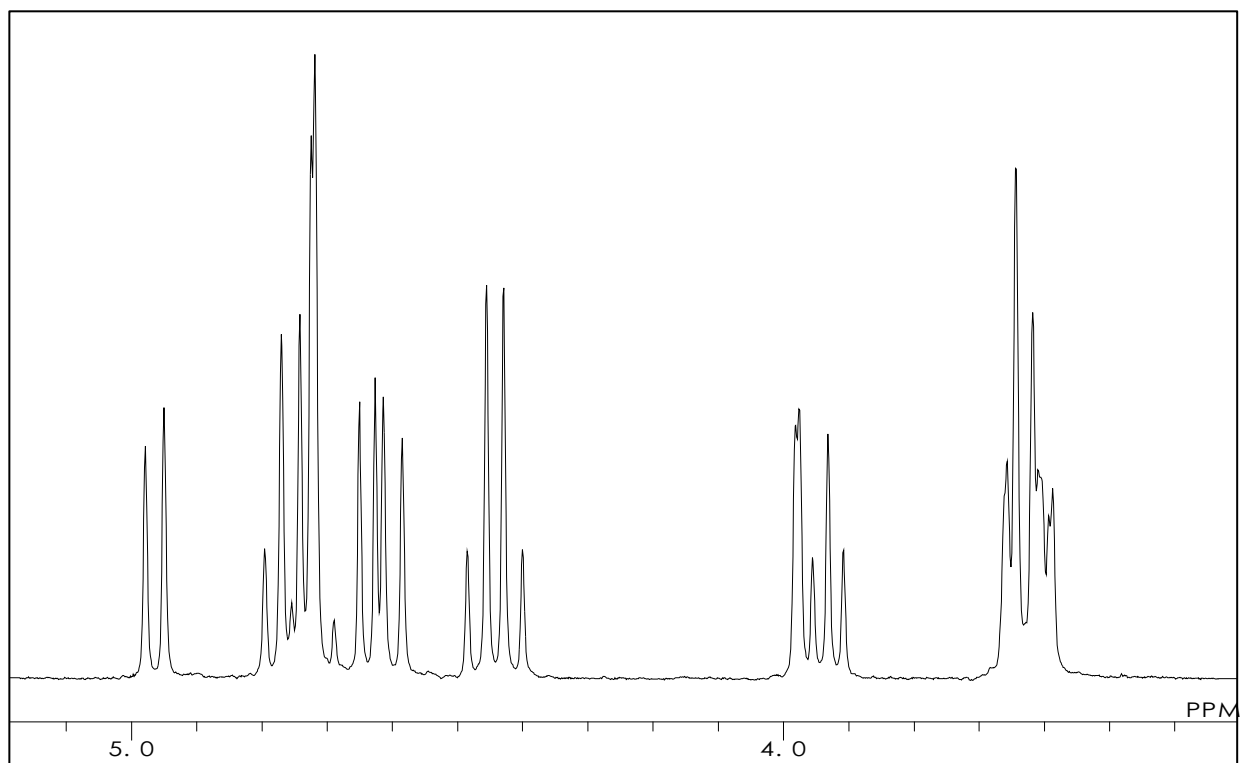
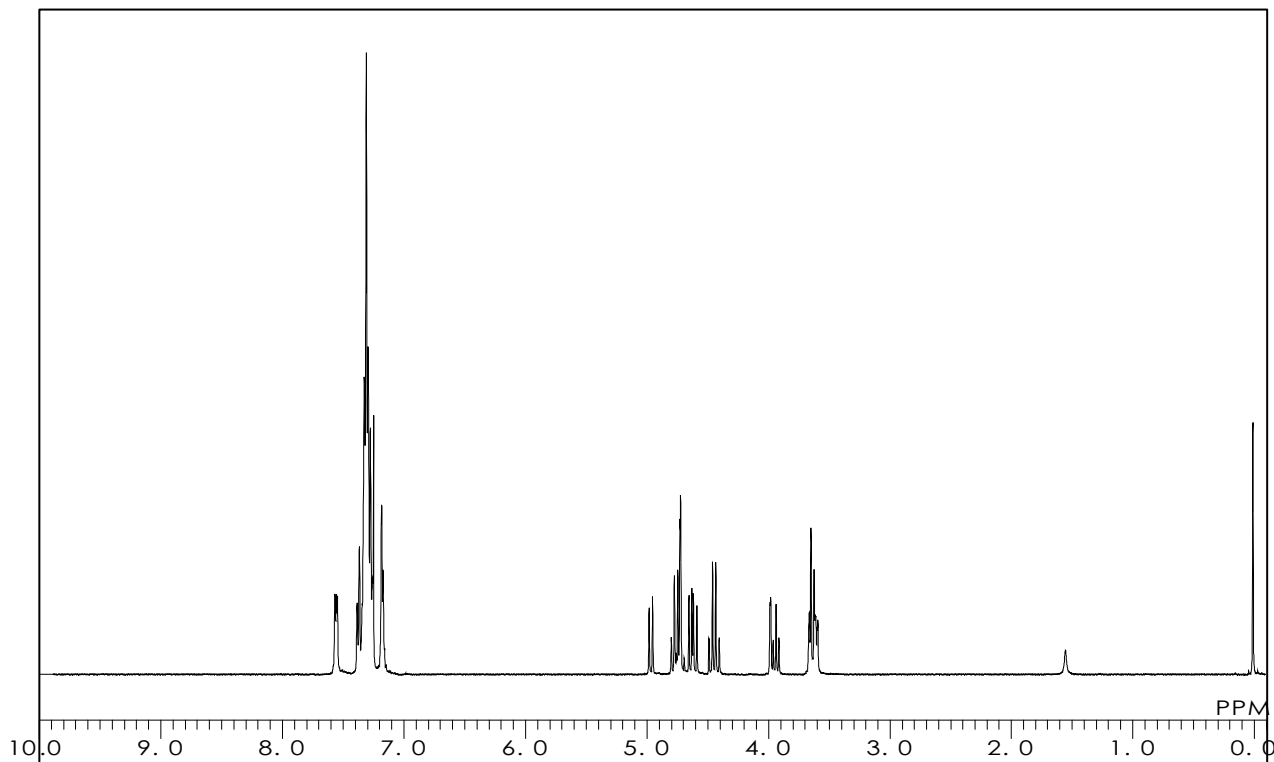
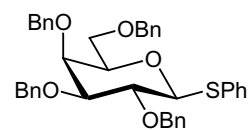
**Phenyl 2,3,4,6-Tetra-O-benzyl-1-thio-β-D-galactopyranoside**

C<sub>40</sub>H<sub>40</sub>O<sub>5</sub>S = 632.82 [74801-29-9]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 20.0 °C



**P1680**

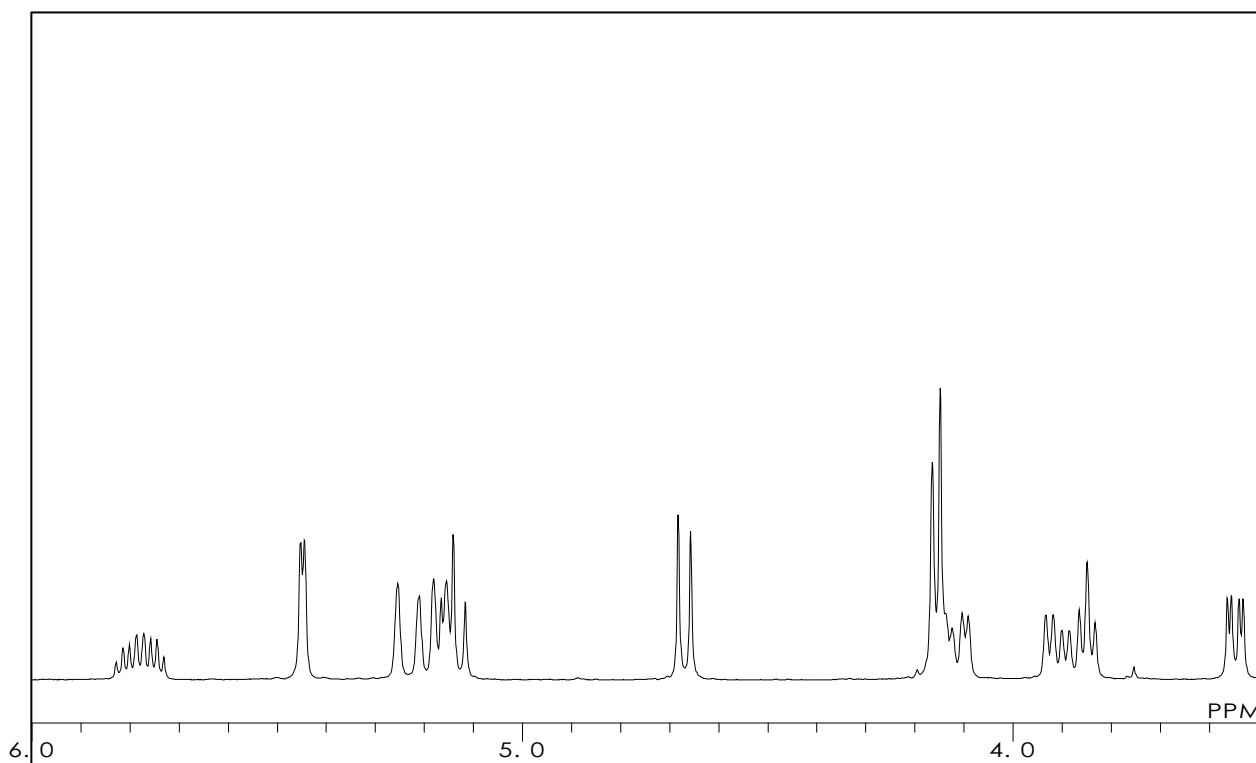
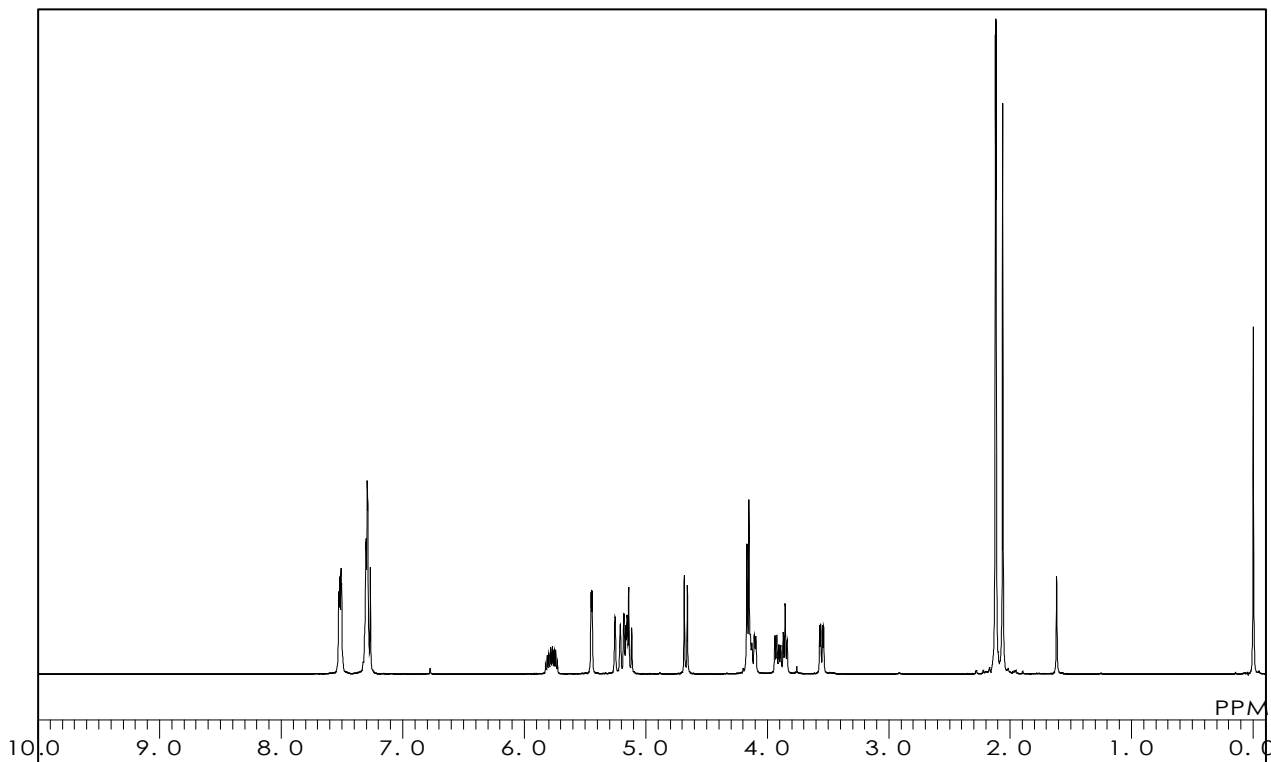
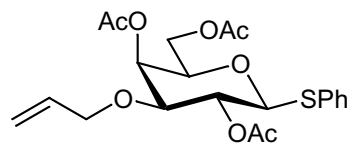
**Phenyl 2,4,6-Tri-O-acetyl-3-O-allyl-1-thio-β-D-galactopyranoside**

$C_{21}H_{26}O_8S = 438.49$

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 22.6 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

T2295

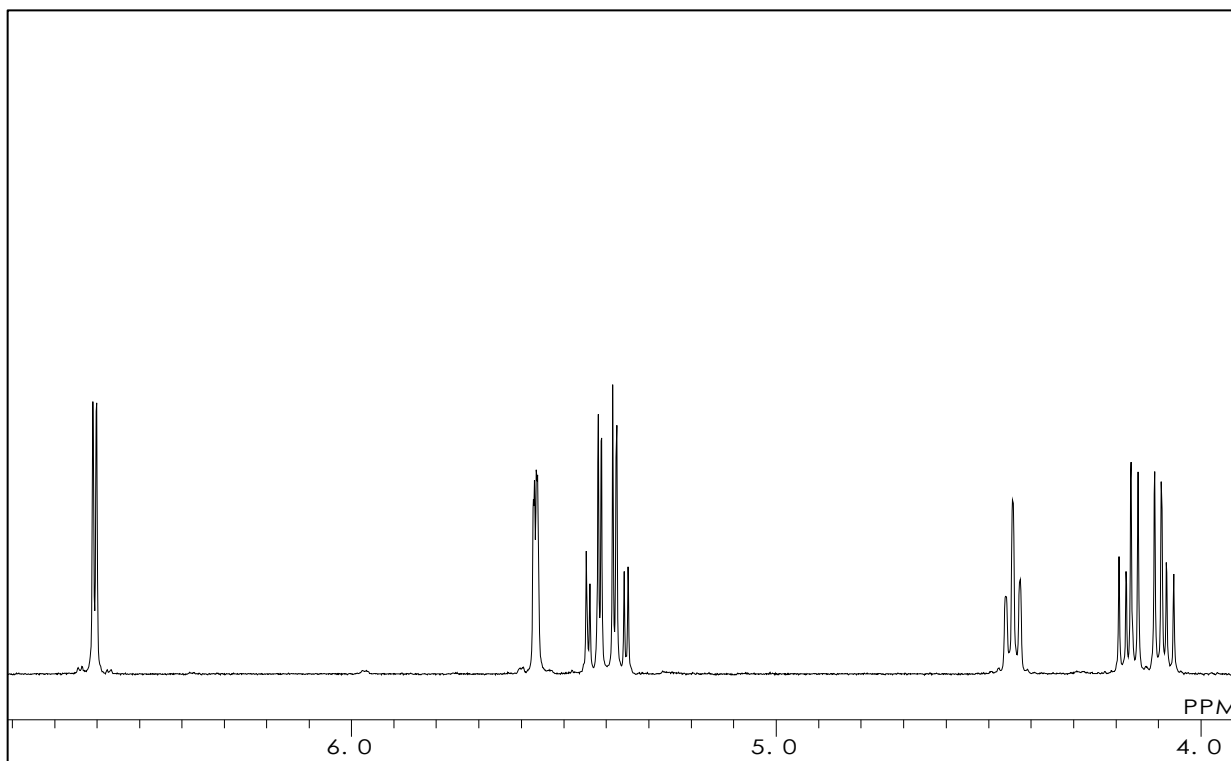
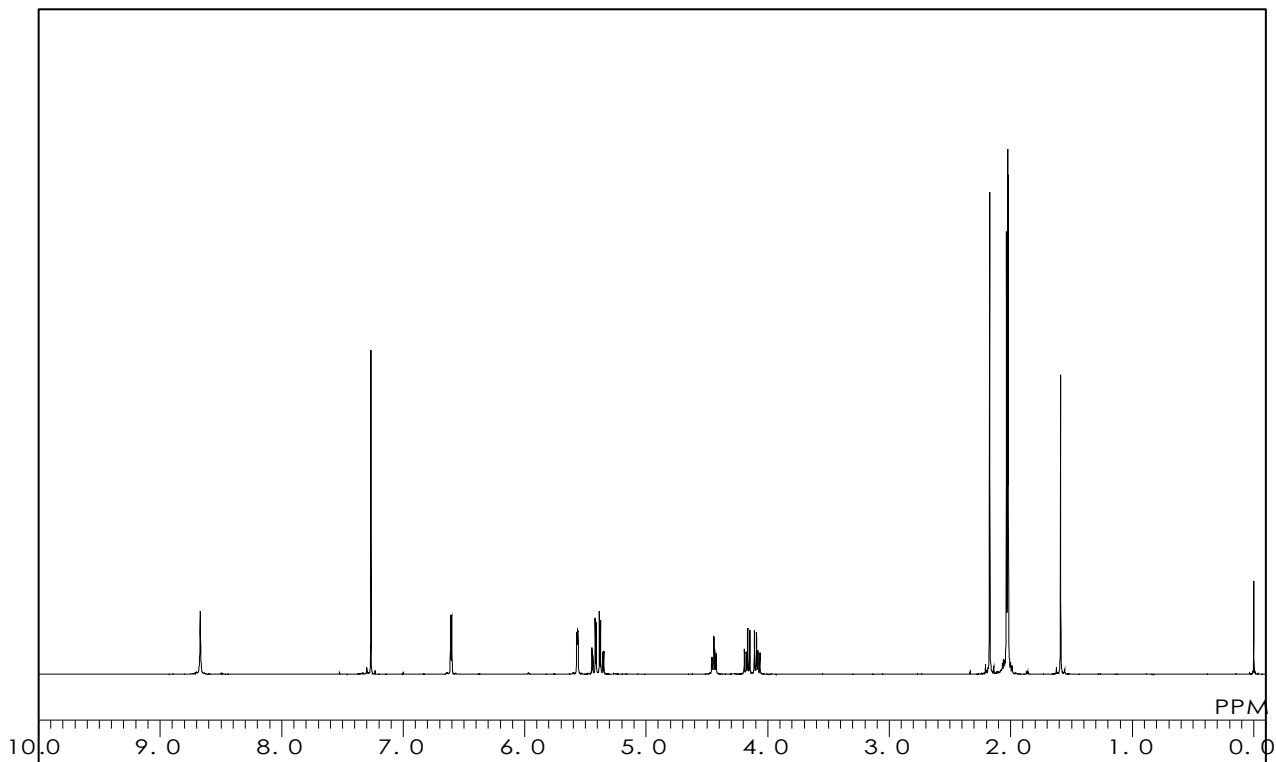
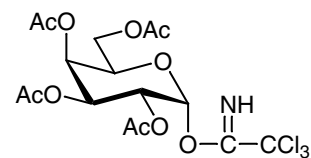
**2,3,4,6-Tetra-O-acetyl- $\alpha$ -D-galactopyranosyl  
2,2,2-Trichloroacetimidate**

$C_{16}H_{20}Cl_3NO_{10}$  = 492.68 [86520-63-0]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 20.4 °C



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**A1833**

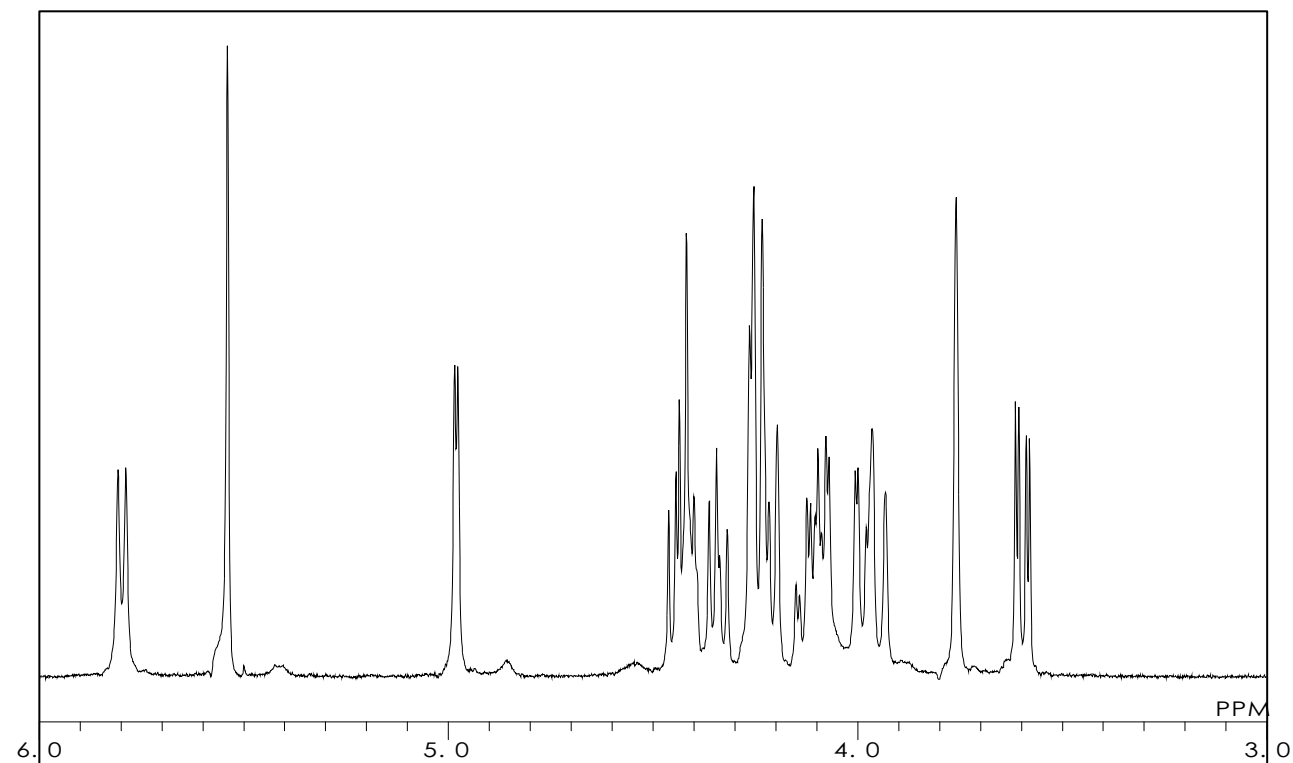
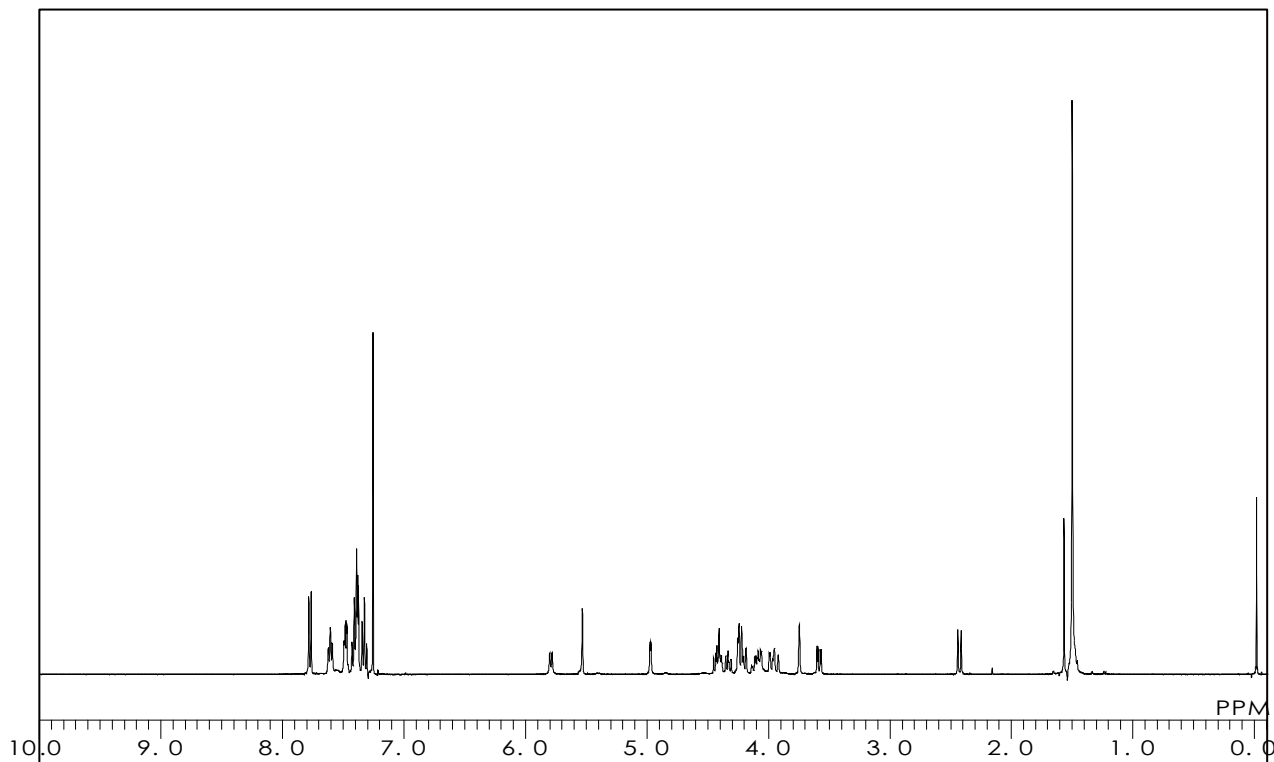
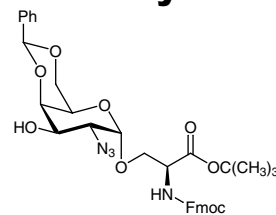
**O-(2-Azido-4,6-O-benzylidene-2-deoxy- $\alpha$ -D-galactopyranosyl)-  
N-[(9H-fluoren-9-ylmethoxy)carbonyl]-L-serine *tert*-Butyl Ester**

C<sub>35</sub>H<sub>38</sub>N<sub>4</sub>O<sub>9</sub> = 658.71 [878483-02-4]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 20.0 °C



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**A1832**

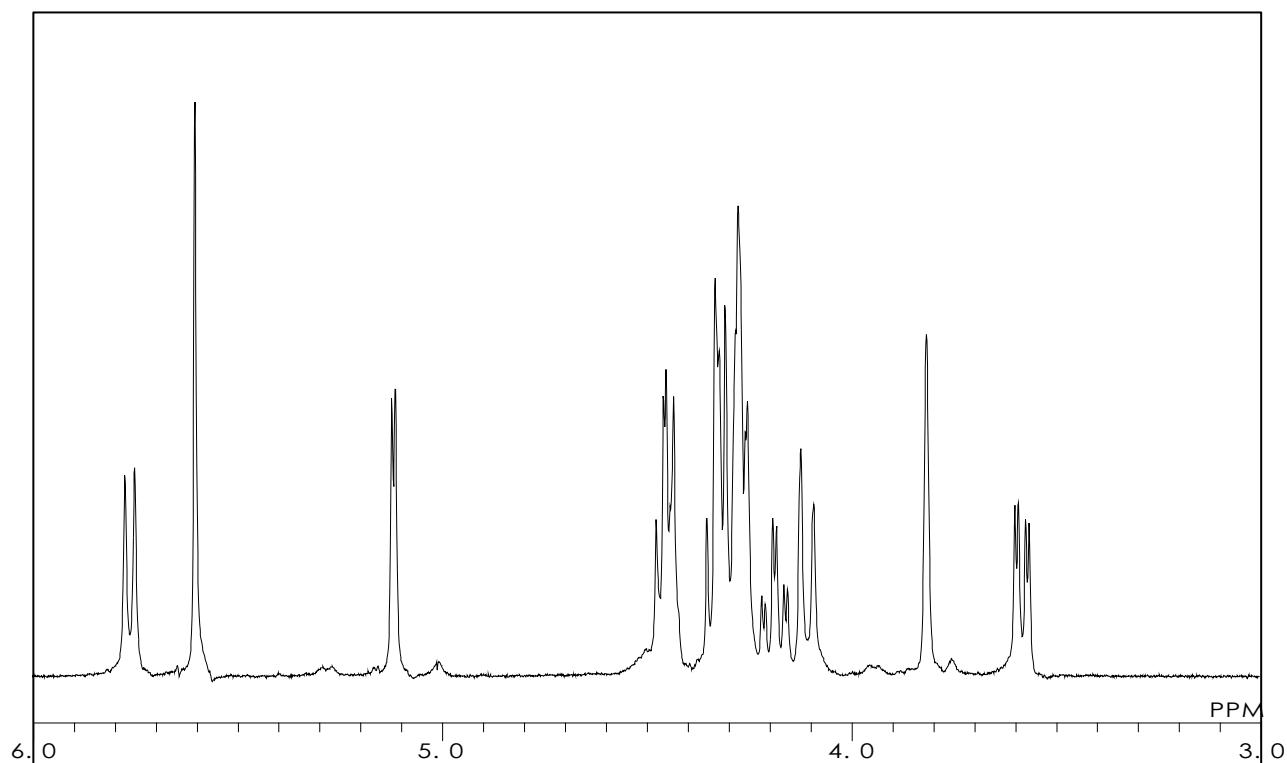
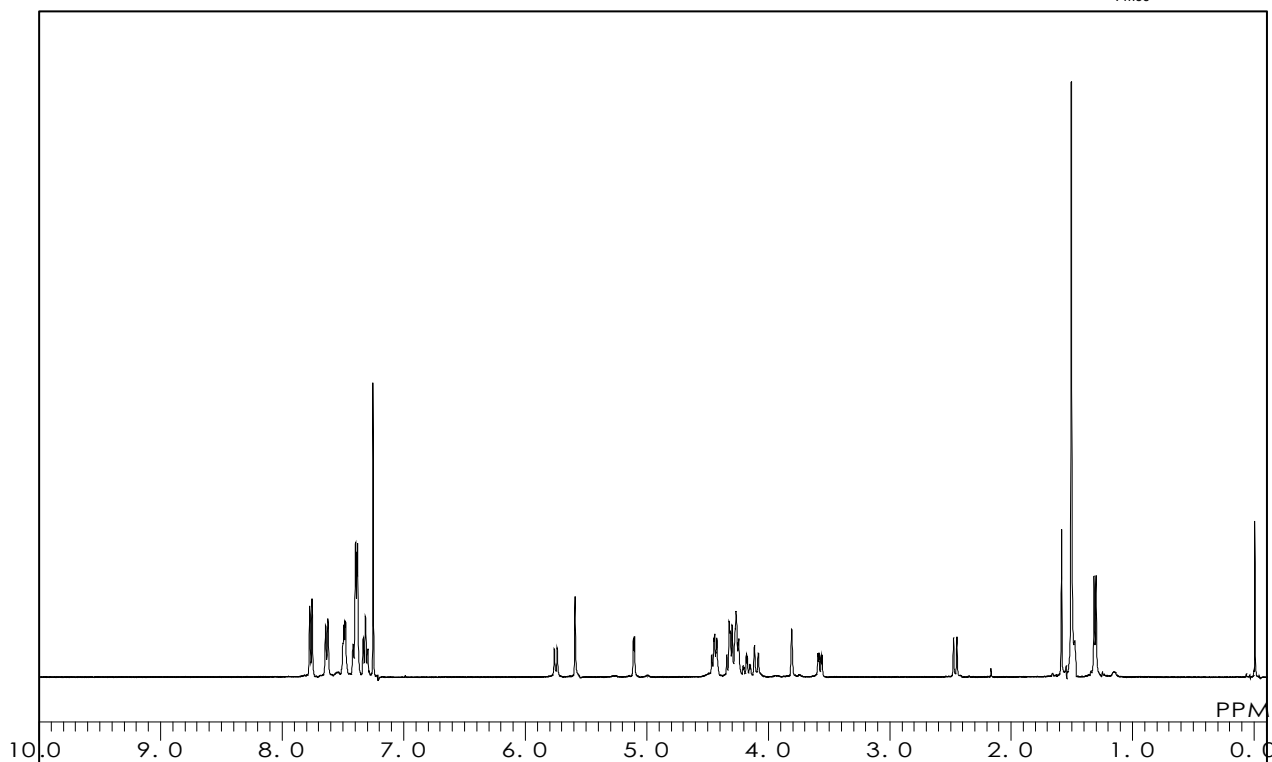
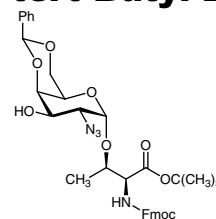
**O-(2-Azido-4,6-O-benzylidene-2-deoxy- $\alpha$ -D-galactopyranosyl)-  
N-[(9H-fluoren-9-ylmethoxy)carbonyl]-L-threonine *tert*-Butyl Ester**

C<sub>36</sub>H<sub>40</sub>N<sub>4</sub>O<sub>9</sub> = 672.74 [195976-07-9]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 20.0 °C



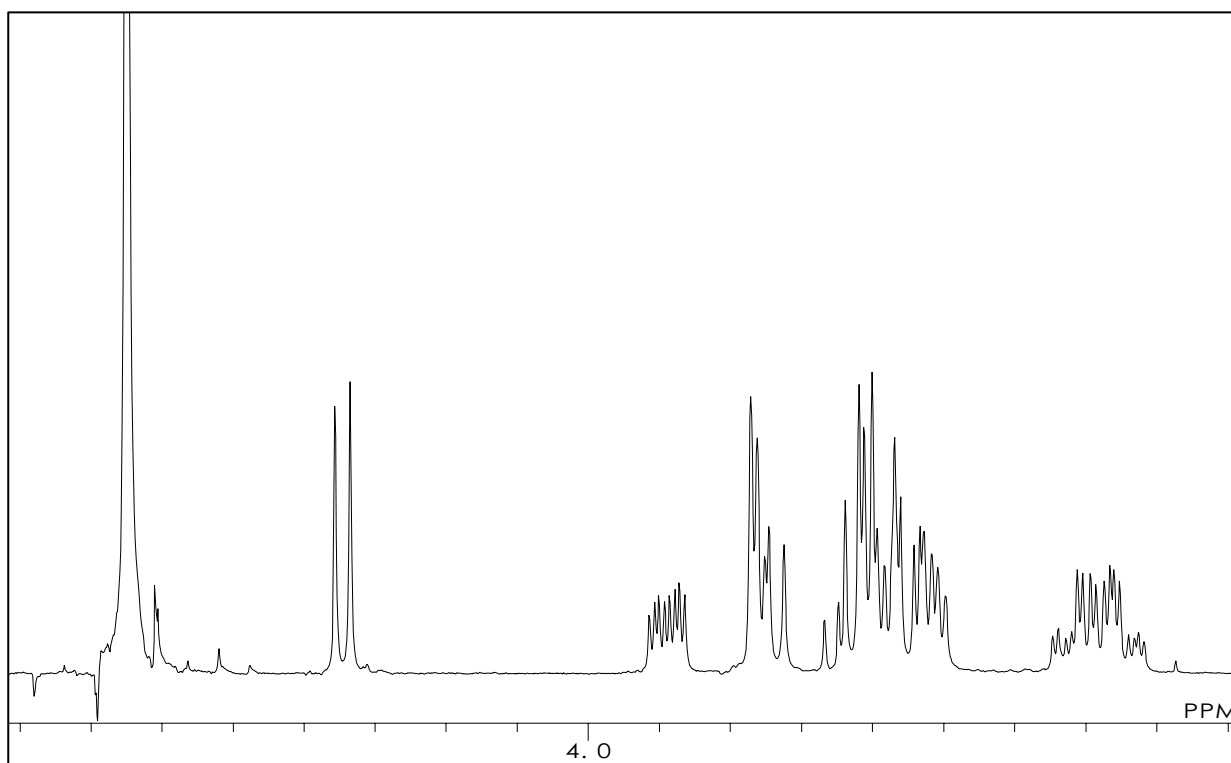
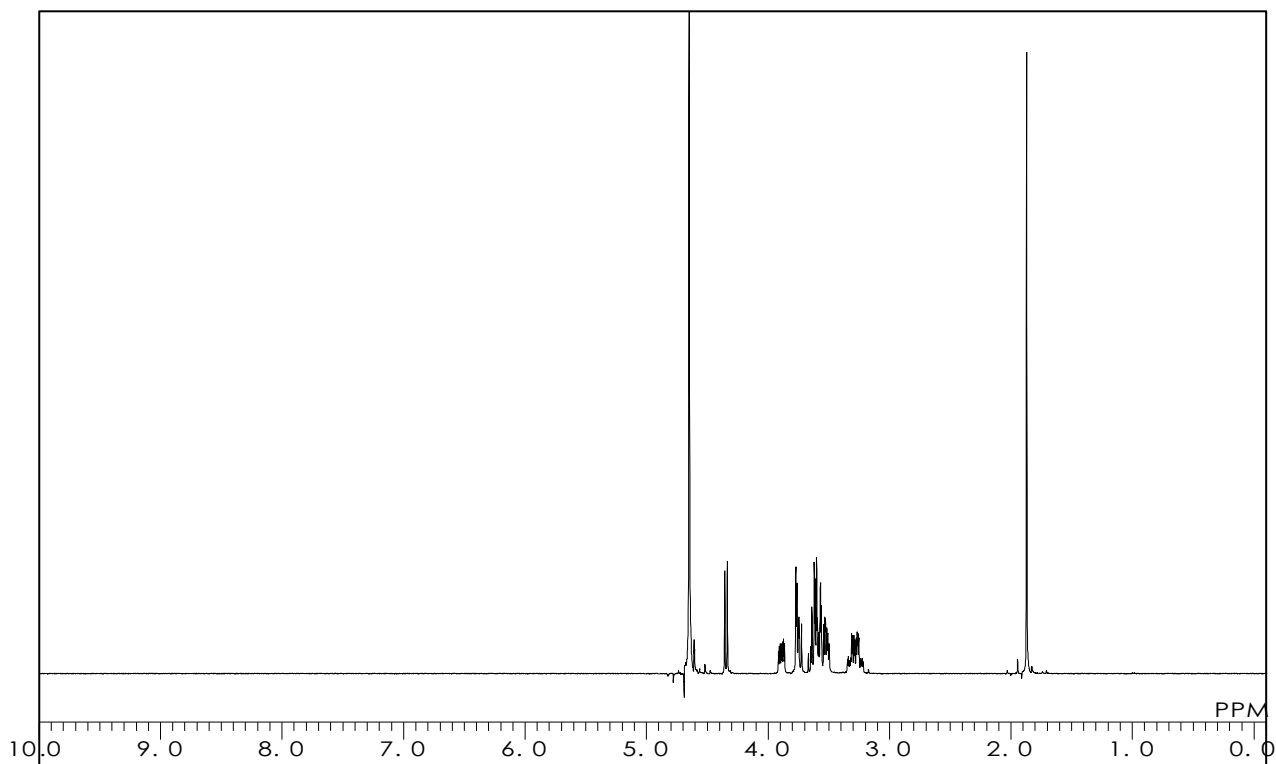
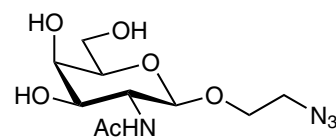
**A2627**

**2-Azidoethyl 2-Acetamido-2-deoxy- $\beta$ -D-galactopyranoside**

$C_{10}H_{18}N_4O_6 = 290.28$  [142072-15-9]

Solvent :  $D_2O$

Measured Temperature : 20.9 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**M1643**

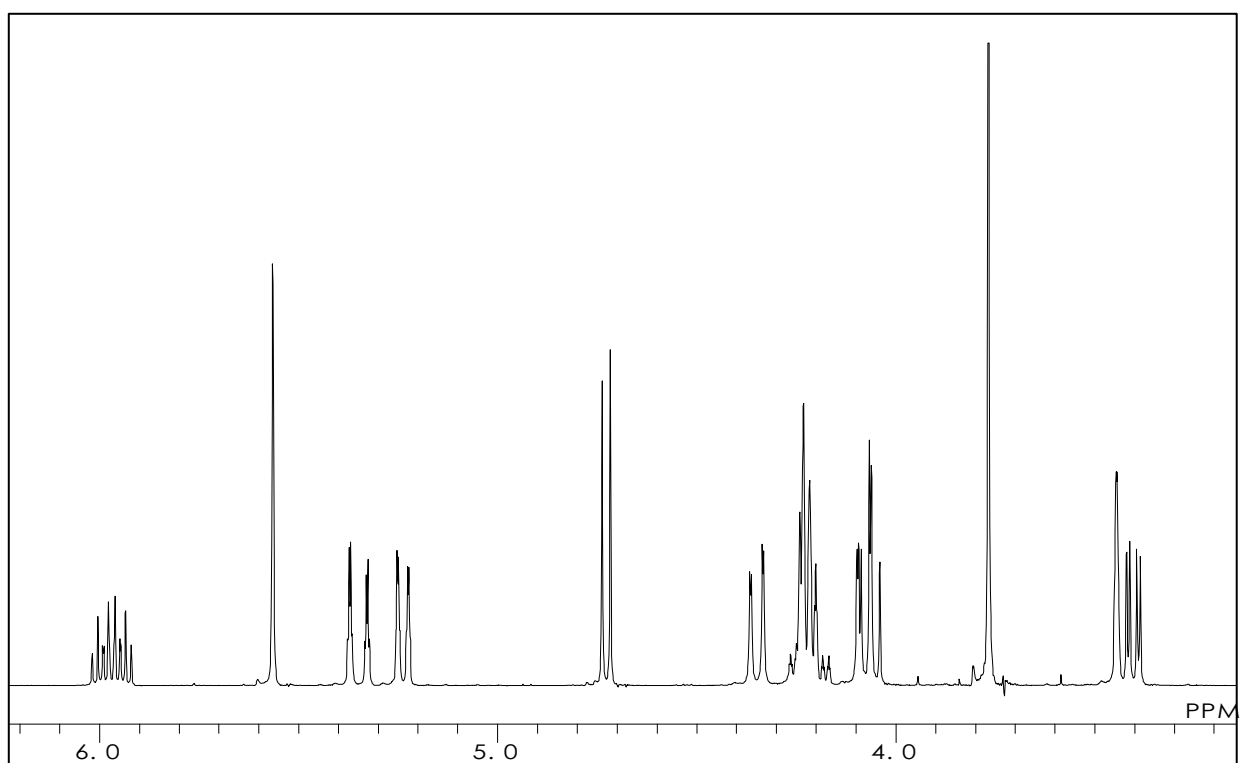
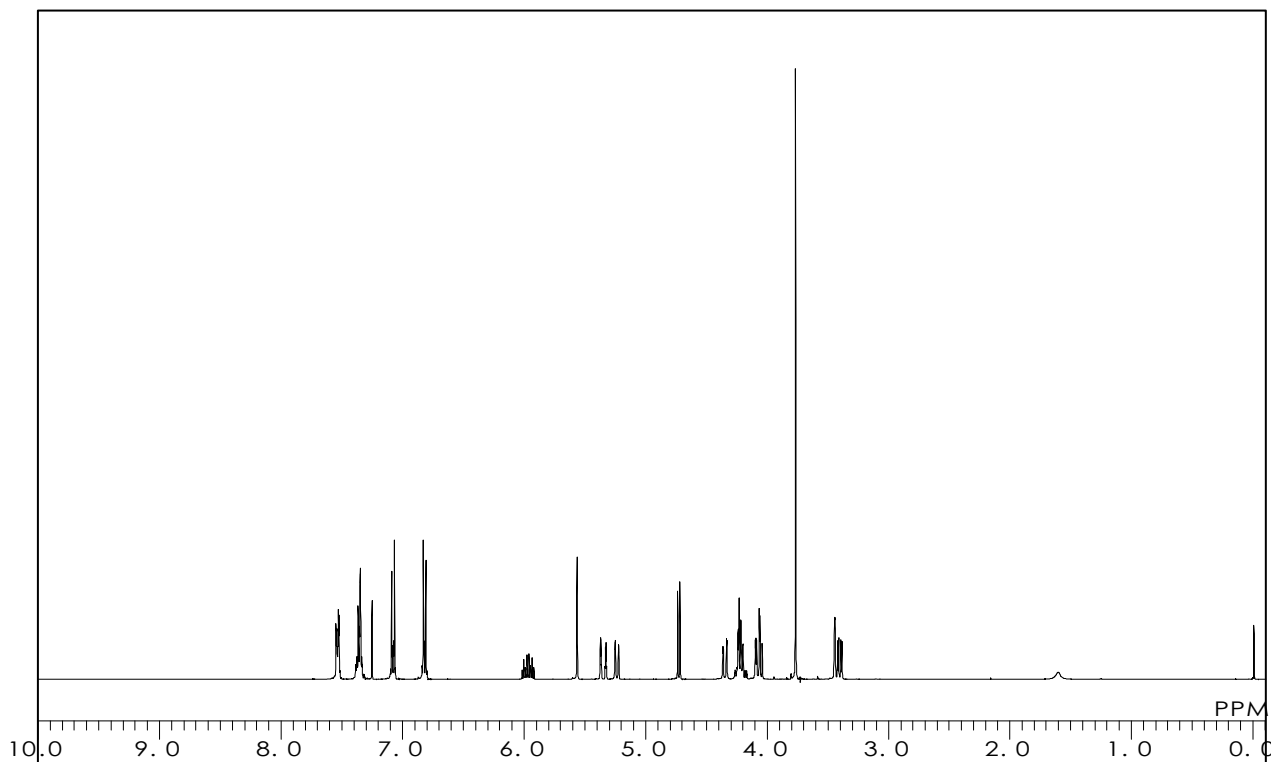
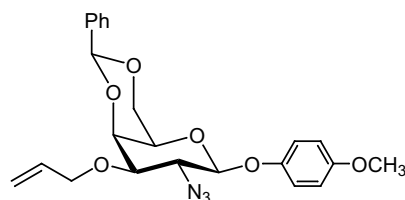
**4-Methoxyphenyl 3-O-Allyl-2-azido-4,6-O-benzylidene-2-deoxy- $\beta$ -D-galactopyranoside**

$C_{23}H_{25}N_3O_6 = 439.47$  [889453-83-2]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 21.4 °C



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M2737

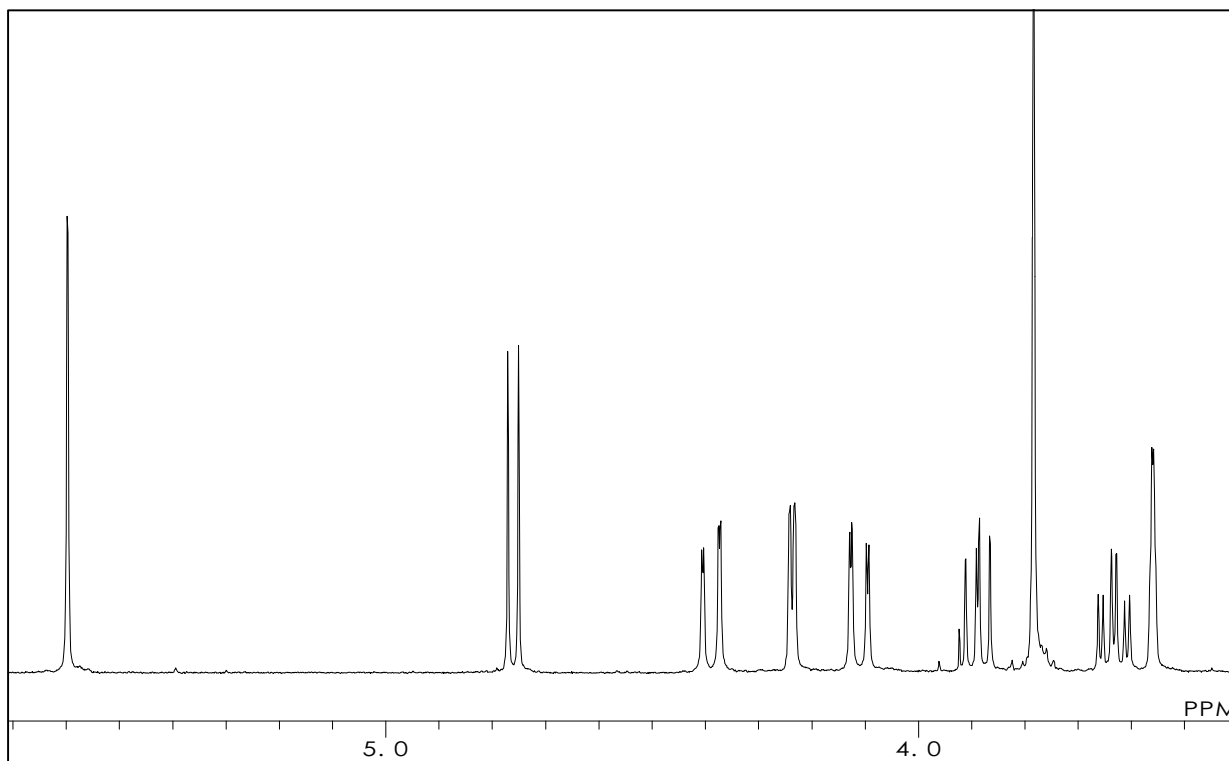
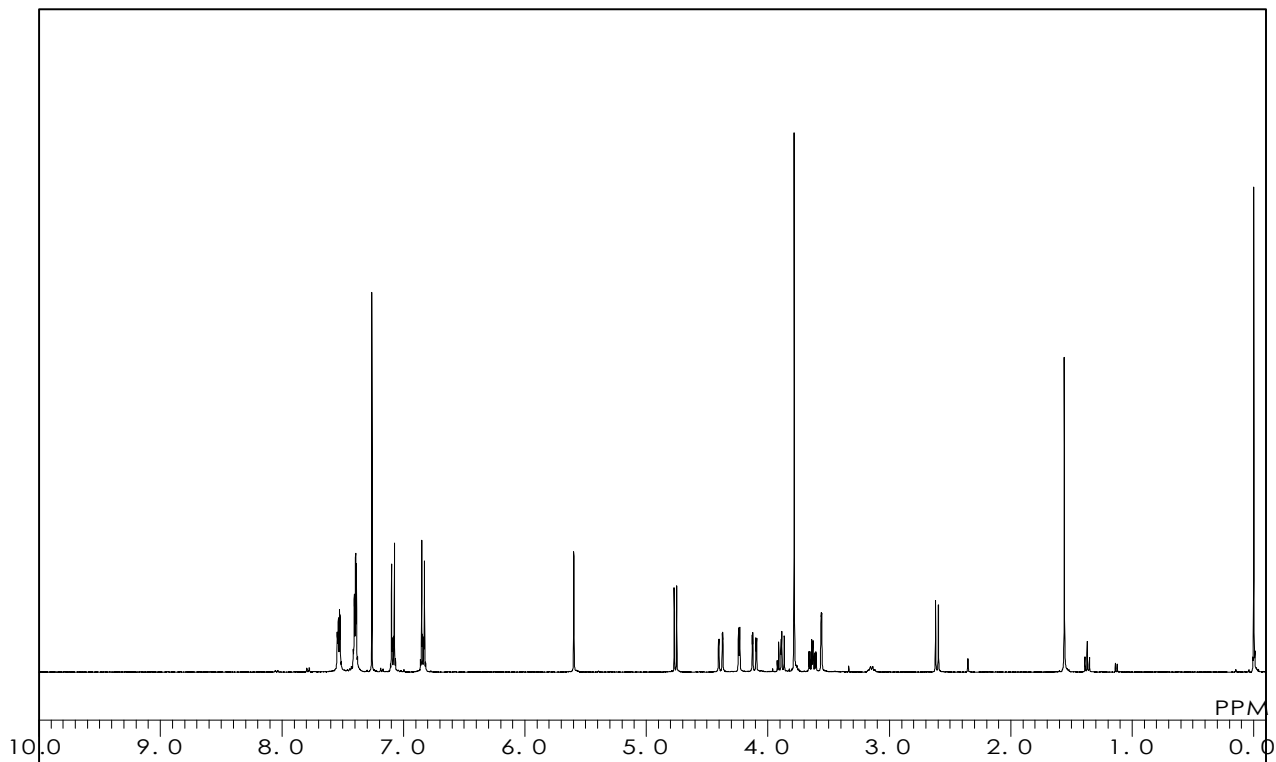
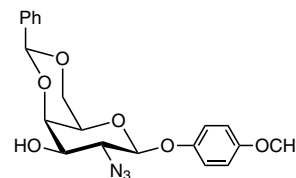
**4-Methoxyphenyl 2-Azido-4,6-O-benzylidene-2-deoxy- $\beta$ -D-galactopyranoside**

$C_{20}H_{21}N_3O_6 = 399.40$  [1340541-47-0]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 34.7 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。



**P1643**

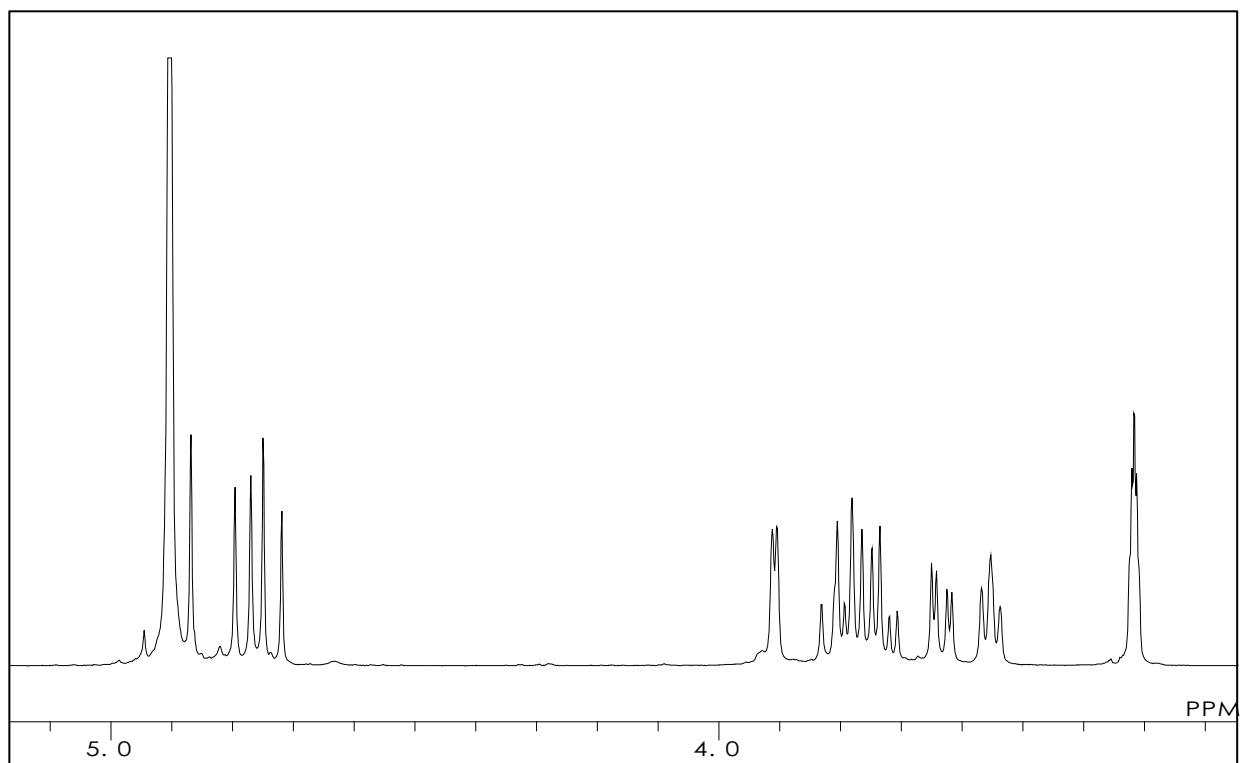
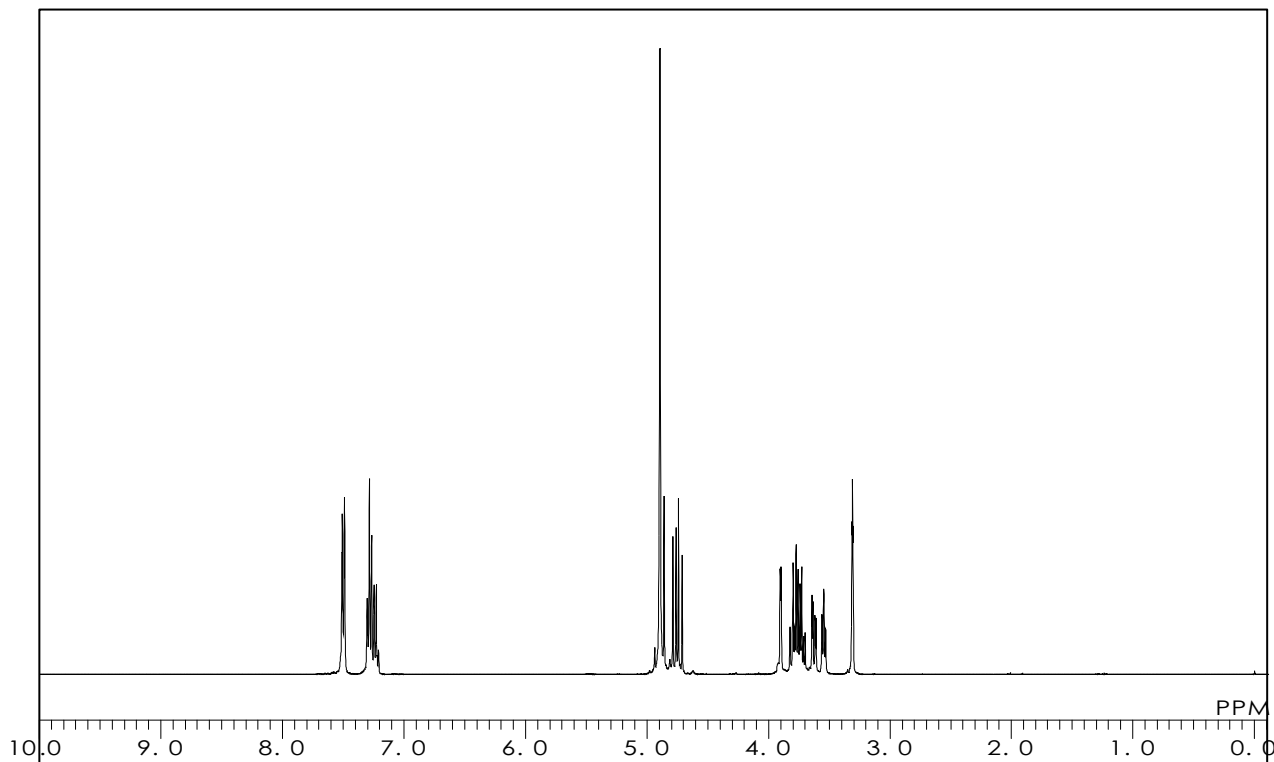
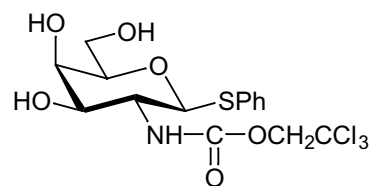
**Phenyl 2-Deoxy-1-thio-2-(2,2,2-trichloroethoxyformamido)- $\beta$ -D-galactopyranoside**

$C_{15}H_{18}Cl_3NO_6S = 446.72$  [868230-98-2]

Solvent :  $CD_3OD$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 20.2 °C



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**P1642**

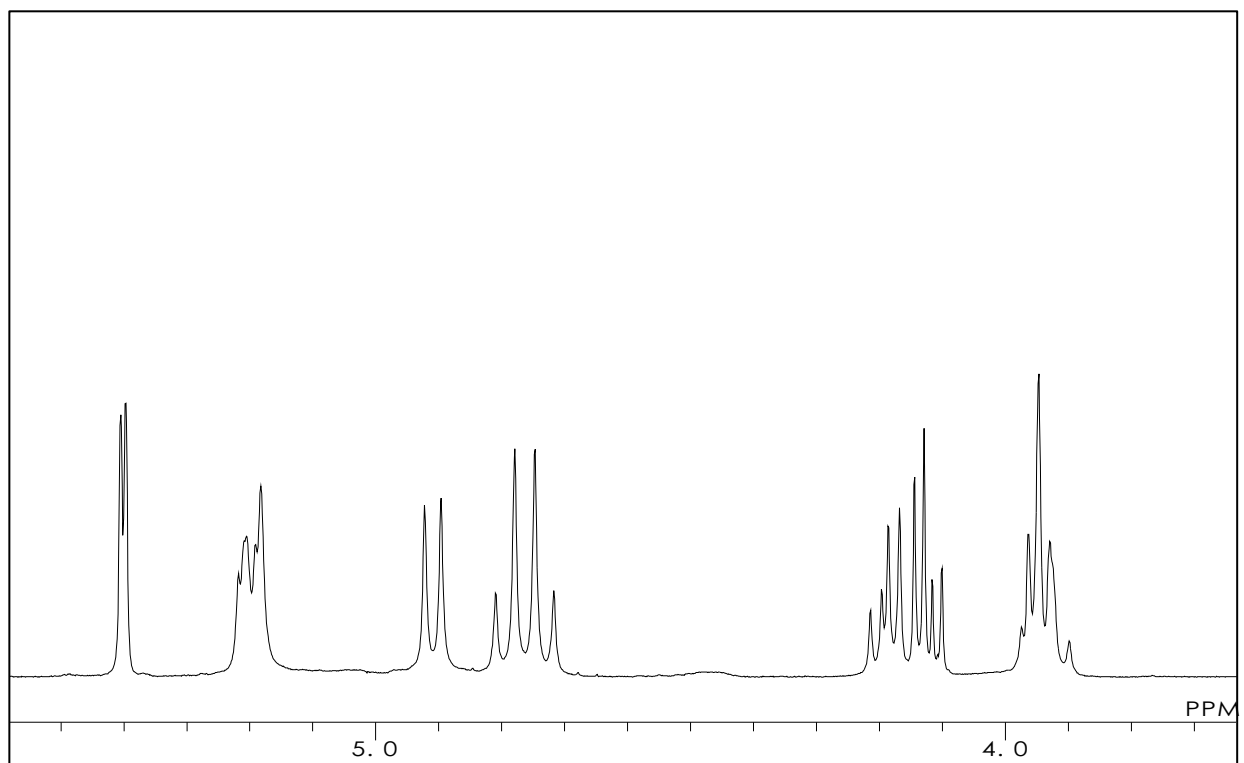
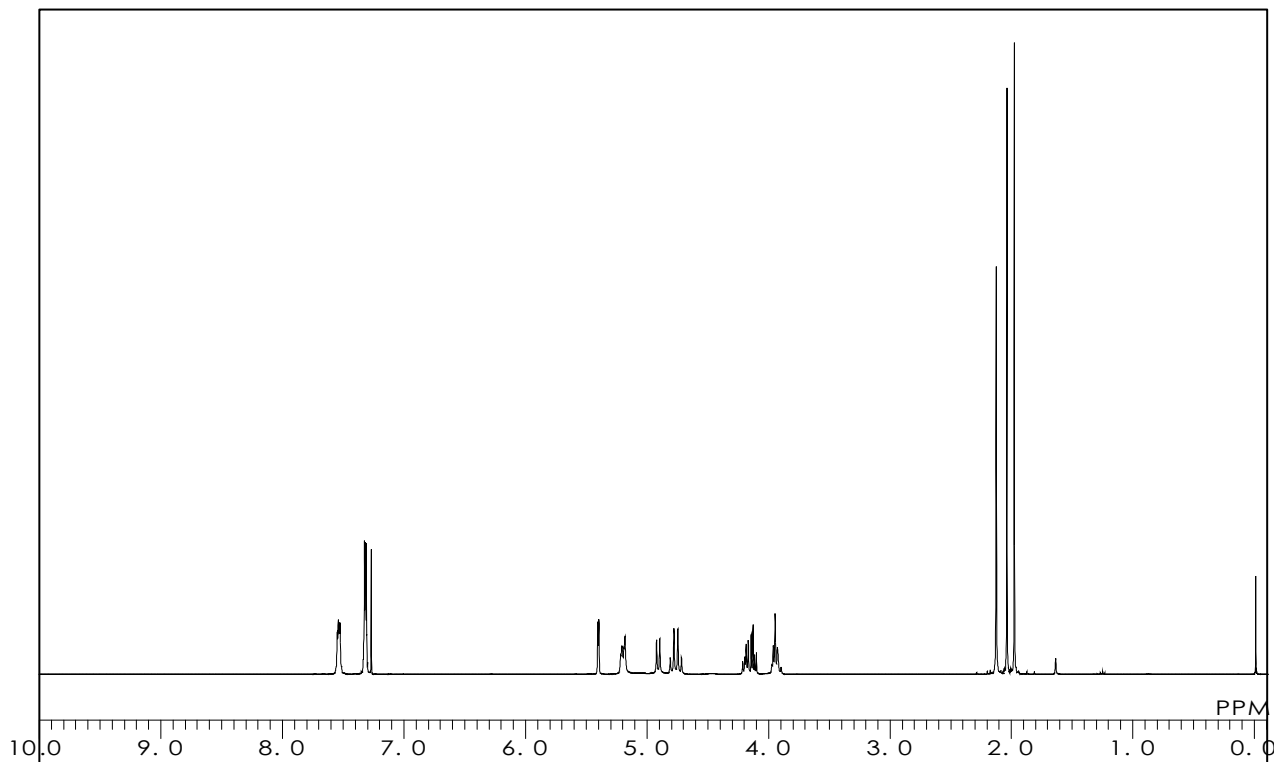
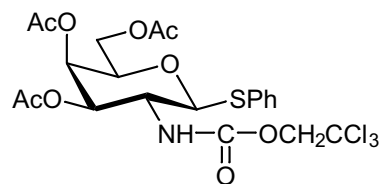
**Phenyl 3,4,6-Tri-O-acetyl-2-deoxy-1-thio-  
2-(2,2,2-trichloroethoxyformamido)-β-D-galactopyranoside**

C<sub>21</sub>H<sub>24</sub>Cl<sub>3</sub>NO<sub>9</sub>S = 572.83 [278784-83-1]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 21.0 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**T1731**

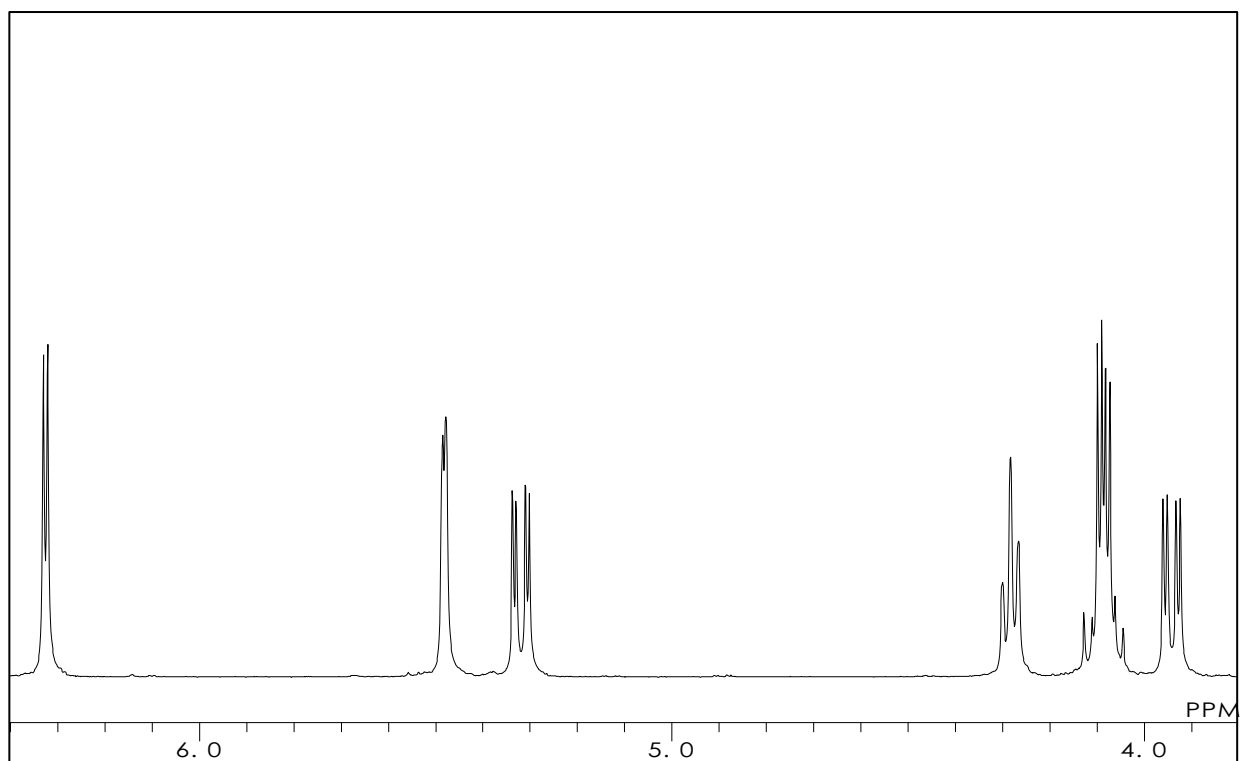
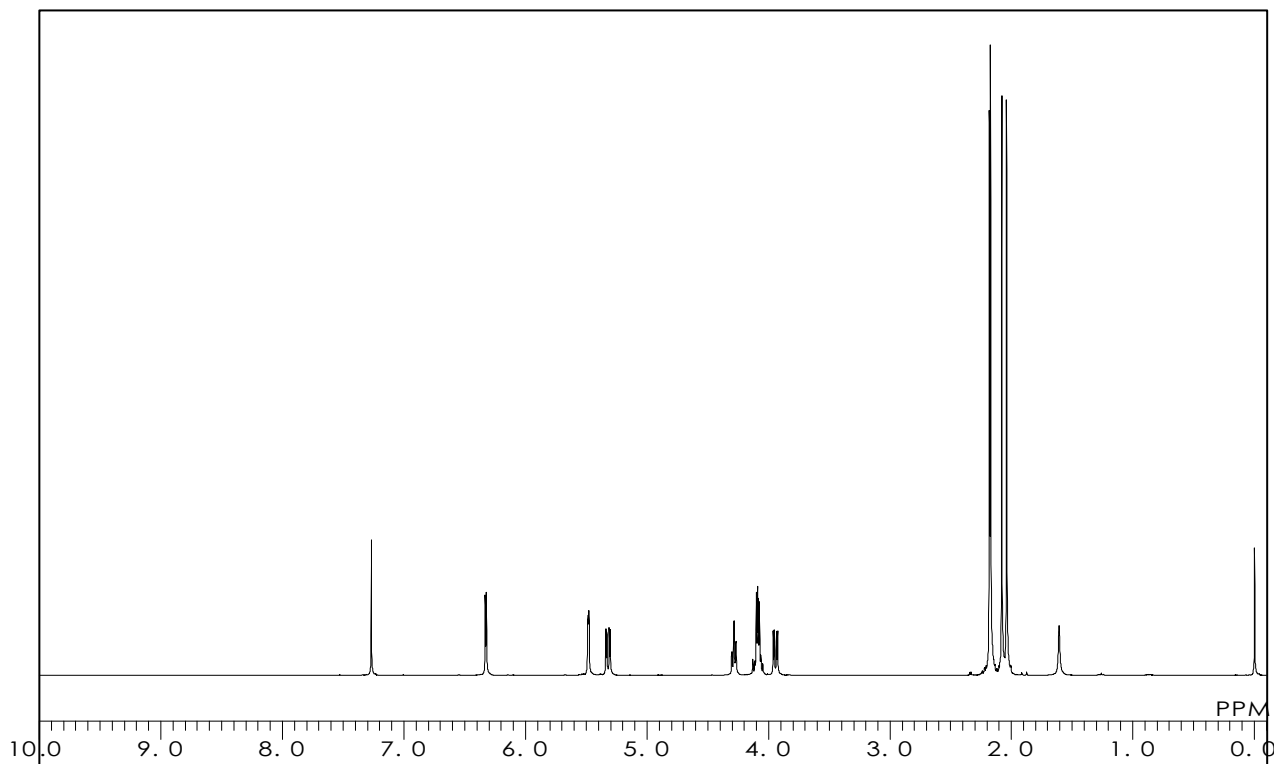
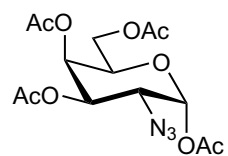
**1,3,4,6-Tetra-O-acetyl-2-azido-2-deoxy- $\alpha$ -D-galactopyranose**

$C_{14}H_{19}N_3O_9 = 373.32$  [67817-30-5]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 20.9 °C



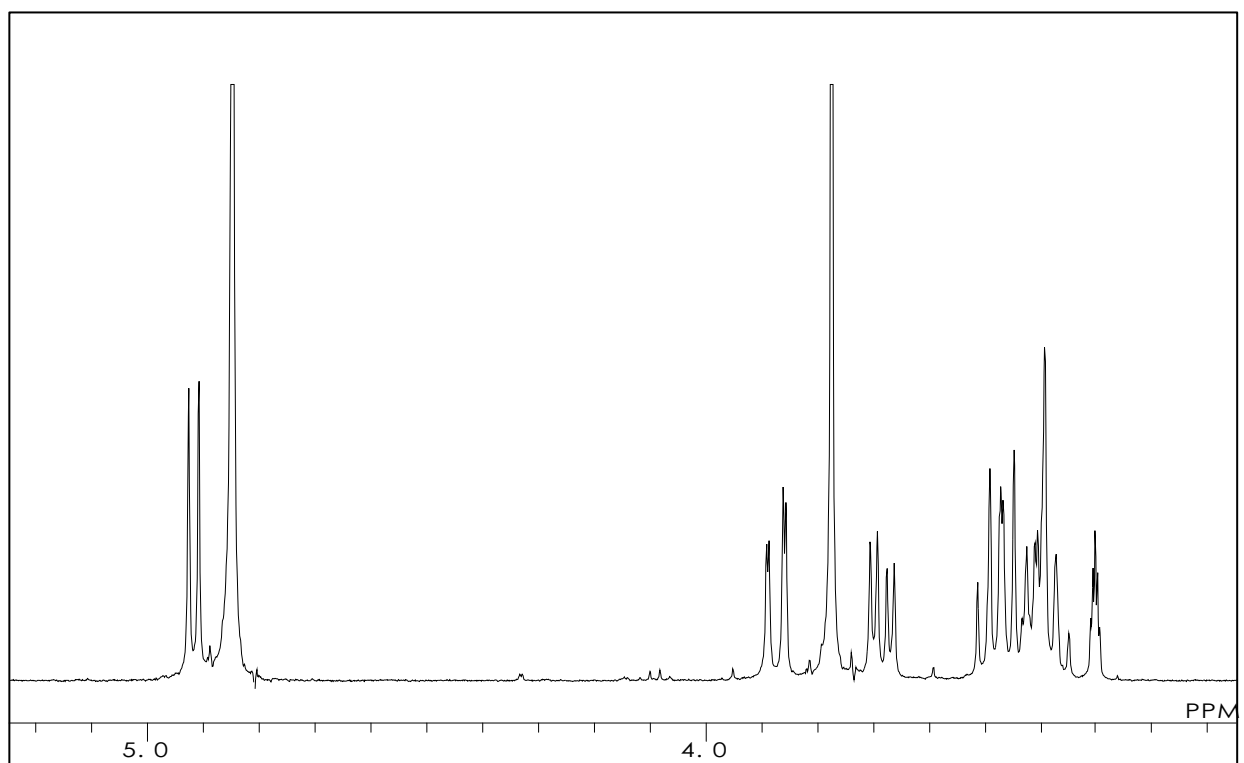
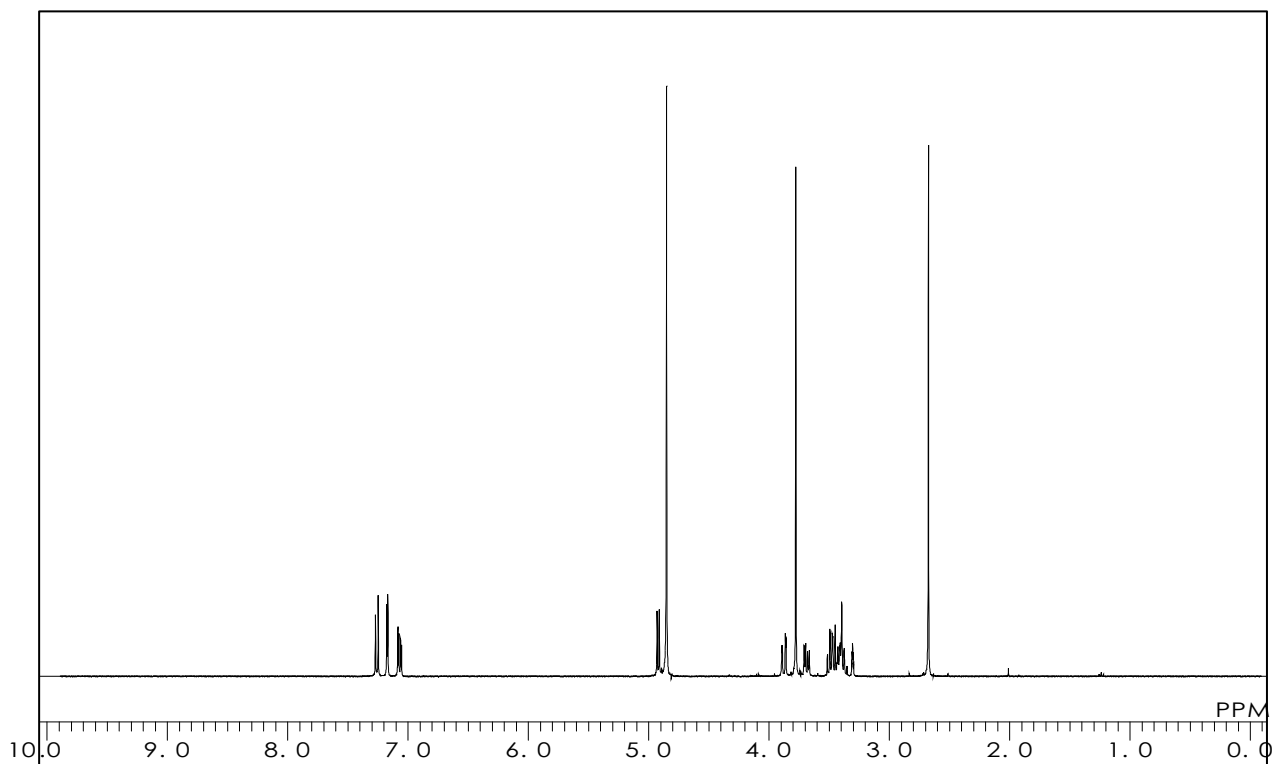
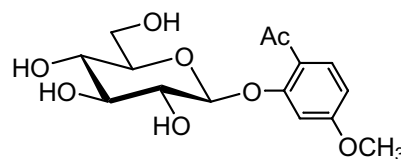
**A2253**

**2-Acetyl-5-methoxyphenyl  $\beta$ -D-Glucopyranoside**

$C_{15}H_{20}O_8 = 328.32$  [20309-70-0]

Solvent :  $CD_3OD$

Measured Temperature : 24.1 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**A2377**

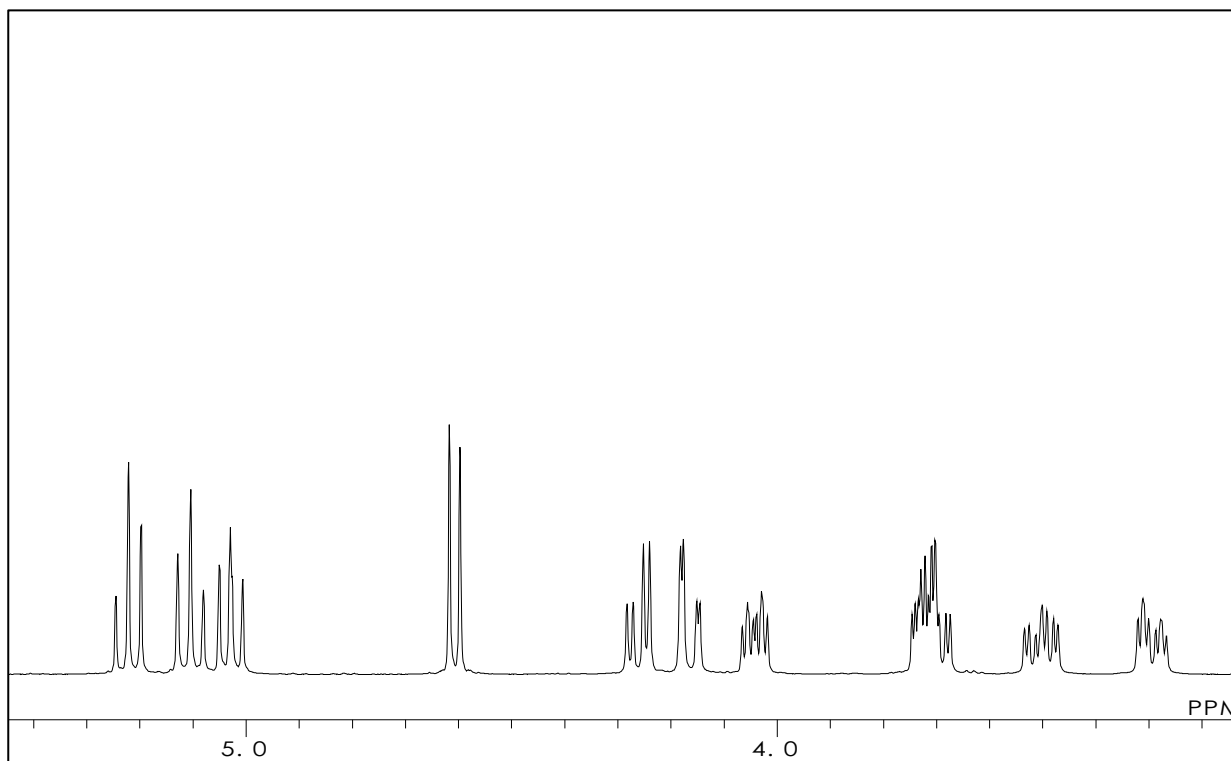
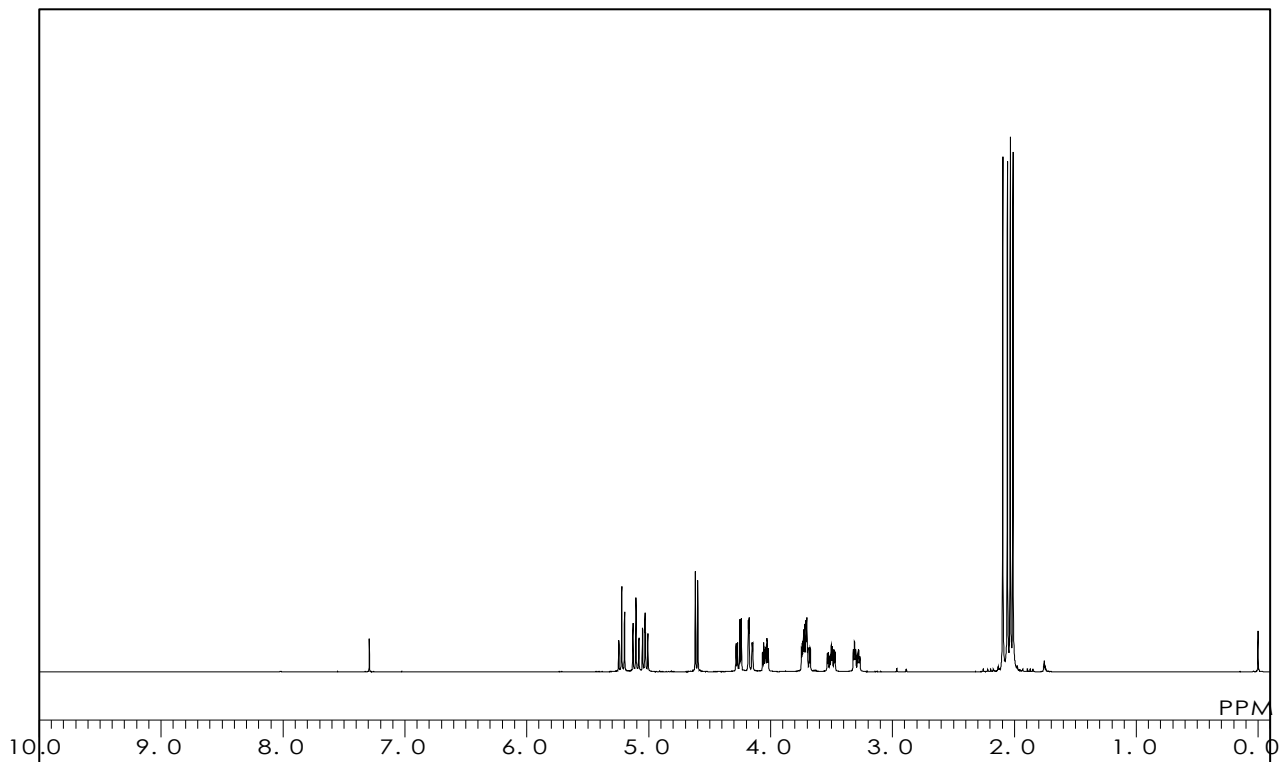
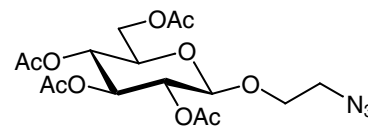
**2-Azidoethyl 2,3,4,6-Tetra-O-acetyl-β-D-glucopyranoside**

$C_{16}H_{23}N_3O_{10} = 417.37$  [140428-81-5]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 22.5 °C

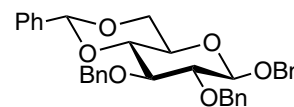


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**B4170**

**Benzyl 2,3-Di-O-benzyl-4,6-O-benzylidene-  
β-D-glucopyranoside**

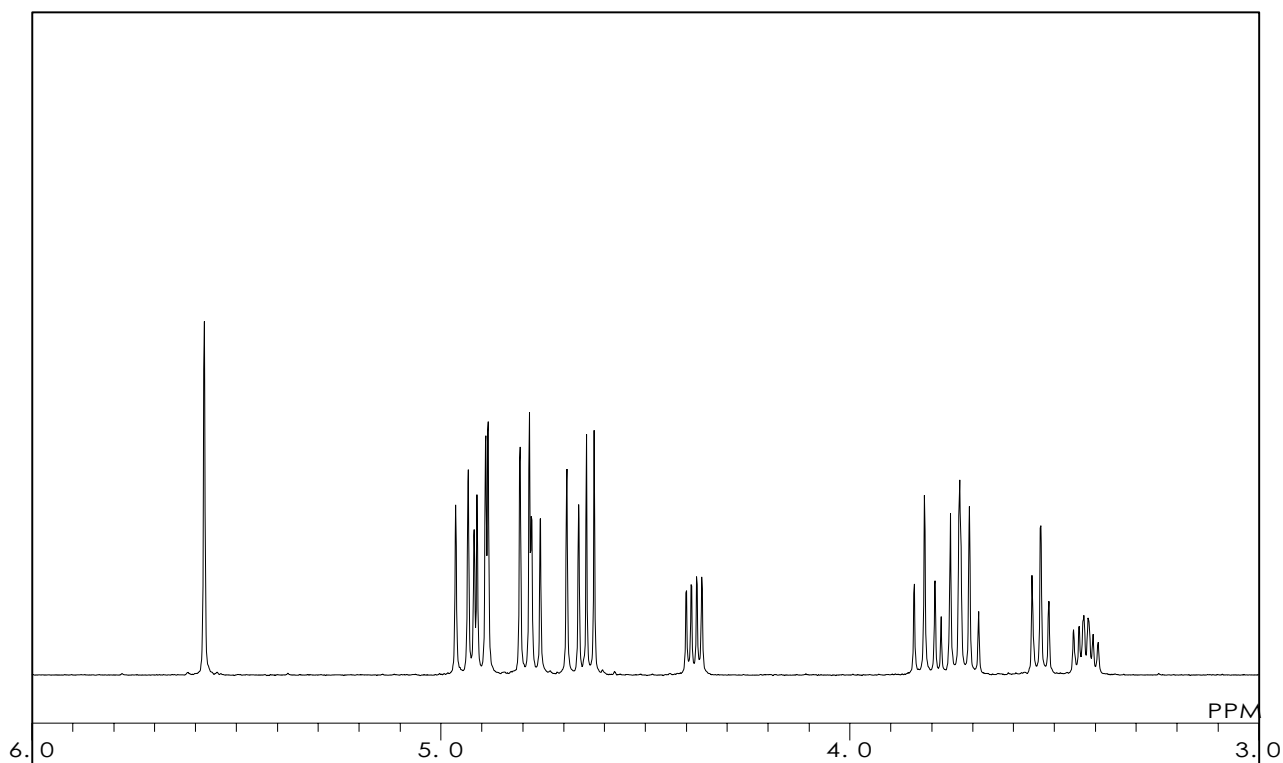
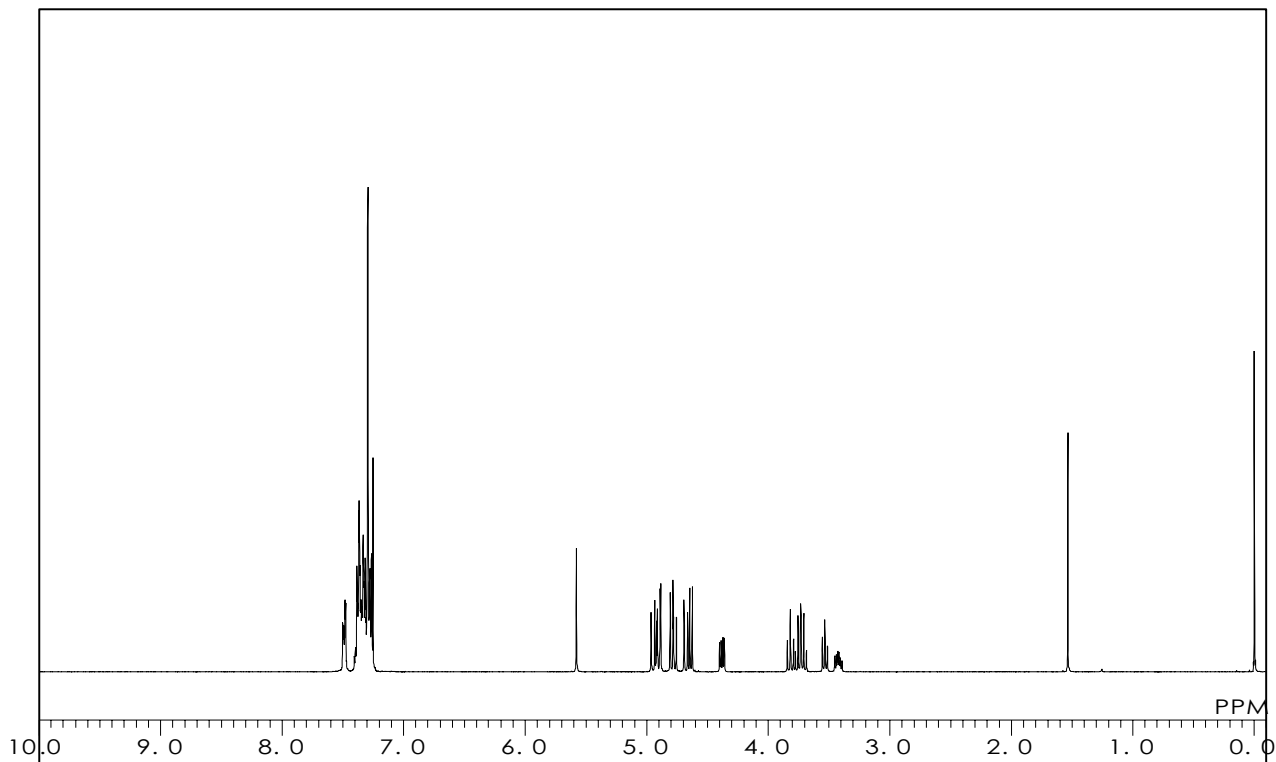
C<sub>34</sub>H<sub>34</sub>O<sub>6</sub> = 538.64 [183953-29-9]



Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 25.1 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**B4171**

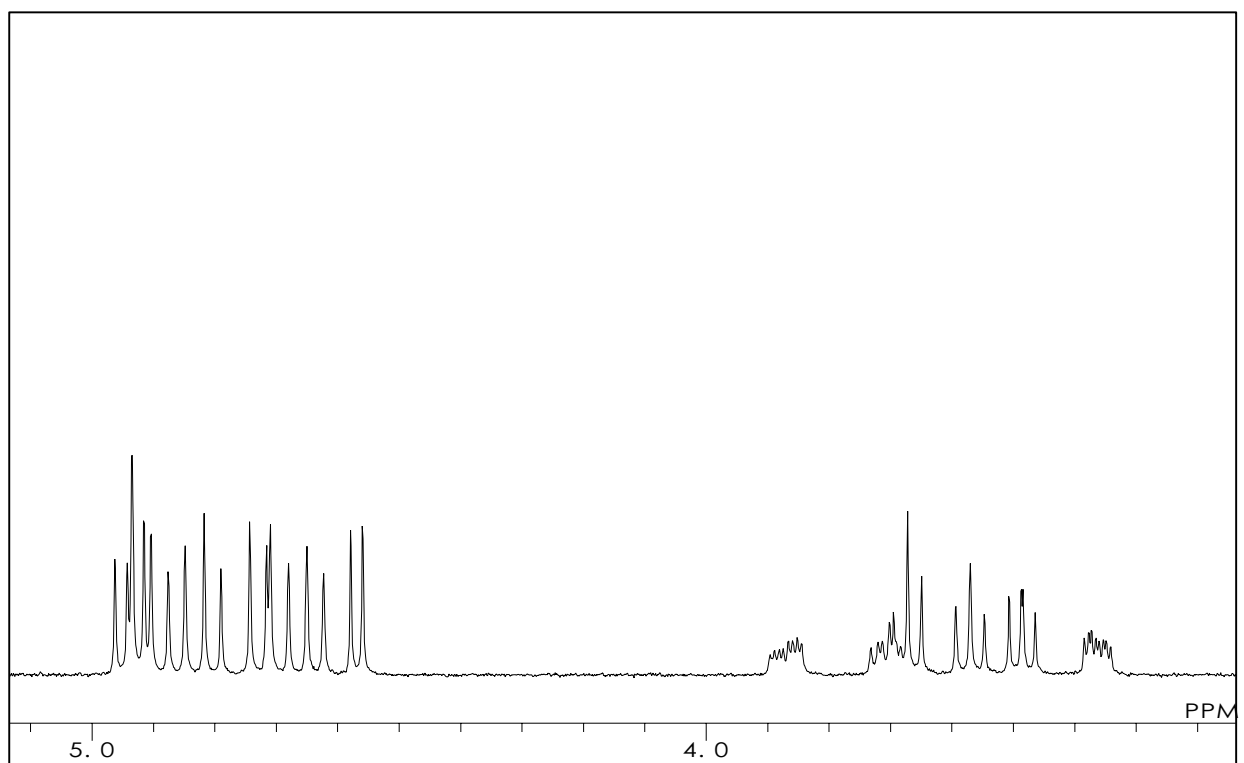
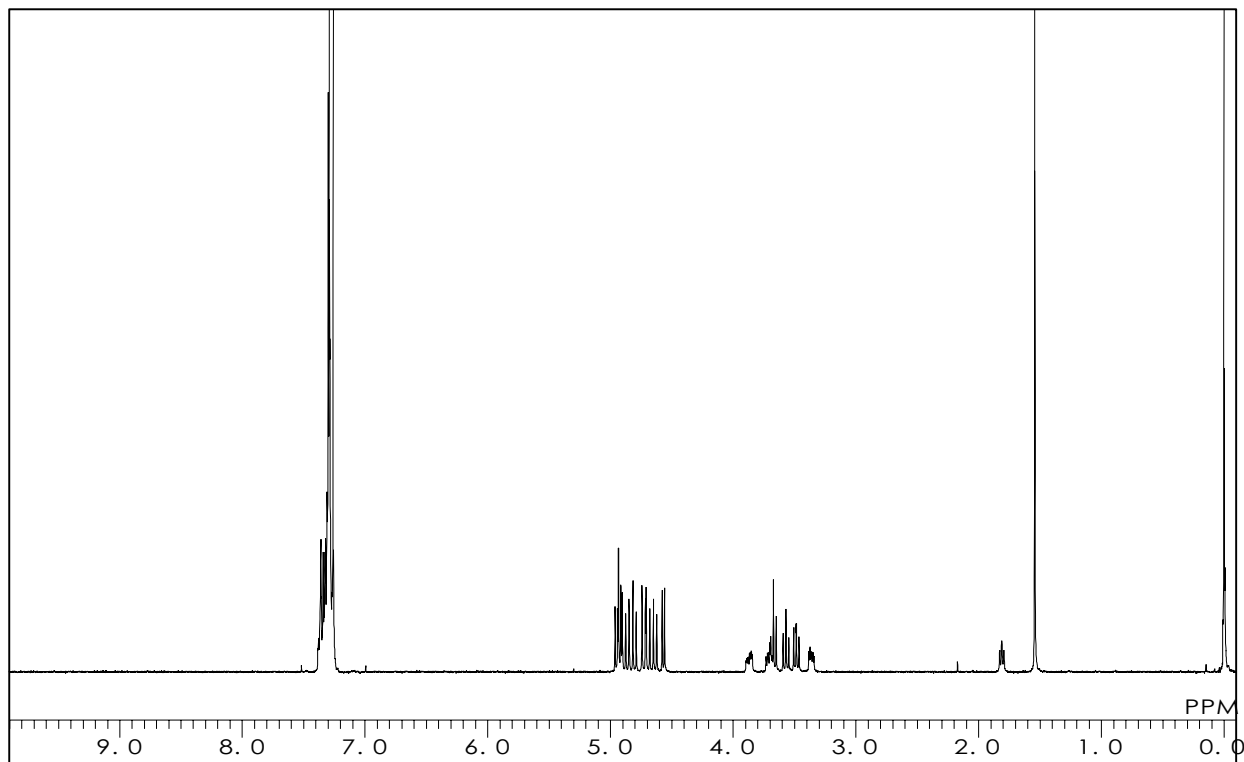
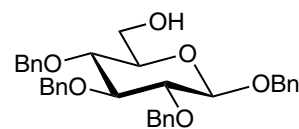
**Benzyl 2,3,4-Tri-O-benzyl-β-D-glucopyranoside**

$C_{34}H_{36}O_6 = 540.66$  [27851-29-2]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 23.8 °C



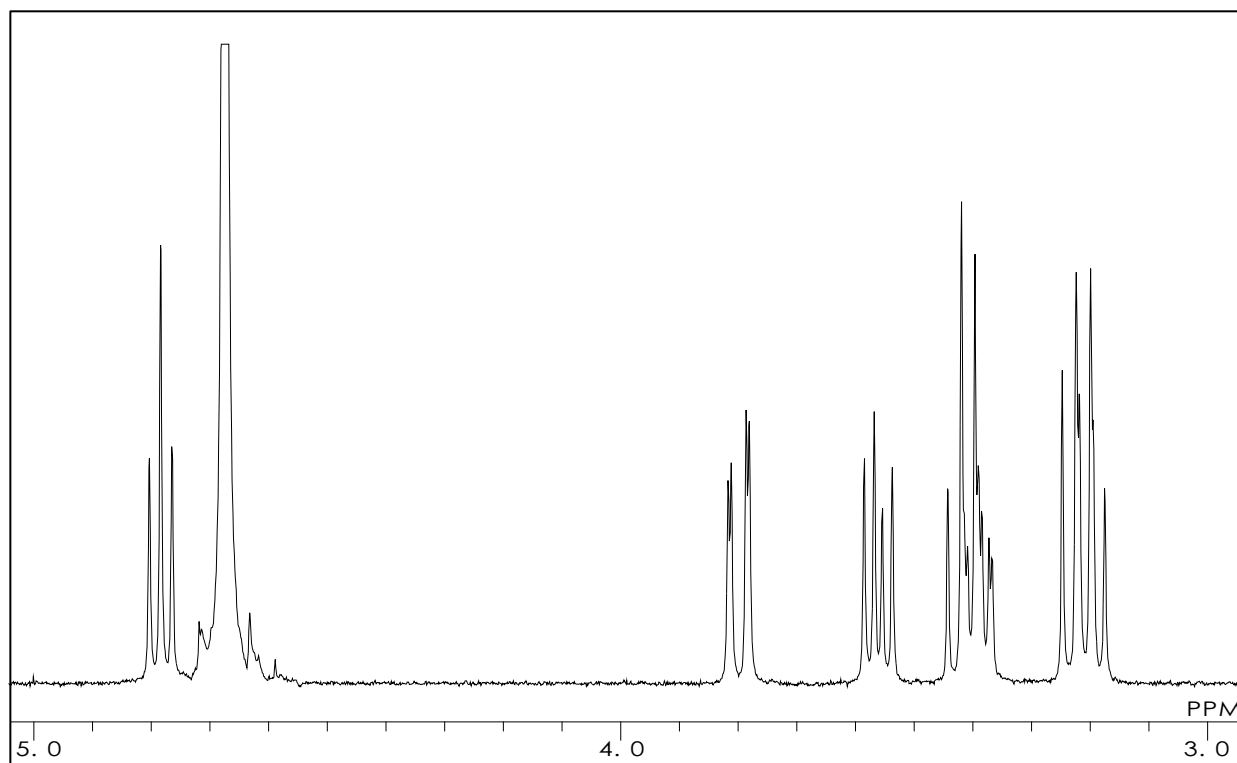
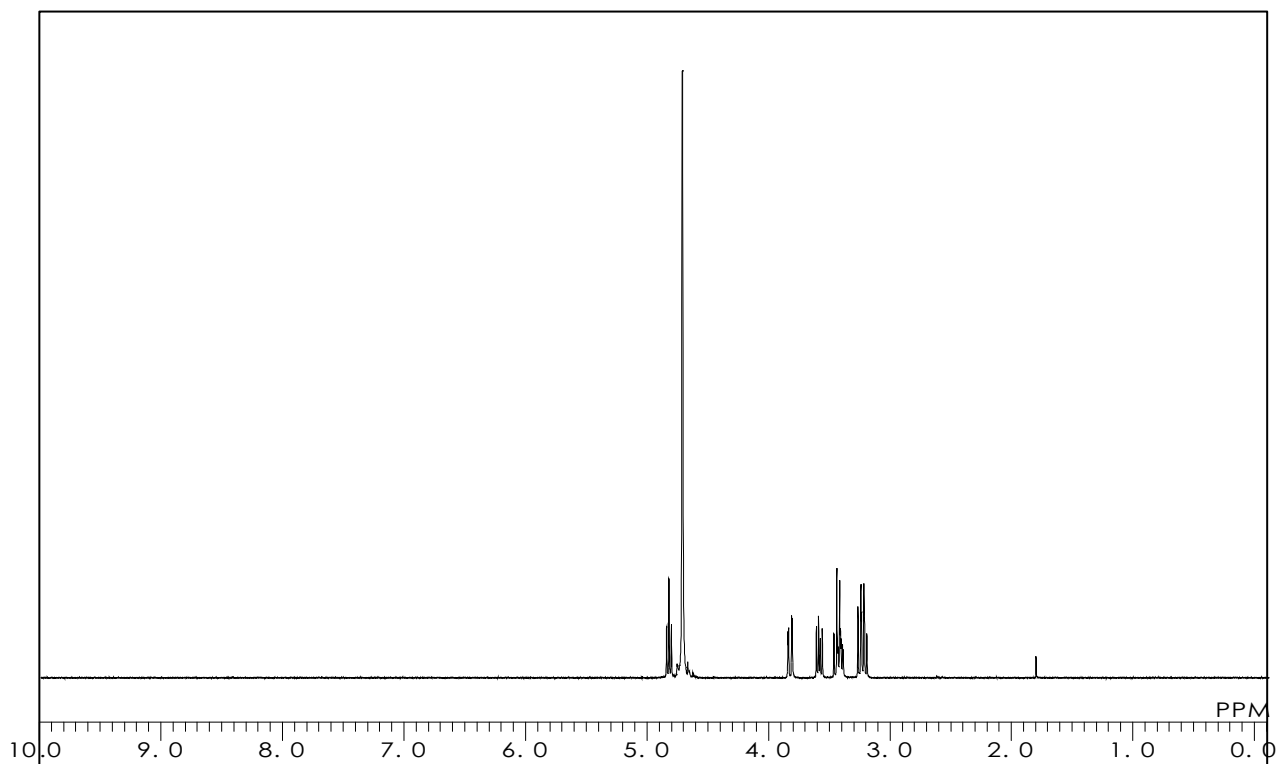
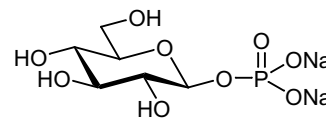
**G0339**

**$\beta$ -D-Glucopyranose 1-Phosphate Disodium Salt**

$C_6H_{11}Na_2O_9P = 304.10$  [83833-15-2]

Solvent :  $D_2O$

Measured Temperature : 24.0 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。



M2434

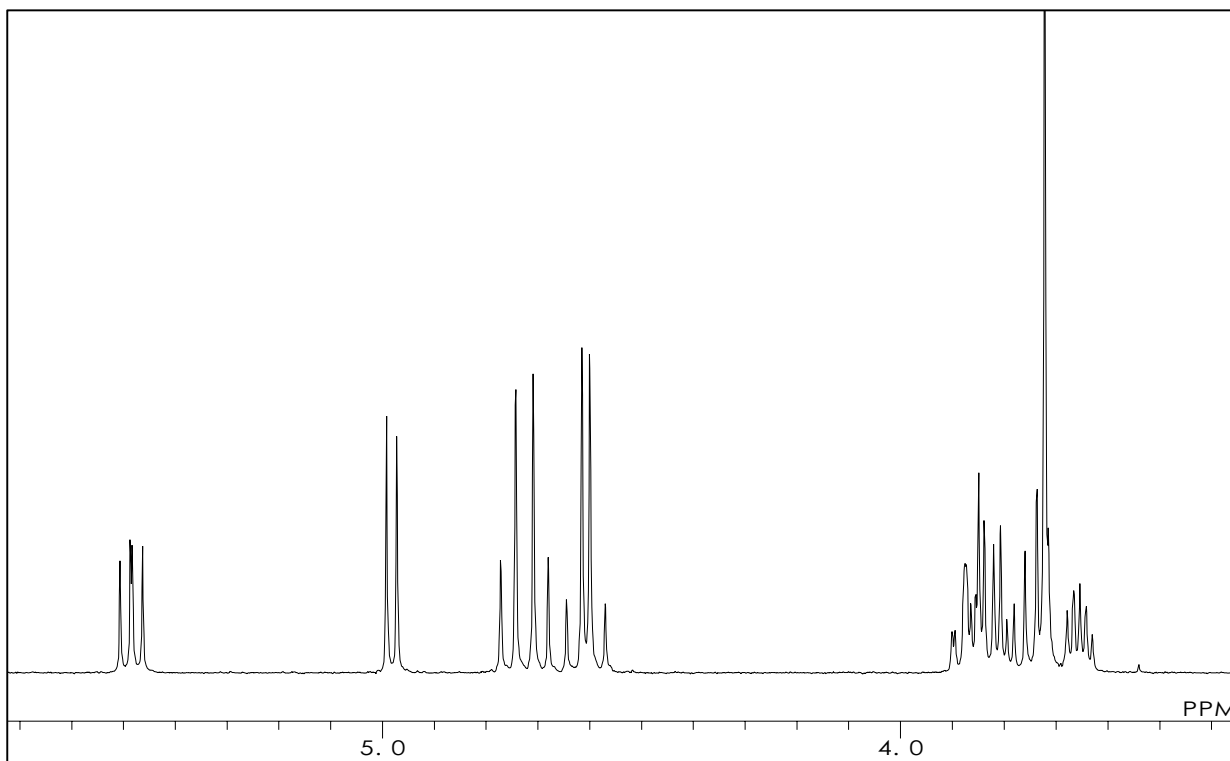
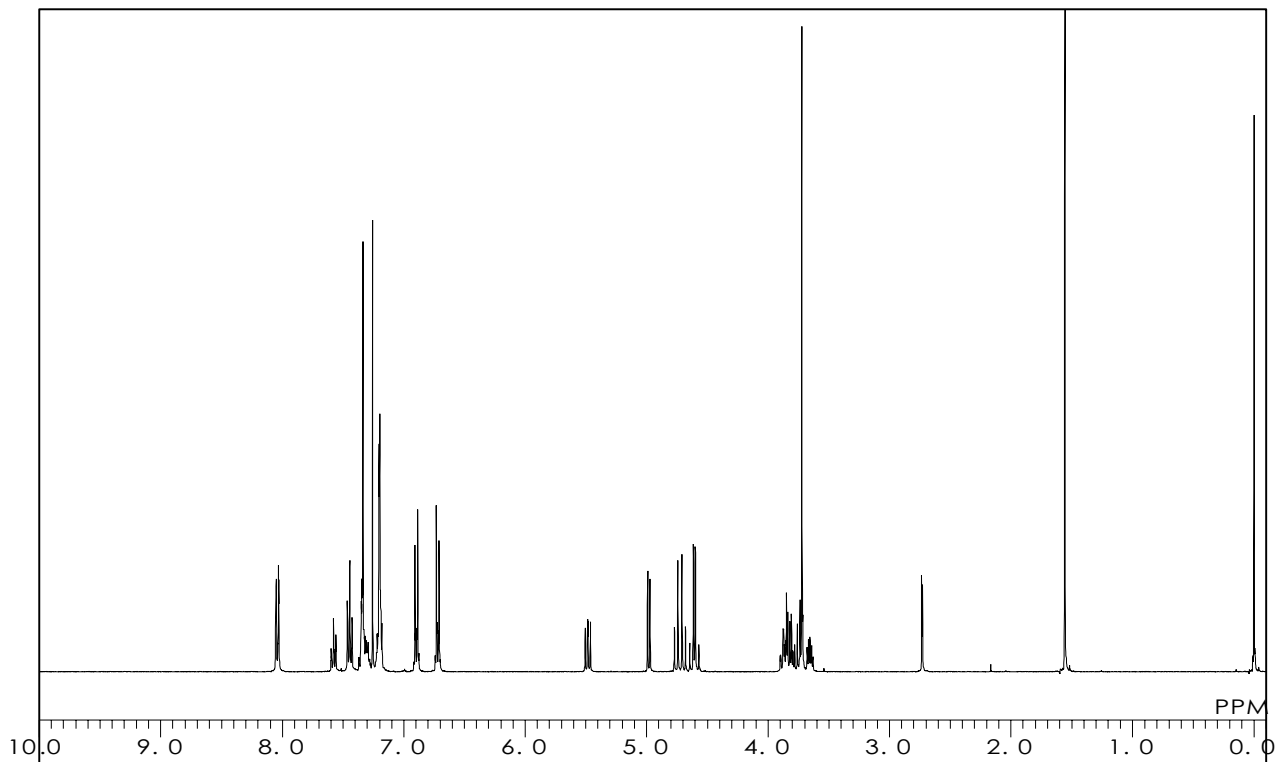
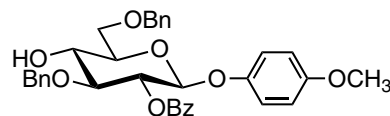
**4-Methoxyphenyl 2-O-Benzoyl-3,6-di-O-benzyl-  
β-D-glucopyranoside**

C<sub>34</sub>H<sub>34</sub>O<sub>8</sub> = 570.64 [1393898-89-9]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 27.7 °C



**M1640**

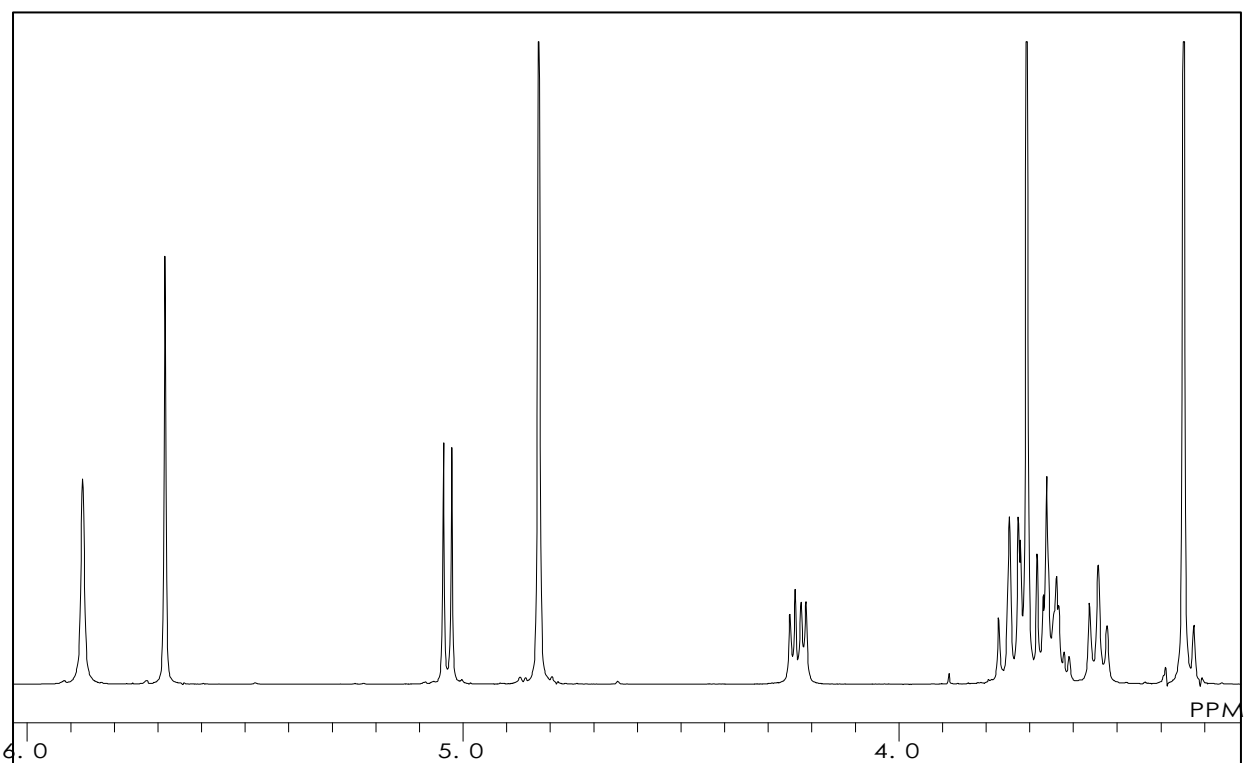
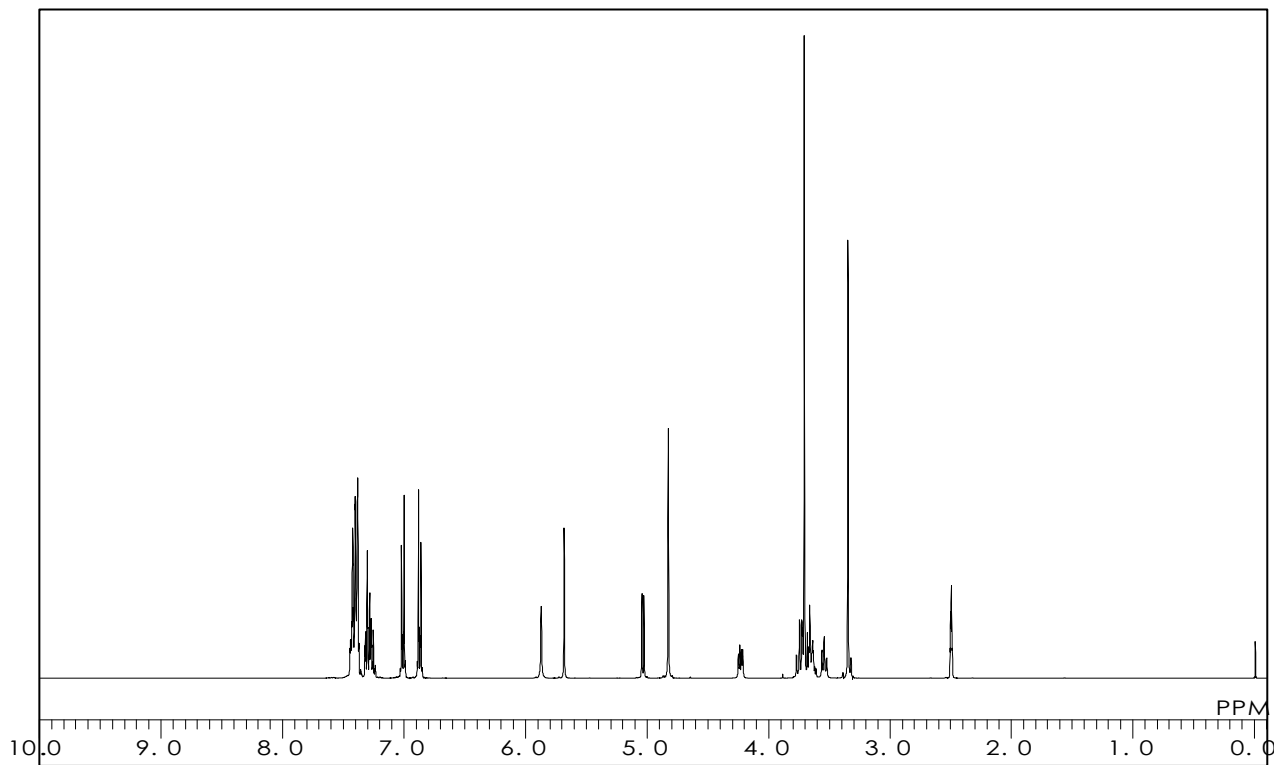
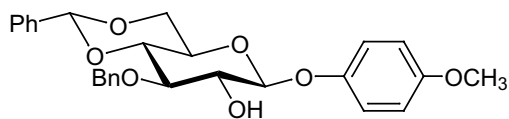
**4-Methoxyphenyl 3-O-Benzyl-4,6-O-benzylidene-β-D-glucopyranoside**

C<sub>27</sub>H<sub>28</sub>O<sub>7</sub> = 464.51 [303127-81-3]

Solvent : DMSO-d<sub>6</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 21.1 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**M1641**

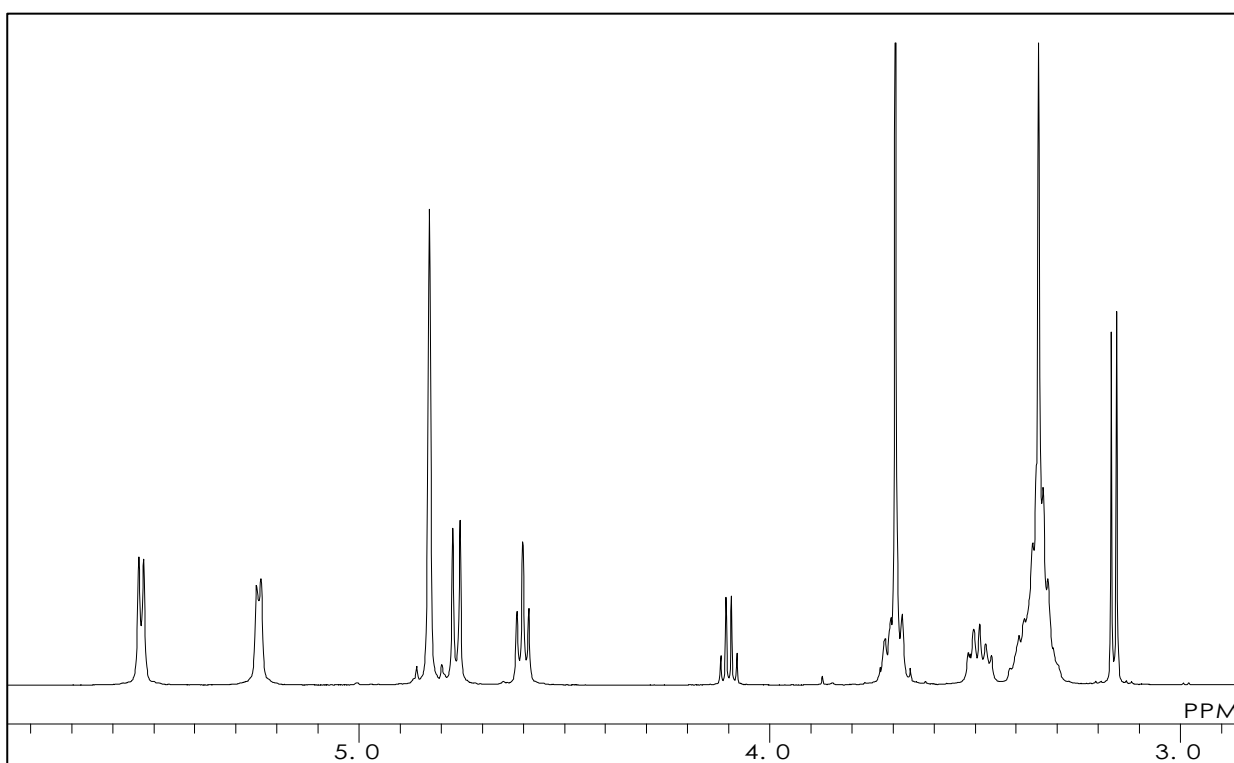
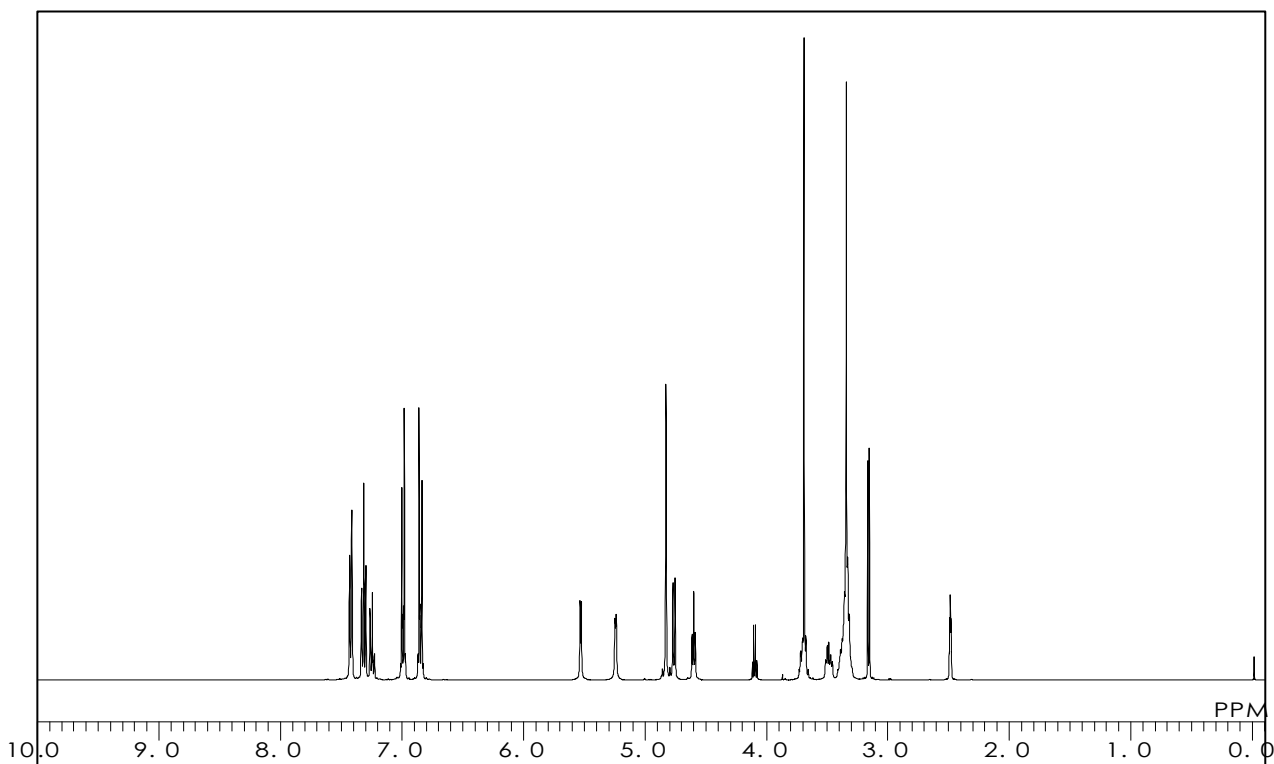
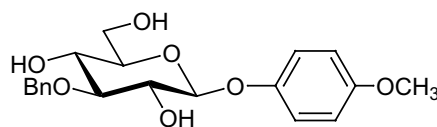
**4-Methoxyphenyl 3-O-Benzyl-β-D-glucopyranoside**

C<sub>20</sub>H<sub>24</sub>O<sub>7</sub> = 376.41 [303127-80-2]

Solvent : DMSO-d<sub>6</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 22.7 °C



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**M1631**

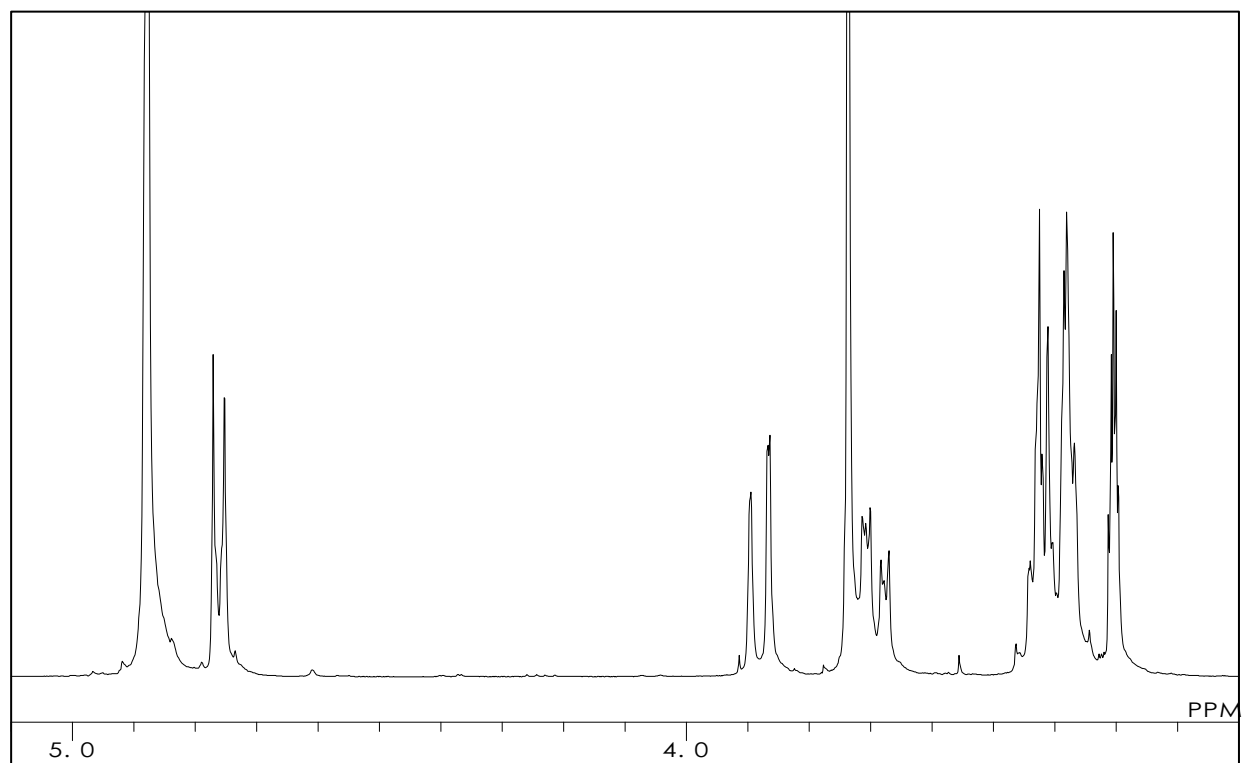
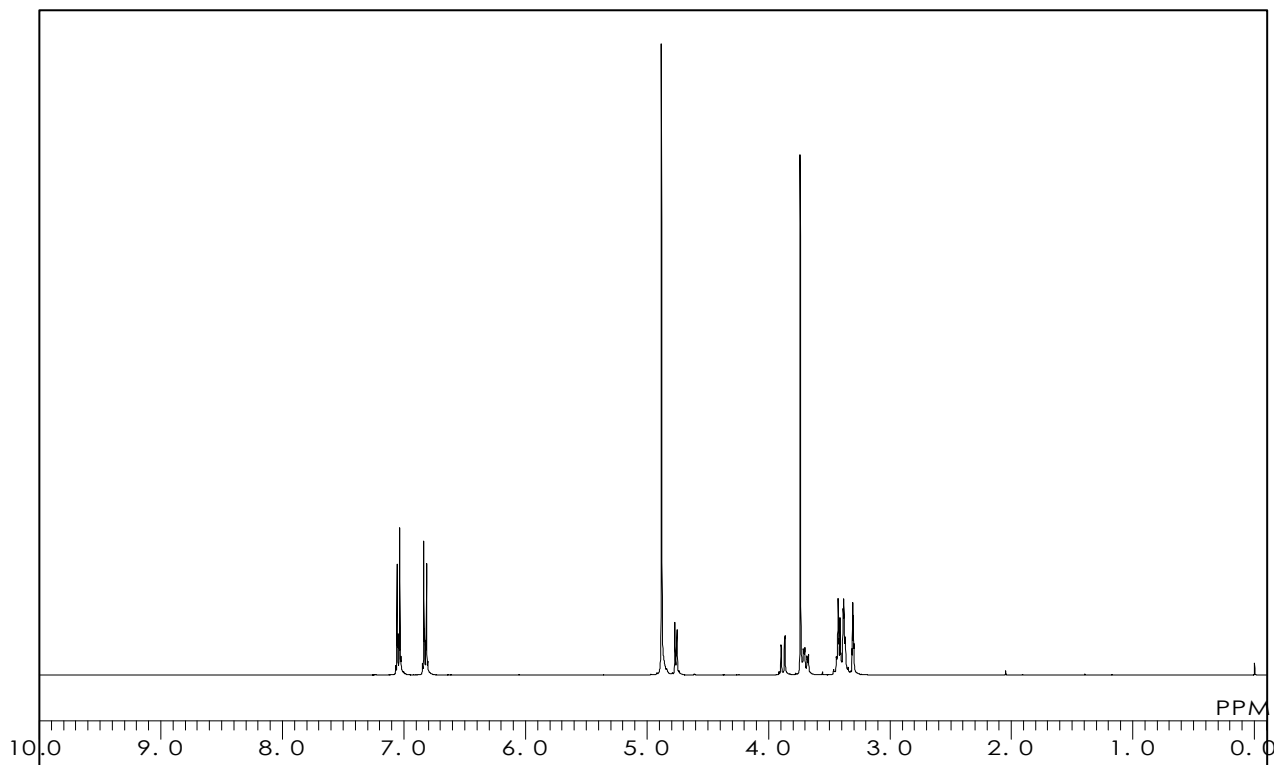
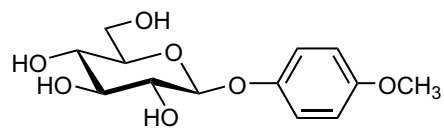
## 4-Methoxyphenyl $\beta$ -D-Glucopyranoside

$C_{13}H_{18}O_7 = 286.28$  [6032-32-2]

Solvent :  $CD_3OD$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 20.9 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**M1630**

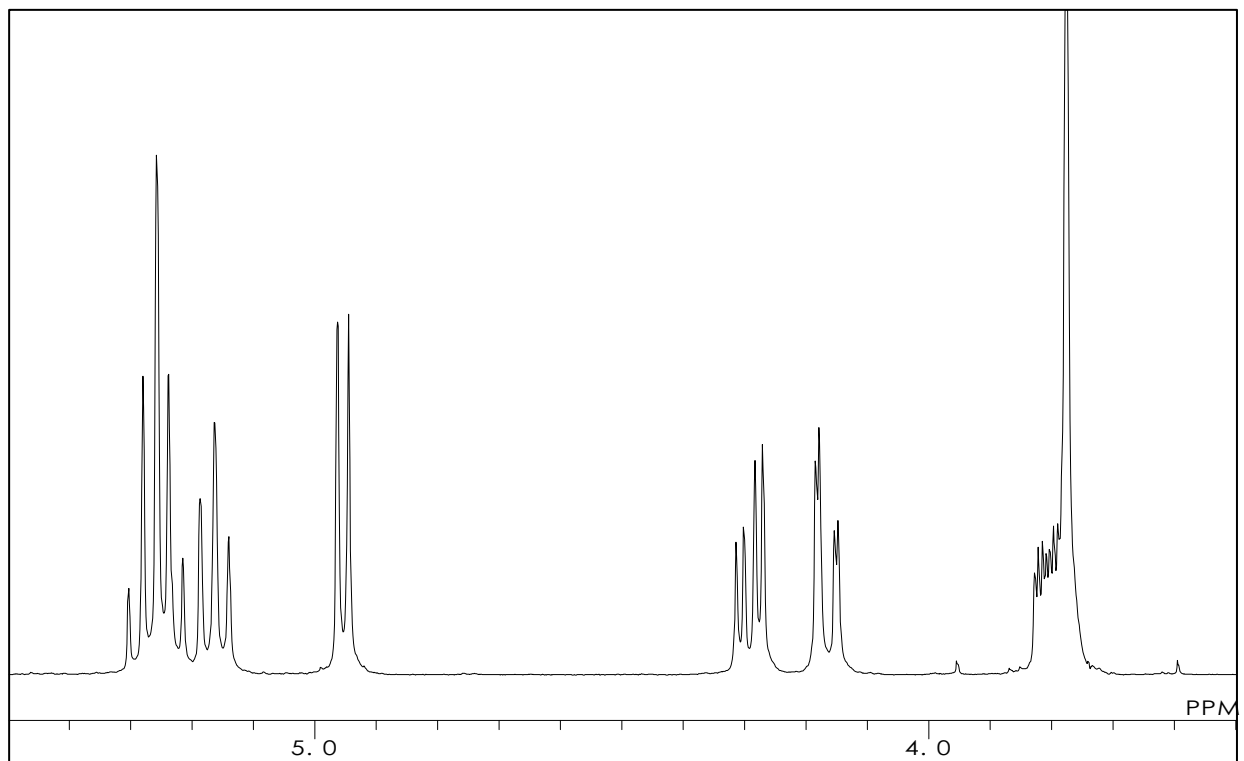
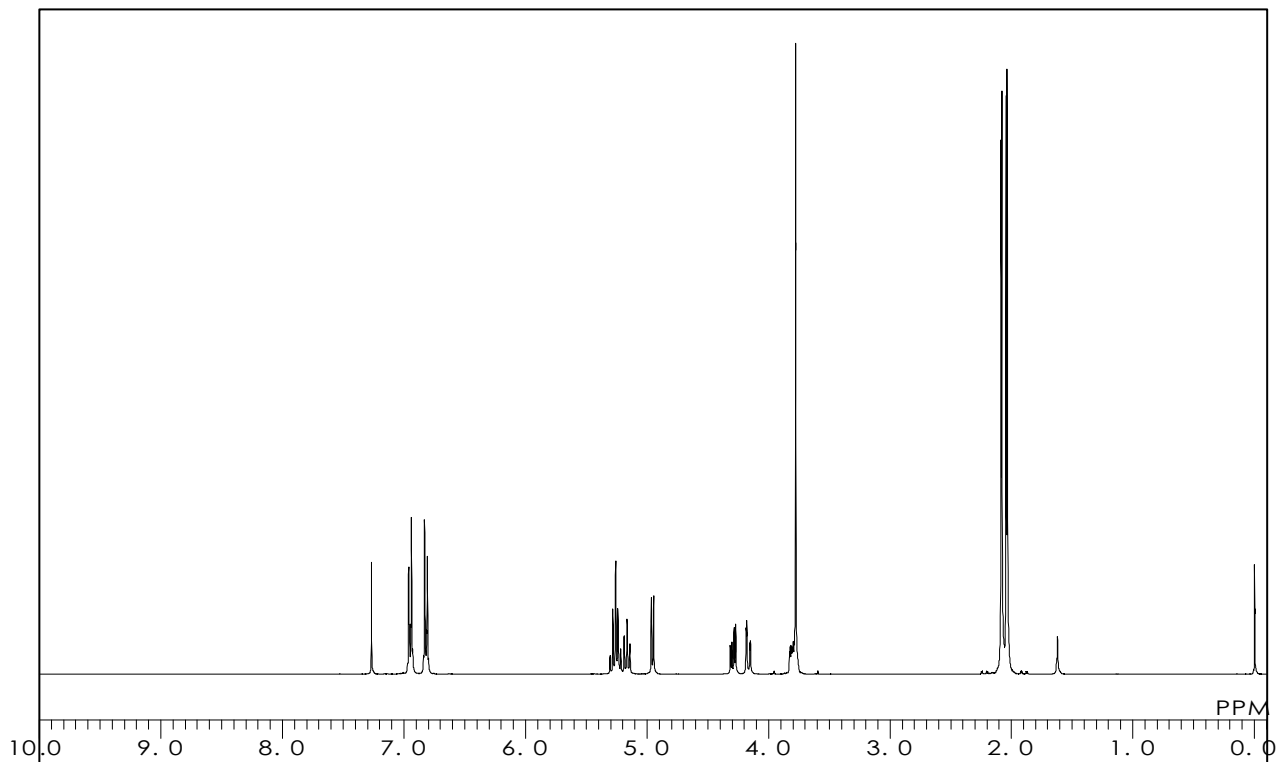
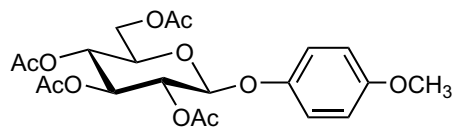
**4-Methoxyphenyl 2,3,4,6-Tetra-O-acetyl-β-D-glucopyranoside**

C<sub>21</sub>H<sub>26</sub>O<sub>11</sub> = 454.43 [14581-81-8]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

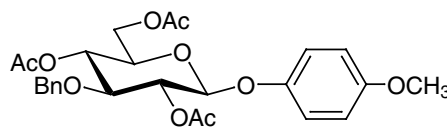
Measured Temperature : 21.2 °C



**M1642**

**4-Methoxyphenyl 2,4,6-Tri-O-acetyl-3-O-benzyl-β-D-glucopyranoside**

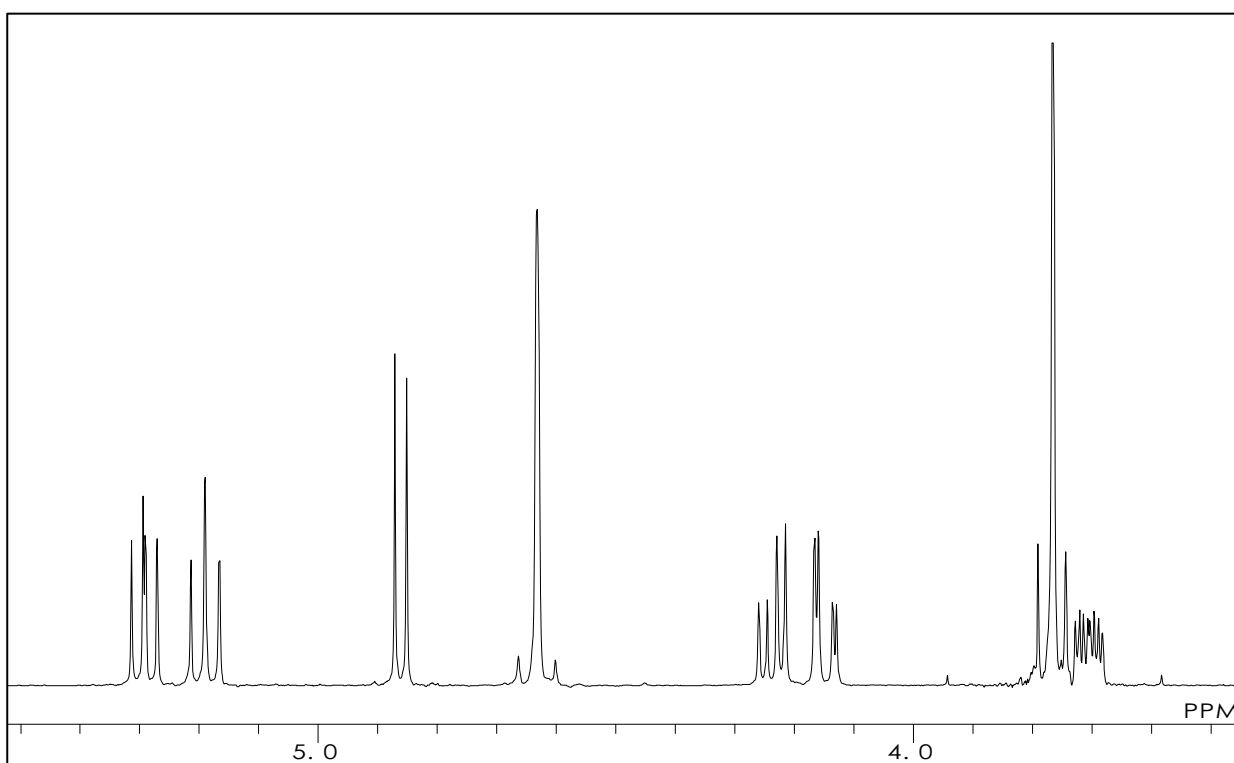
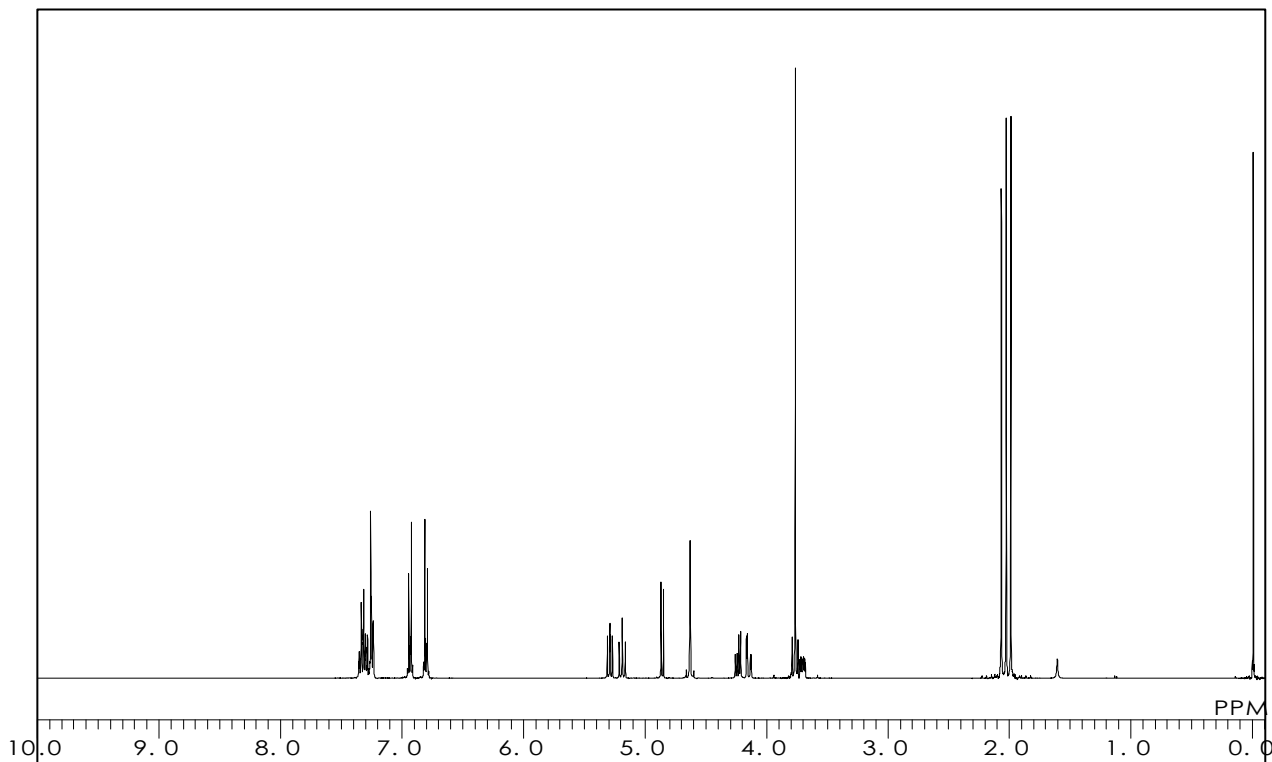
C<sub>26</sub>H<sub>30</sub>O<sub>10</sub> = 502.52 [303127-79-9]



Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 25.0 °C



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**M1682**

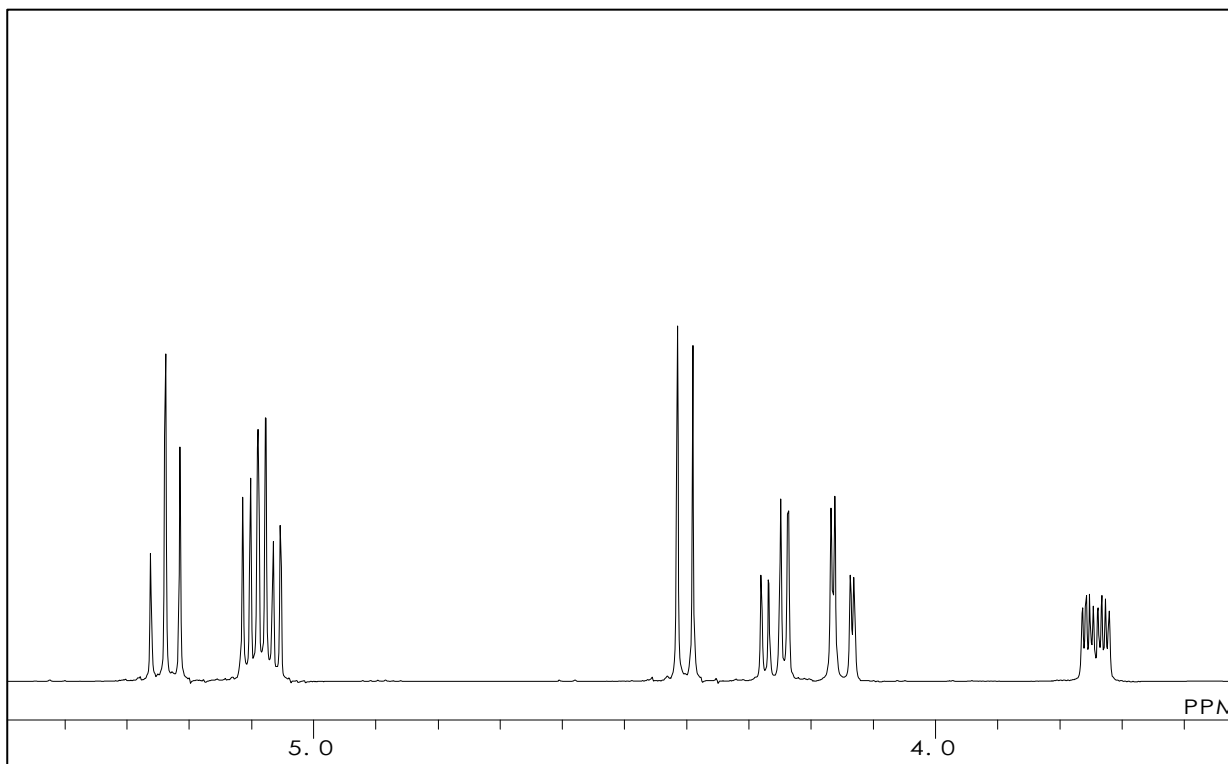
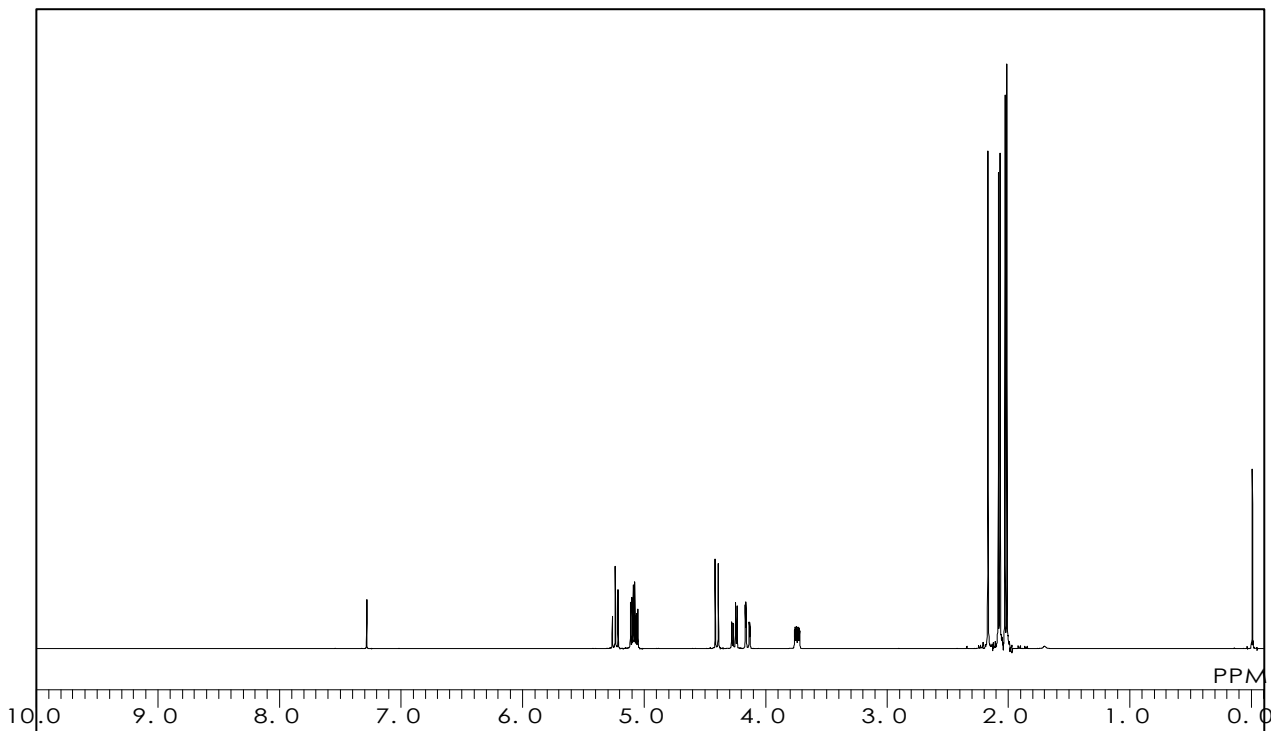
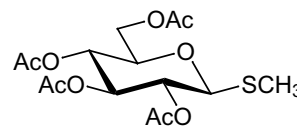
**Methyl 2,3,4,6-Tetra-O-acetyl-1-thio-β-D-glucopyranoside**

C<sub>15</sub>H<sub>22</sub>O<sub>9</sub>S = 378.39 [13350-45-3]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 22.0 °C



**M1487**

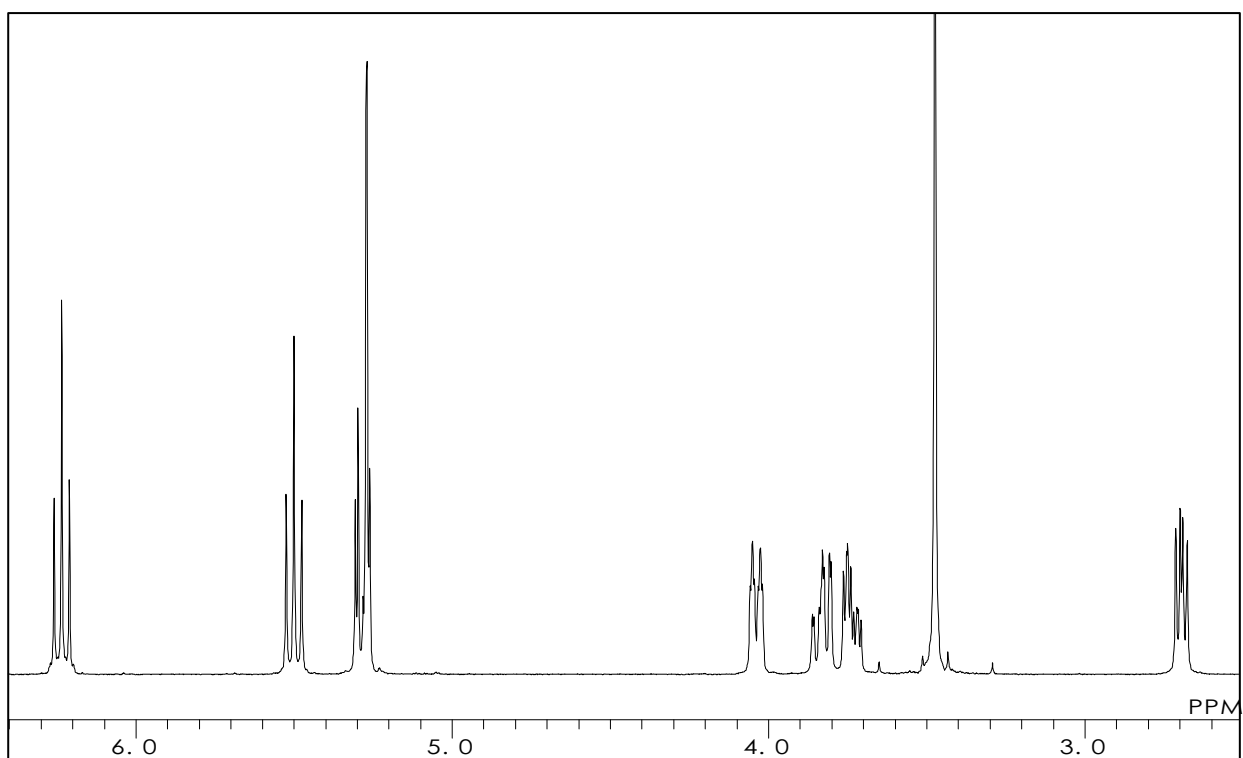
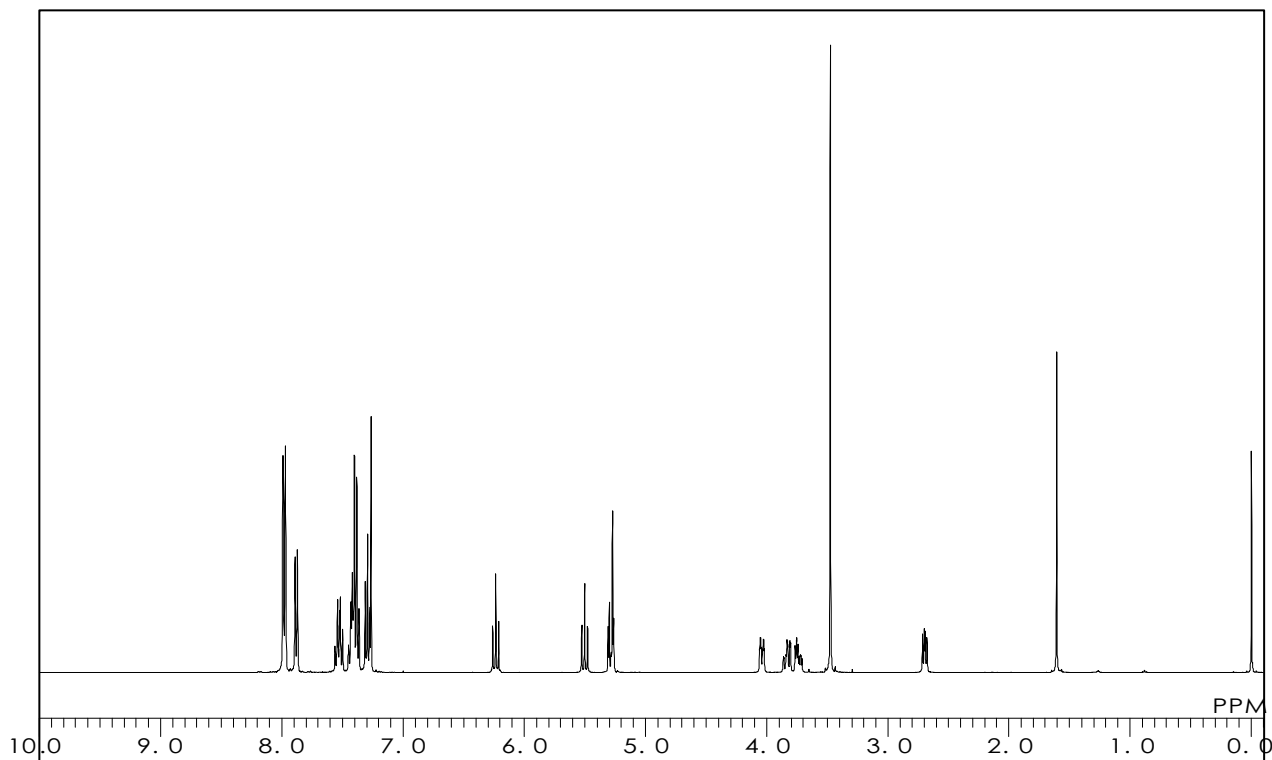
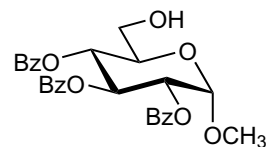
**Methyl 2,3,4-Tri-O-benzoyl- $\alpha$ -D-glucopyranoside**

$C_{28}H_{26}O_9 = 506.51$  [34234-44-1]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 20.9 °C



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**M1488**

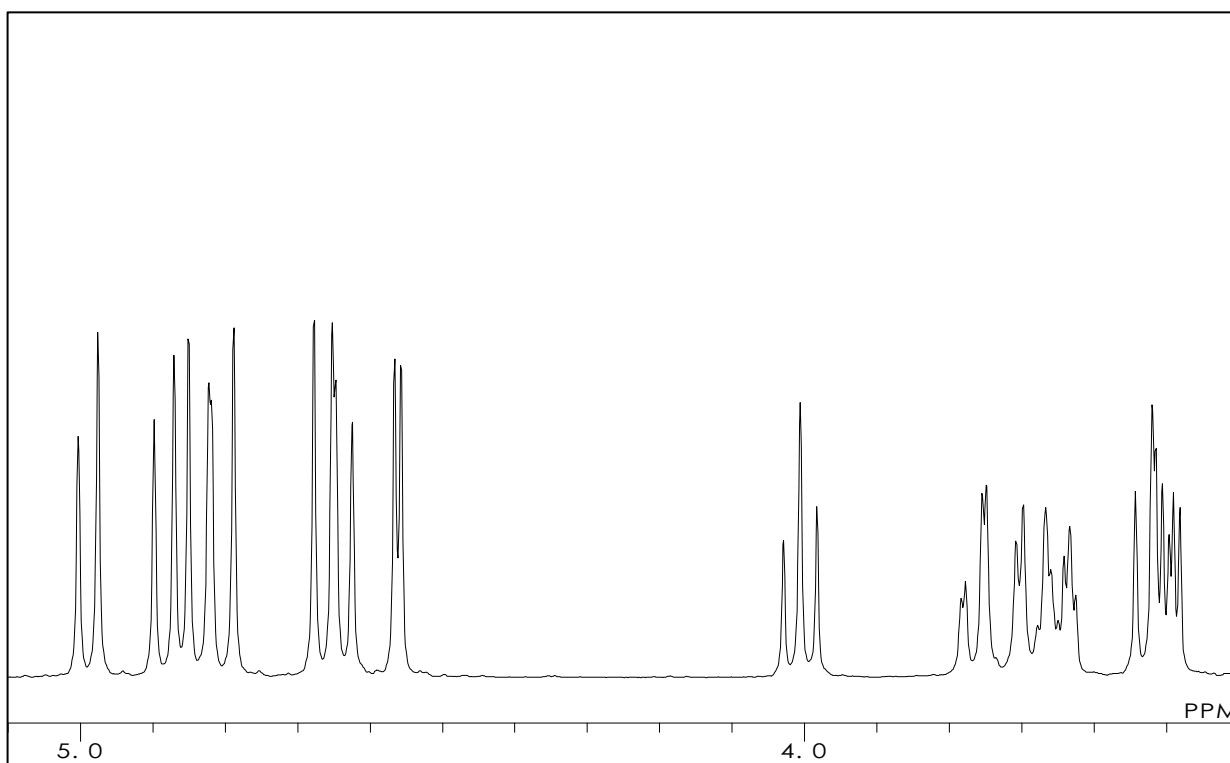
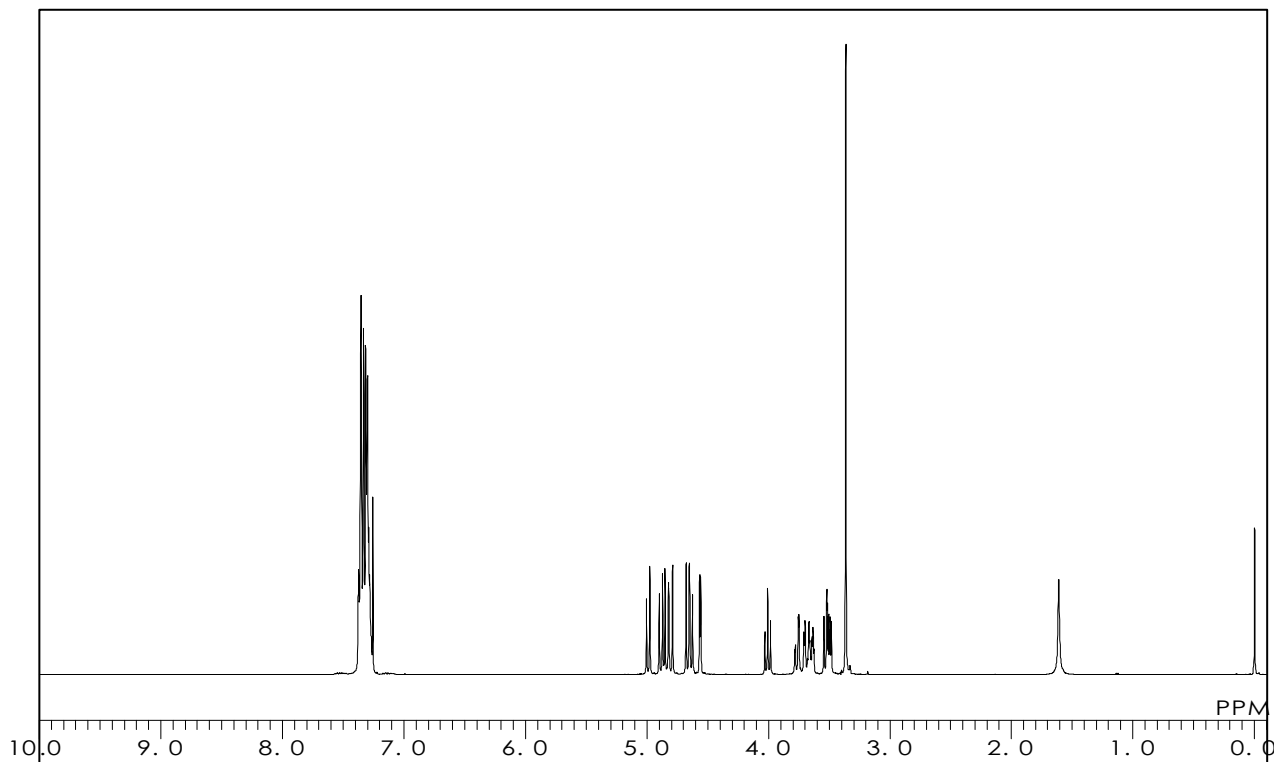
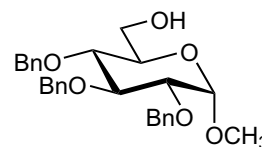
**Methyl 2,3,4-Tri-O-benzyl- $\alpha$ -D-glucopyranoside**

$C_{28}H_{32}O_6 = 464.56$  [53008-65-4]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 20.7 °C



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**A2638**

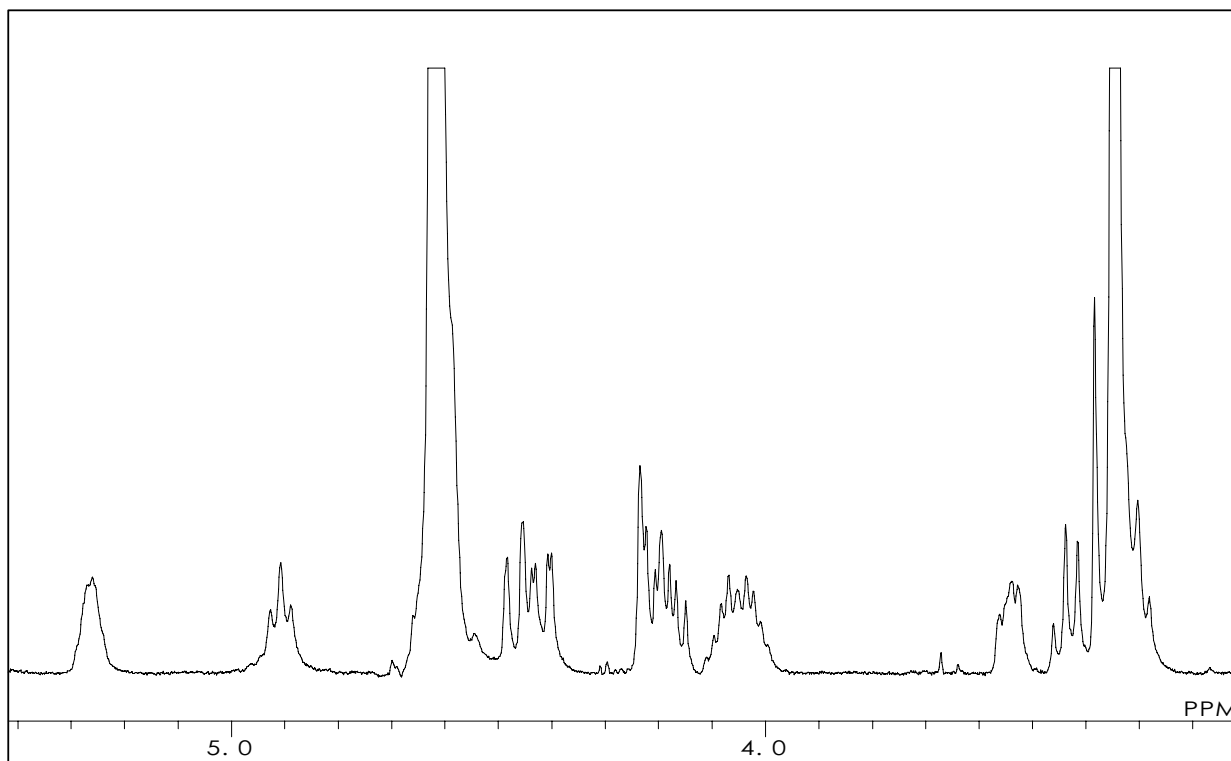
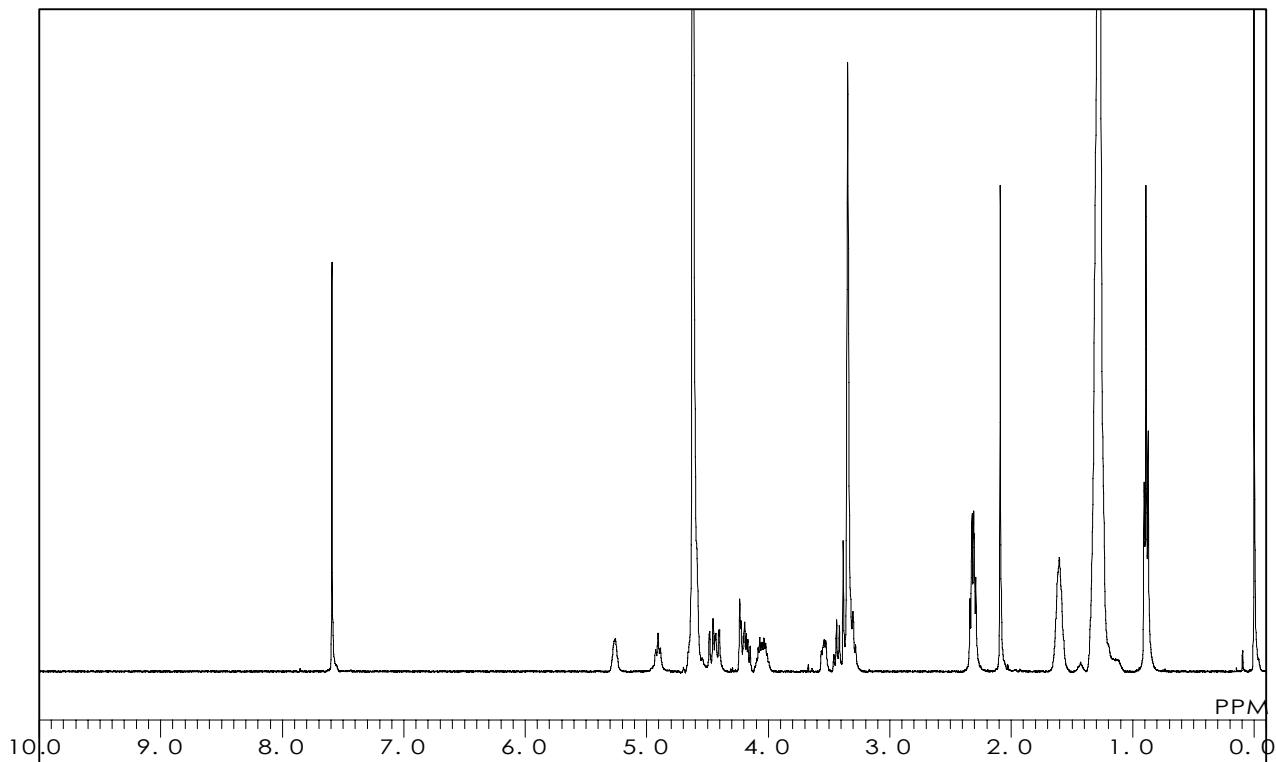
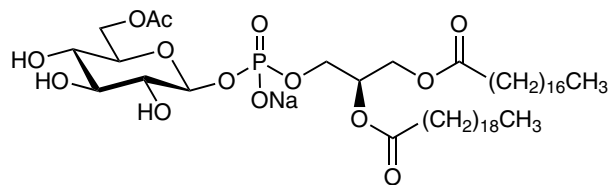
**6-OAc PtdGlc(di-acyl Chain)**

$C_{49}H_{92}NaO_{14}P = 959.22$  [1065483-61-5]

Solvent :  $CDCl_3/CD_3OD = 1/1$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 26.6 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**P1475**

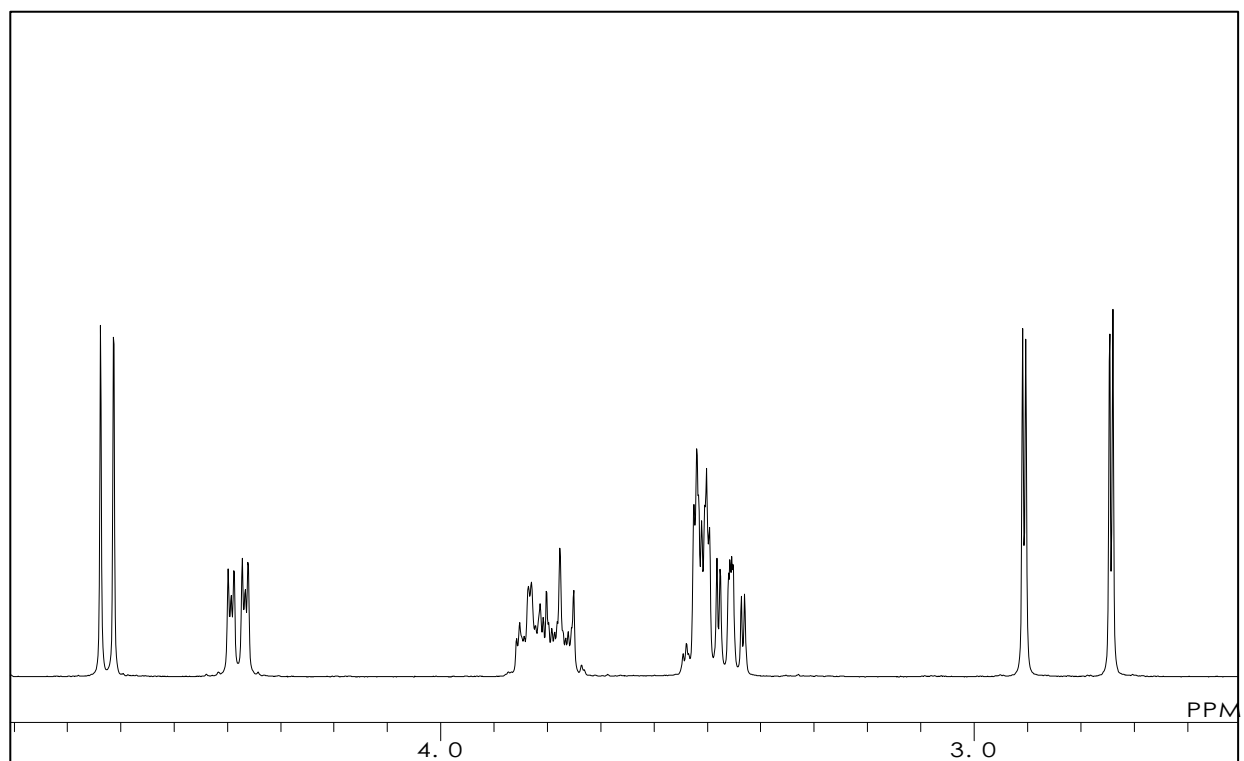
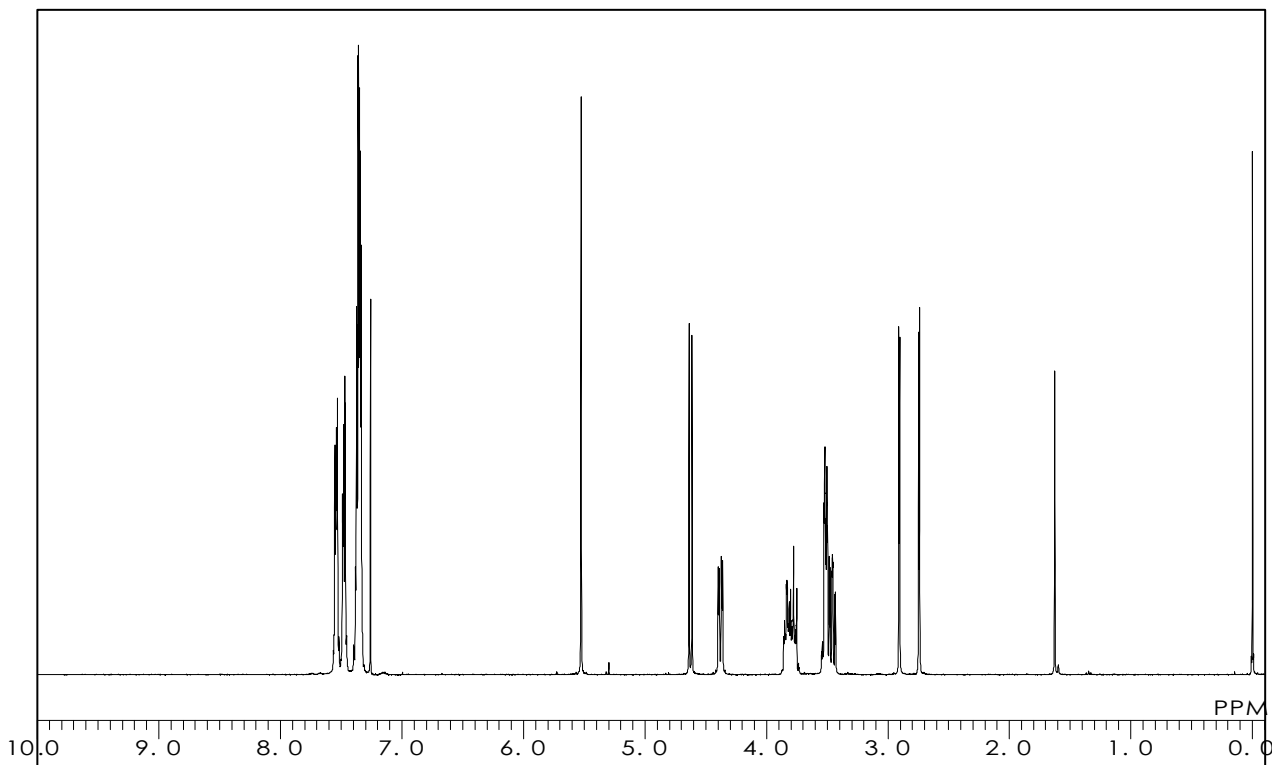
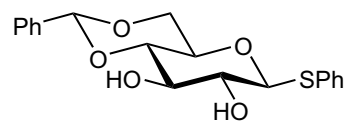
**Phenyl 4,6-O-Benzylidene-1-thio-β-D-glucopyranoside**

C<sub>19</sub>H<sub>20</sub>O<sub>5</sub>S = 360.42 [87508-17-6]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 20.5 °C



**P1476**

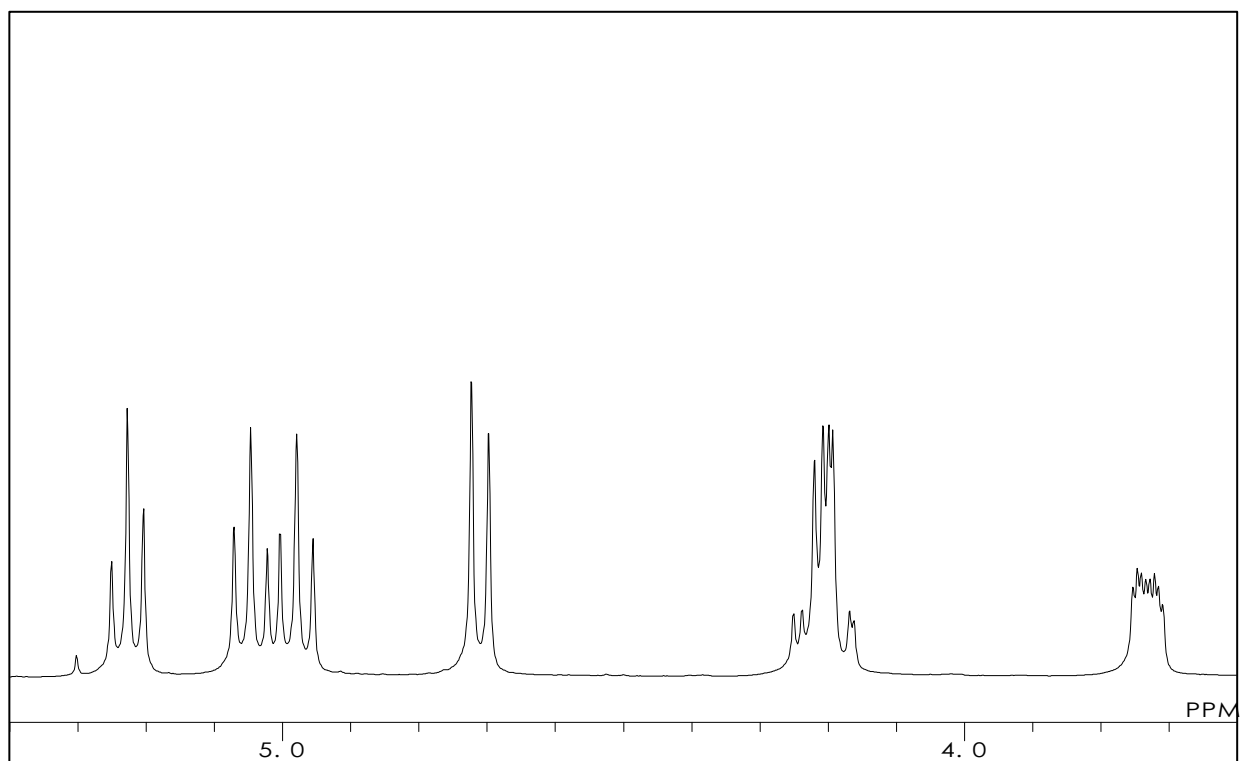
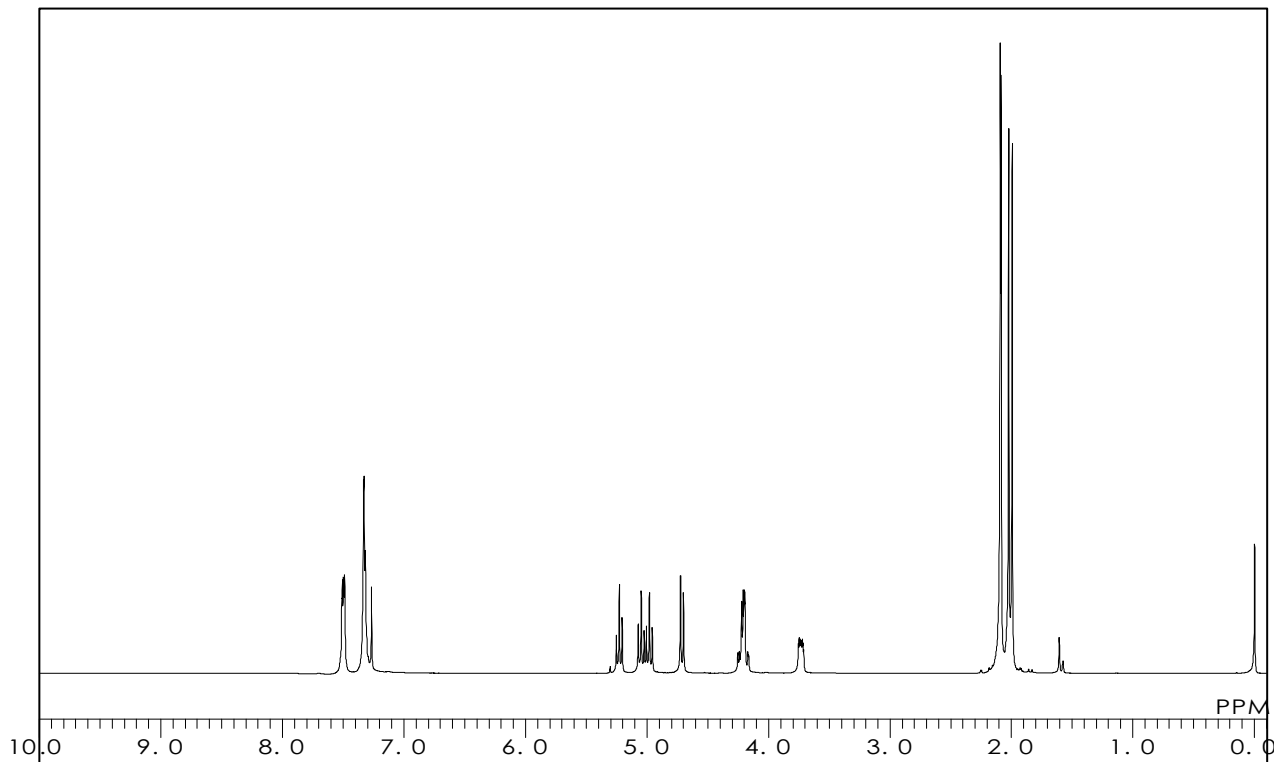
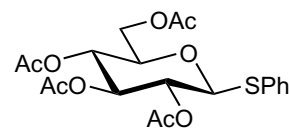
**Phenyl 2,3,4,6-Tetra-O-acetyl-1-thio-β-D-glucopyranoside**

C<sub>20</sub>H<sub>24</sub>O<sub>9</sub>S = 440.46 [23661-28-1]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 19.8 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**P1736**

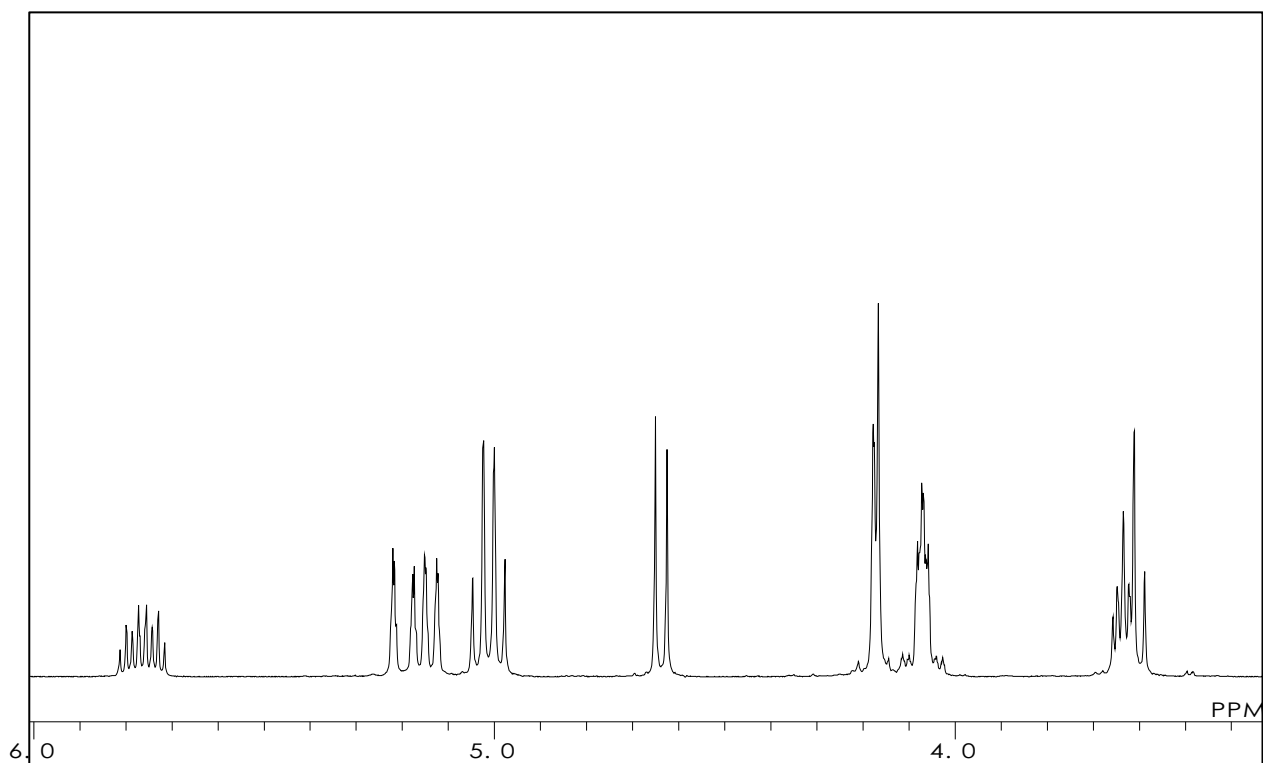
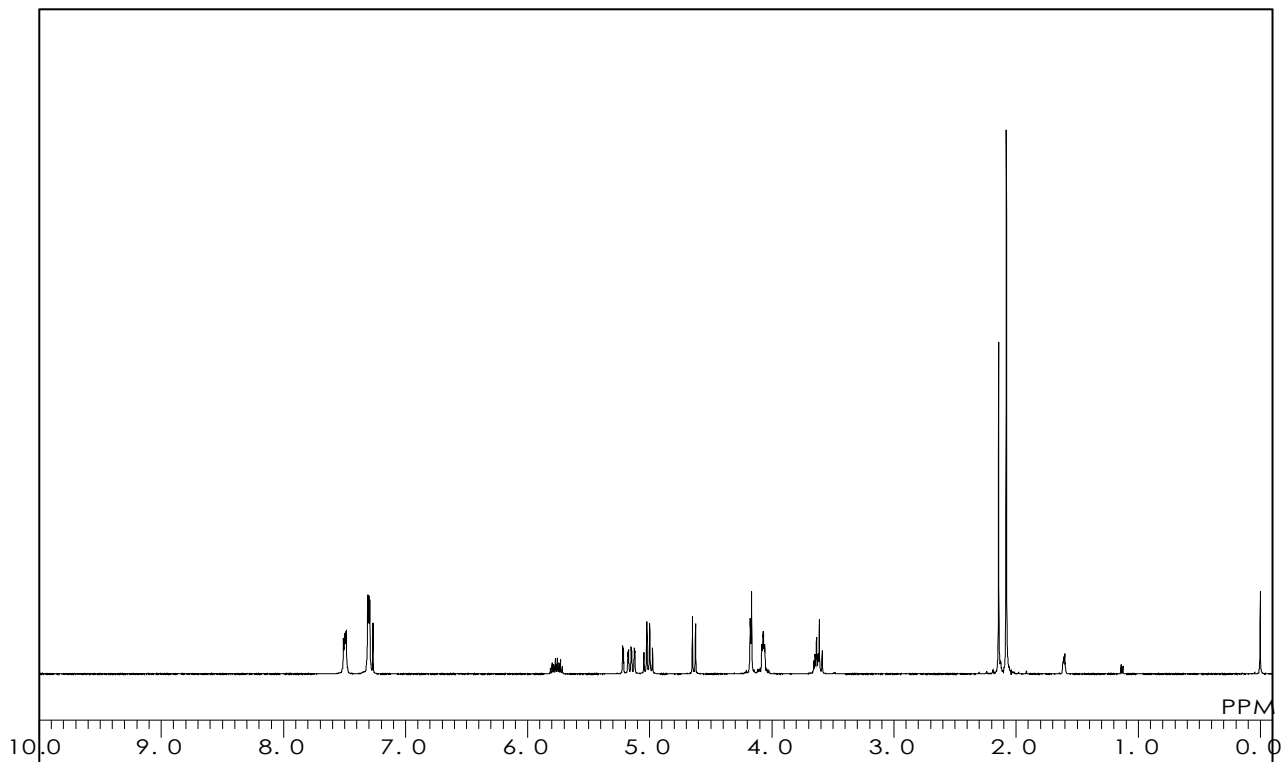
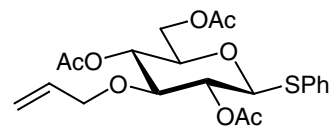
**Phenyl 2,4,6-Tri-O-acetyl-3-O-allyl-1-thio-β-D-glucopyranoside**

$C_{21}H_{26}O_8S = 438.49$  [197005-22-4]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 20.5 °C



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T2449

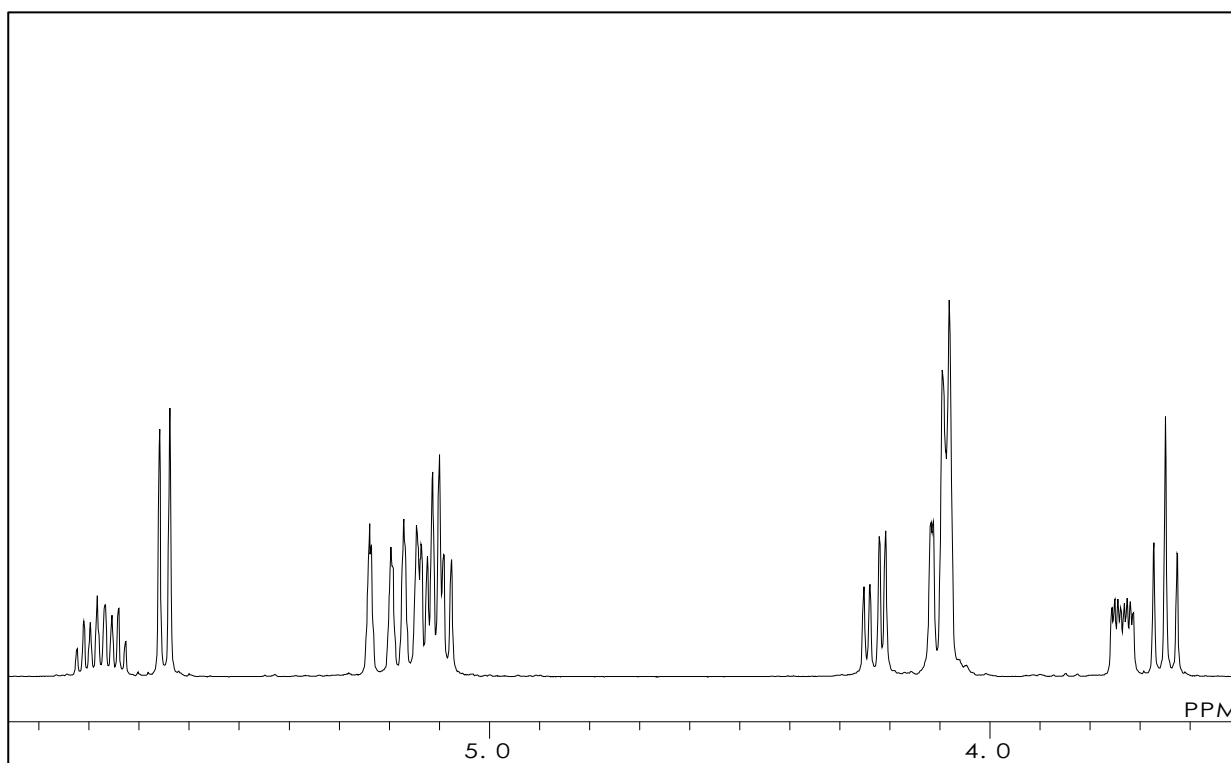
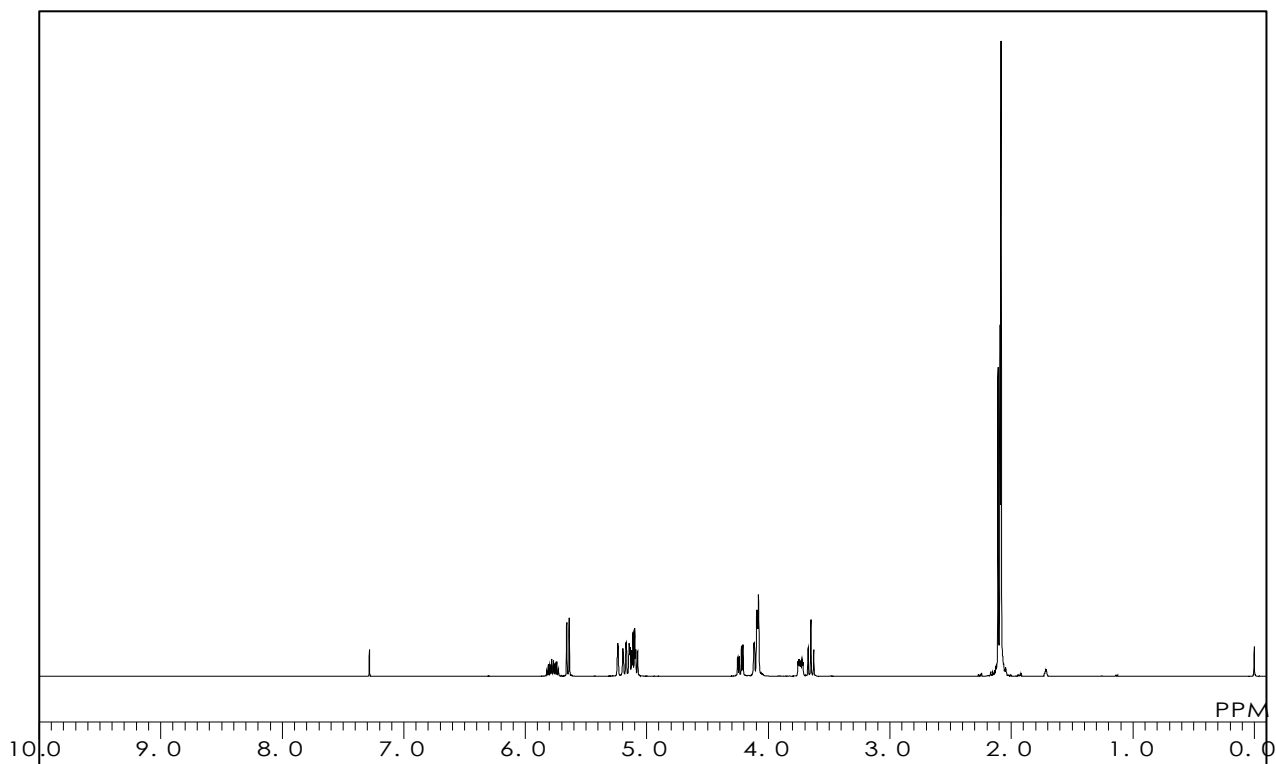
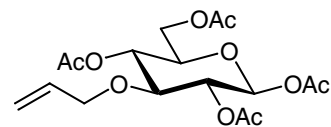
## 1,2,4,6-Tetra-O-acetyl-3-O-allyl-β-D-glucopyranose

C<sub>17</sub>H<sub>24</sub>O<sub>10</sub> = 388.37 [39698-00-5]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 22.3 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

T1995

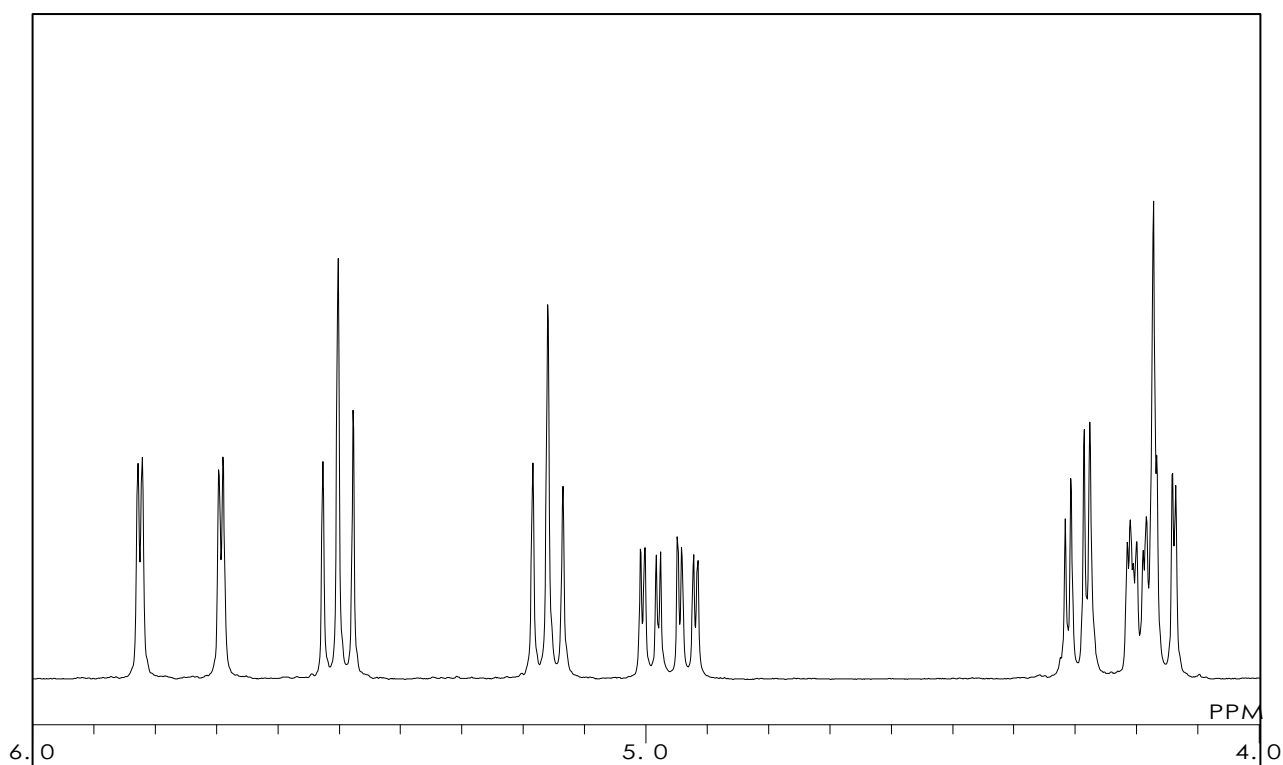
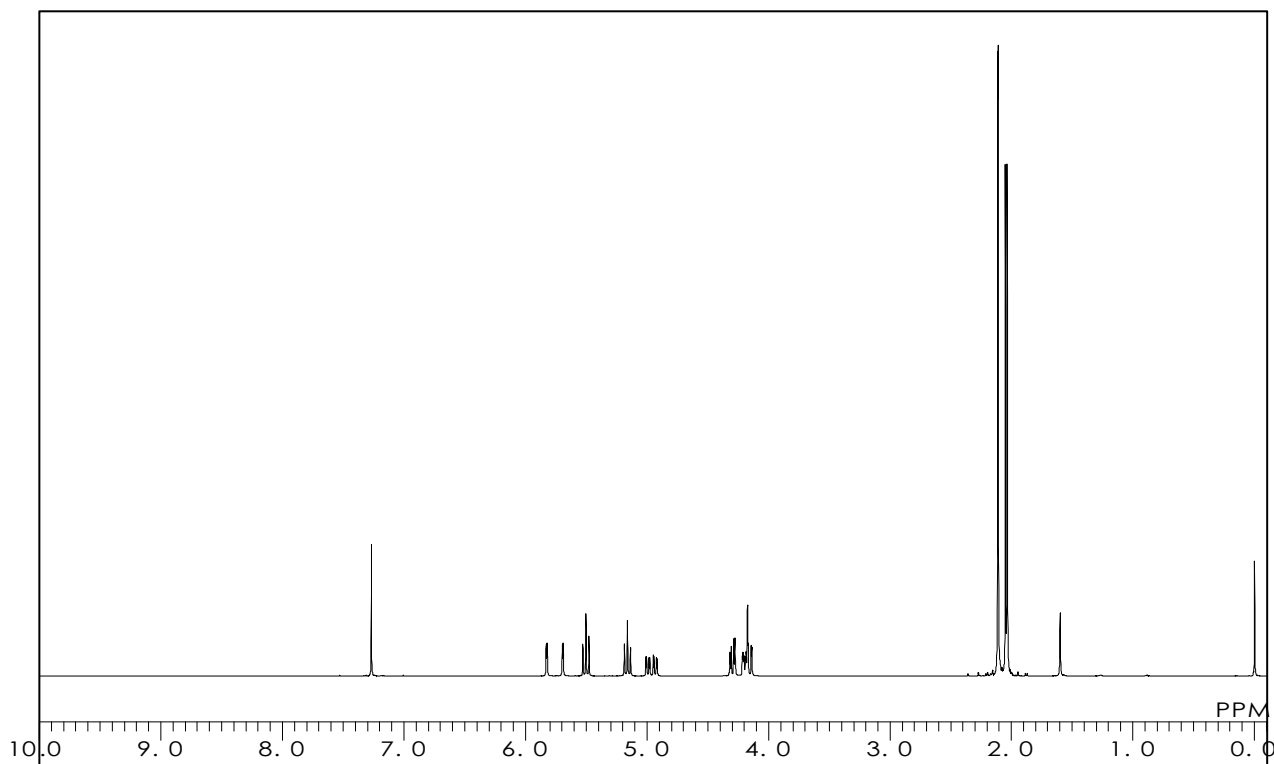
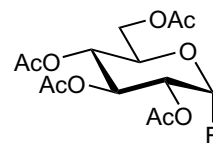
## 2,3,4,6-Tetra-O-acetyl- $\alpha$ -D-glucopyranosyl Fluoride

$C_{14}H_{19}FO_9 = 350.30$  [3934-29-0]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 20.8 °C



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T2491

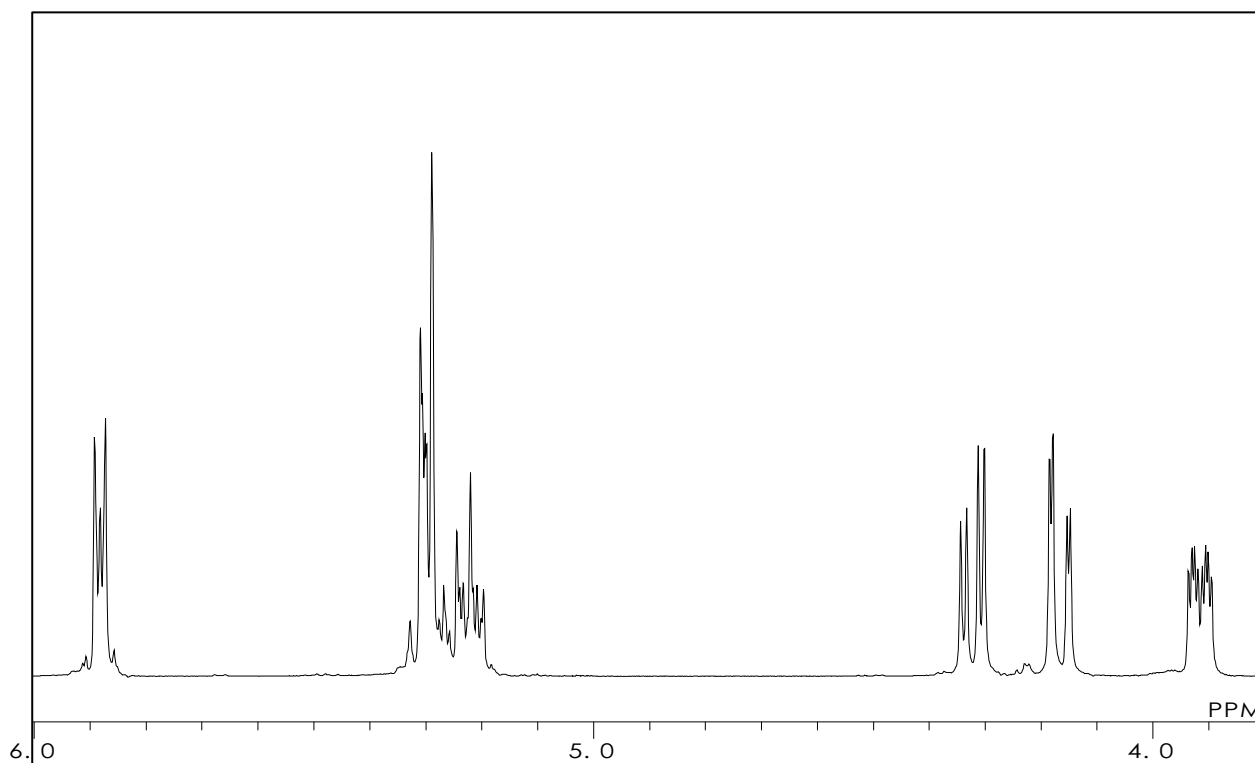
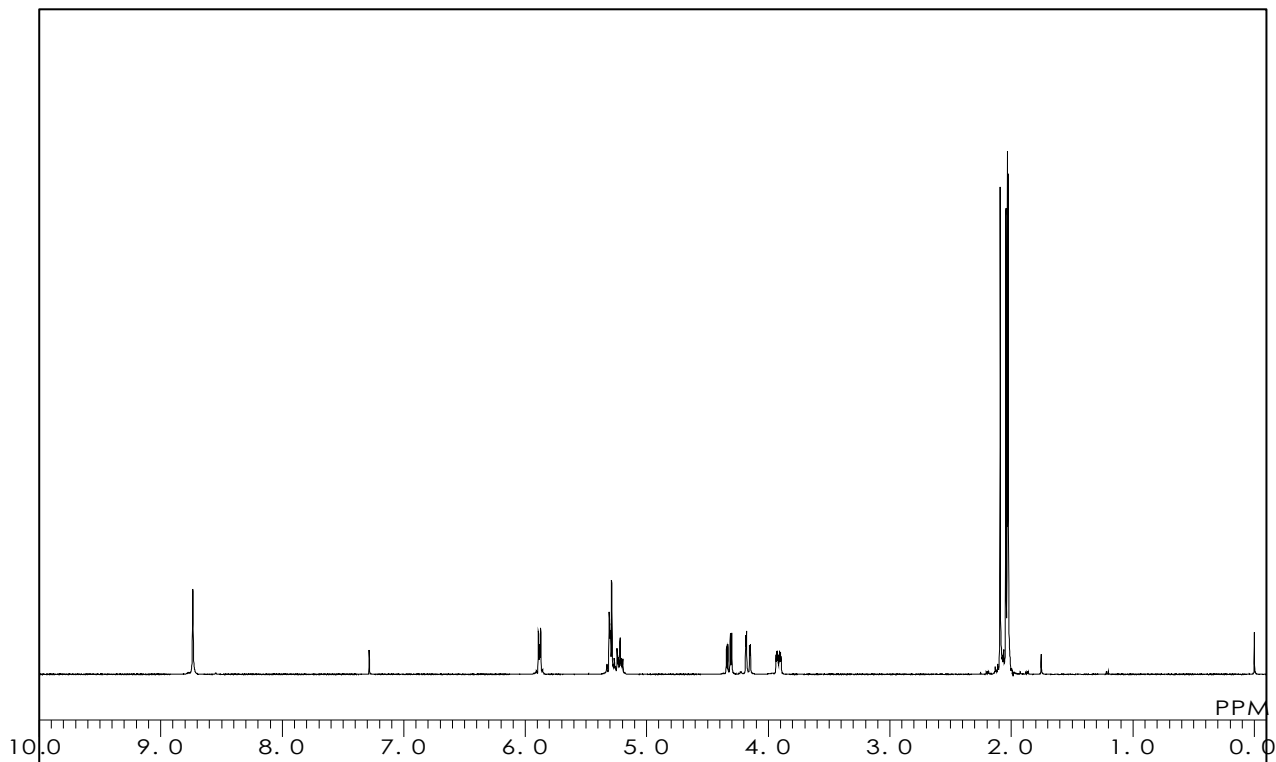
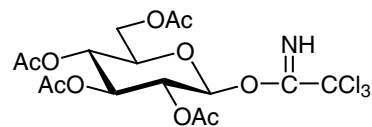
**2,3,4,6-Tetra-O-acetyl-β-D-glucopyranosyl  
2,2,2-Trichloroacetimidate**

C<sub>16</sub>H<sub>20</sub>Cl<sub>3</sub>NO<sub>10</sub> = 492.68 [92052-29-4]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 22.8 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。



**P2079**

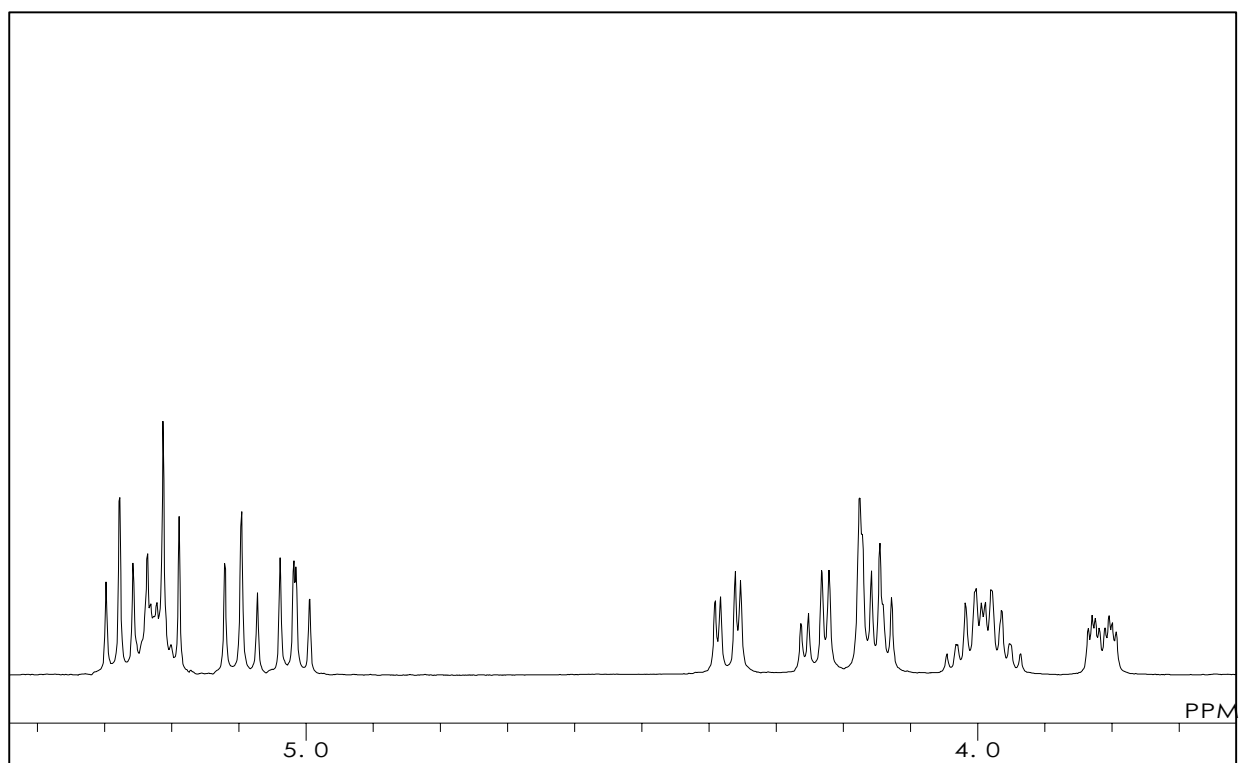
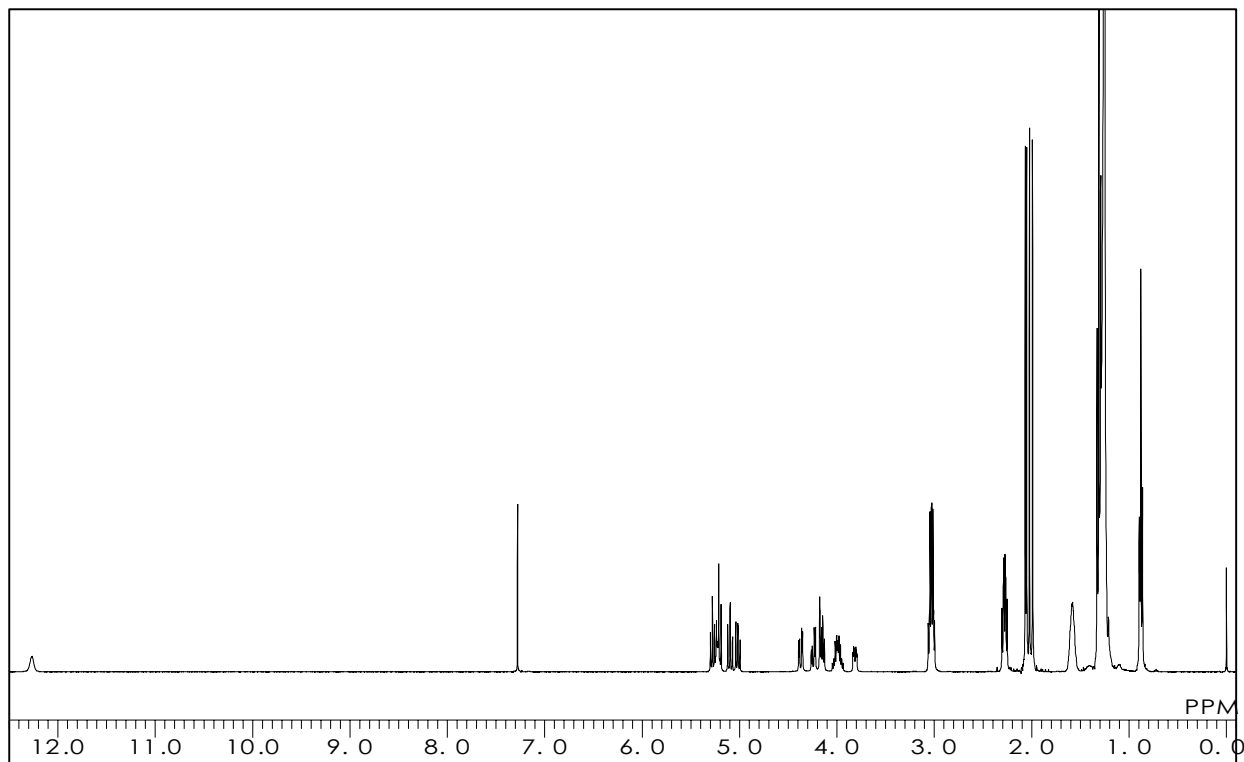
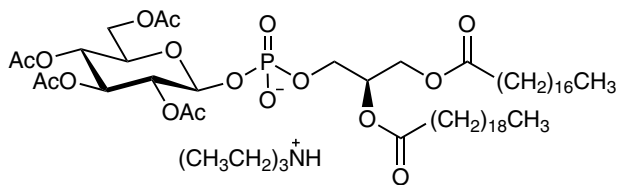
**2,3,4,6-Tetra-O-acetyl-PtdGlc(di-acyl Chain)**

$C_{61}H_{114}NO_{17}P = 1164.55$  [1037195-49-5]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 25.2 °C



**P2080**

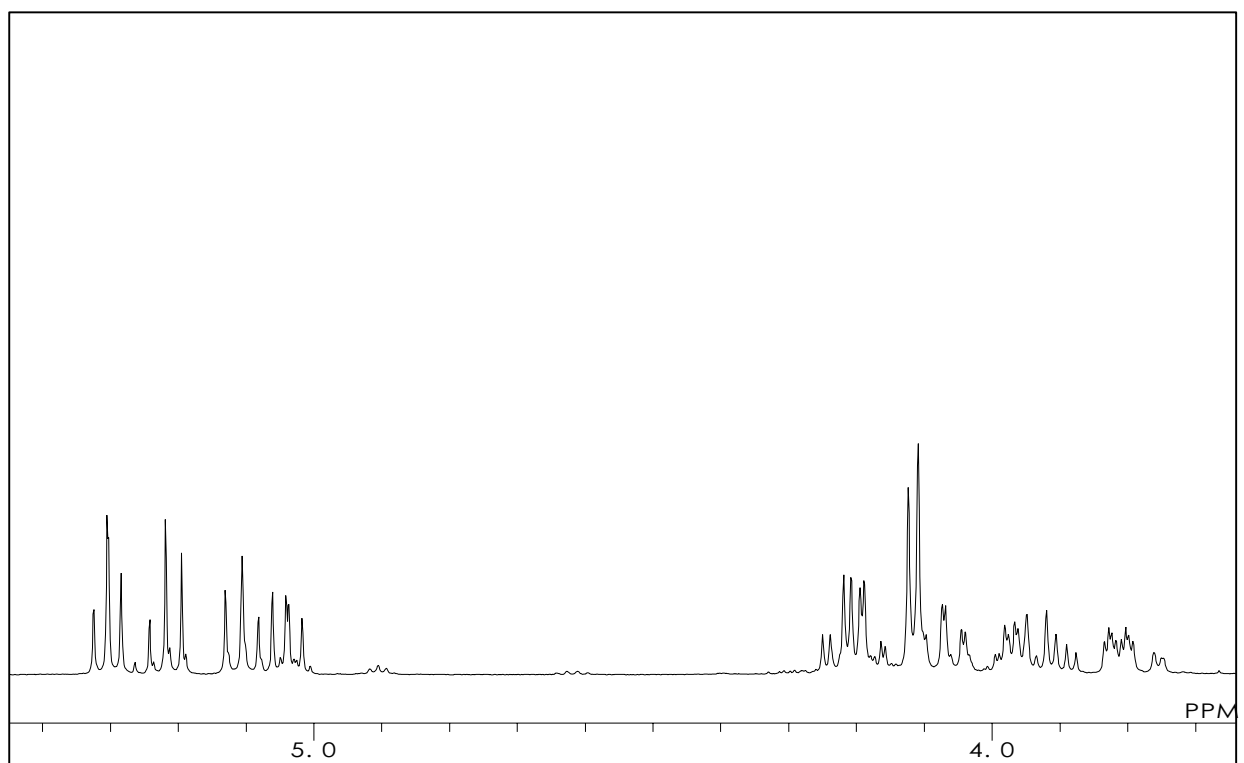
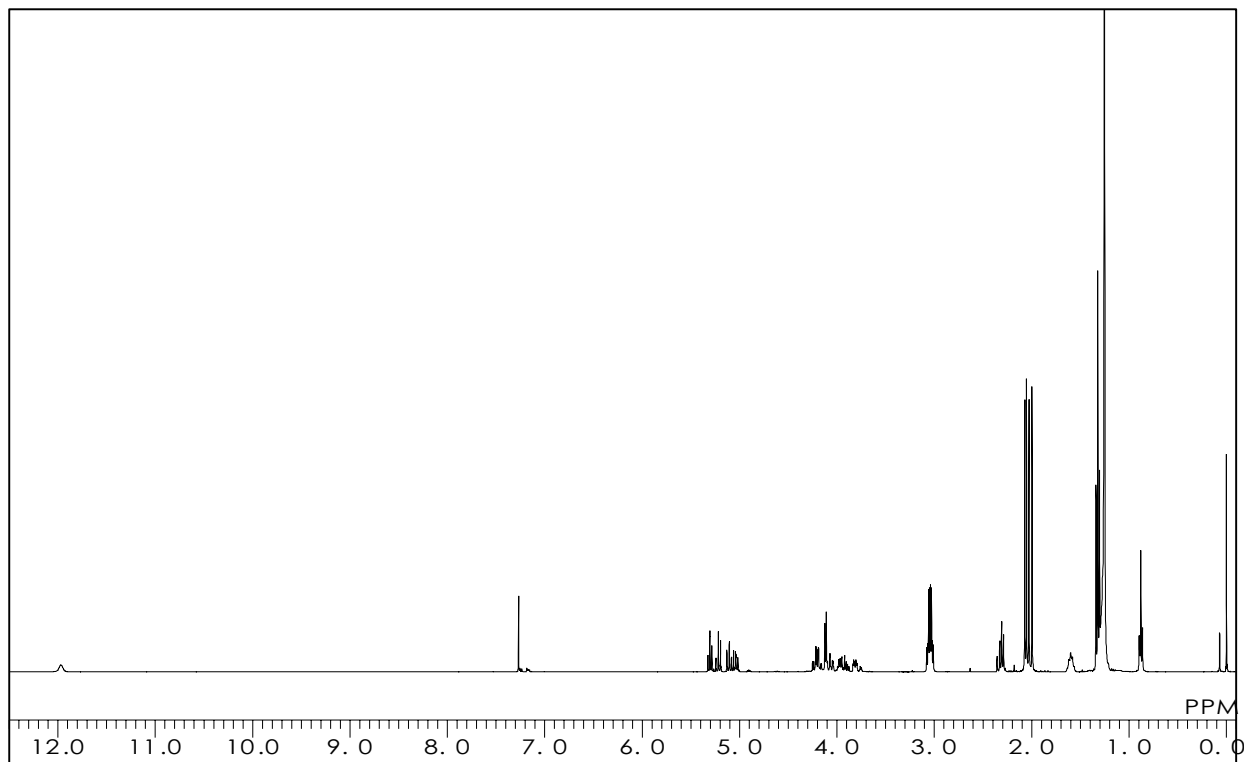
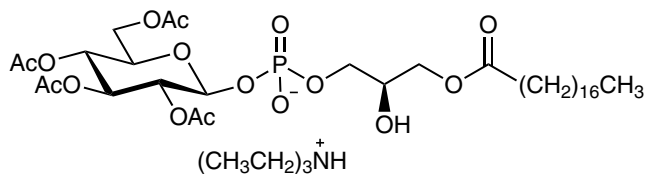
**2,3,4,6-Tetra-O-acetyl-PtdGlc(mono-acyl Chain)**

$C_{41}H_{76}NO_{16}P = 870.02$

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 25.5 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

T1991

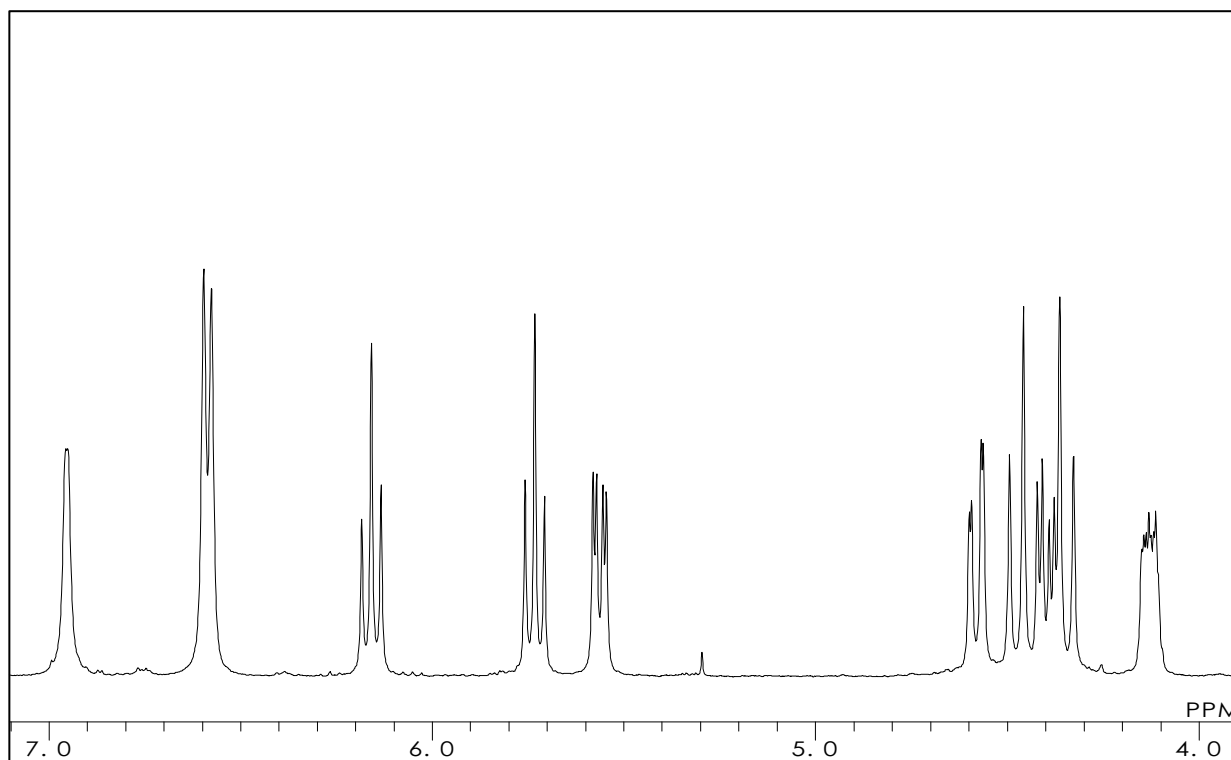
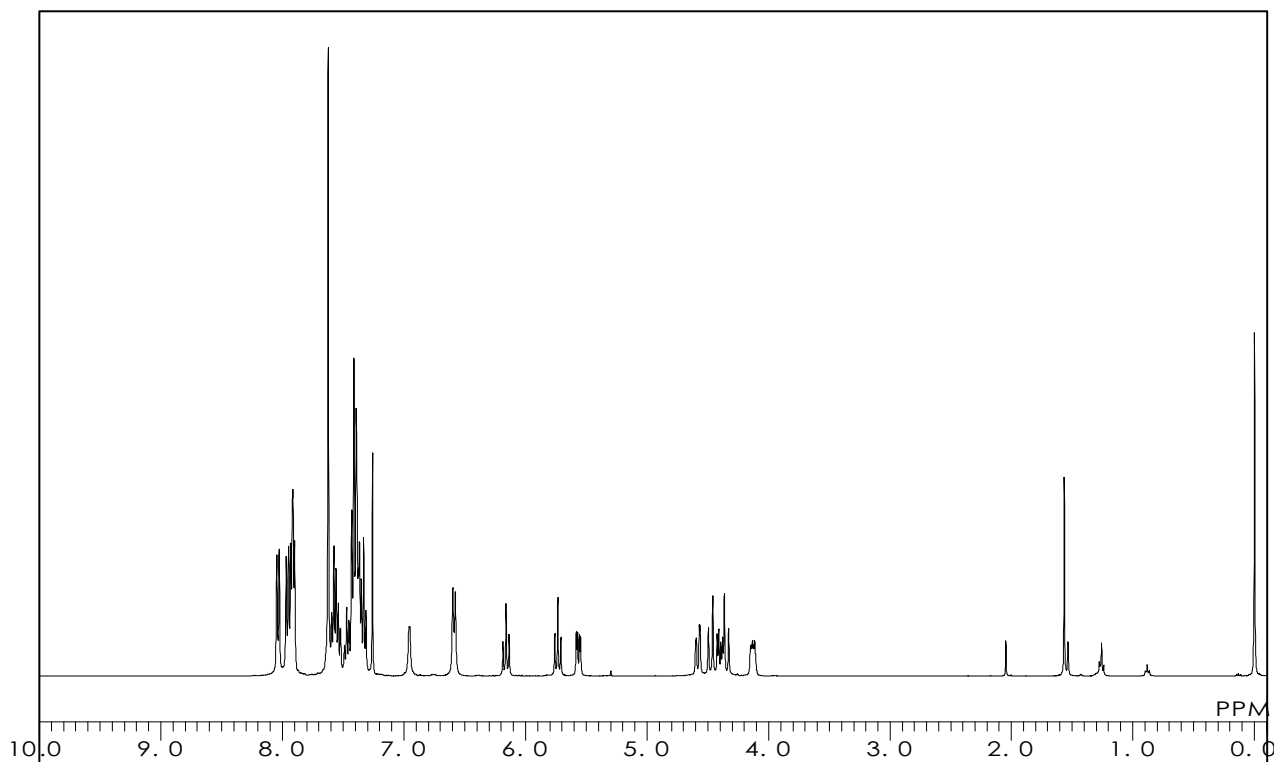
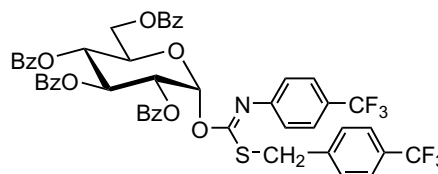
**2,3,4,6-Tetra-O-benzoyl- $\alpha$ -D-glucopyranosyl *p*-Trifluoromethylbenzylthio-*N*-(*p*-trifluoromethylphenyl)formimidate**

C<sub>50</sub>H<sub>37</sub>F<sub>6</sub>NO<sub>10</sub>S = 957.89 [428816-48-2]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 22.4 °C



T1922

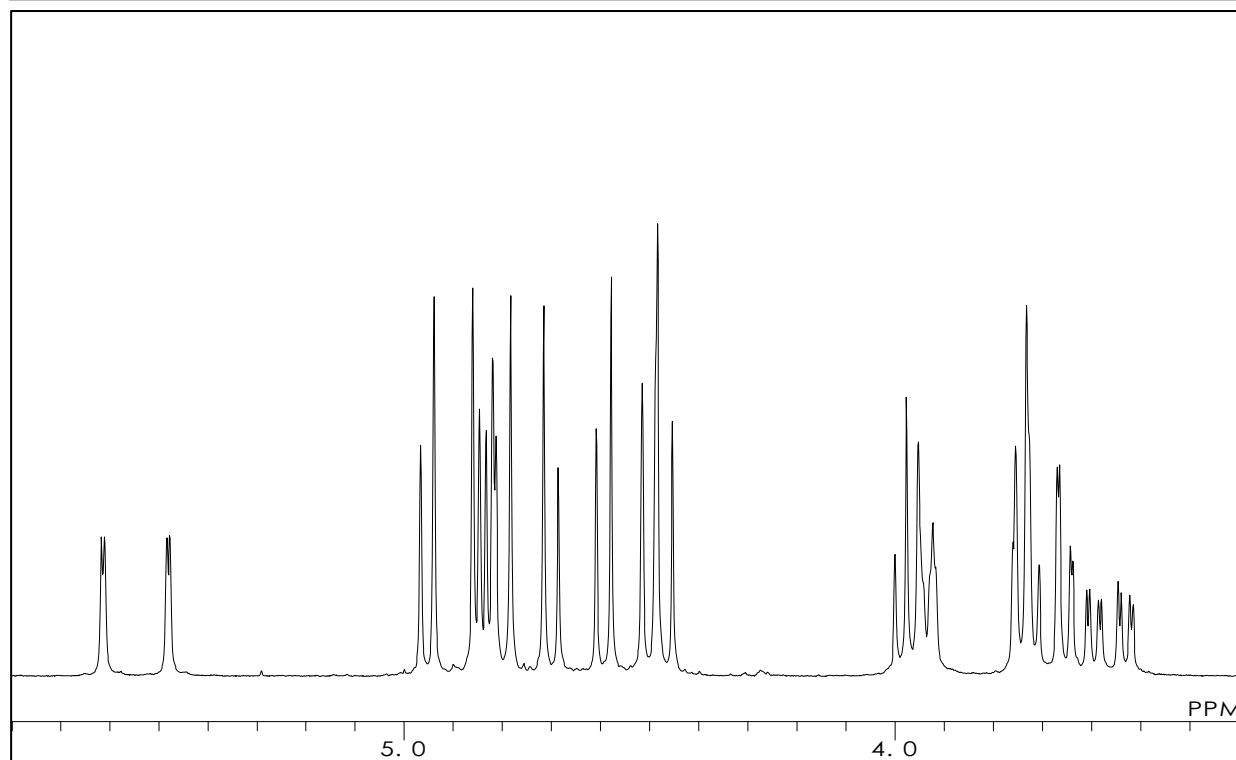
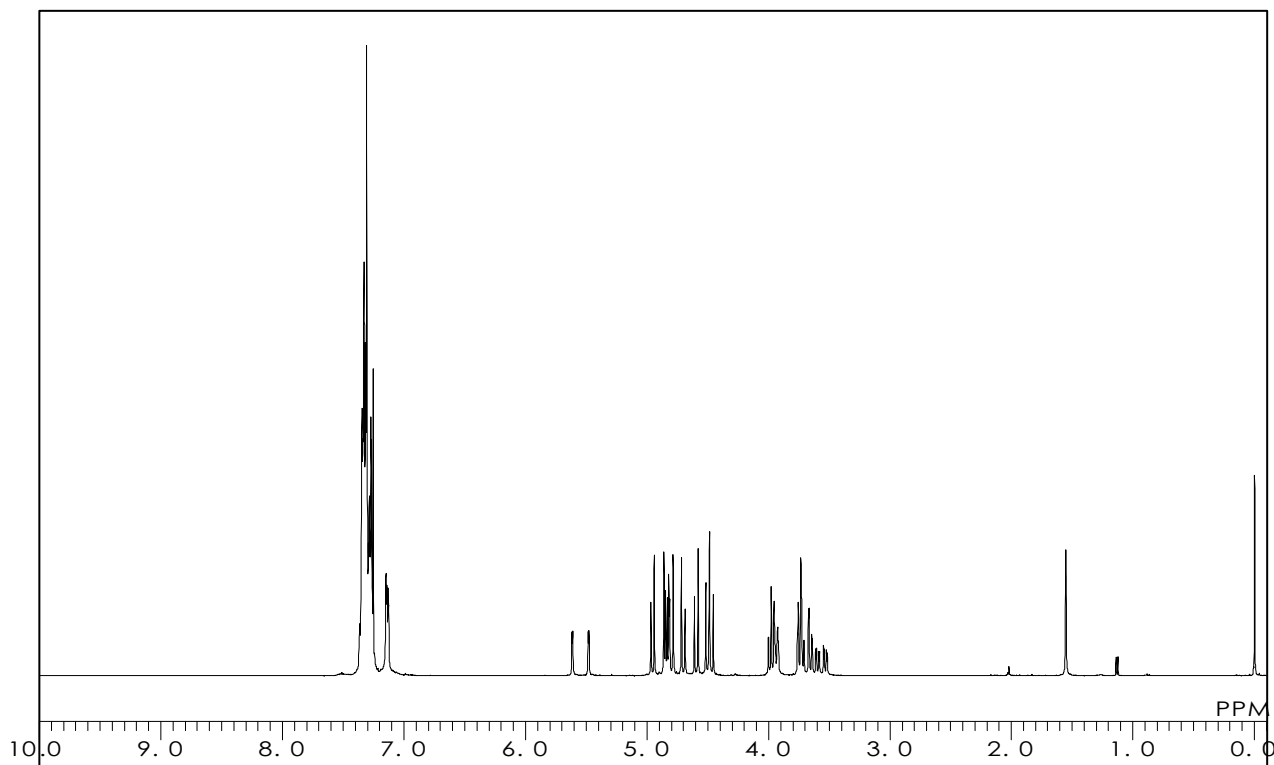
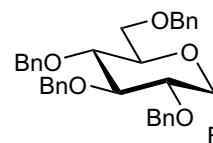
## 2,3,4,6-Tetra-O-benzyl- $\alpha$ -D-glucopyranosyl Fluoride

$C_{34}H_{35}FO_5 = 542.65$  [89025-46-7]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 22.6 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**T1923**

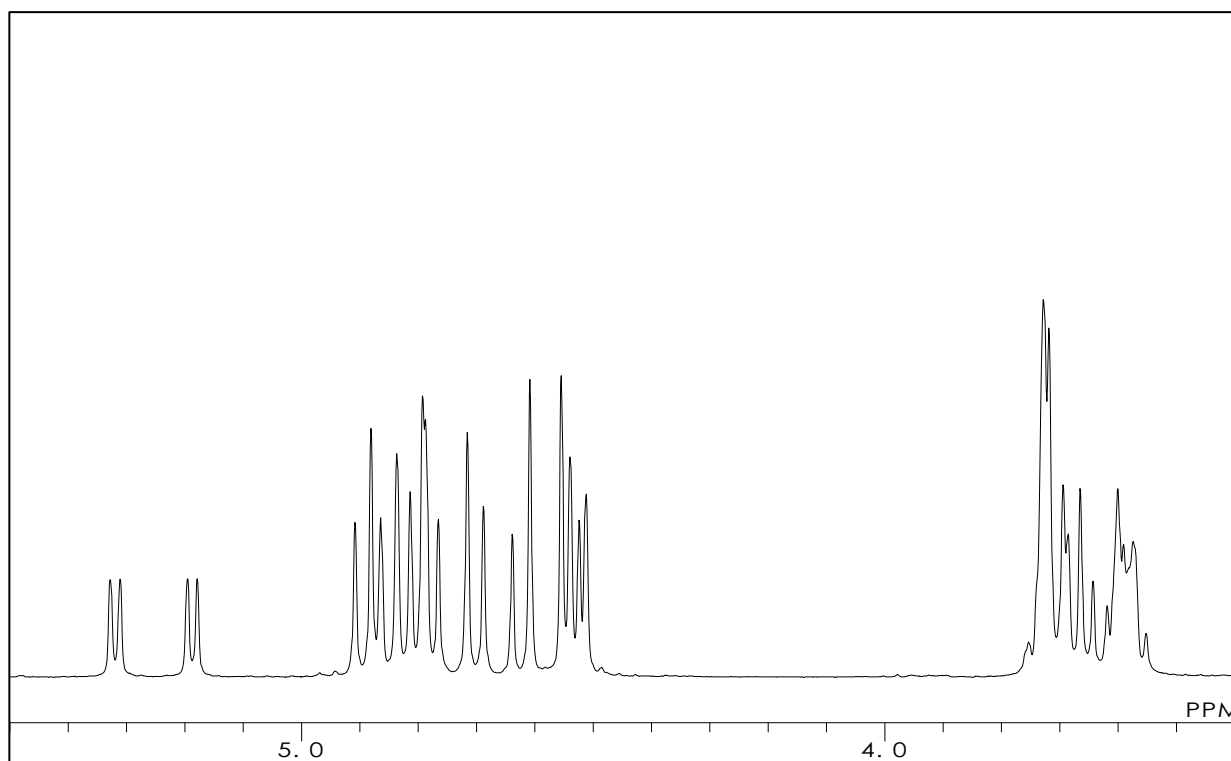
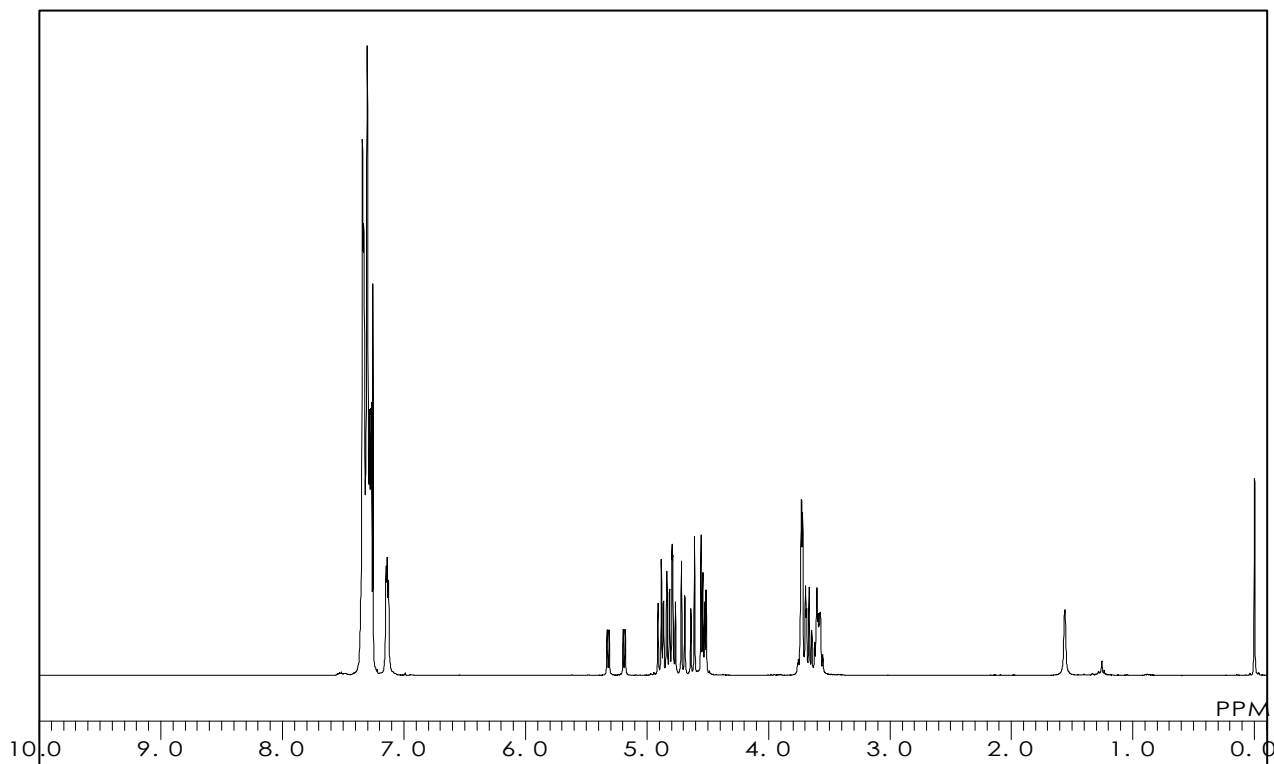
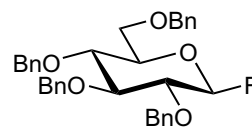
## 2,3,4,6-Tetra-O-benzyl-β-D-glucopyranosyl Fluoride

$C_{34}H_{35}FO_5 = 542.65$  [78153-79-4]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 20.8 °C



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T2197

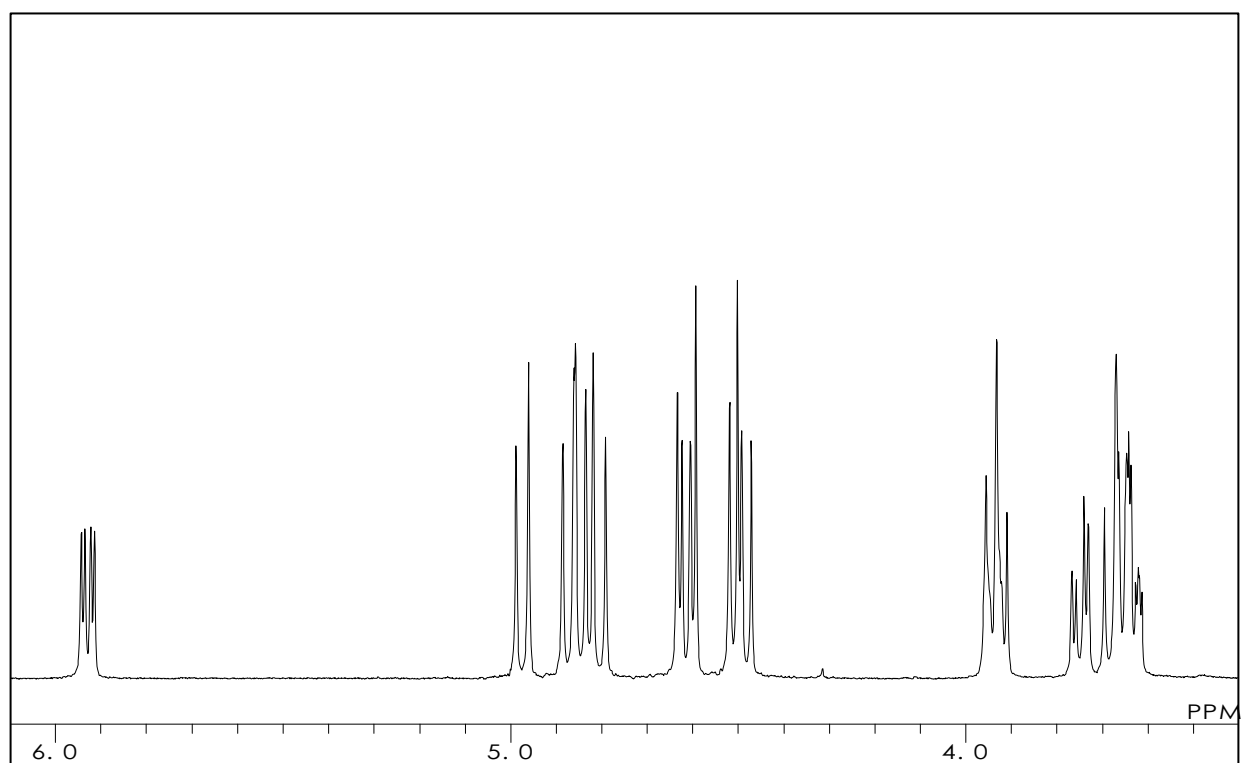
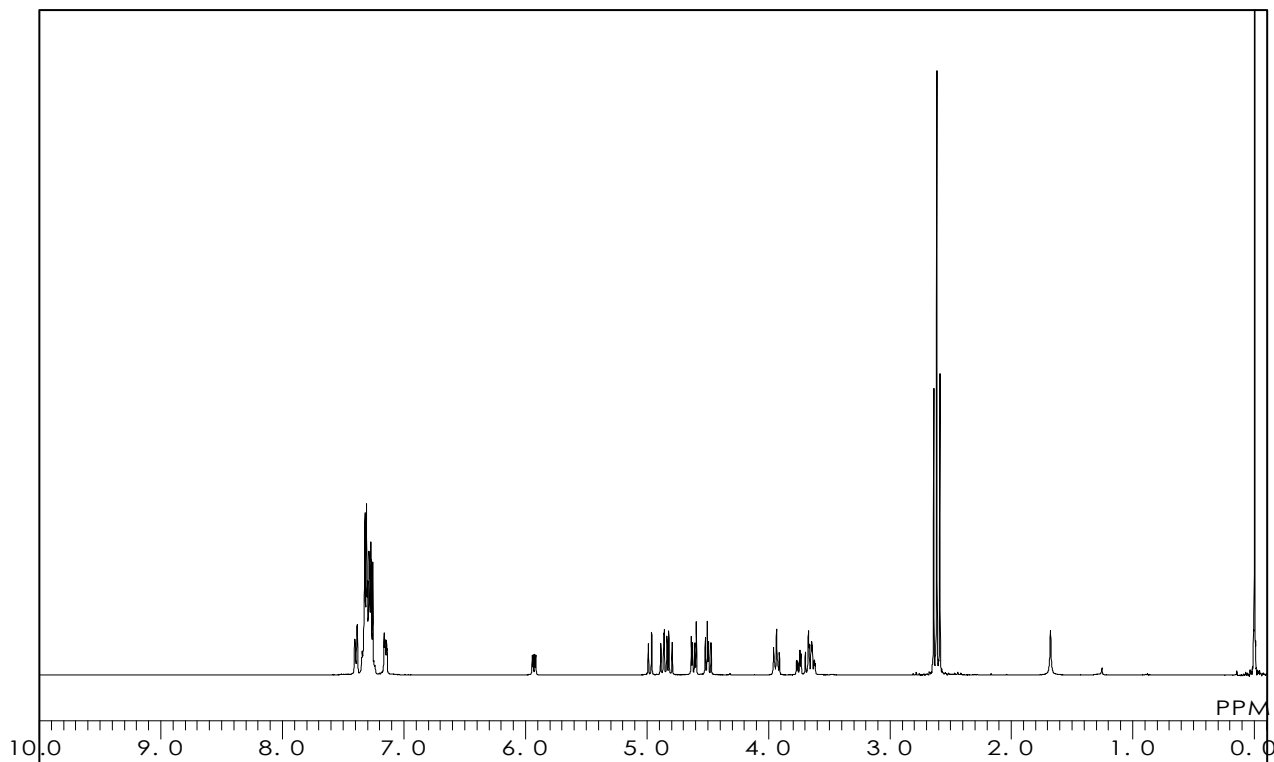
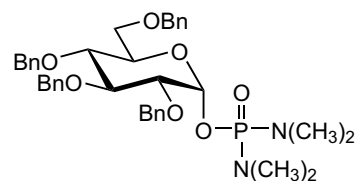
**2,3,4,6-Tetra-O-benzyl- $\alpha$ -D-glucopyranosyl N,N,N',N'-Tetramethylphosphorodiamidate** (ca. 20% in Benzene)

$C_{38}H_{47}N_2O_7P = 674.77$  [143520-19-8]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 25.0 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

T1999

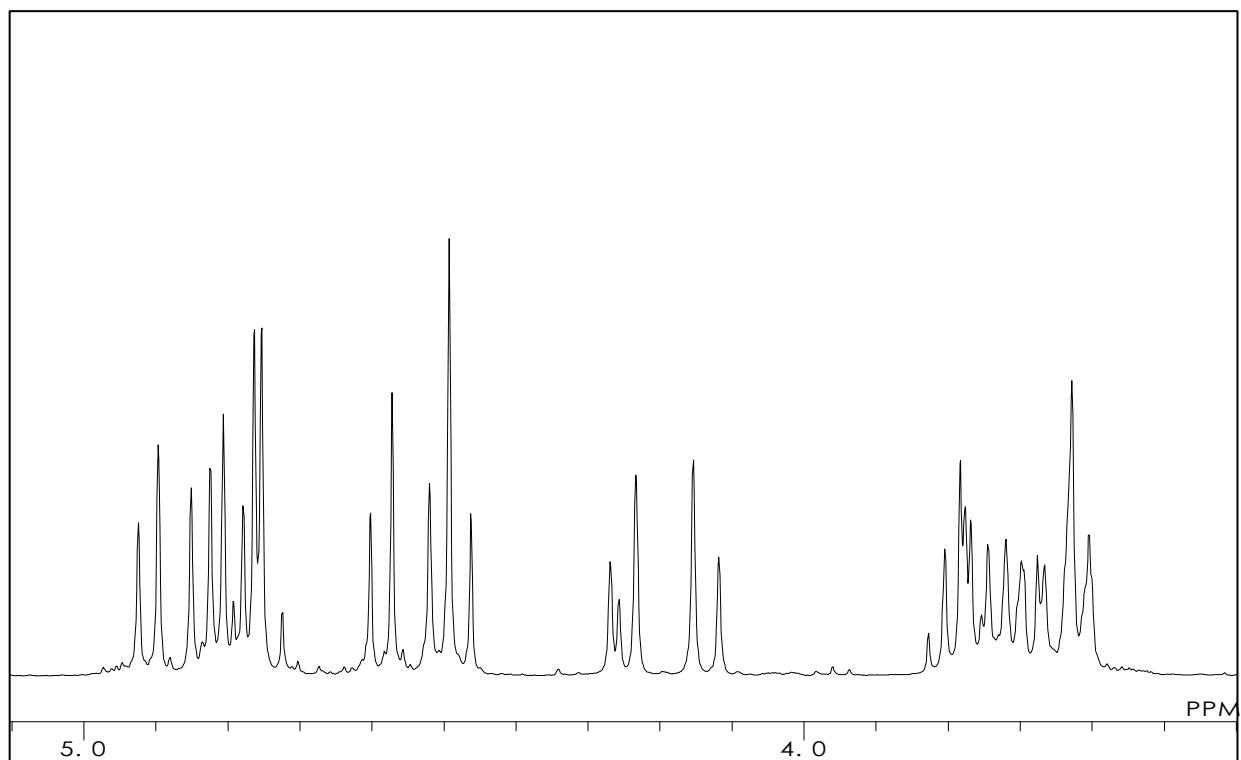
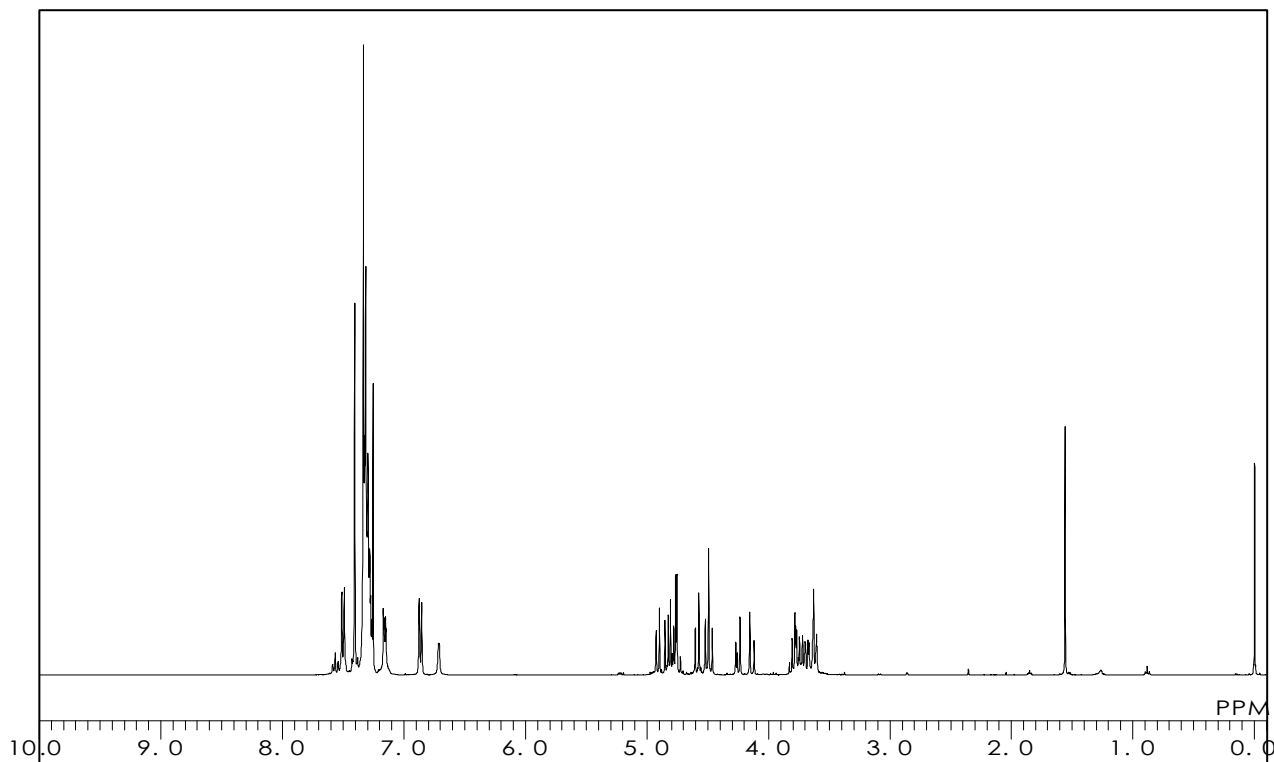
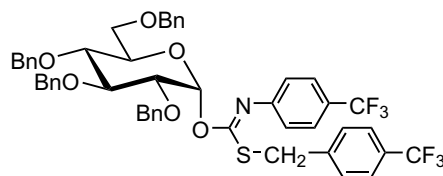
**2,3,4,6-Tetra-O-benzyl- $\alpha$ -D-glucopyranosyl *p*-Trifluoromethylbenzylthio-*N*-(*p*-trifluoromethylphenyl)formimidate**

C<sub>50</sub>H<sub>45</sub>F<sub>6</sub>NO<sub>6</sub>S = 901.96 [468095-63-8]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 22.0 °C



**A1812**

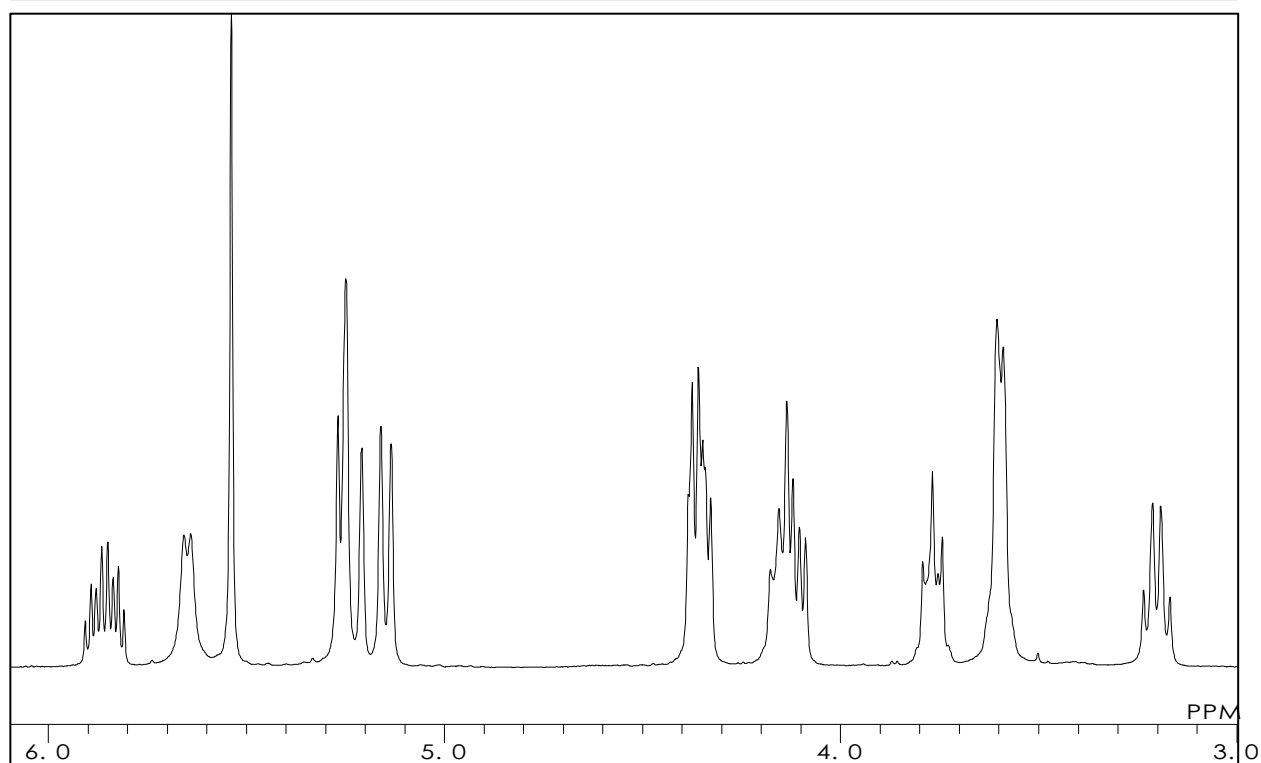
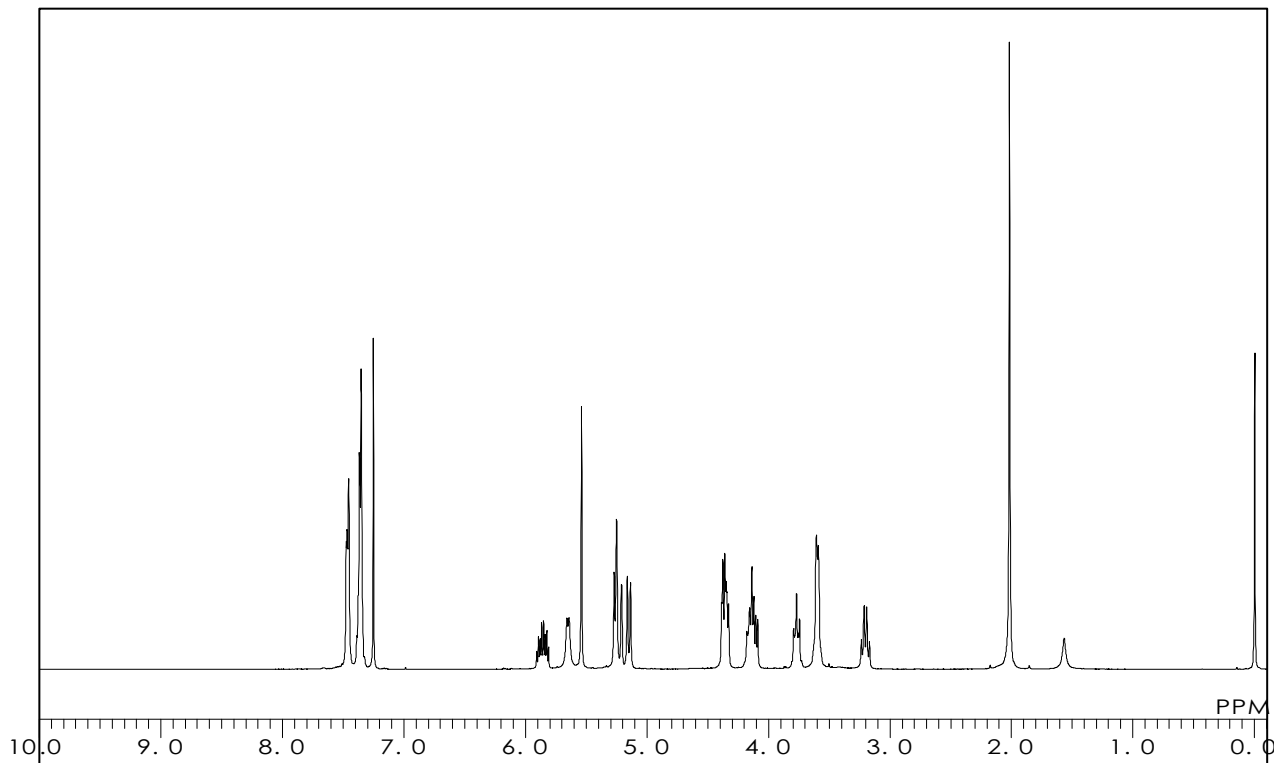
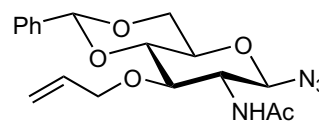
**2-Acetamido-3-O-allyl-4,6-O-benzylidene-  
2-deoxy-β-D-glucopyranosyl Azide**

$C_{18}H_{22}N_4O_5 = 374.40$

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 45.0 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。



**A1813**

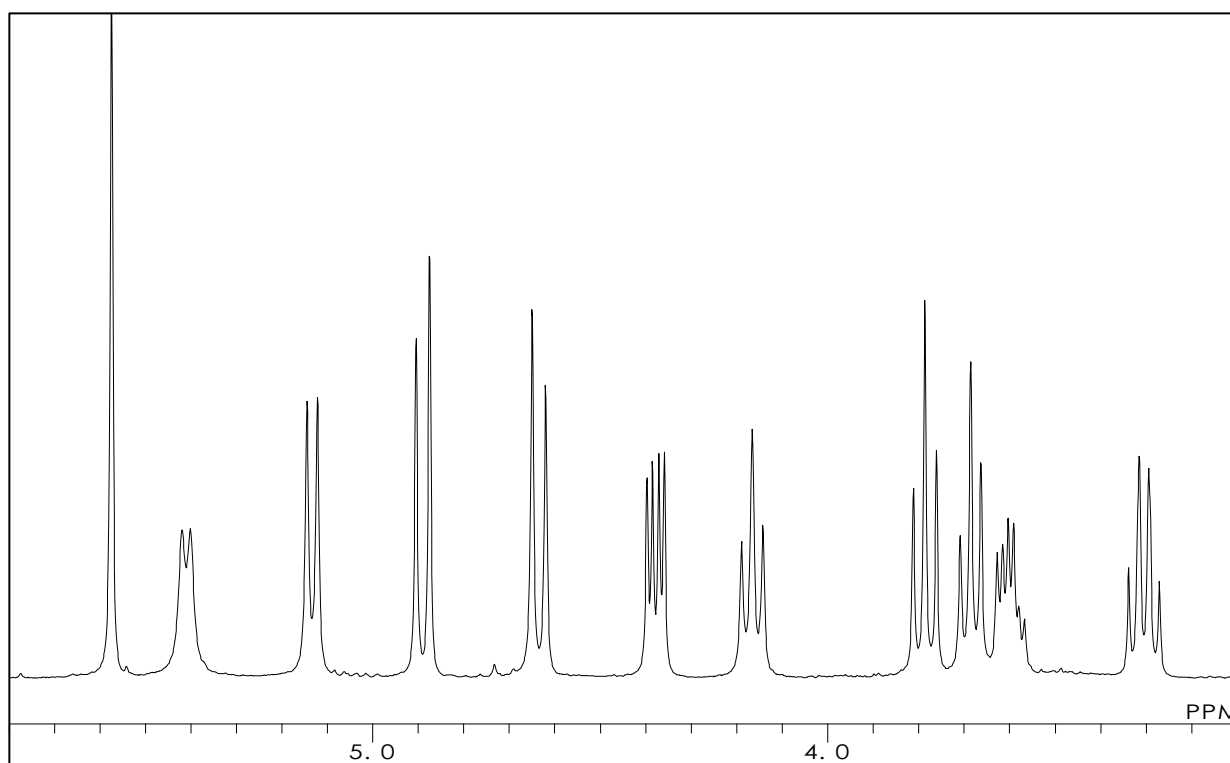
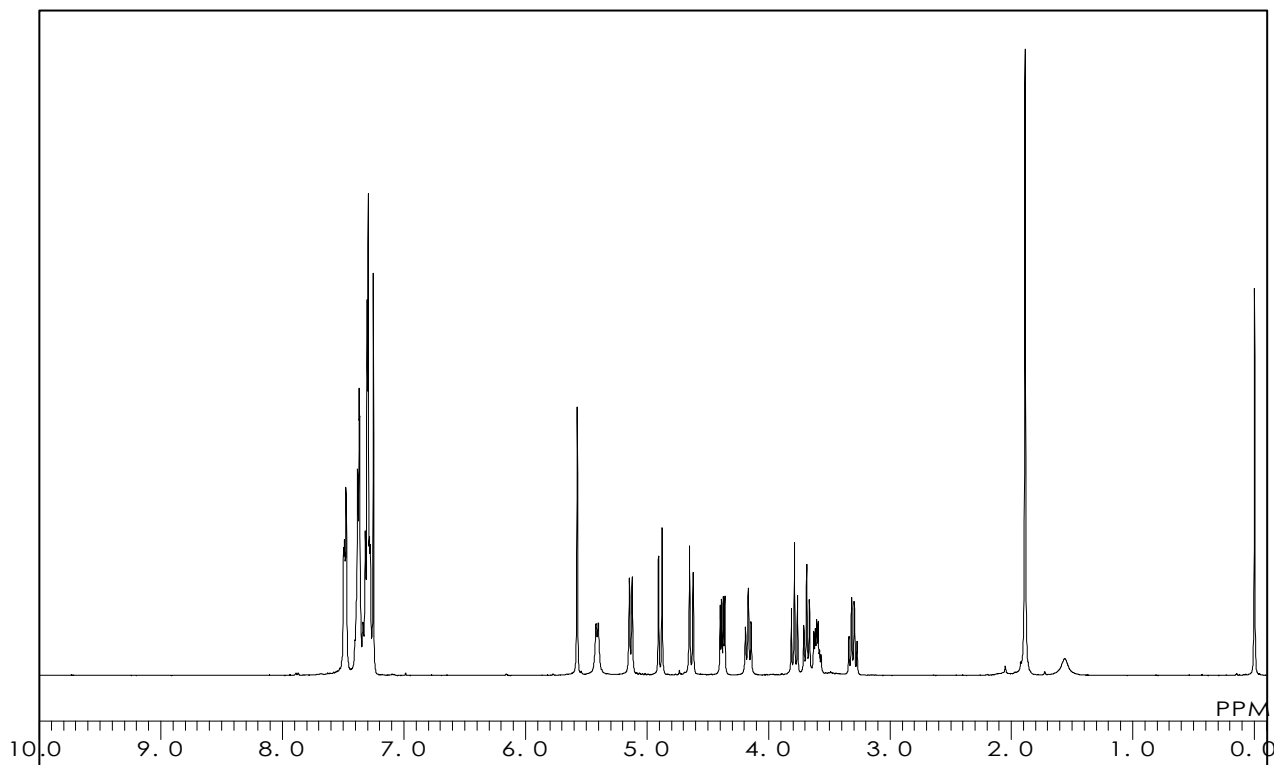
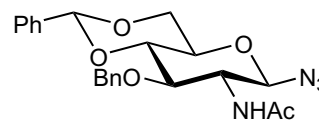
**2-Acetamido-3-O-benzyl-4,6-O-benzylidene-2-deoxy- $\beta$ -D-glucopyranosyl Azide**

$C_{22}H_{24}N_4O_5 = 424.46$  [80887-27-0]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 45.0 °C



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**A1811**

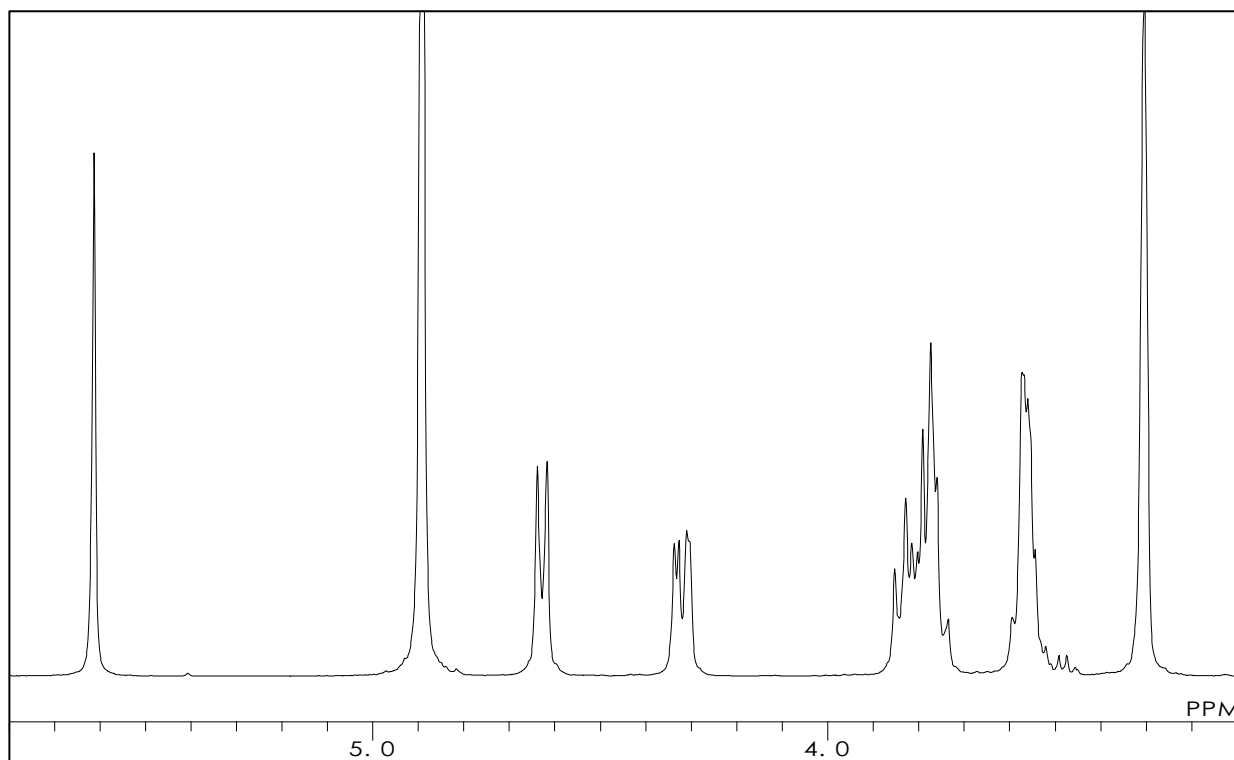
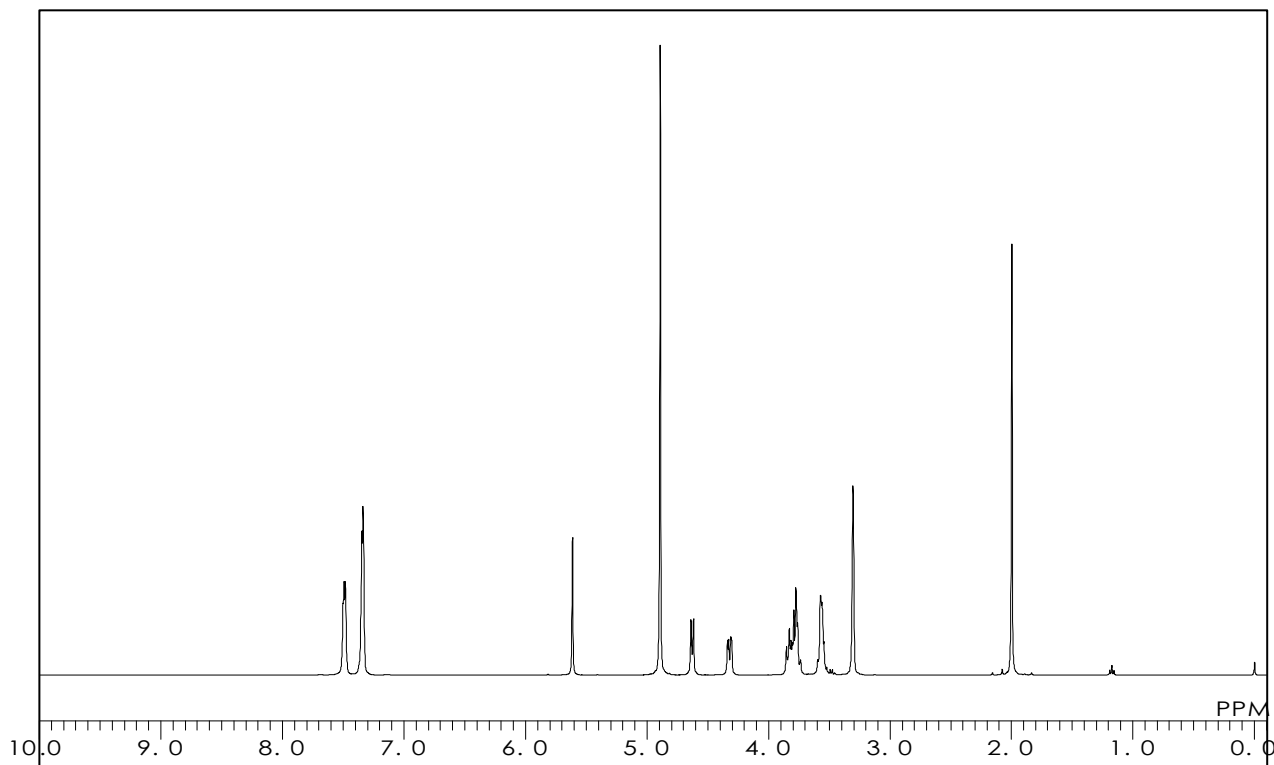
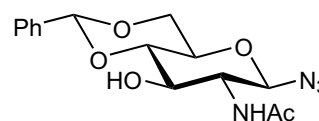
**2-Acetamido-4,6-O-benzylidene-2-deoxy-β-D-glucopyranosyl Azide**

C<sub>15</sub>H<sub>18</sub>N<sub>4</sub>O<sub>5</sub> = 334.33 [168397-51-1]

Solvent : CD<sub>3</sub>OD

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 20.0 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**A1614**

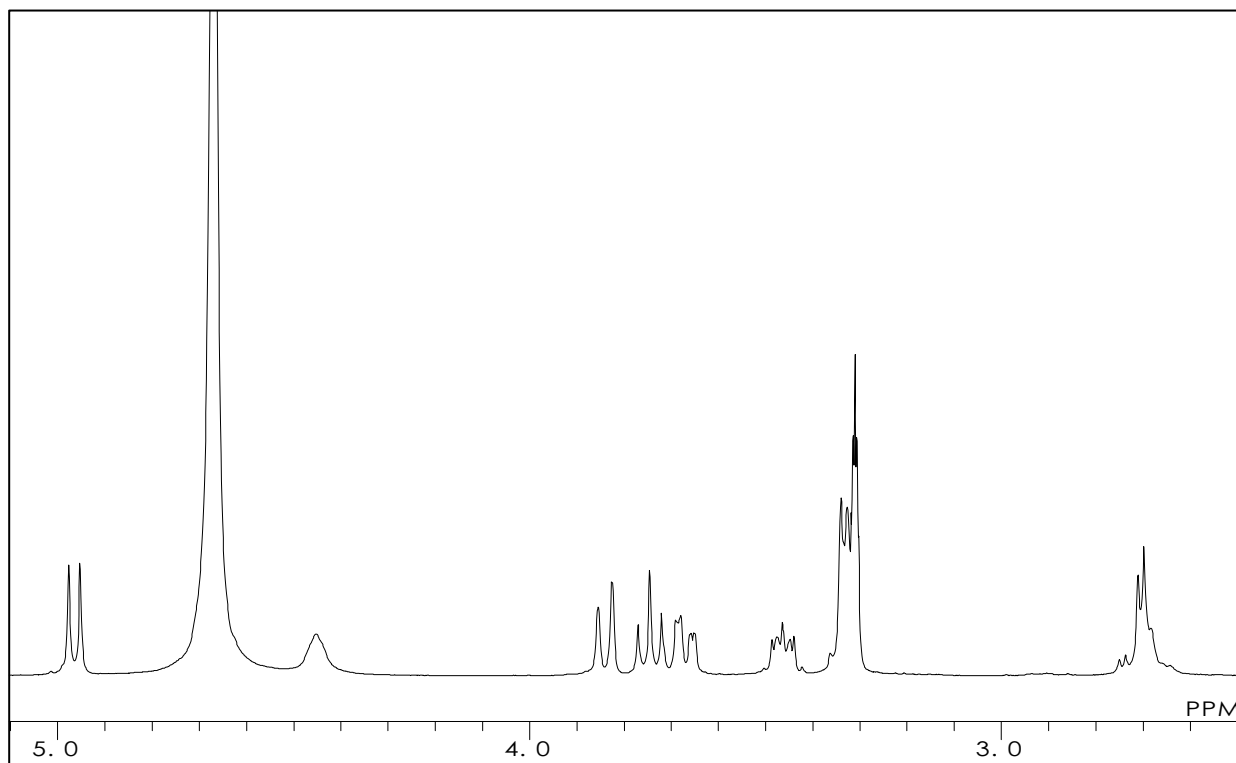
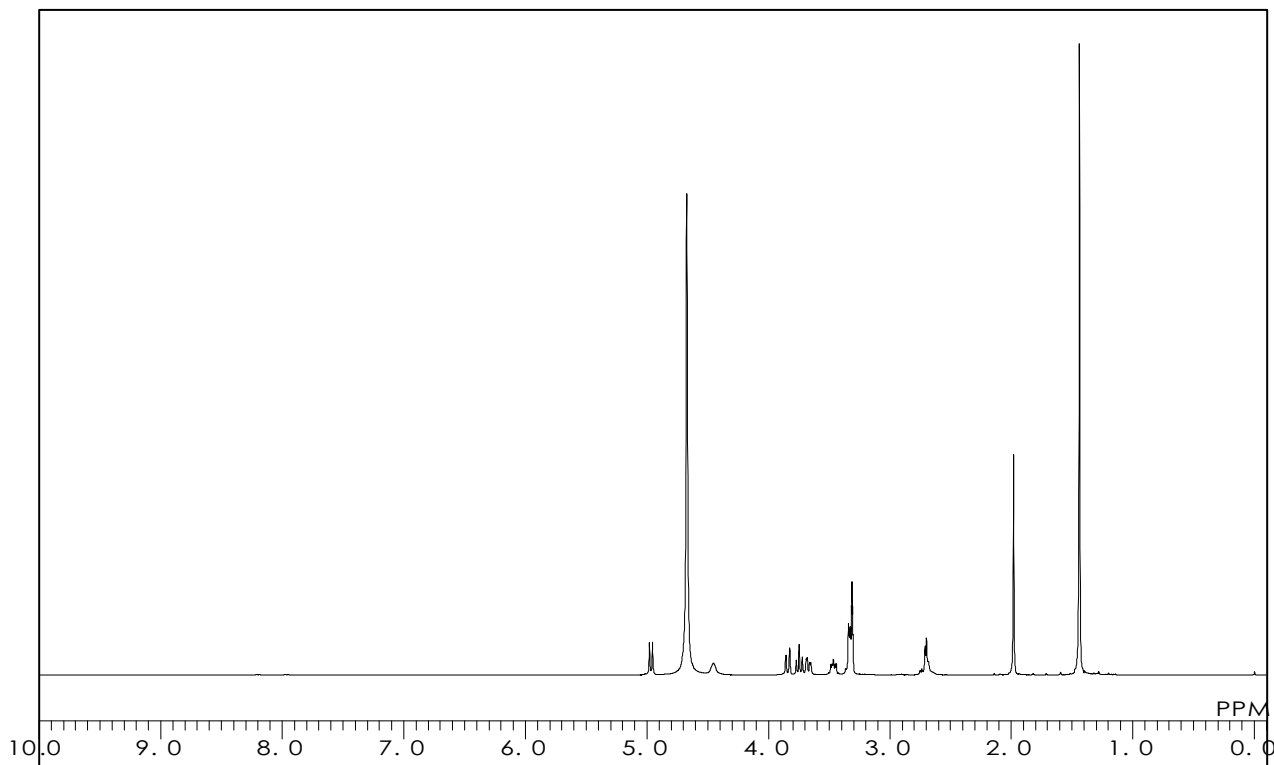
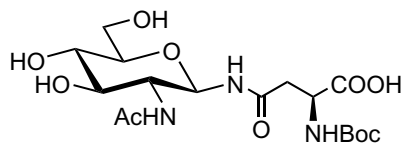
***N*<sup>ω</sup>-(2-Acetamido-2-deoxy-β-D-glucopyranosyl)-*N*<sup>α</sup>-(*tert*-butoxy-carbonyl)-L-asparagine**

C<sub>17</sub>H<sub>29</sub>N<sub>3</sub>O<sub>10</sub> = 435.43 [137255-40-4]

Solvent : CD<sub>3</sub>OD

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 45.0 °C



**A1616**

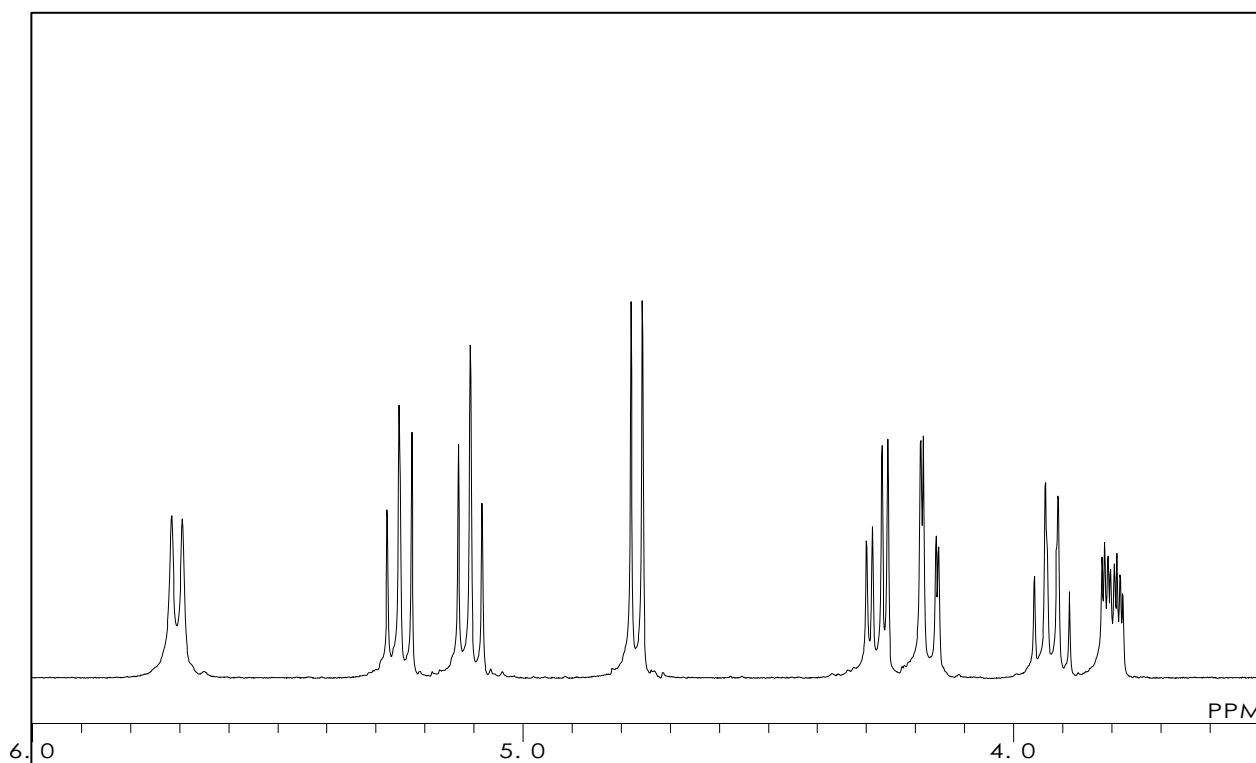
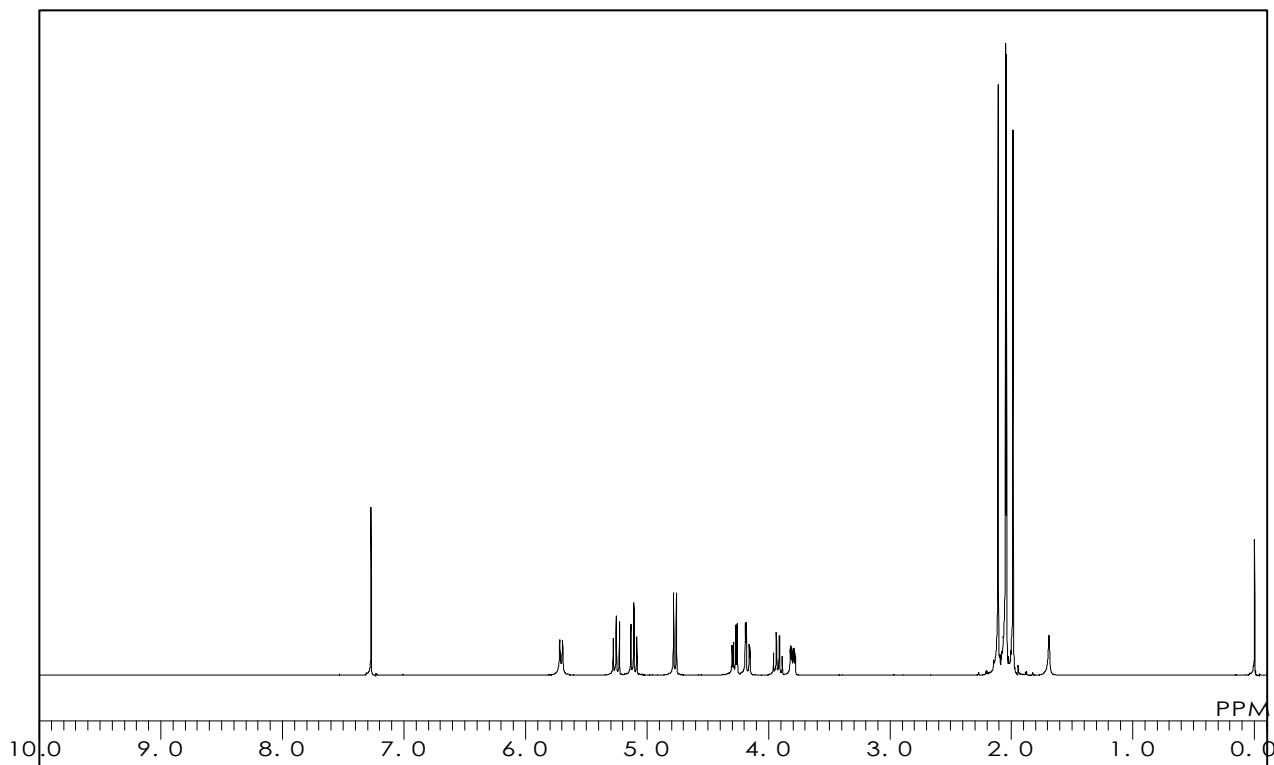
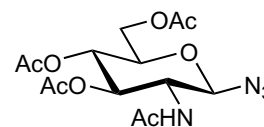
**2-Acetamido-3,4,6-tri-O-acetyl-2-deoxy-β-D-glucopyranosyl Azide**

$C_{14}H_{20}N_4O_8 = 372.33$  [6205-69-2]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 21.2 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**A1678**

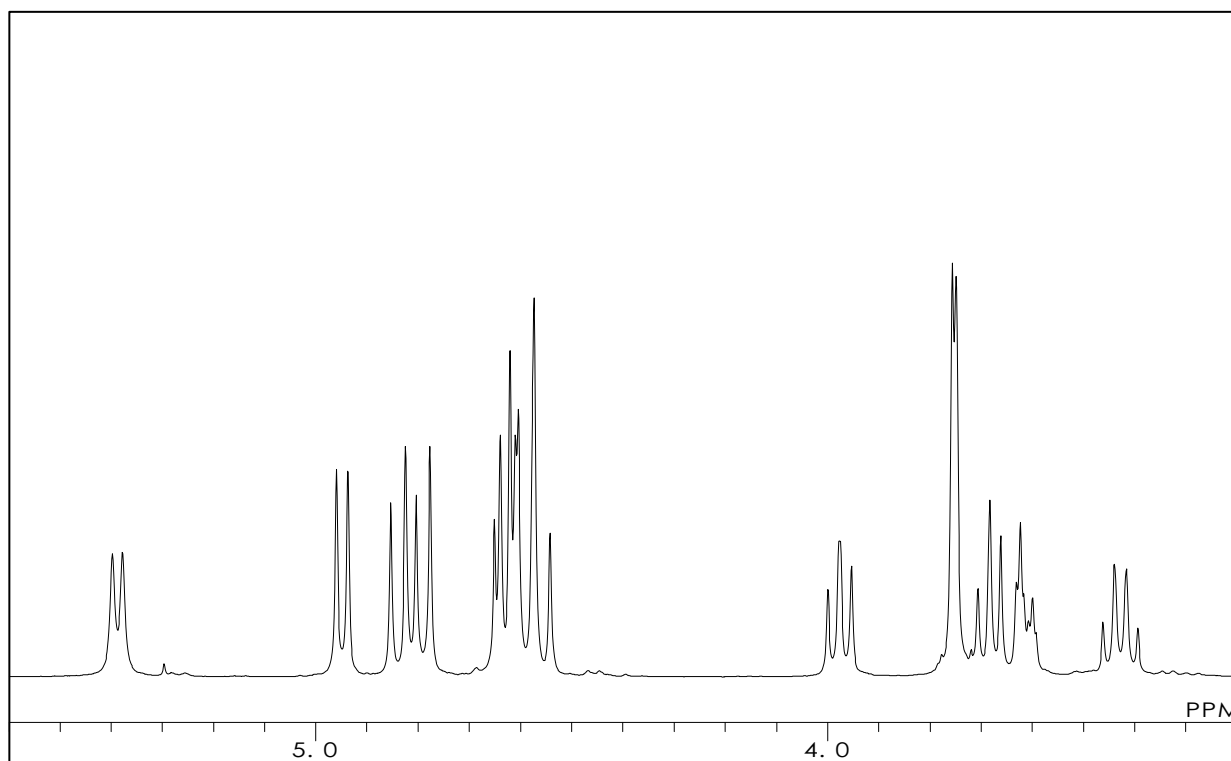
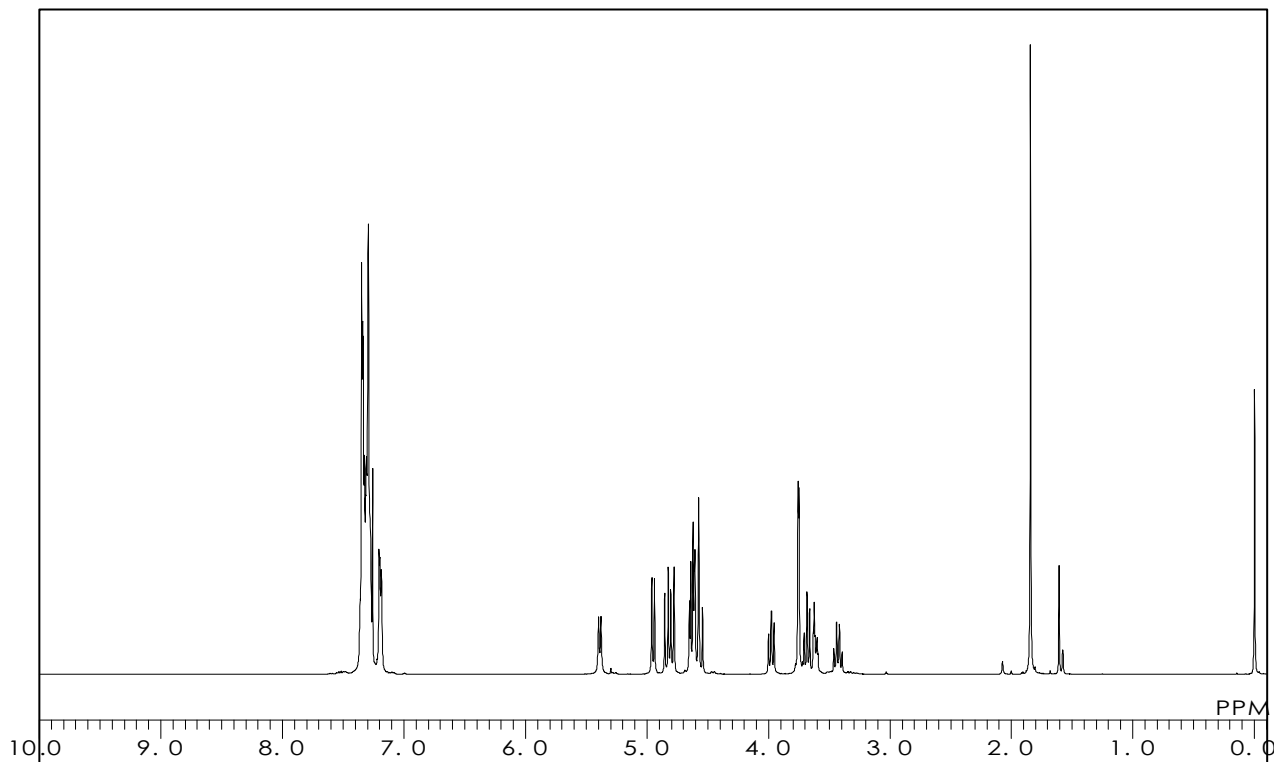
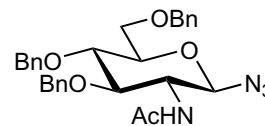
**2-Acetamido-3,4,6-tri-O-benzyl-2-deoxy-β-D-glucopyranosyl Azide**

C<sub>29</sub>H<sub>32</sub>N<sub>4</sub>O<sub>5</sub> = 516.60 [214467-60-4]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 19.8 °C



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**A1685**

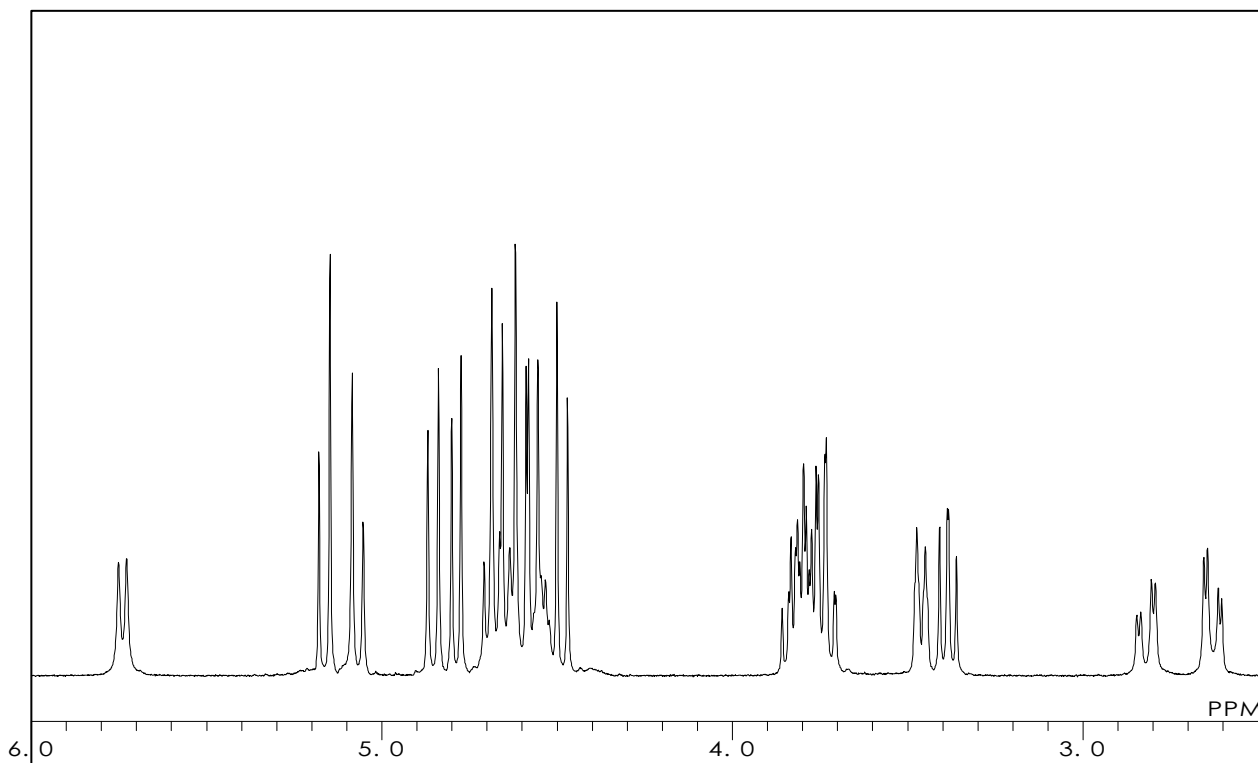
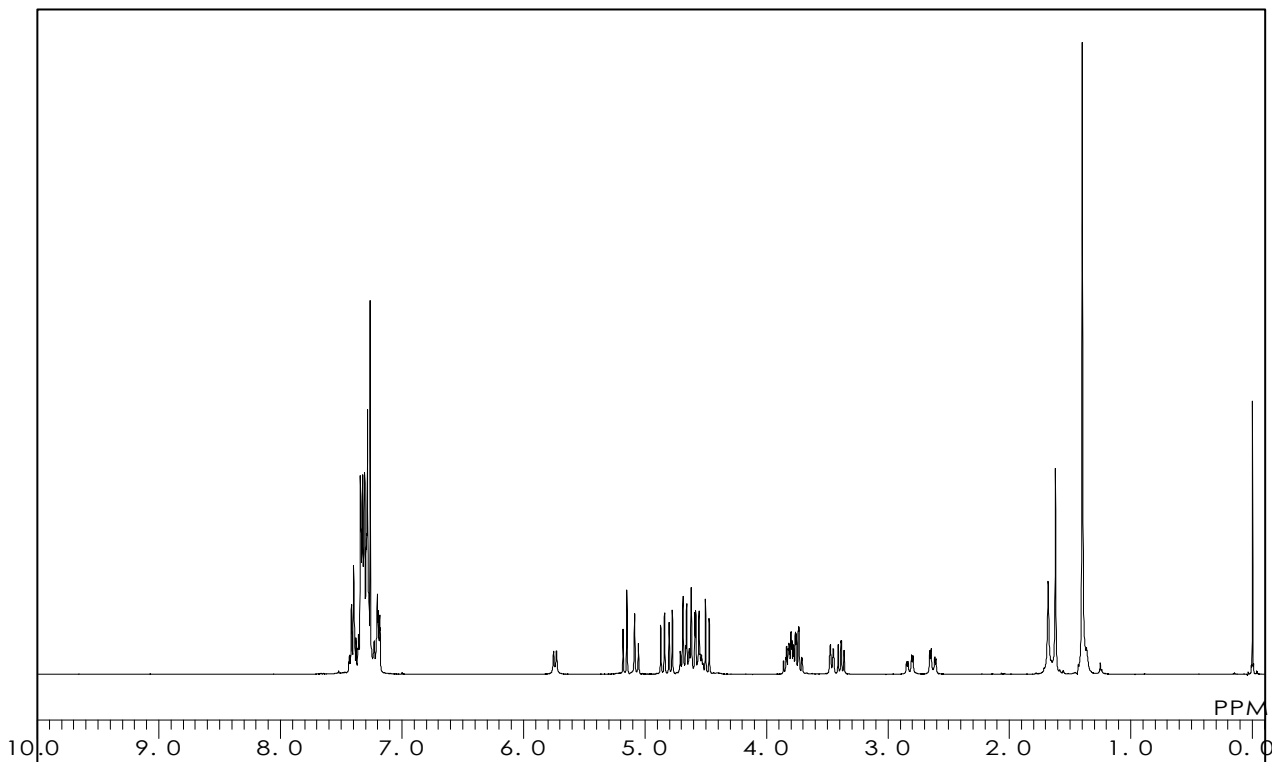
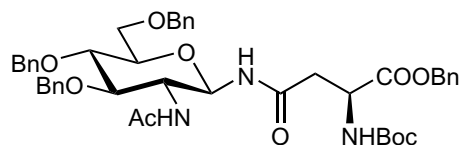
***N*<sup>ω</sup>-(2-Acetamido-3,4,6-tri-*O*-benzyl-2-deoxy-β-D-glucopyranosyl)-*N*<sup>α</sup>-(*tert*-butoxycarbonyl)-L-asparagine Benzyl Ester**

C<sub>45</sub>H<sub>53</sub>N<sub>3</sub>O<sub>10</sub> = 795.93 [219968-28-2]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 21.3 °C



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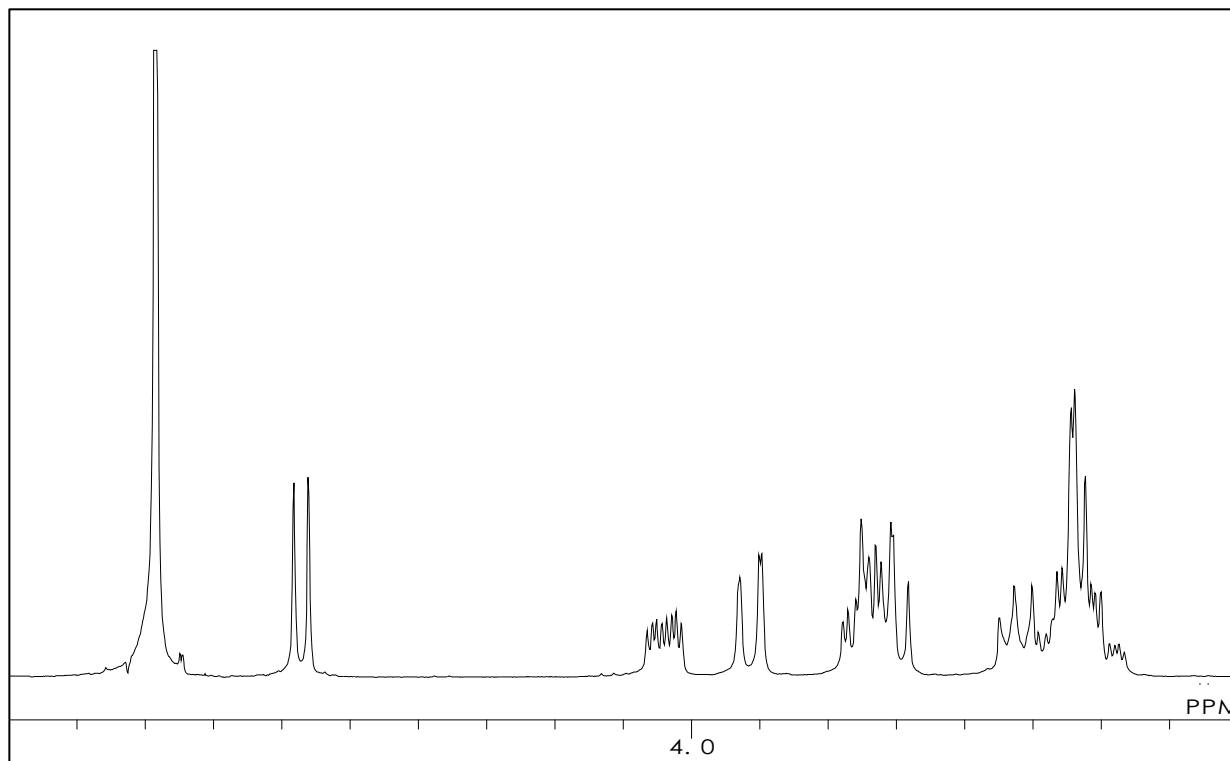
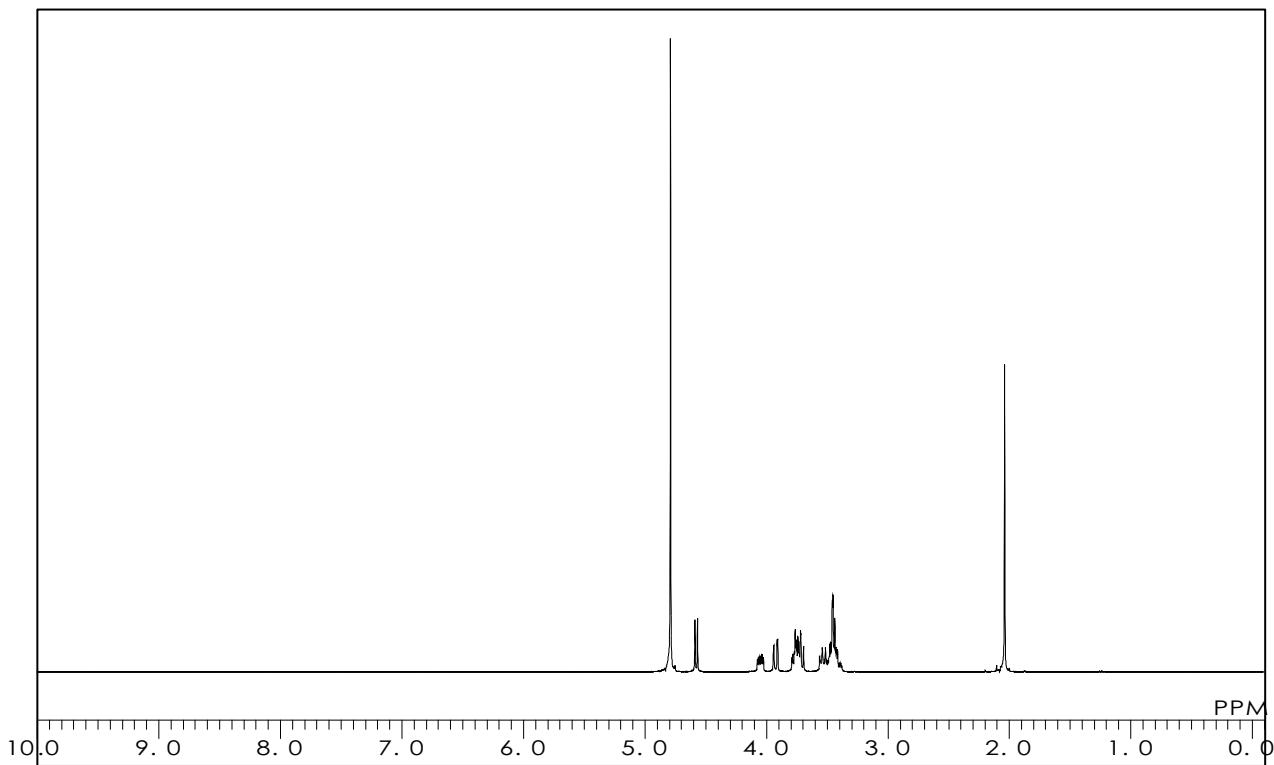
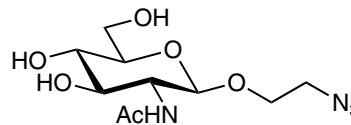
**A2172**

**2-Azidoethyl 2-Acetamido-2-deoxy-β-D-glucopyranoside**

C<sub>10</sub>H<sub>18</sub>N<sub>4</sub>O<sub>6</sub> = 290.28 [142072-12-6]

Solvent : D<sub>2</sub>O

Measured Temperature : 23.2 °C



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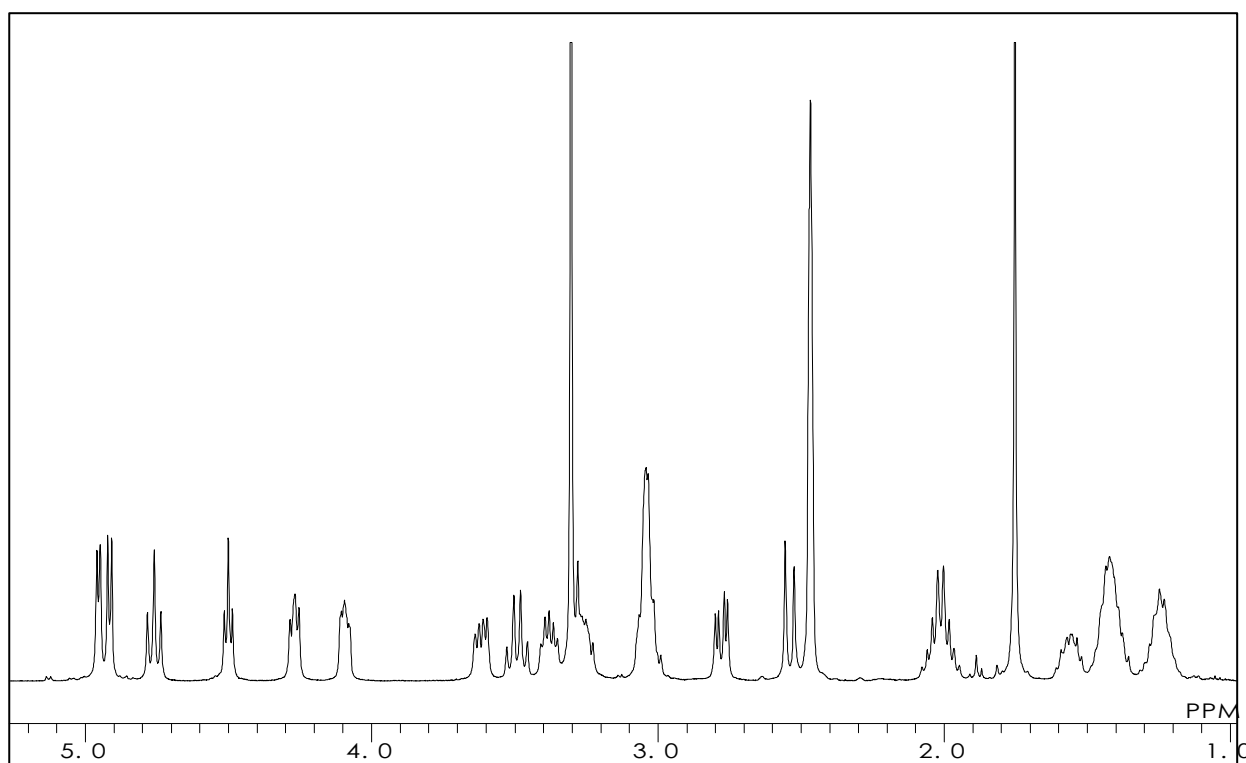
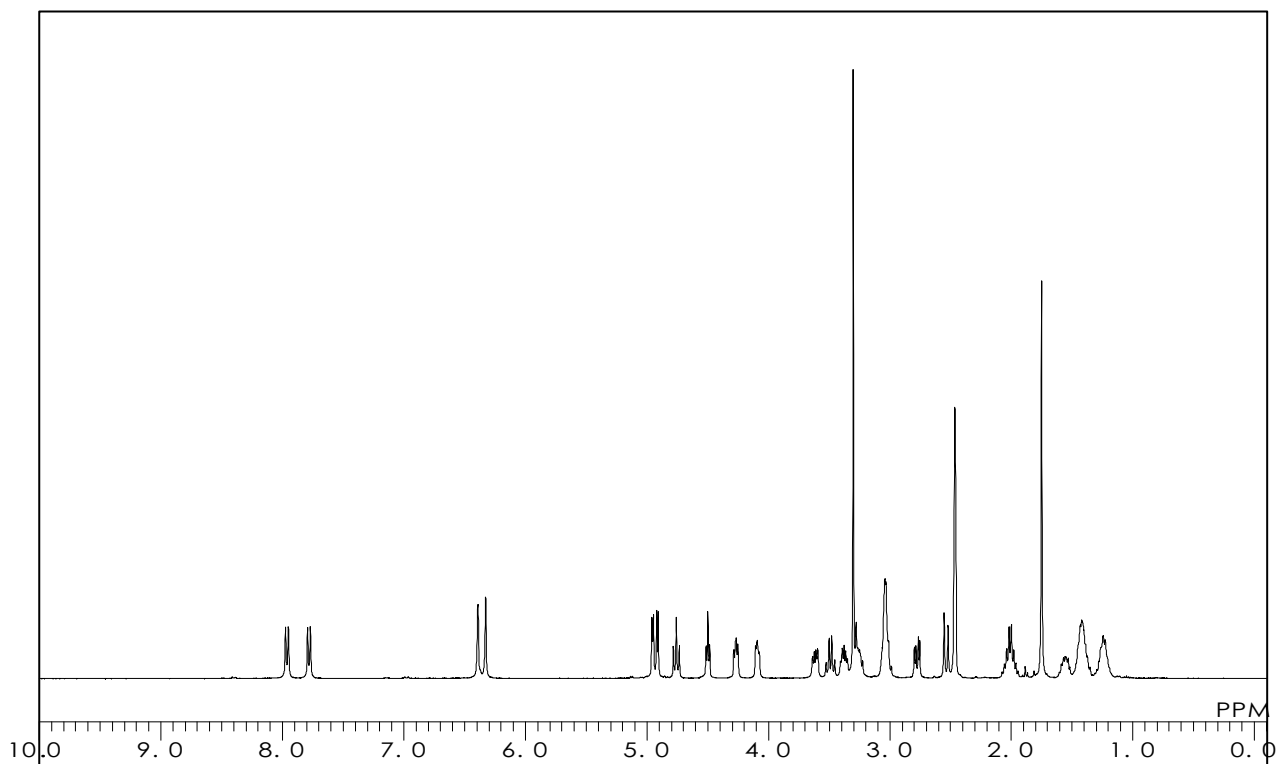
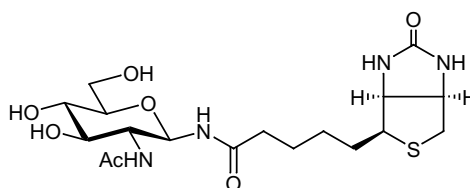
**G0297**

**N-GlcNAc-Biotin**

$C_{18}H_{30}N_4O_7S = 446.52$  [1272755-69-7]

Solvent : DMSO- $d_6$

Measured Temperature : 22.1 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。



**M2051**

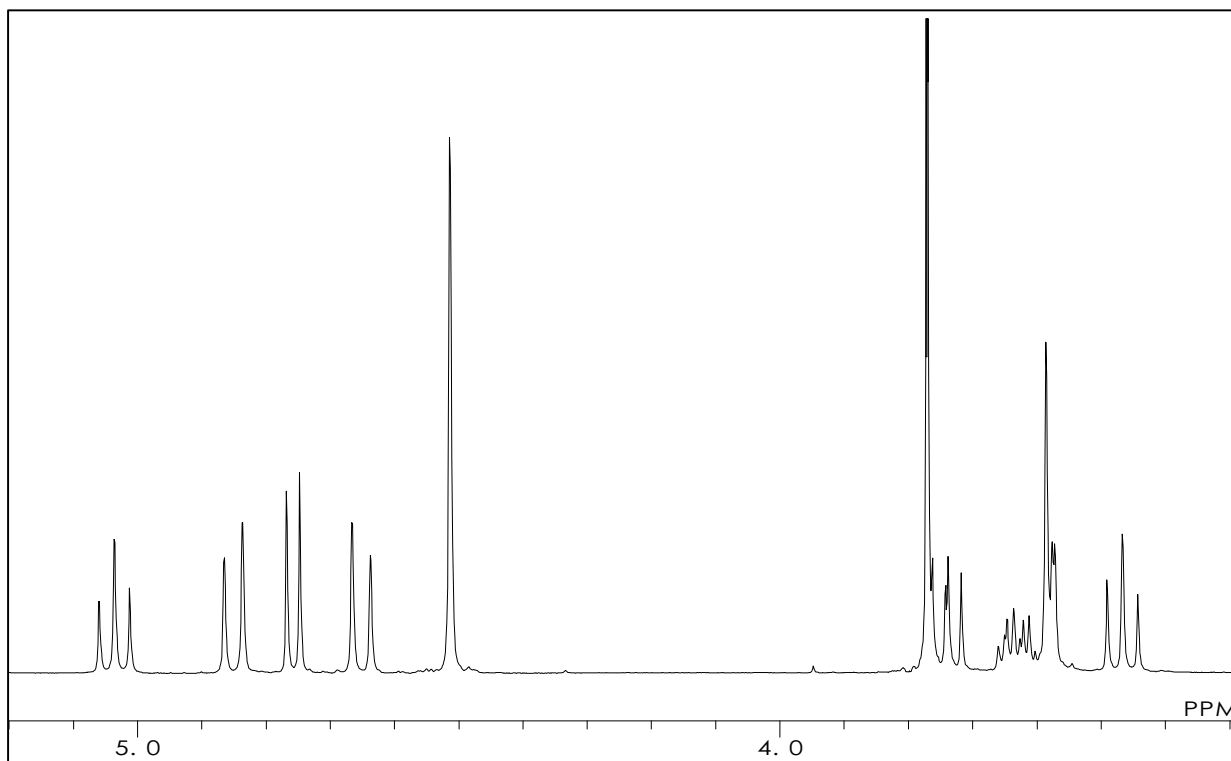
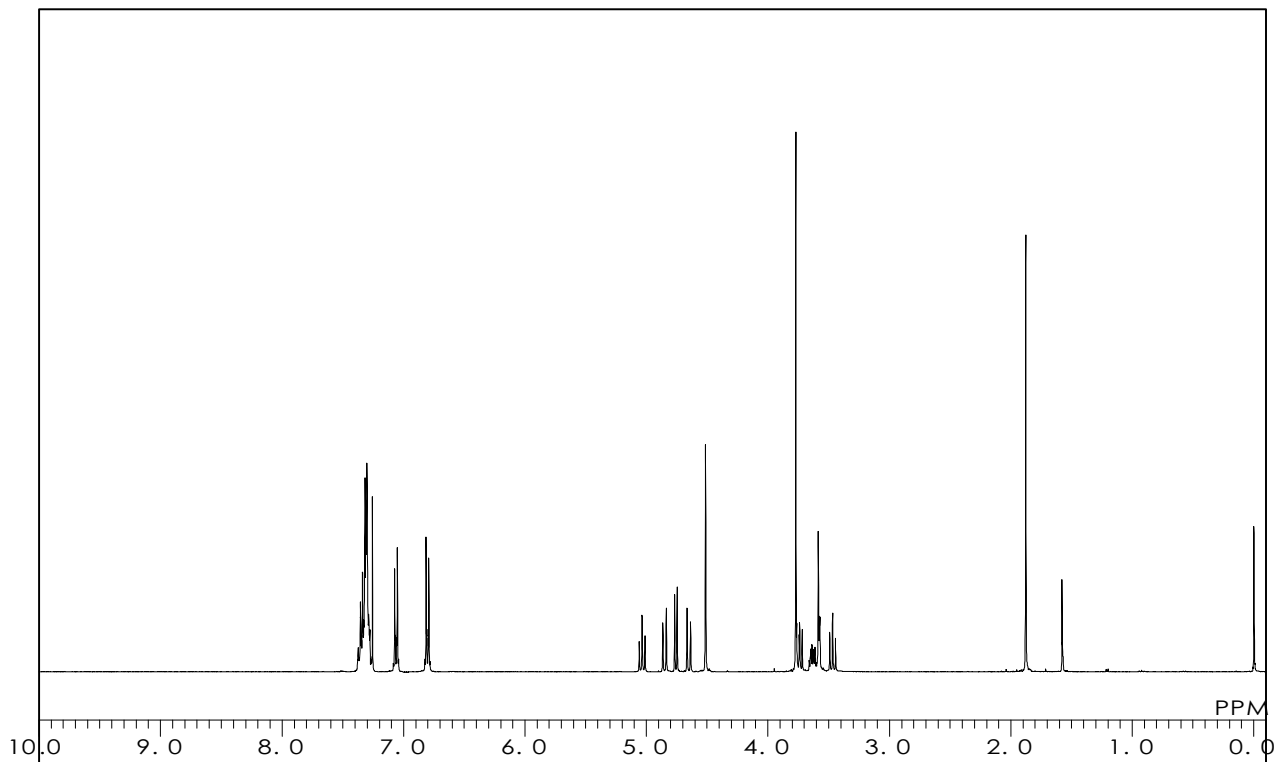
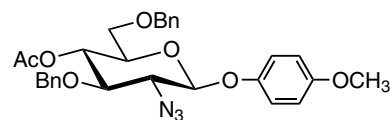
**4-Methoxyphenyl 4-O-Acetyl-2-azido-3,6-di-O-benzyl-2-deoxy-β-D-glucopyranoside**

$C_{29}H_{31}N_3O_7 = 533.58$

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 18.1 °C



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M1638

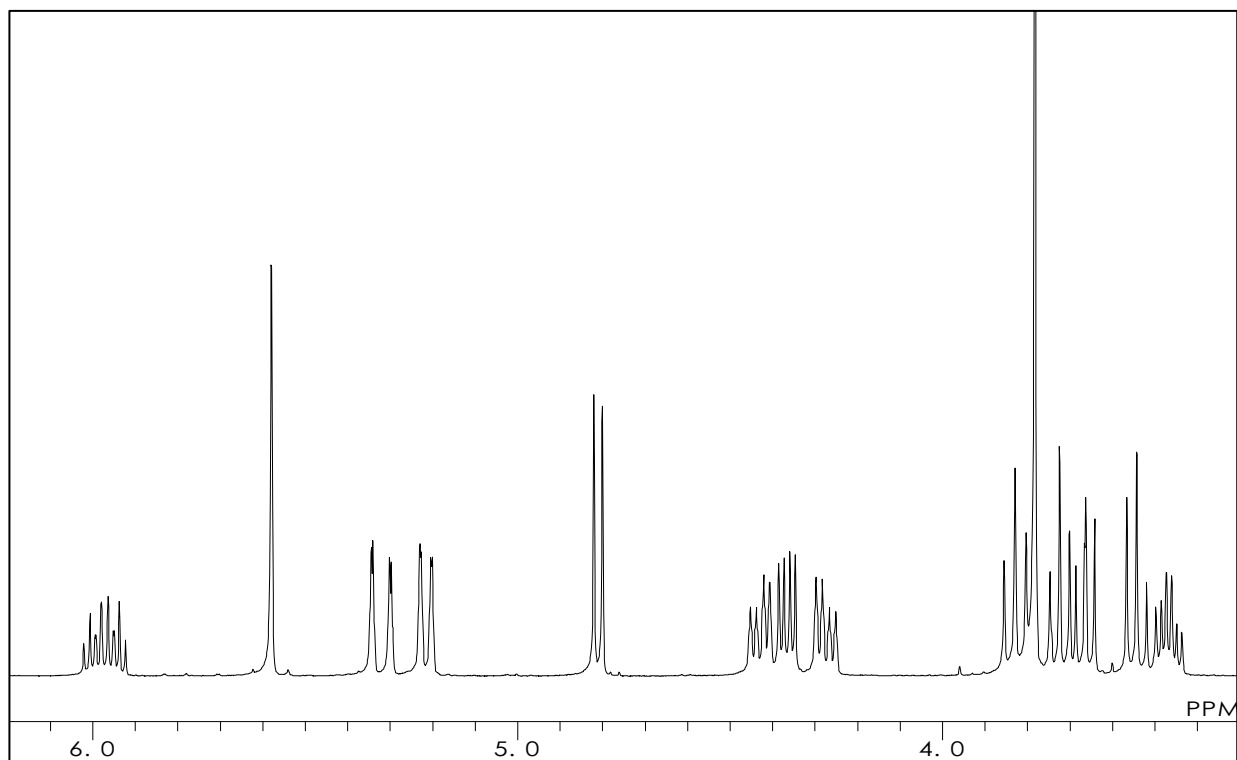
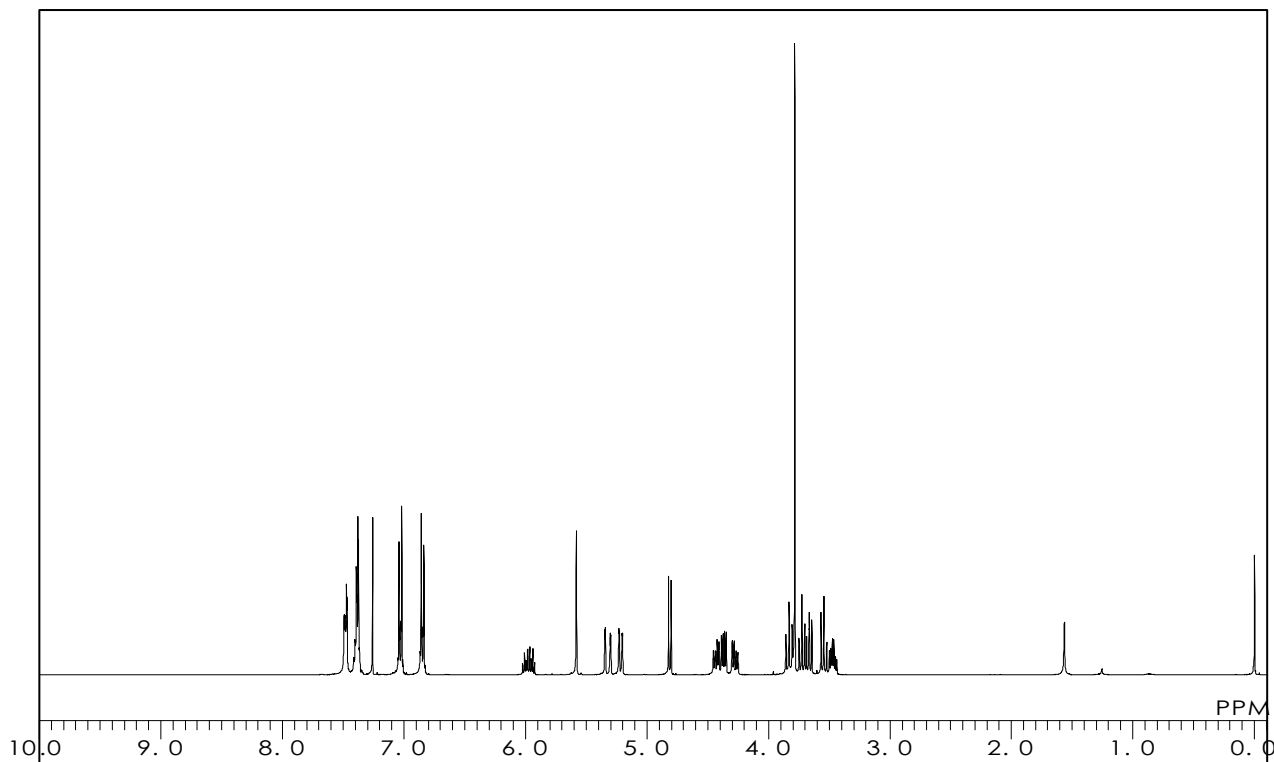
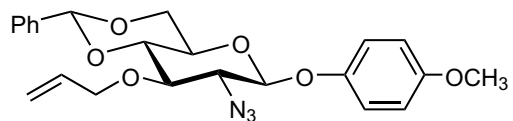
**4-Methoxyphenyl 3-O-Allyl-2-azido-4,6-O-benzylidene-2-deoxy- $\beta$ -D-glucopyranoside**

$C_{23}H_{25}N_3O_6 = 439.47$  [889453-78-5]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 21.0 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**M1598**

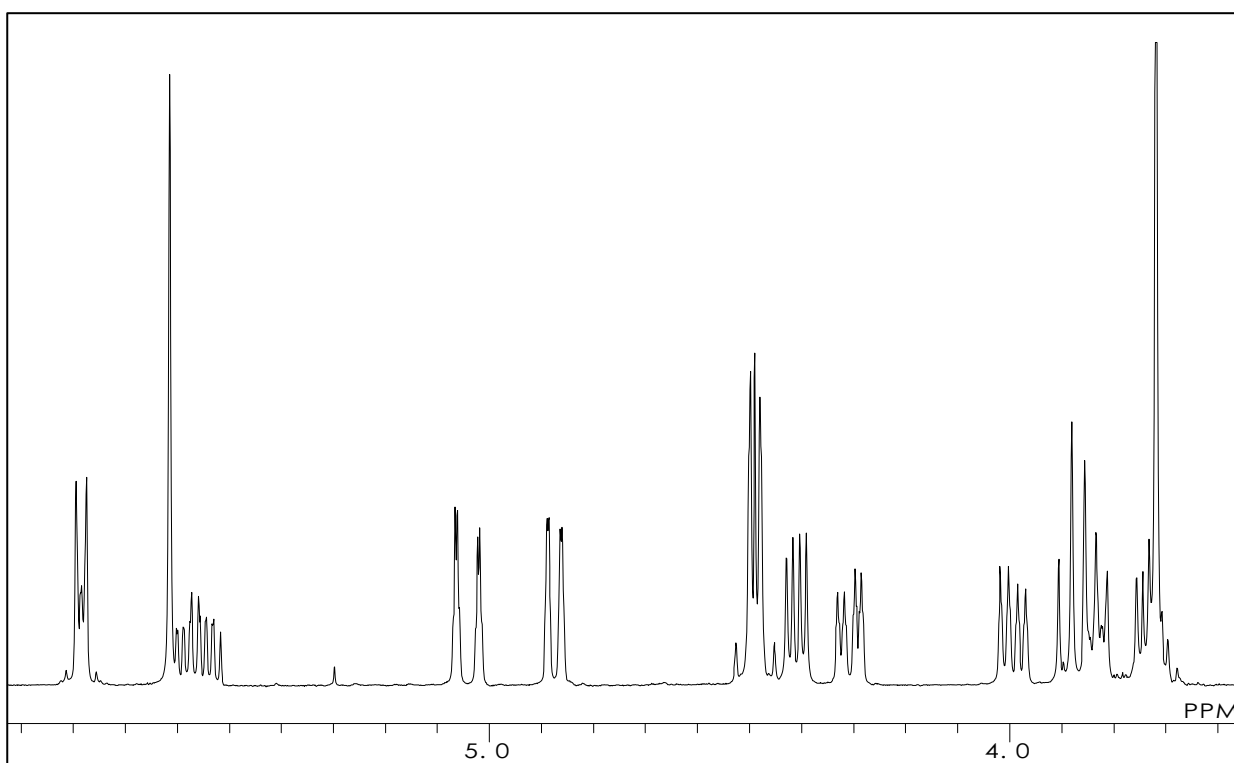
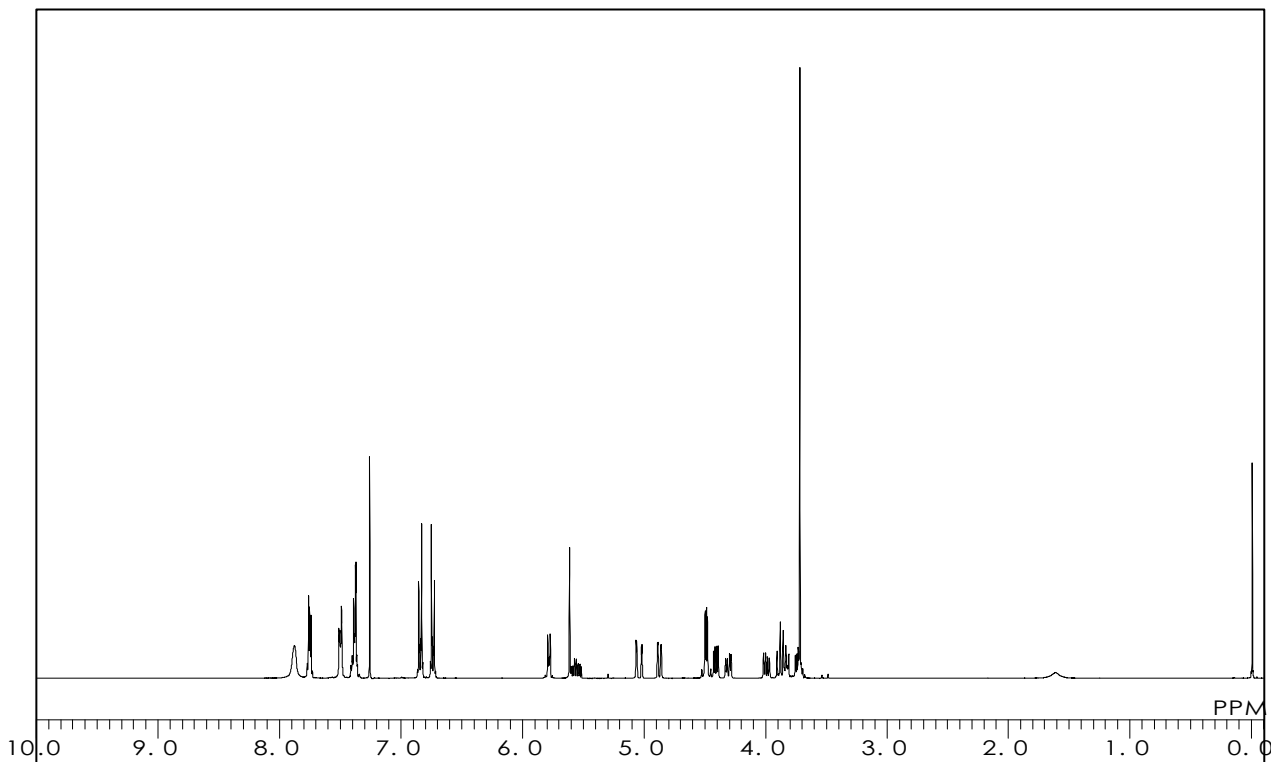
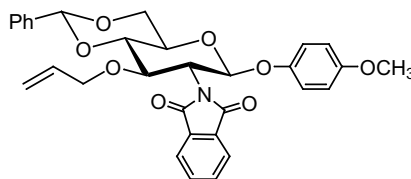
**4-Methoxyphenyl 3-O-Allyl-4,6-O-benzylidene-2-deoxy-2-phthalimido-β-D-glucopyranoside**

C<sub>31</sub>H<sub>29</sub>NO<sub>8</sub> = 543.57 [889453-84-3]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 20.3 °C



**M1616**

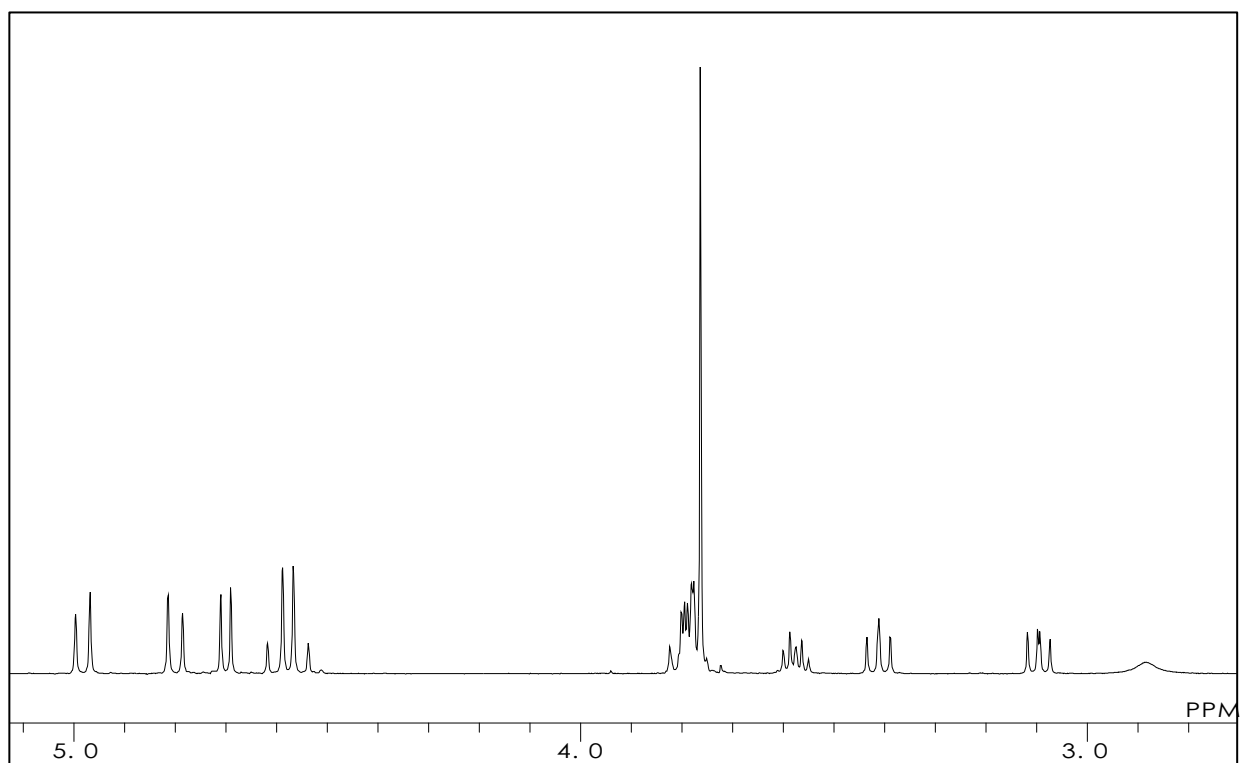
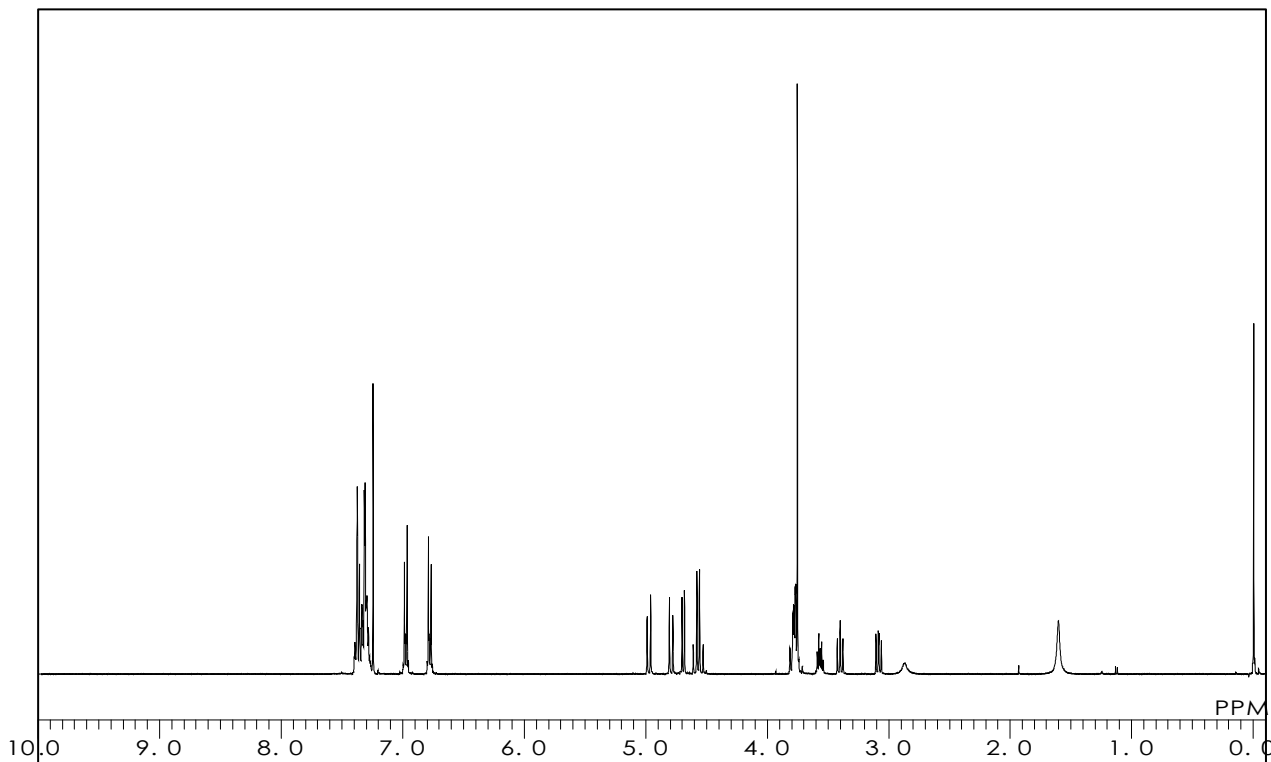
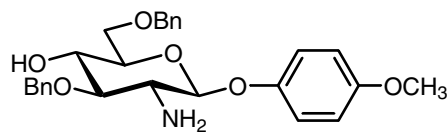
**4-Methoxyphenyl 2-Amino-3,6-di-O-benzyl-2-deoxy- $\beta$ -D-glucopyranoside**

$C_{27}H_{31}NO_6 = 465.55$  [1272755-07-3]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 23.6 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**M1637**

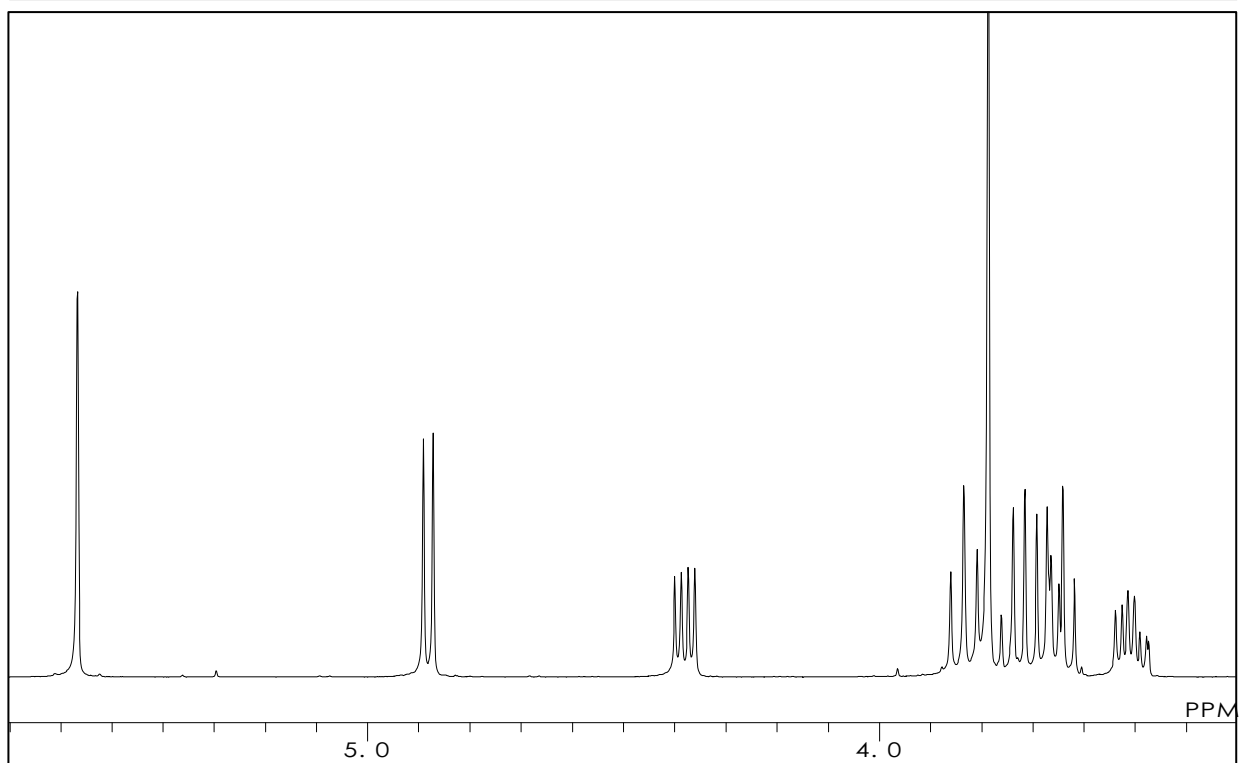
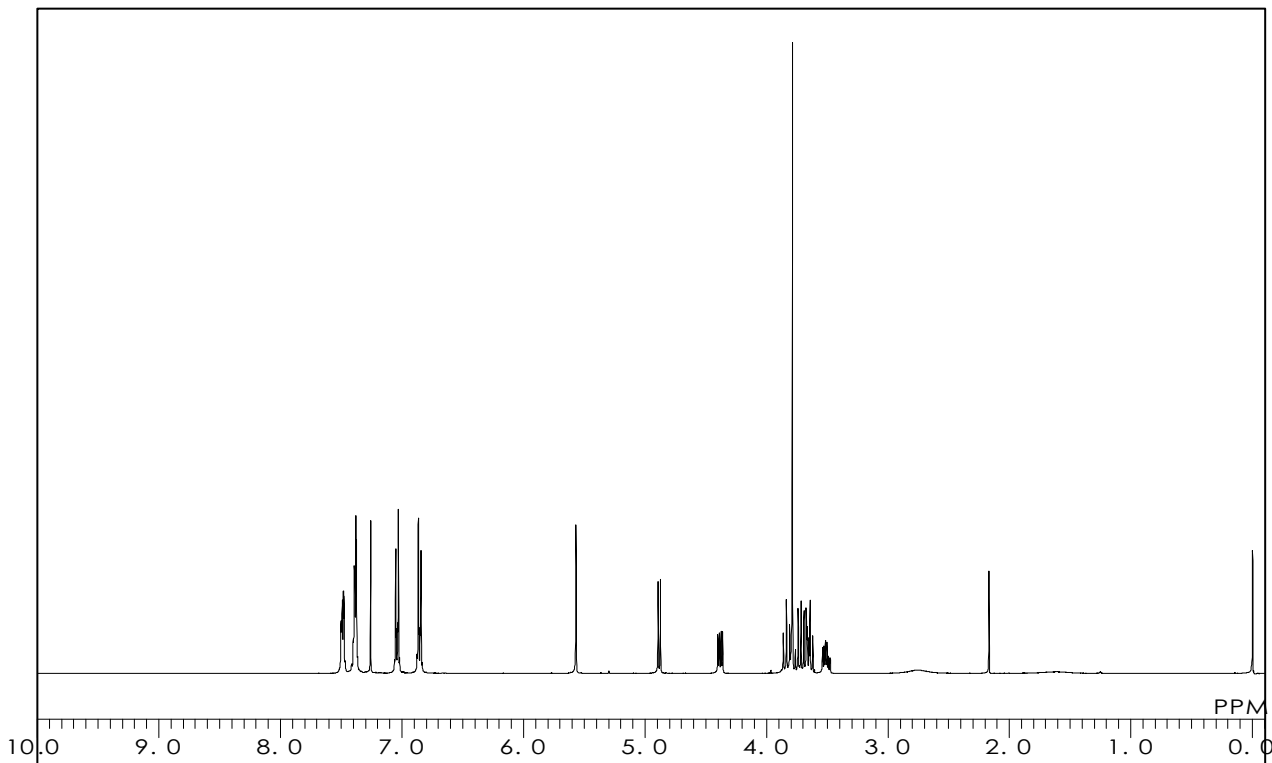
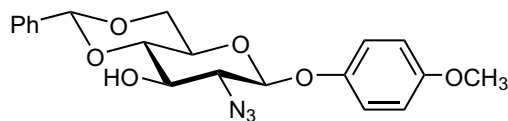
**4-Methoxyphenyl 2-Azido-4,6-O-benzylidene-2-deoxy- $\beta$ -D-glucopyranoside**

$C_{20}H_{21}N_3O_6 = 399.40$  [1430068-18-0]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 20.7 °C



Please refrain from the conversion of these data without permission. These data have been released on our homepage.

**M1617**

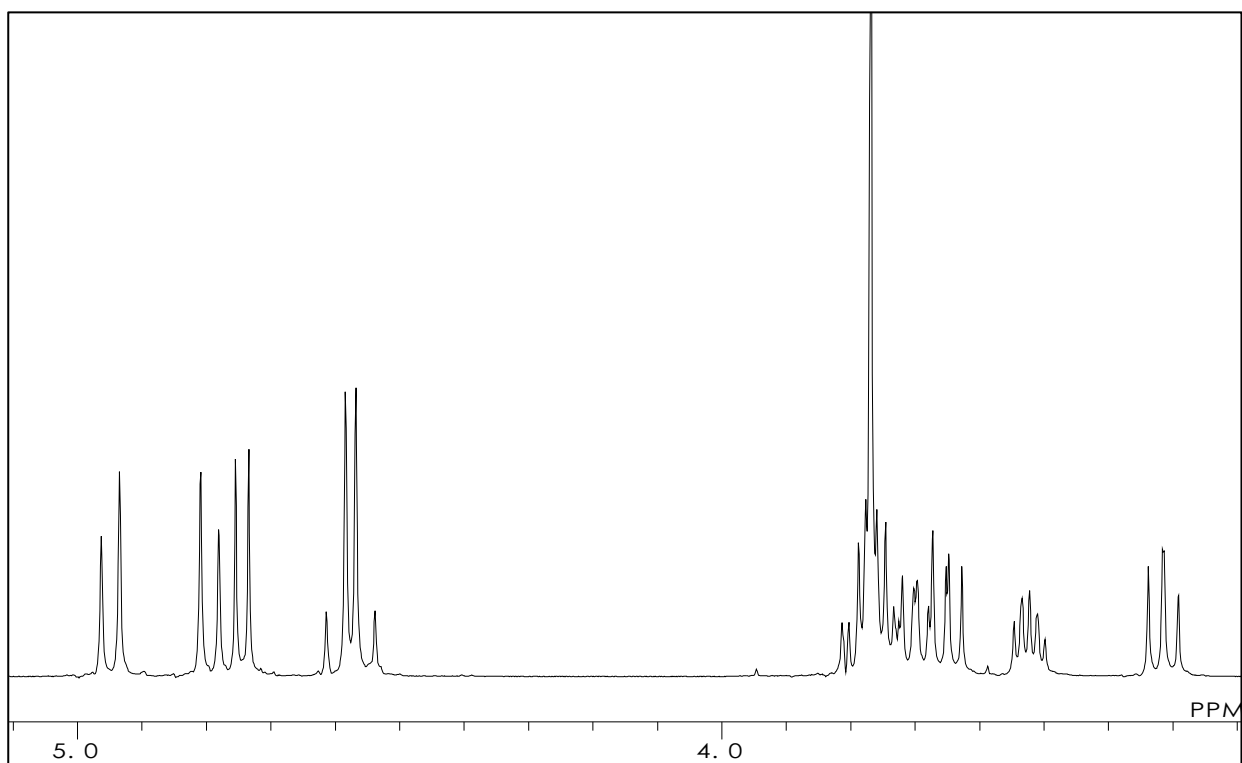
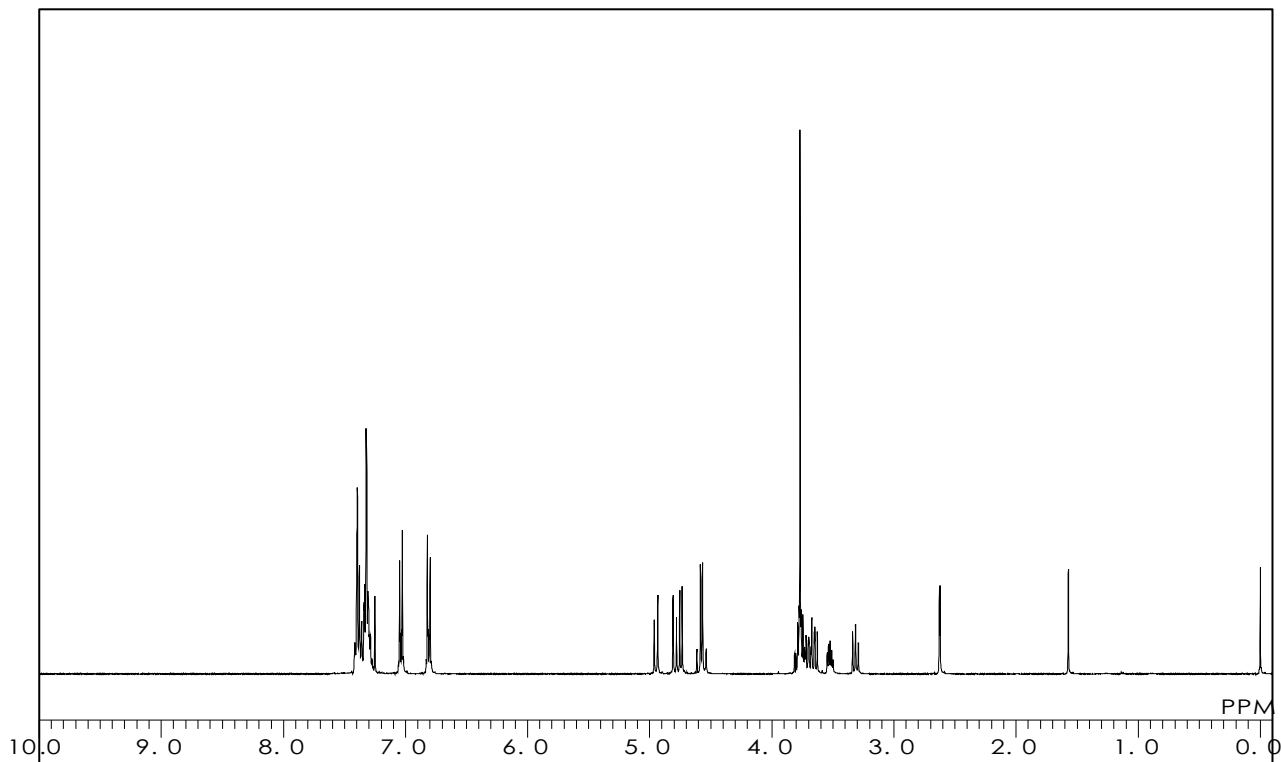
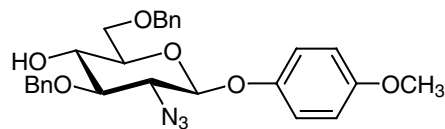
**4-Methoxyphenyl 2-Azido-3,6-di-O-benzyl-2-deoxy- $\beta$ -D-glucopyranoside**

$C_{27}H_{29}N_3O_6 = 491.54$  [1272755-25-5]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 23.8 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**M1609**

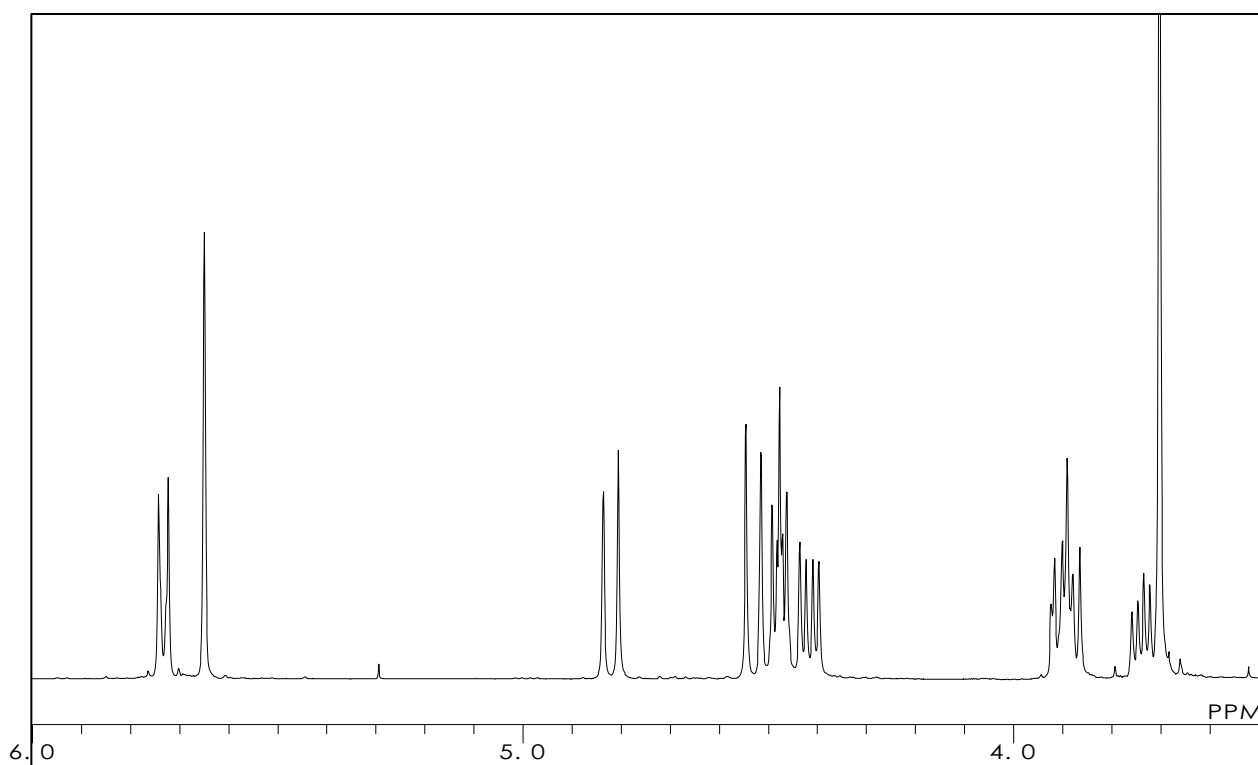
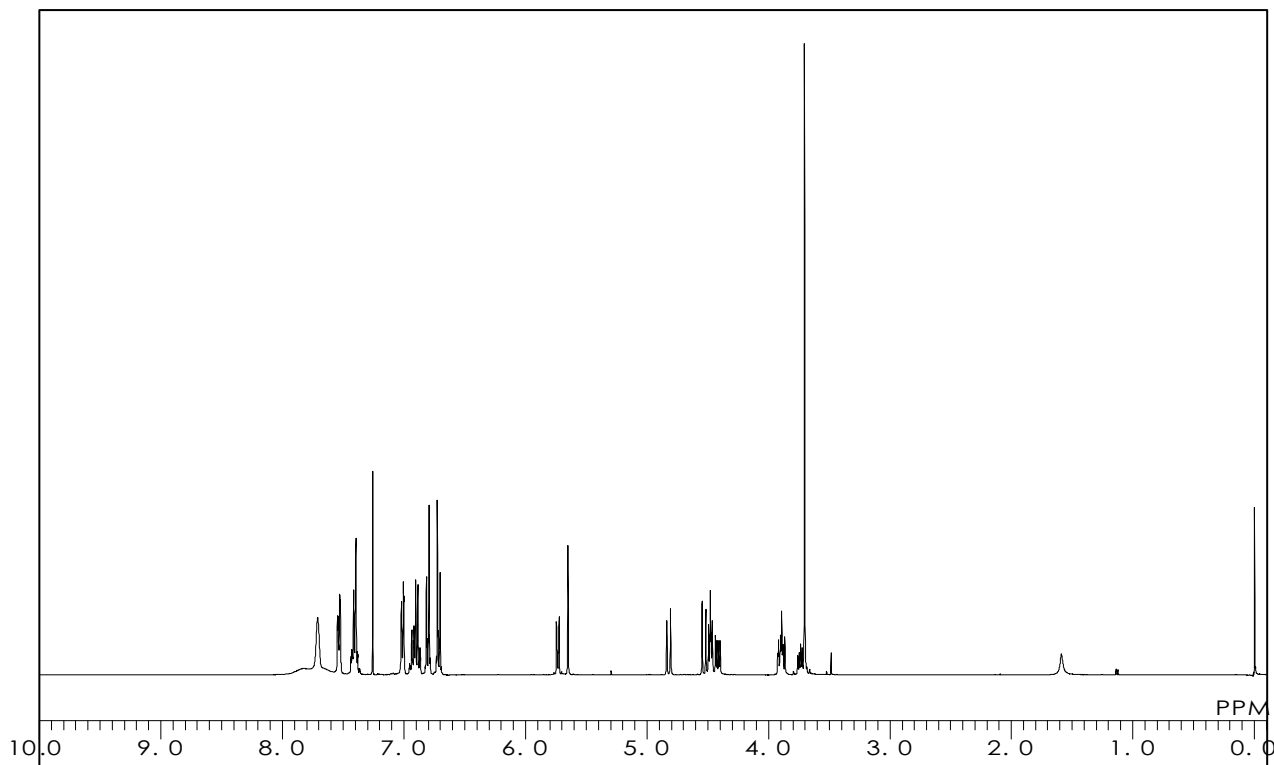
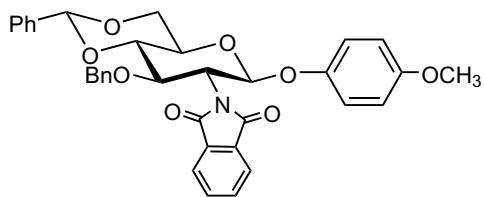
**4-Methoxyphenyl 3-O-Benzyl-4,6-O-benzylidene-2-deoxy-2-phthalimido-β-D-glucopyranoside**

$C_{35}H_{31}NO_8 = 593.63$  [129575-88-8]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 21.2 °C



M1479

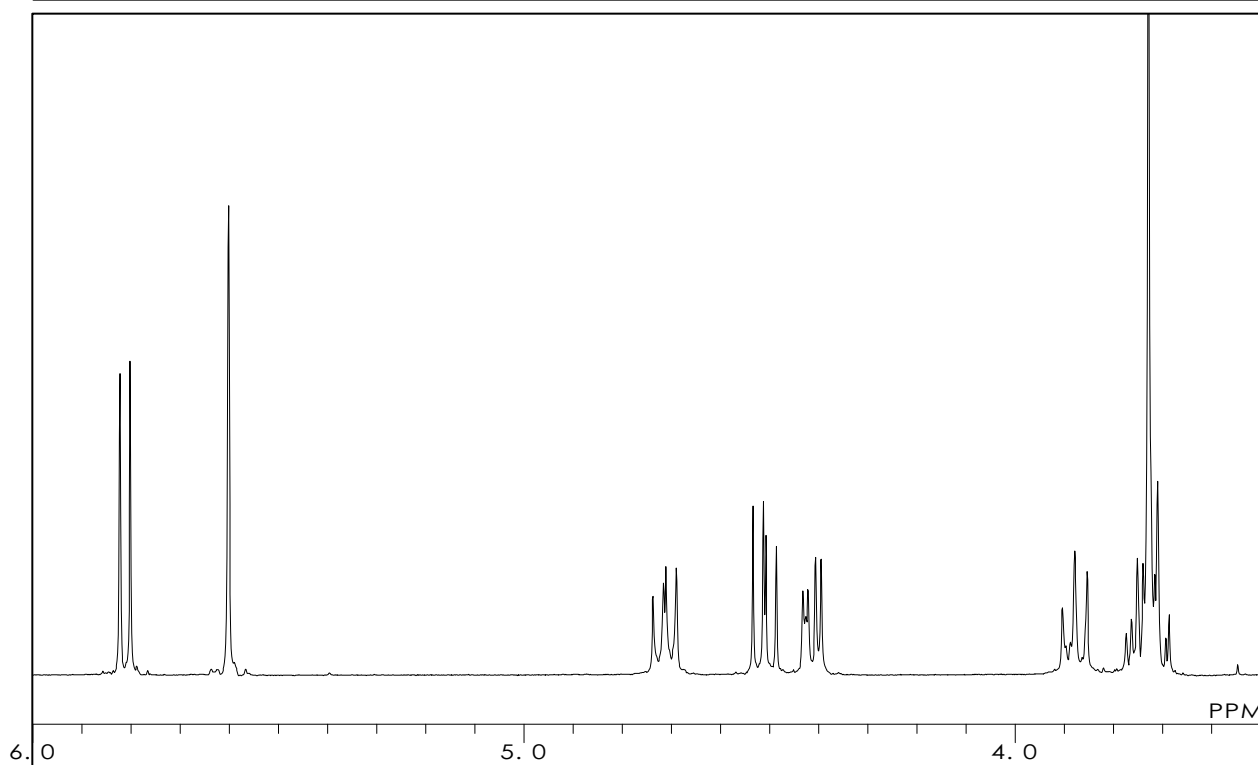
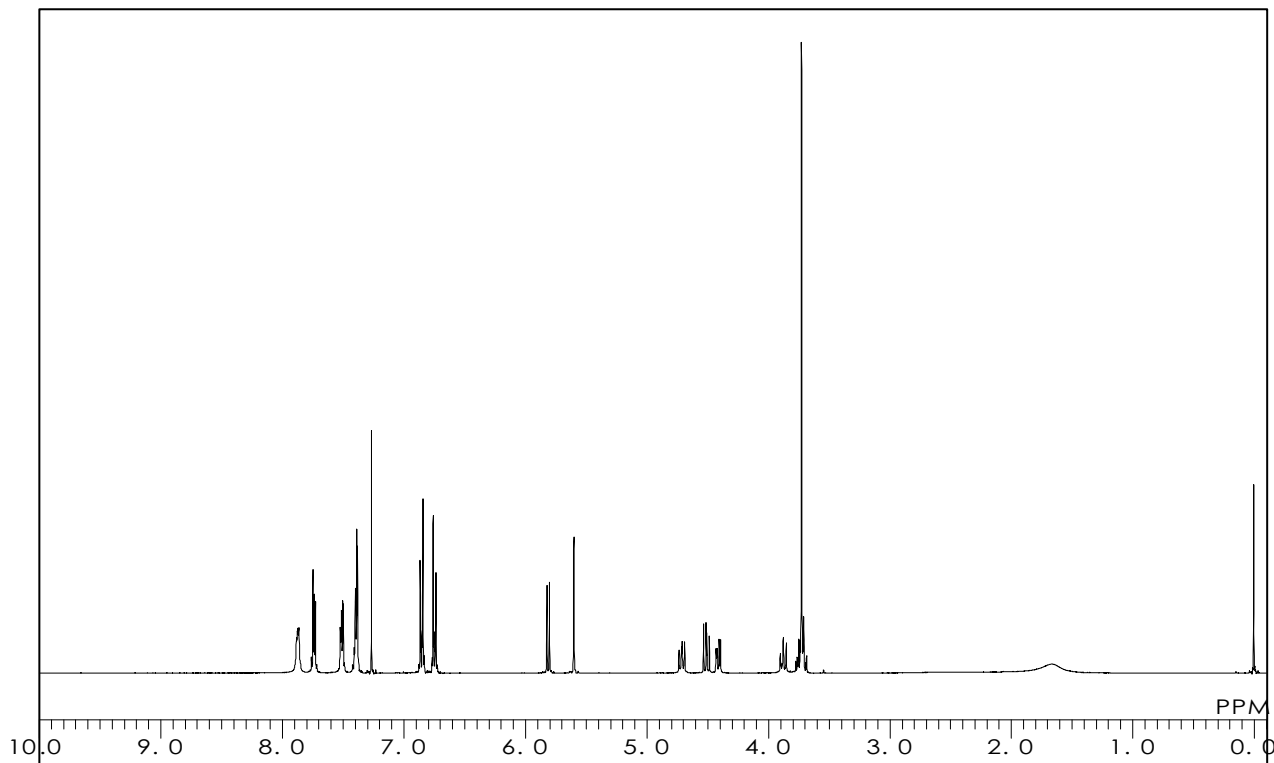
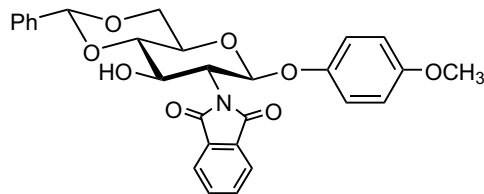
**4-Methoxyphenyl 4,6-O-Benzylidene-2-deoxy-2-phthalimido- $\beta$ -D-glucopyranoside**

C<sub>28</sub>H<sub>25</sub>NO<sub>8</sub> = 503.51 [138906-43-1]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 22.0 °C



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**M1615**

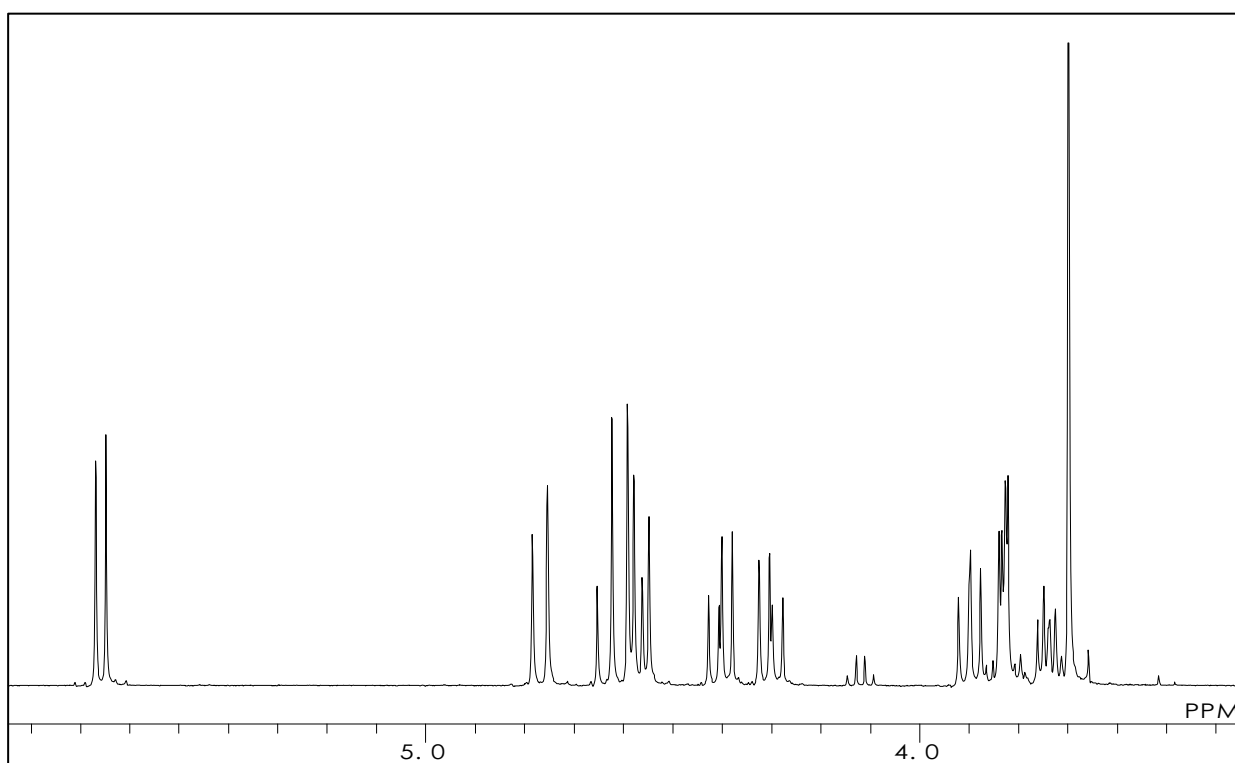
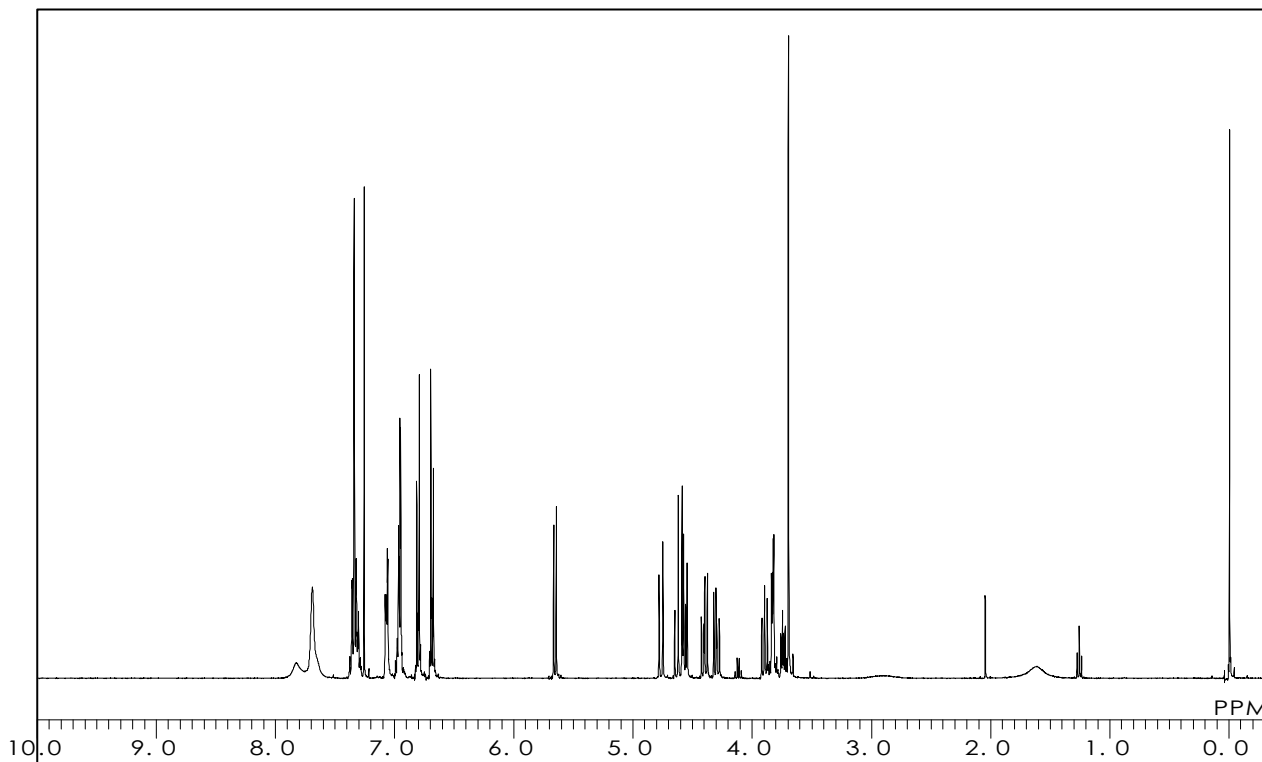
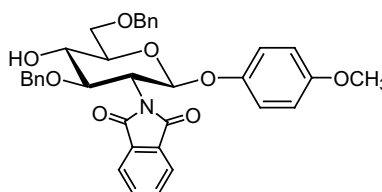
**4-Methoxyphenyl 3,6-Di-O-benzyl-2-deoxy-2-phthalimido- $\beta$ -D-glucopyranoside**

$C_{35}H_{33}NO_8$  = 595.65 [129575-89-9]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 20.4 °C



**M1480**

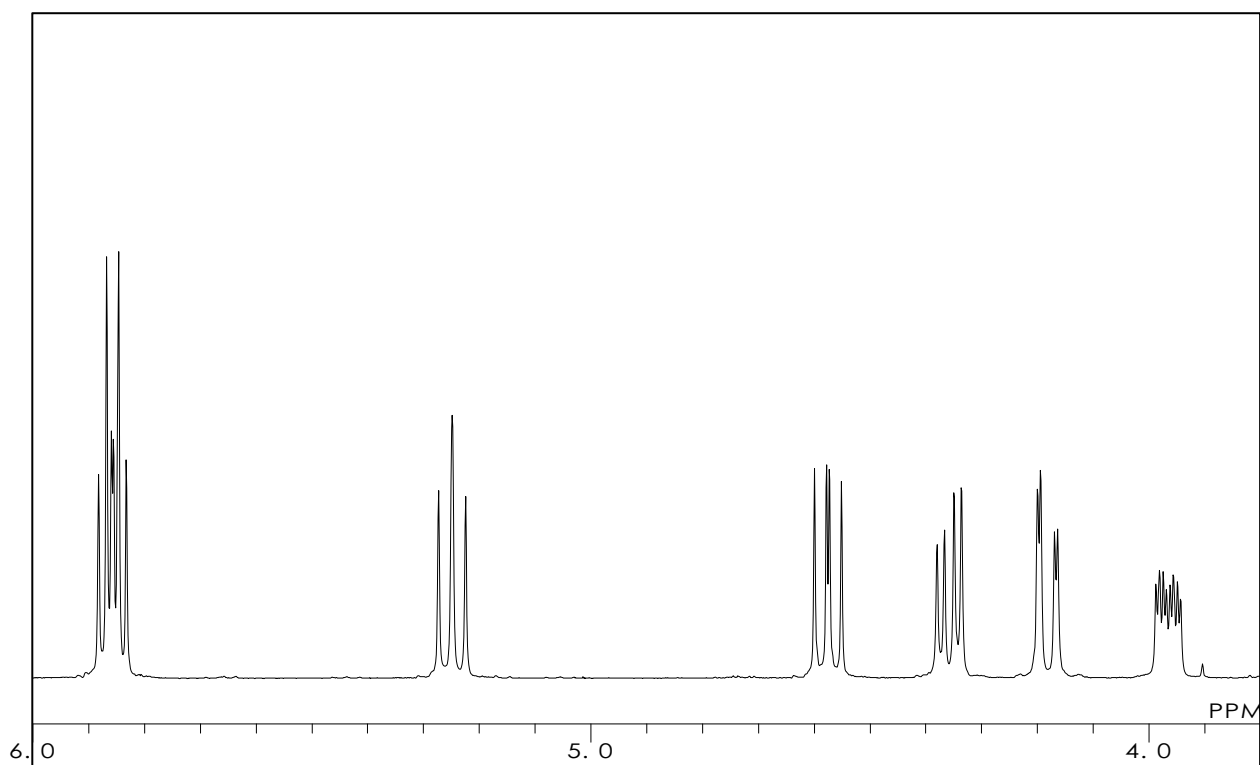
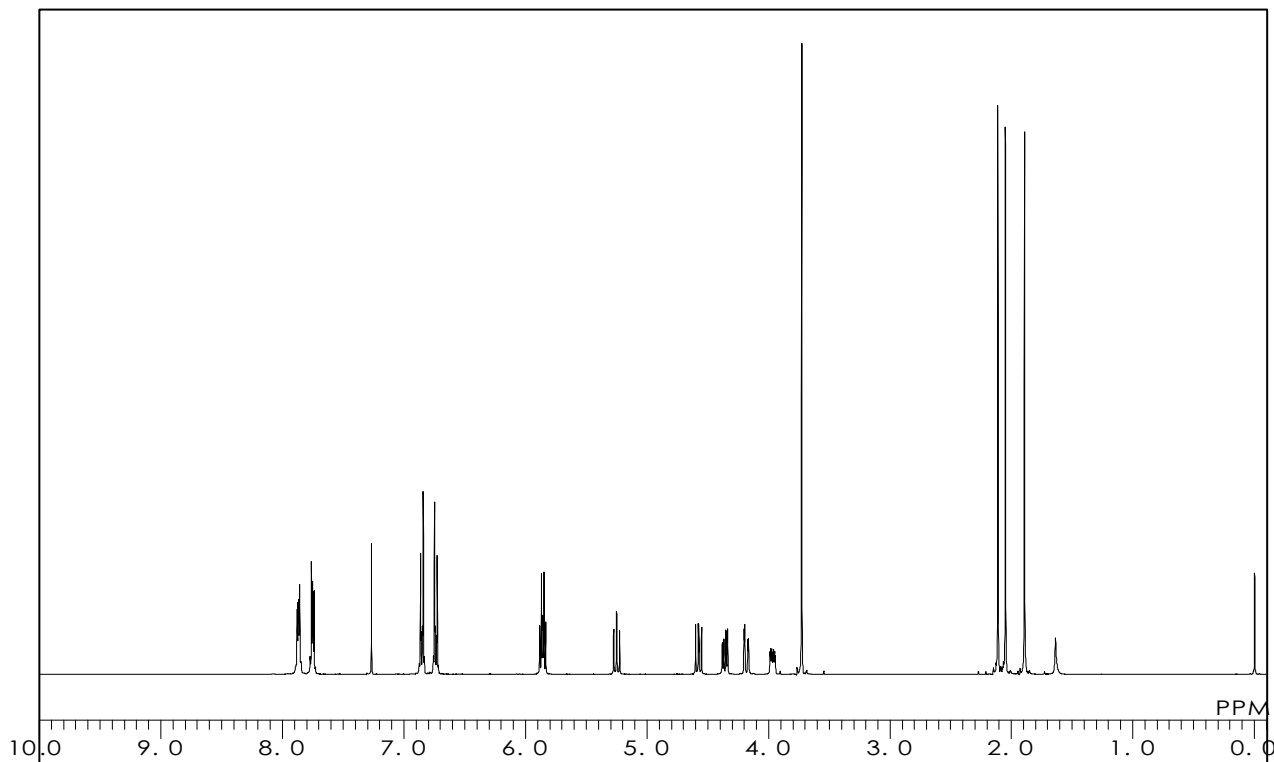
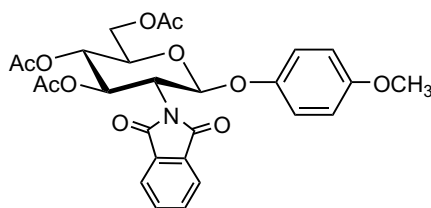
**4-Methoxyphenyl 3,4,6-Tri-O-acetyl-2-deoxy-2-phthalimido- $\beta$ -D-glucopyranoside**

$C_{27}H_{27}NO_{11}$  = 541.51 [138906-41-9]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 21.0 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**M1649**

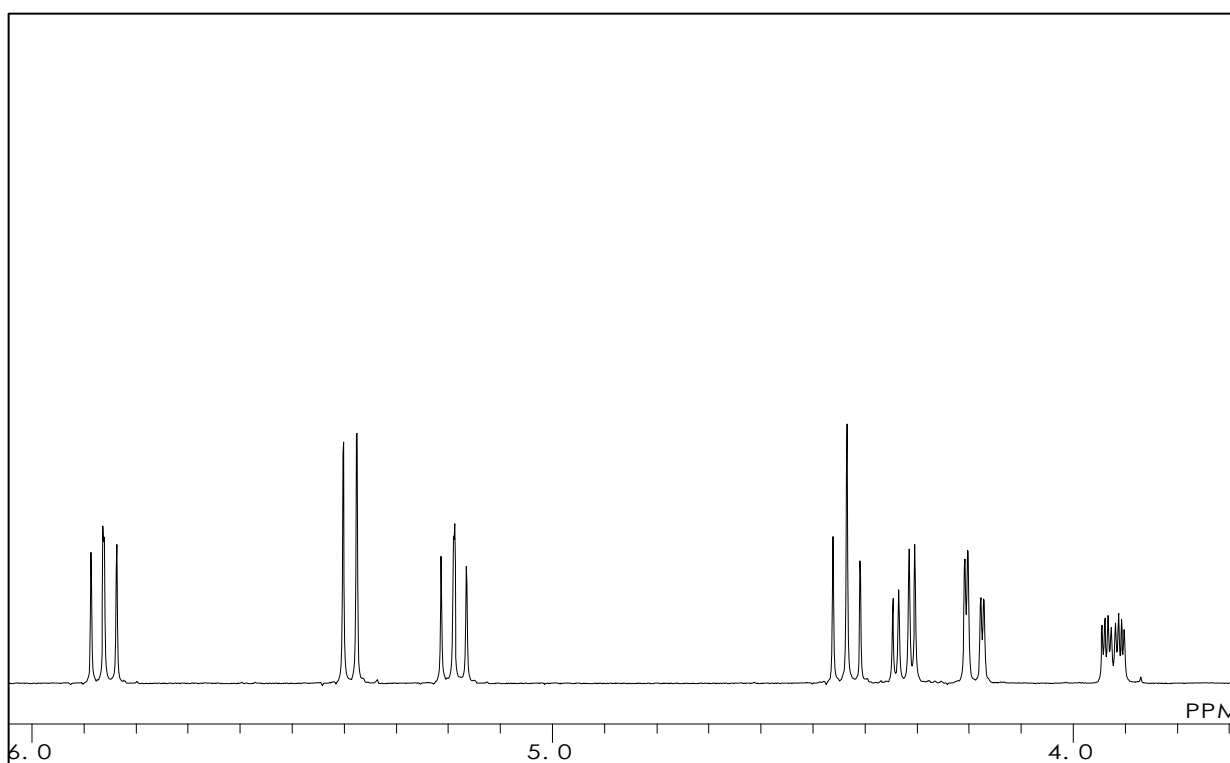
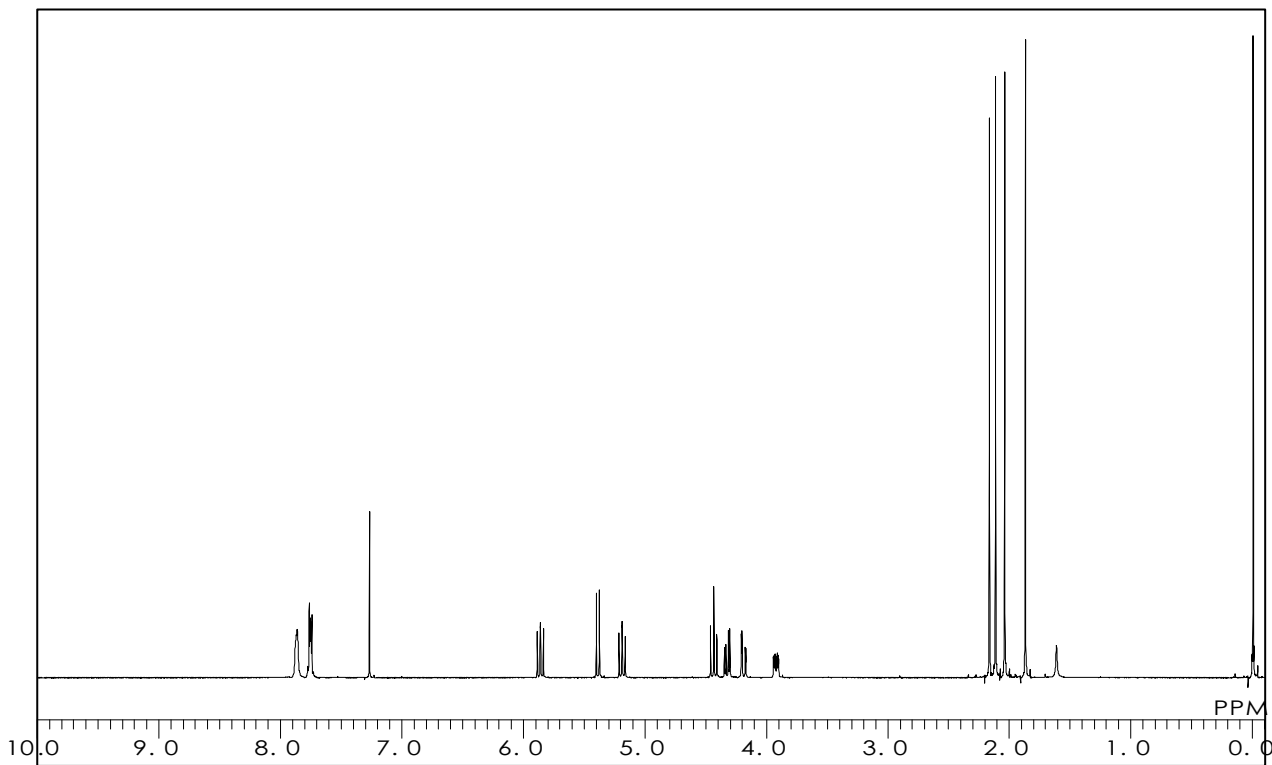
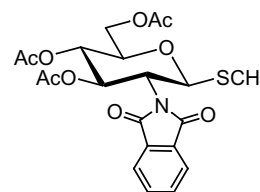
**Methyl 3,4,6-Tri-O-acetyl-2-deoxy-2-phthalimido-1-thio- $\beta$ -D-glucopyranoside**

$C_{21}H_{23}NO_9S = 465.47$  [79528-48-6]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 21.2 °C



**P1762**

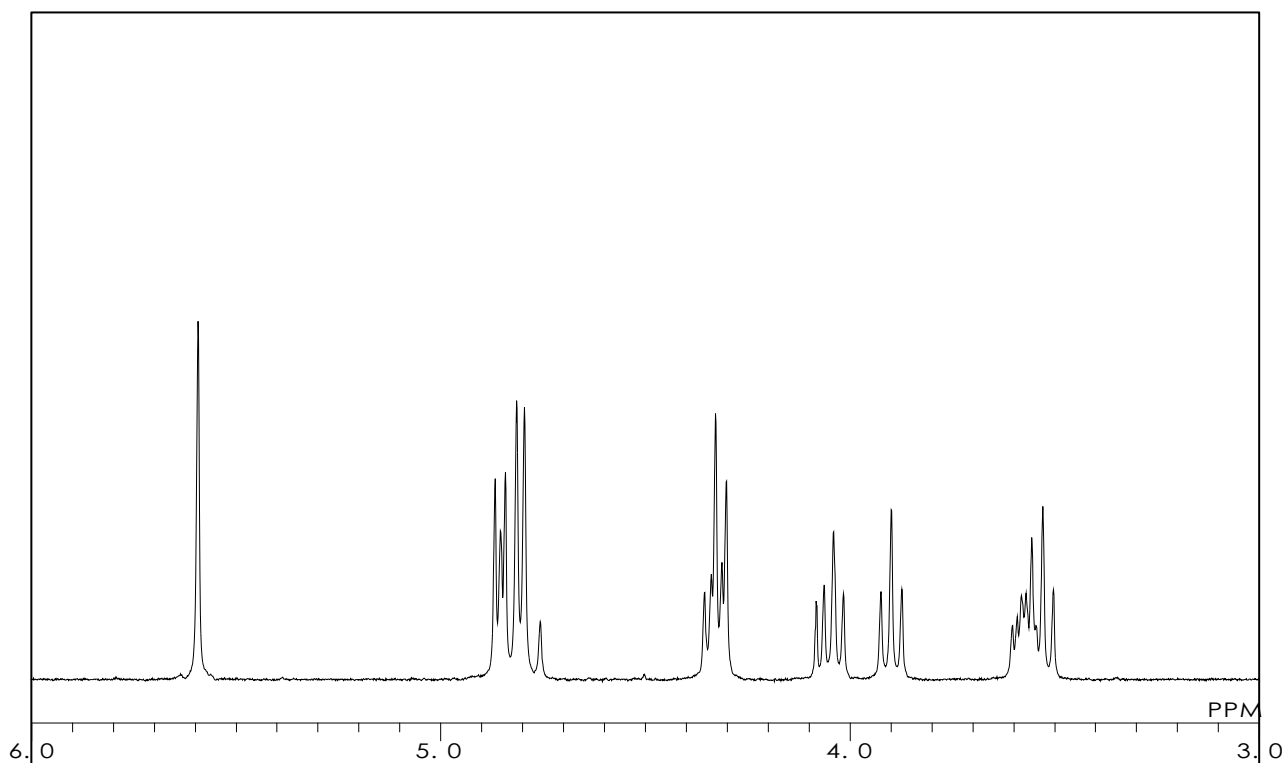
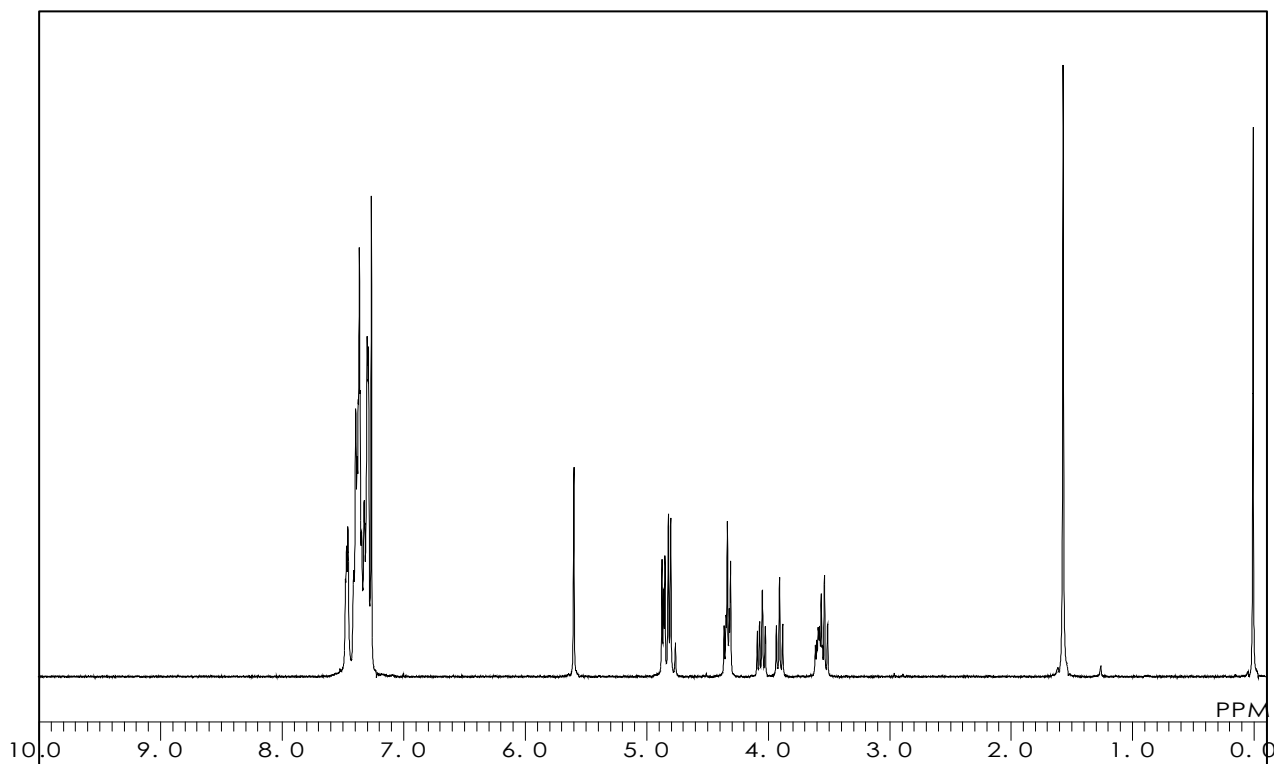
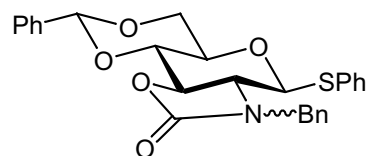
**Phenyl N-Benzyl-2-amino-4,6-O-benzylidene-2-N,3-O-carbonyl-2-deoxy-1-thio-β-D-glucopyranoside**

C<sub>27</sub>H<sub>25</sub>NO<sub>5</sub>S = 475.56 [910805-49-1]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 23.2 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**T2196**

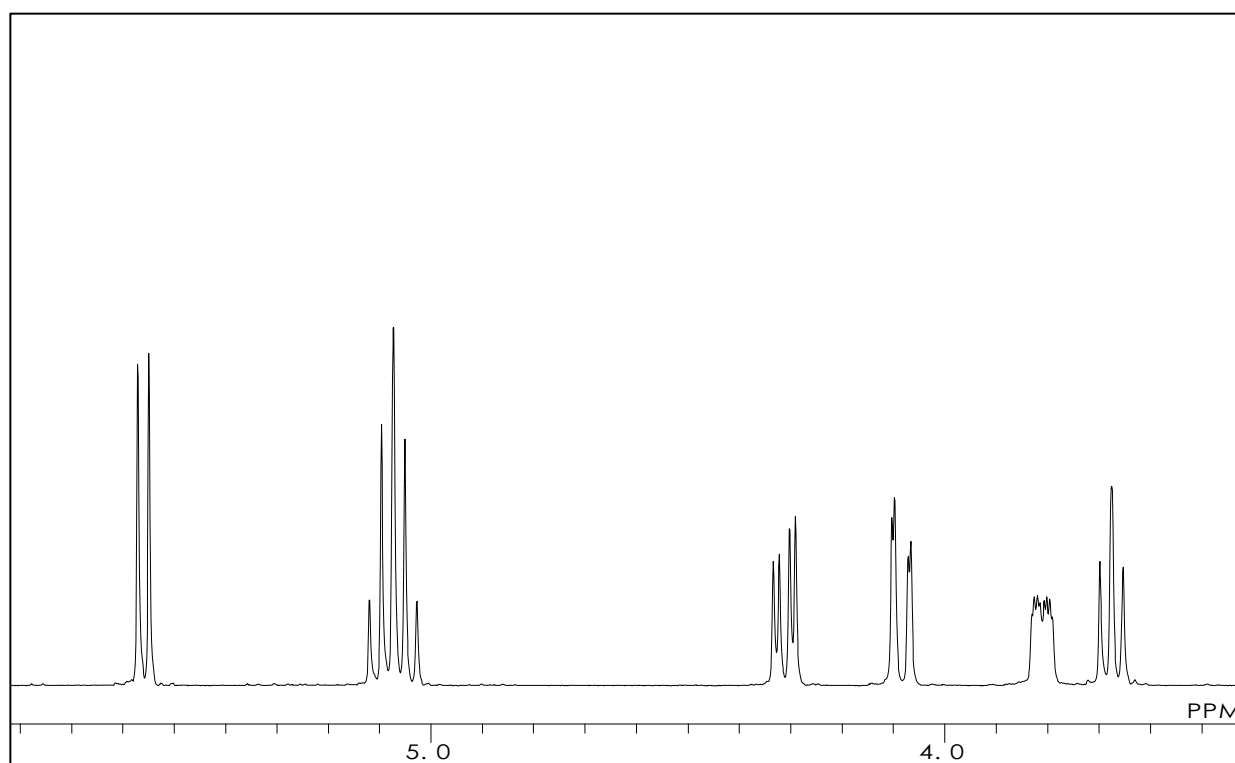
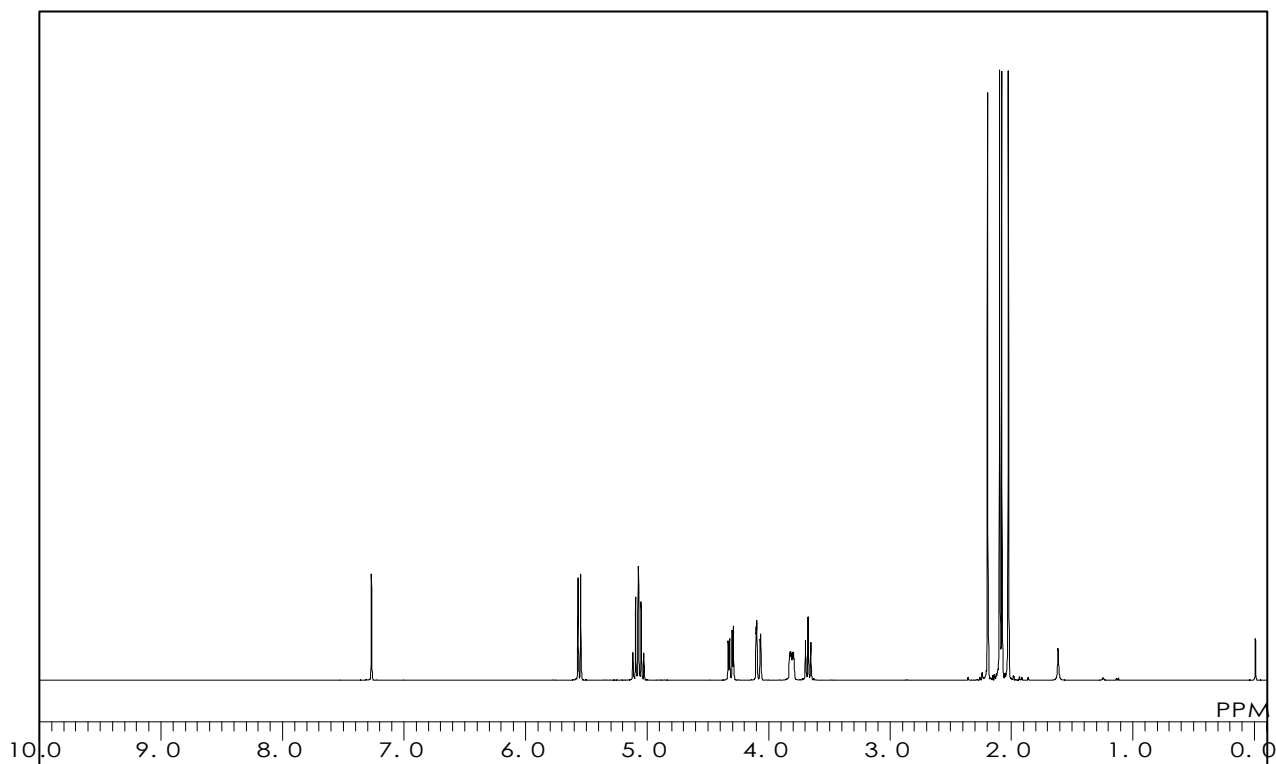
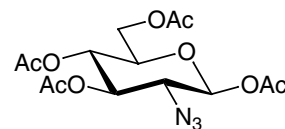
**1,3,4,6-Tetra-O-acetyl-2-azido-2-deoxy-β-D-glucopyranose**

$C_{14}H_{19}N_3O_9 = 373.32$  [80321-89-7]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 18.9 °C



T2047

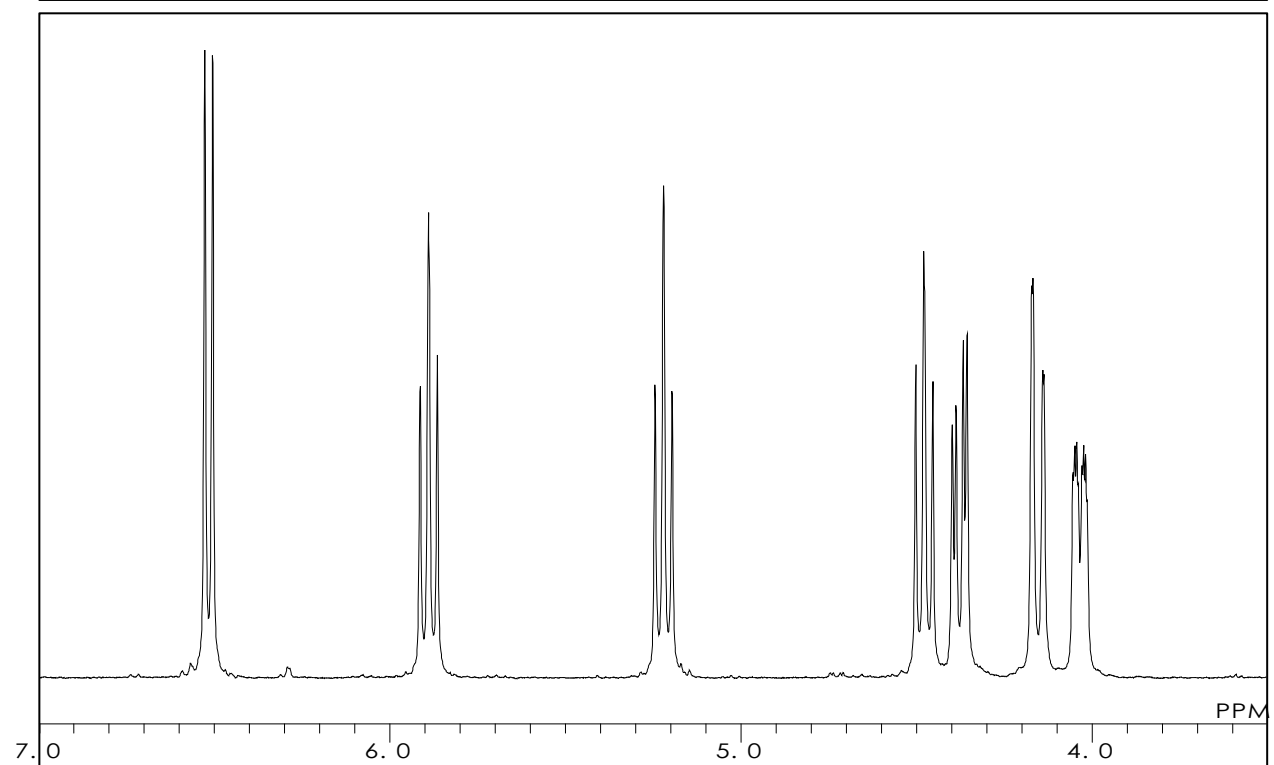
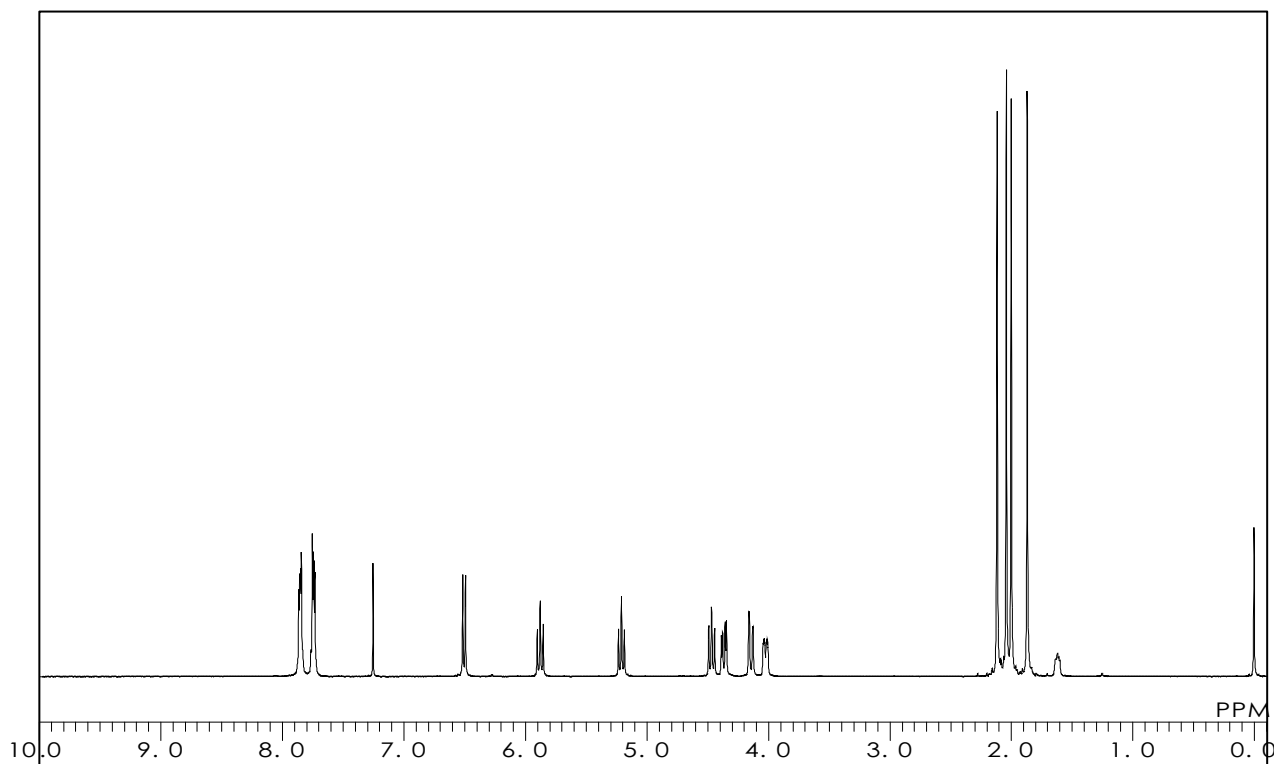
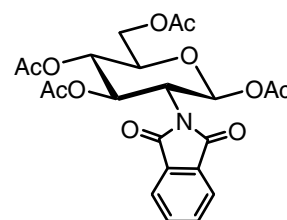
# 1,3,4,6-Tetra-O-acetyl-2-deoxy-2-phthalimido-β-D-glucopyranose

C<sub>22</sub>H<sub>23</sub>NO<sub>11</sub> = 477.42 [10022-13-6]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 22.0 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**M1759**

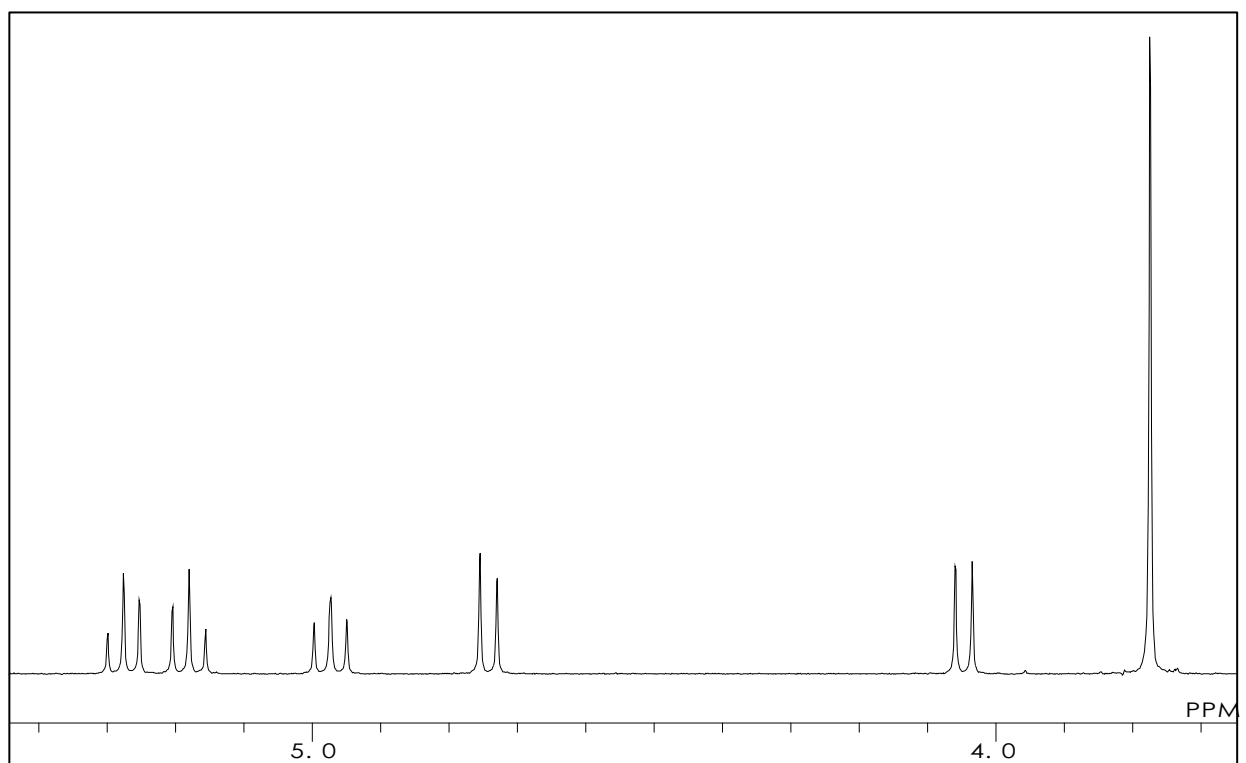
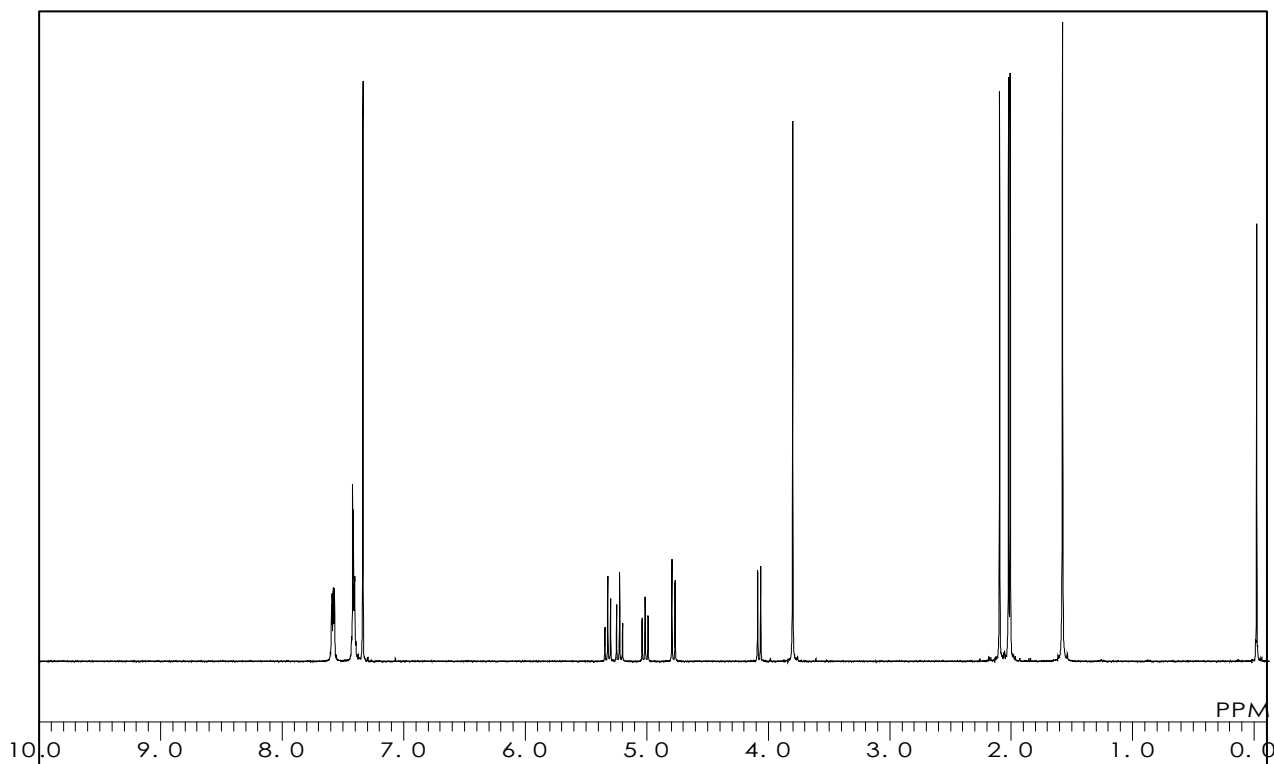
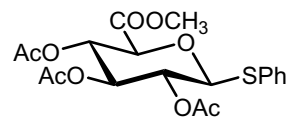
**Methyl (Phenyl 2,3,4-Tri-O-acetyl-1-thio-β-D-glucopyranosid)uronate**

C<sub>19</sub>H<sub>22</sub>O<sub>9</sub>S = 426.44 [62812-42-4]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 20.0 °C



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**M1868**

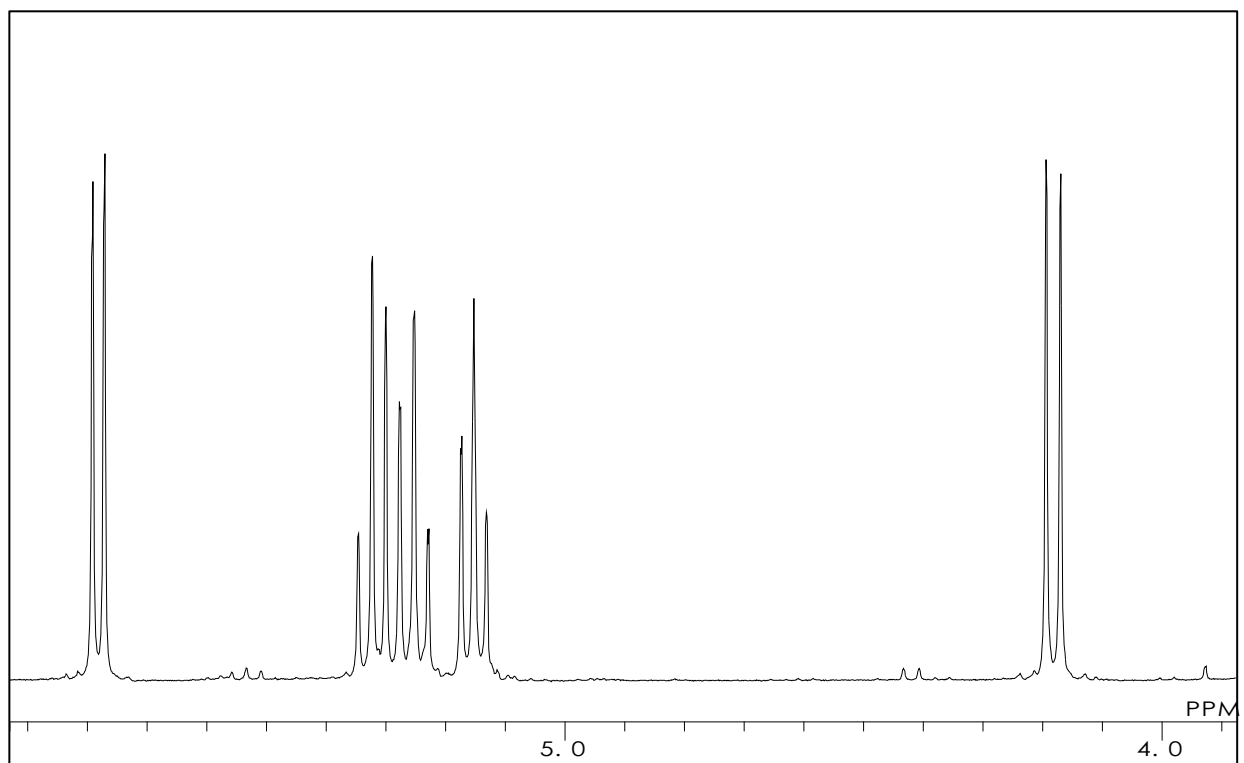
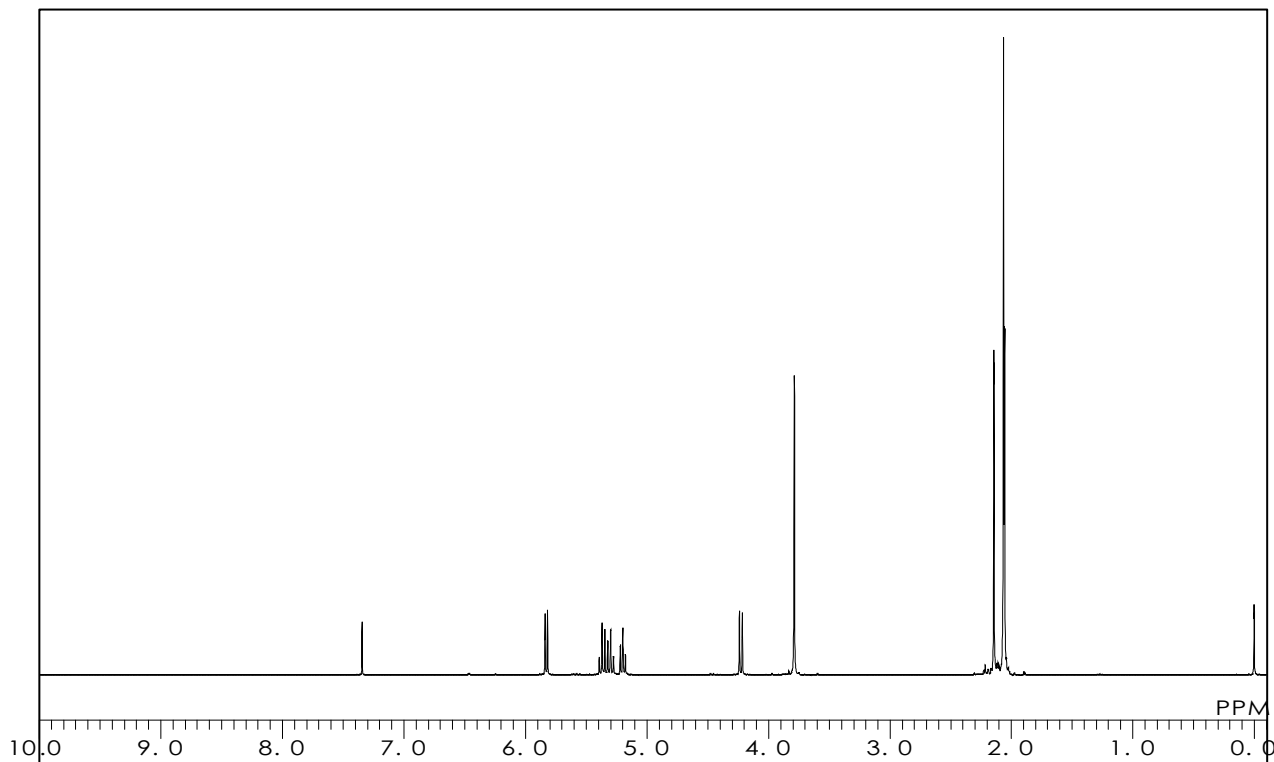
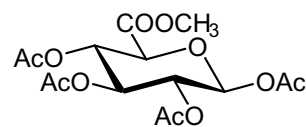
**Methyl 1,2,3,4-Tetra-O-acetyl-β-D-glucuronate**

C<sub>15</sub>H<sub>20</sub>O<sub>11</sub> = 376.31 [7355-18-2]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 20.0 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。



**N0857**

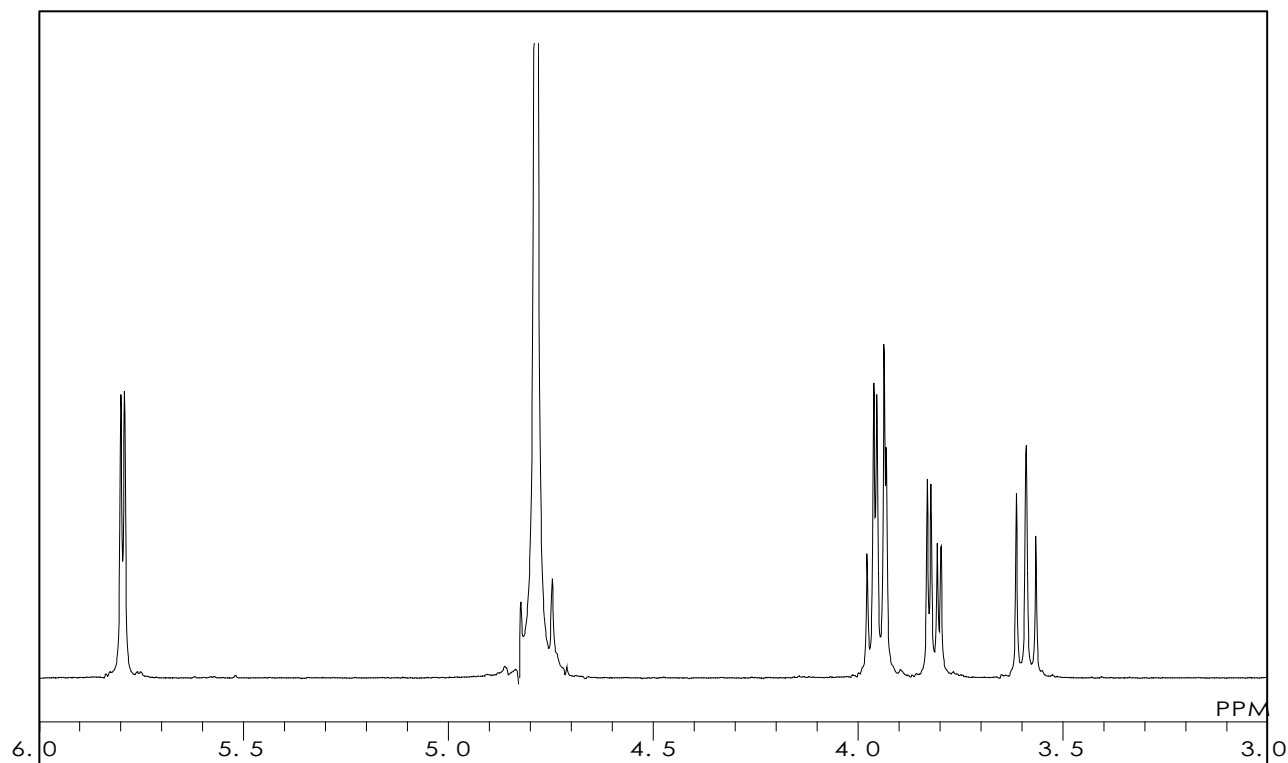
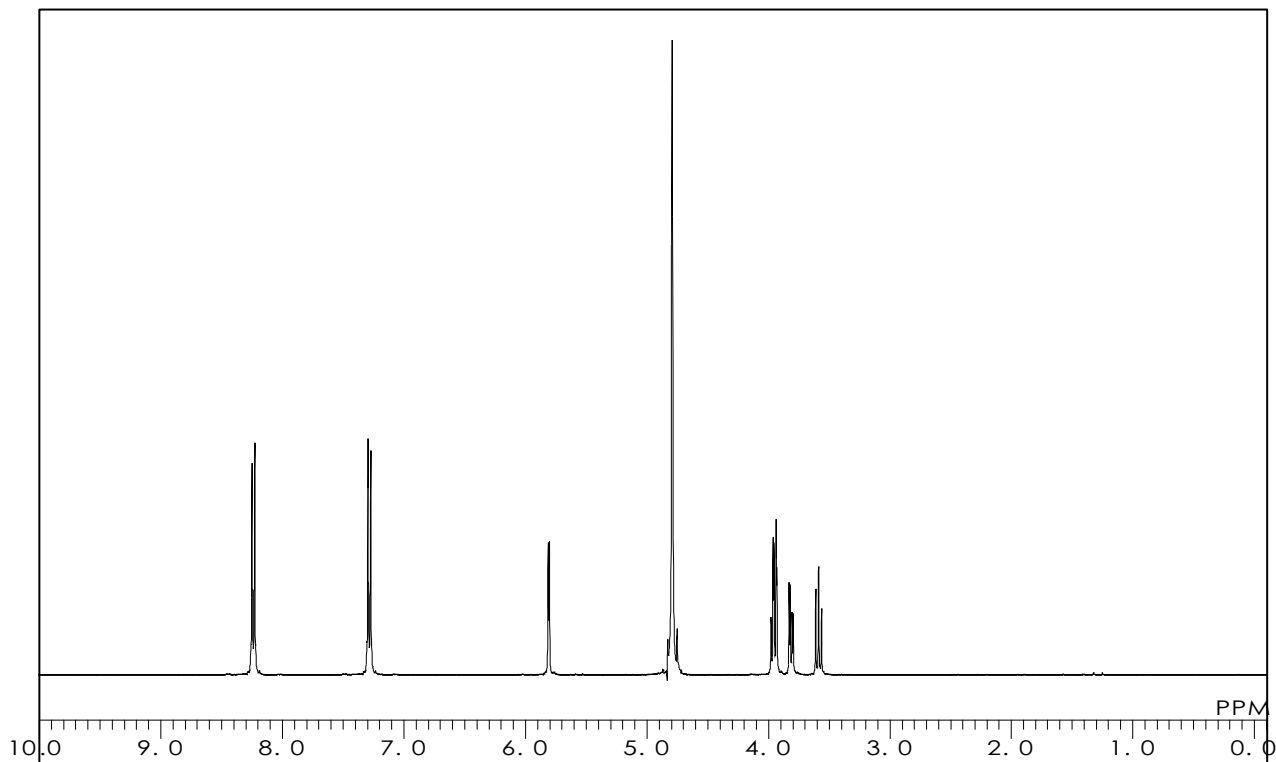
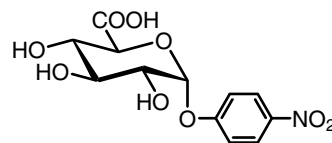
## 4-Nitrophenyl $\alpha$ -D-Glucuronide

$C_{12}H_{13}NO_9 = 315.23$  [71484-85-0]

Solvent :  $D_2O$

External Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 22.9 °C



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**I0629**

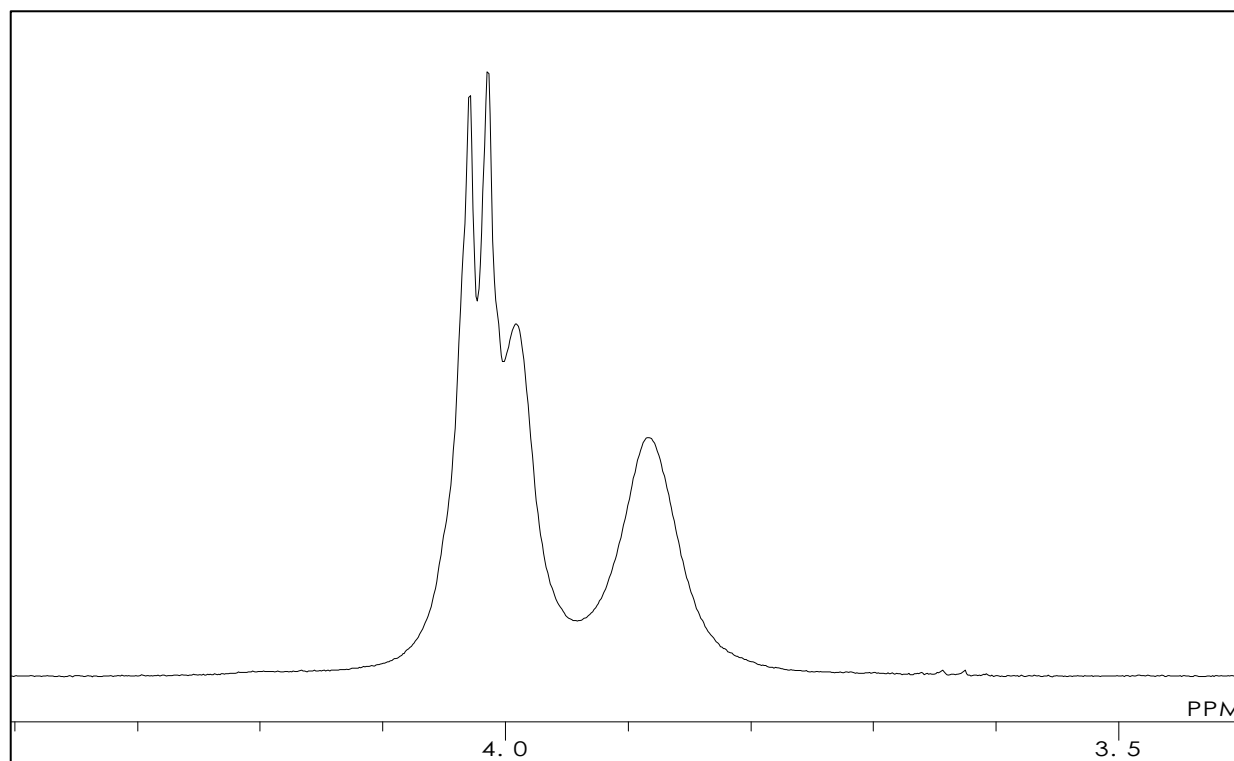
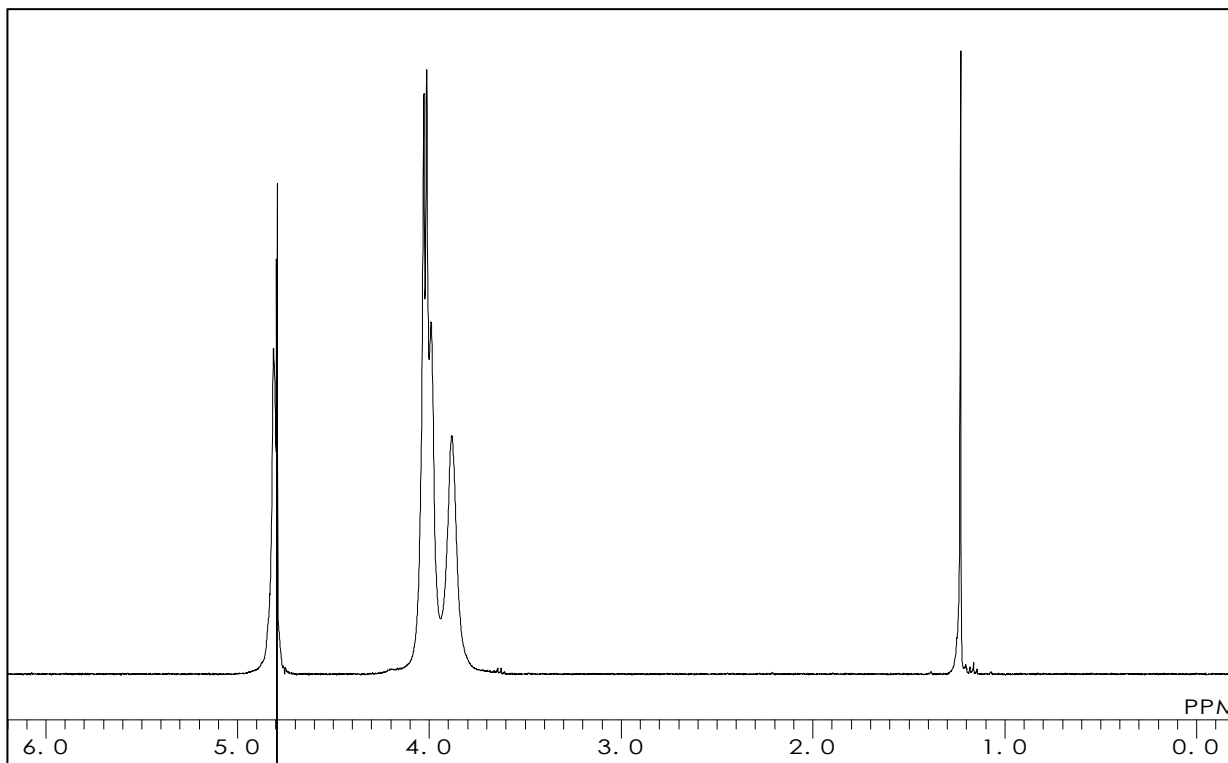
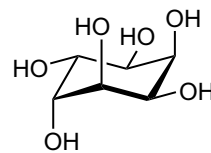
**allo-Inositol**

$C_6H_{12}O_6 = 180.16$  [643-10-7]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 22.7 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**I0628**

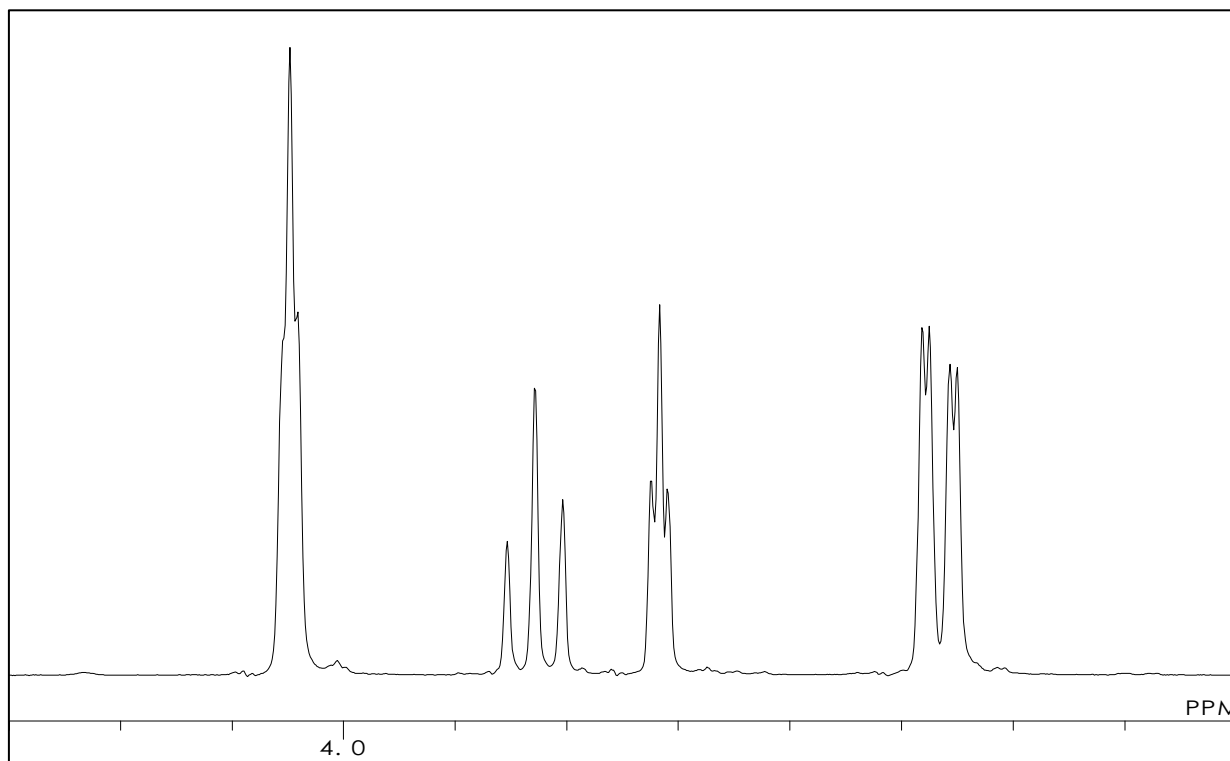
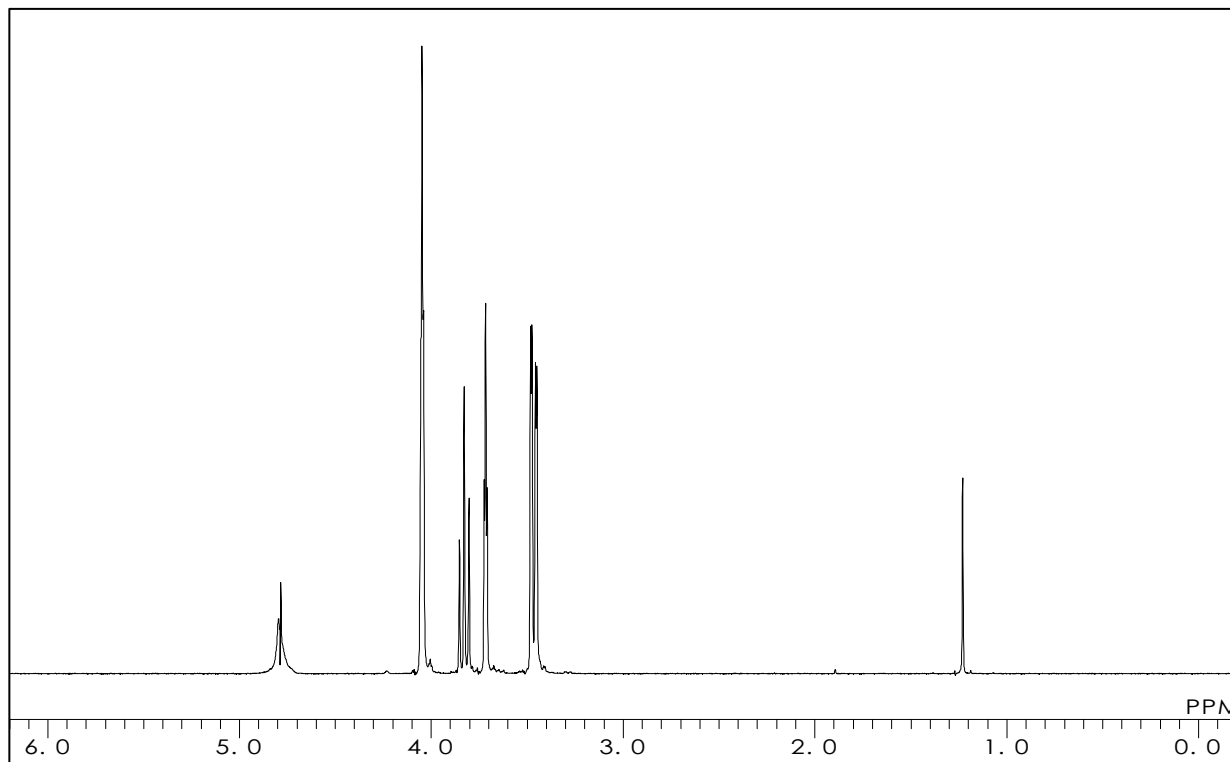
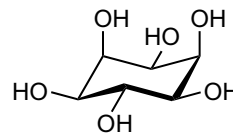
**epi-Inositol**

$C_6H_{12}O_6 = 180.16$  [488-58-4]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 23.0 °C



**I0630**

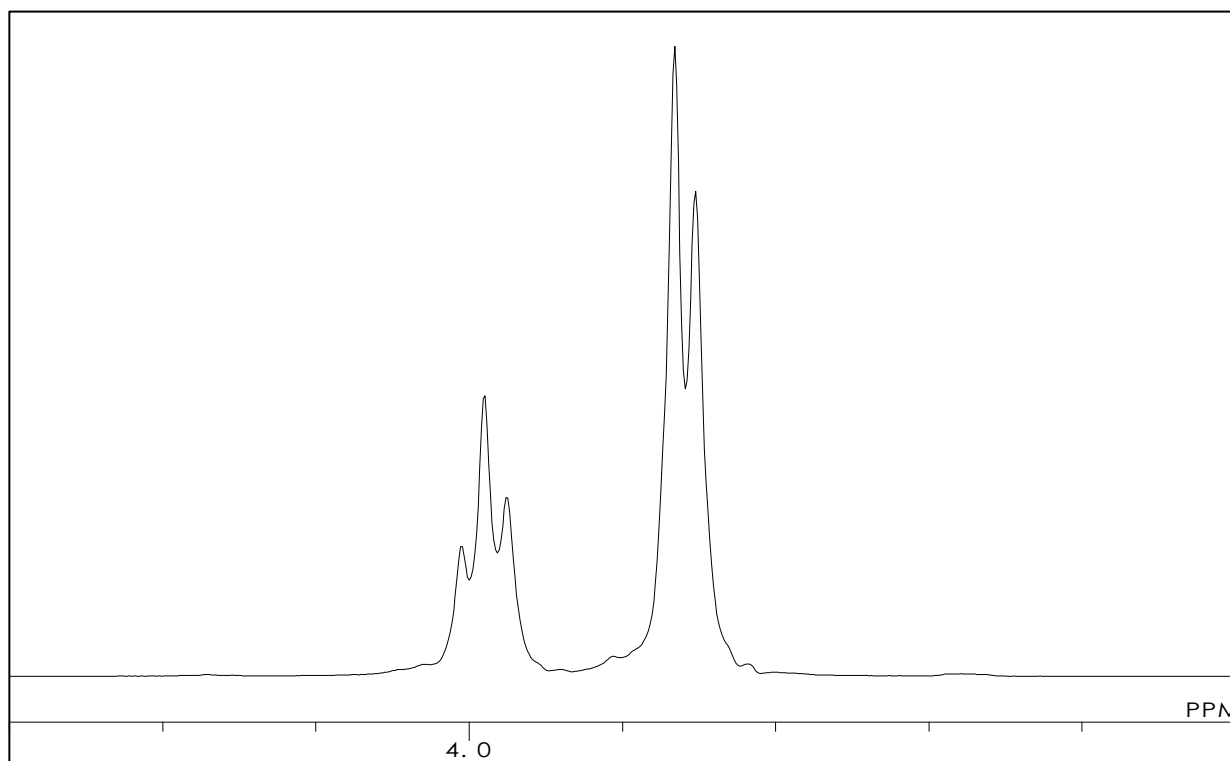
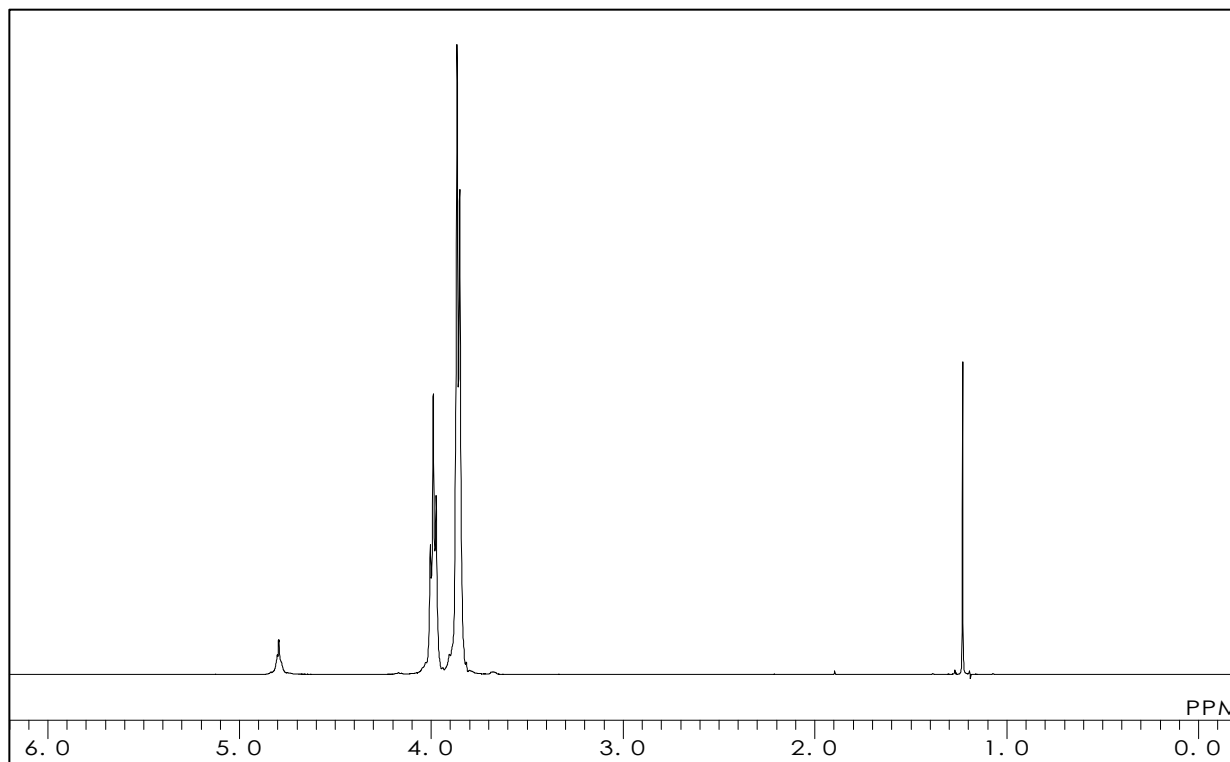
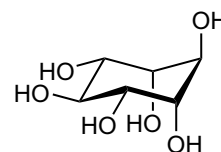
**muco-Inositol**

$C_6H_{12}O_6 = 180.16$  [41546-34-3]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 21.9 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**I0631**

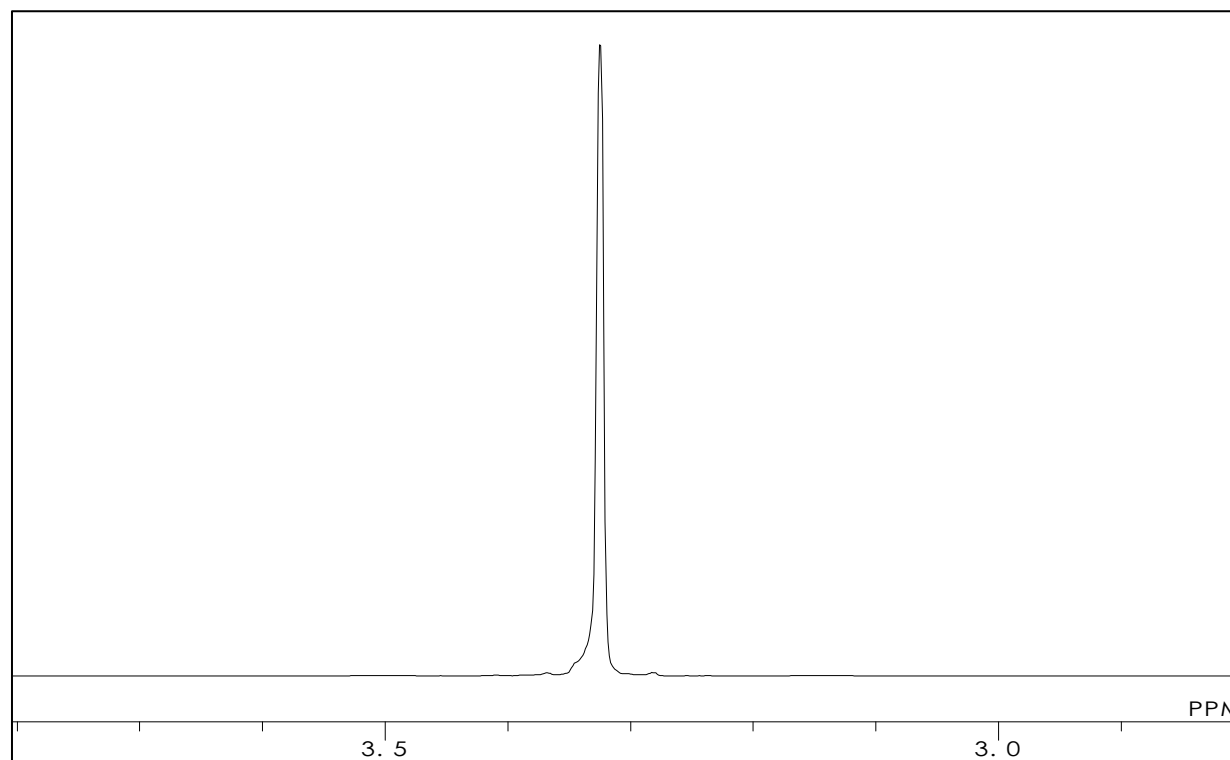
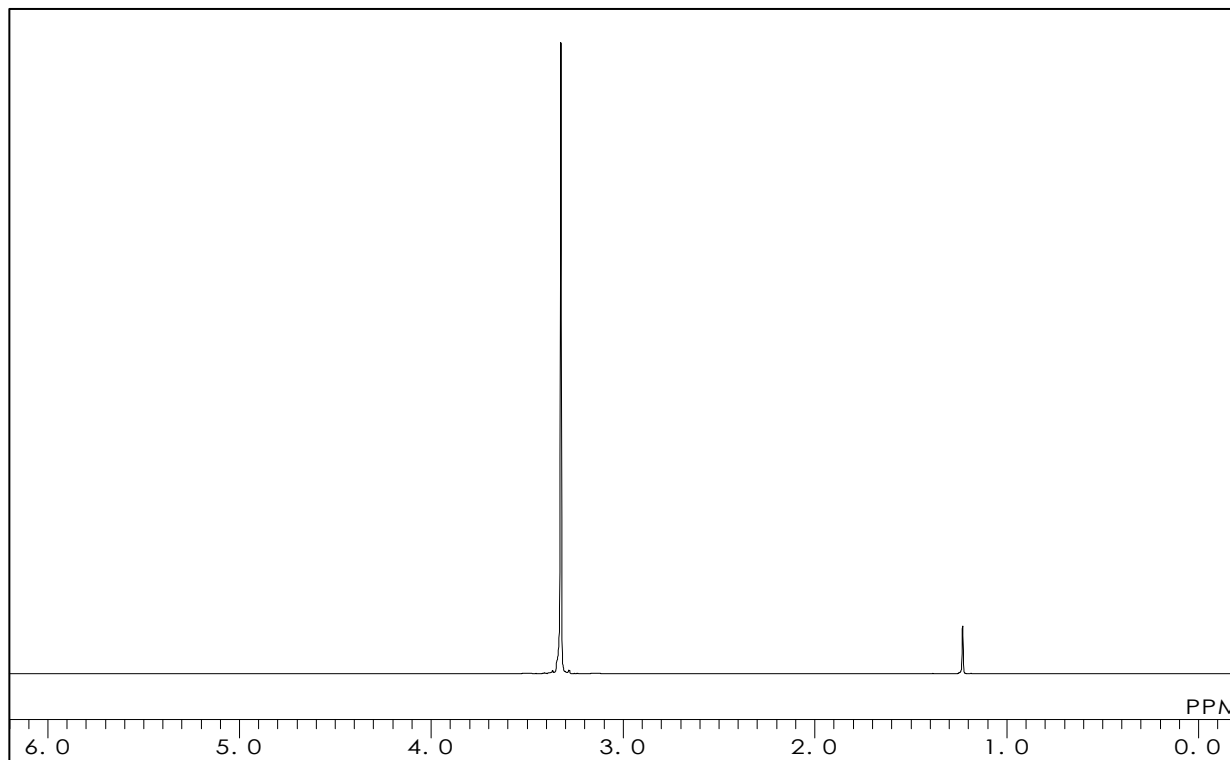
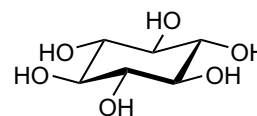
**scyllo-Inositol**

$C_6H_{12}O_6 = 180.16$  [488-59-5]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 23.0 °C



**I0634**

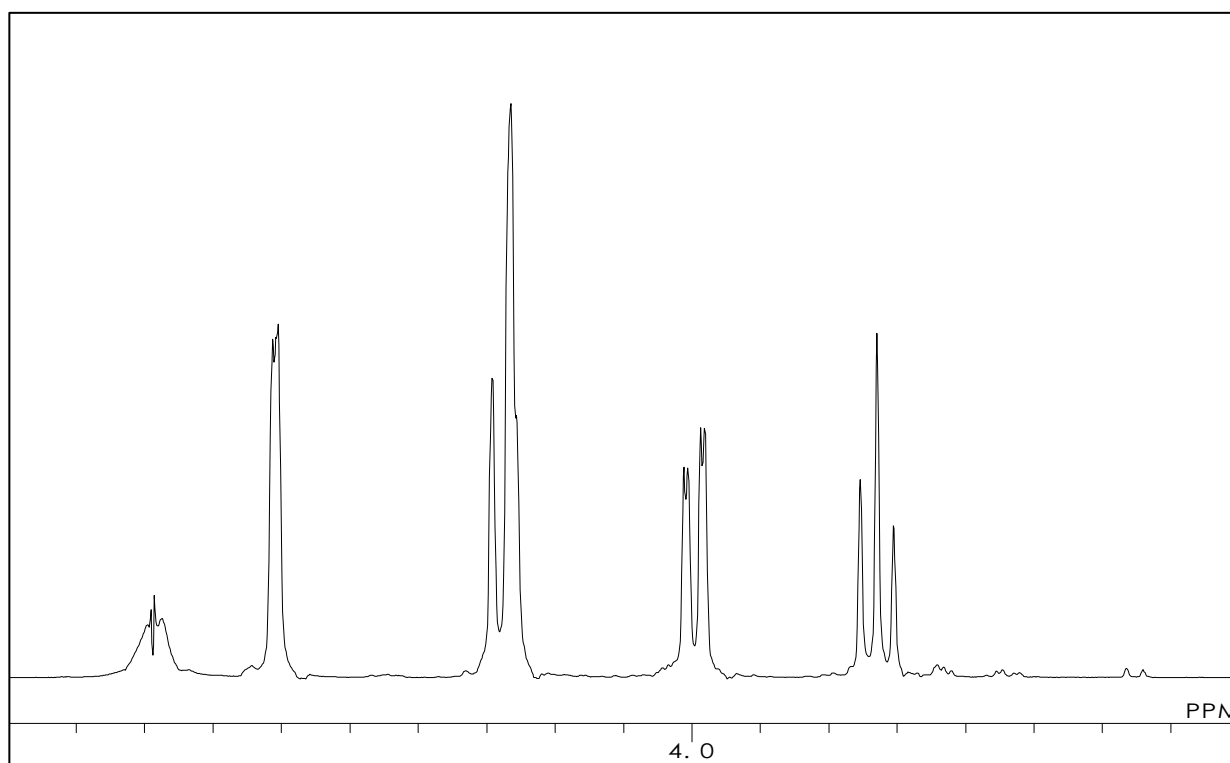
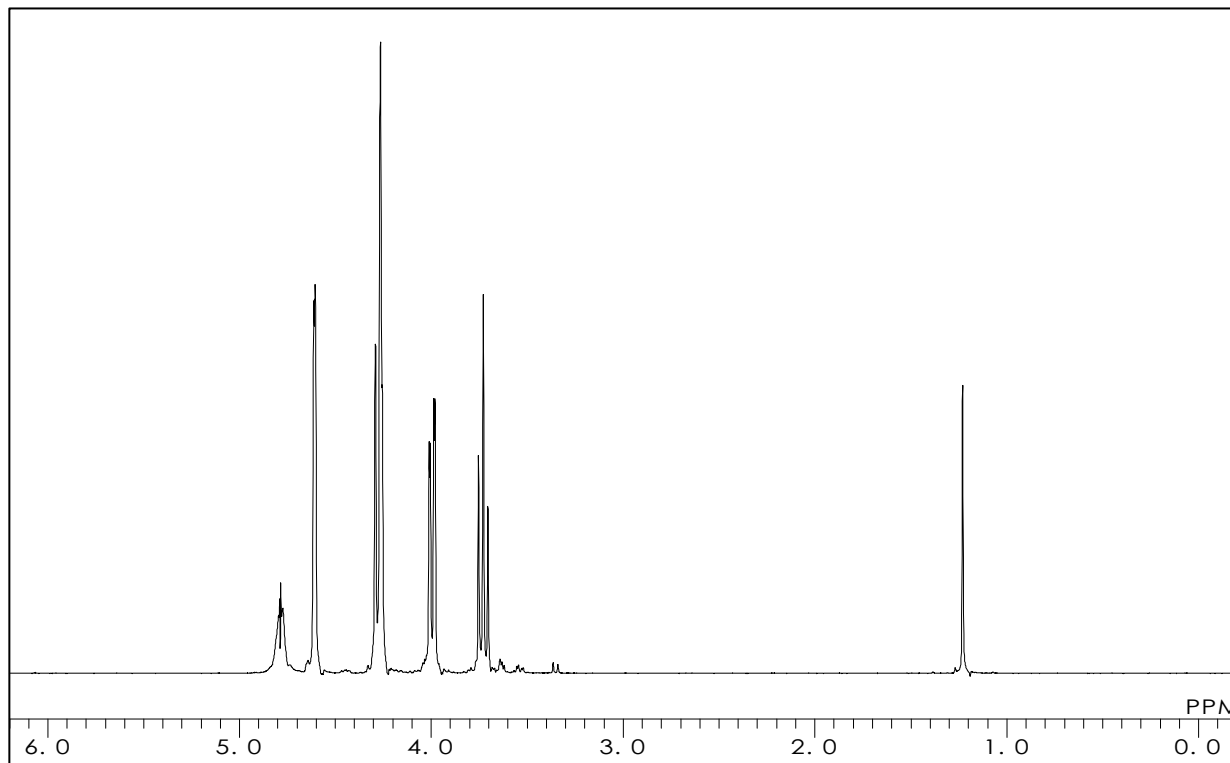
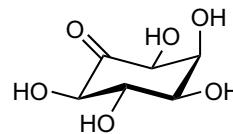
**1L-*epi*-2-Inosose**

$C_6H_{10}O_6 = 178.14$  [33471-33-9]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 22.2 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**Q0070**

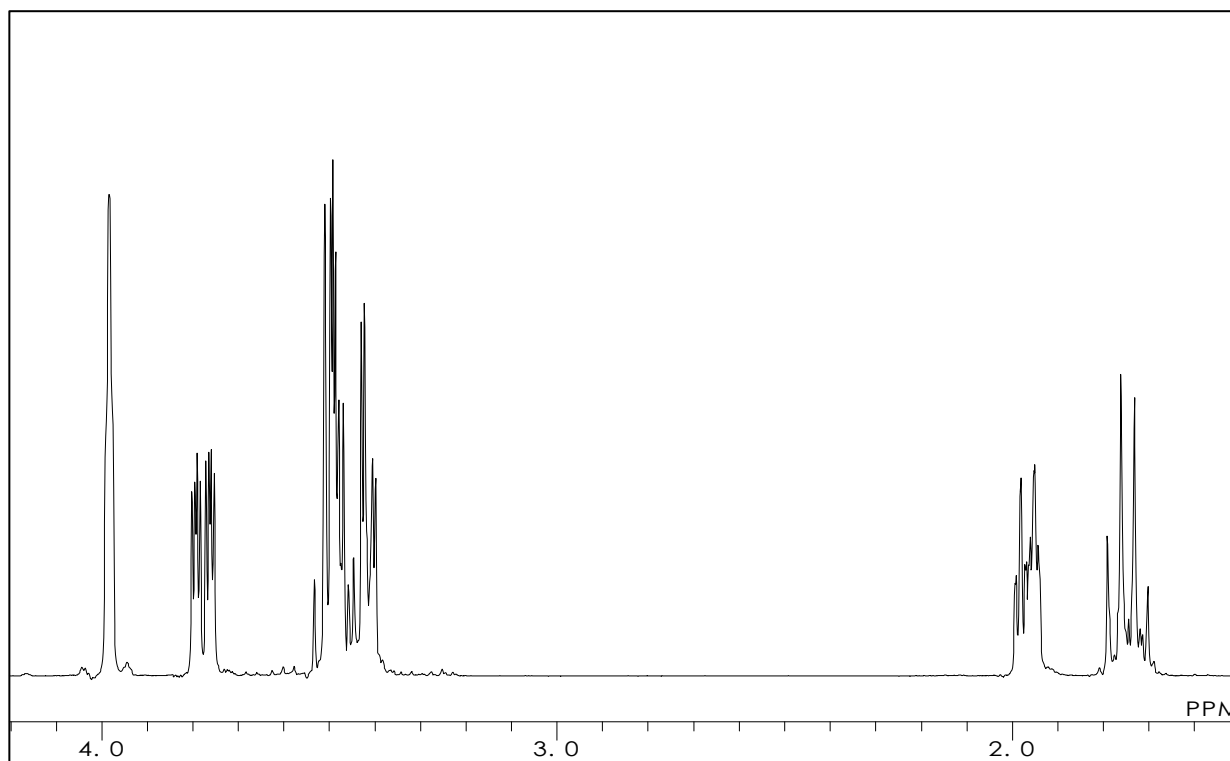
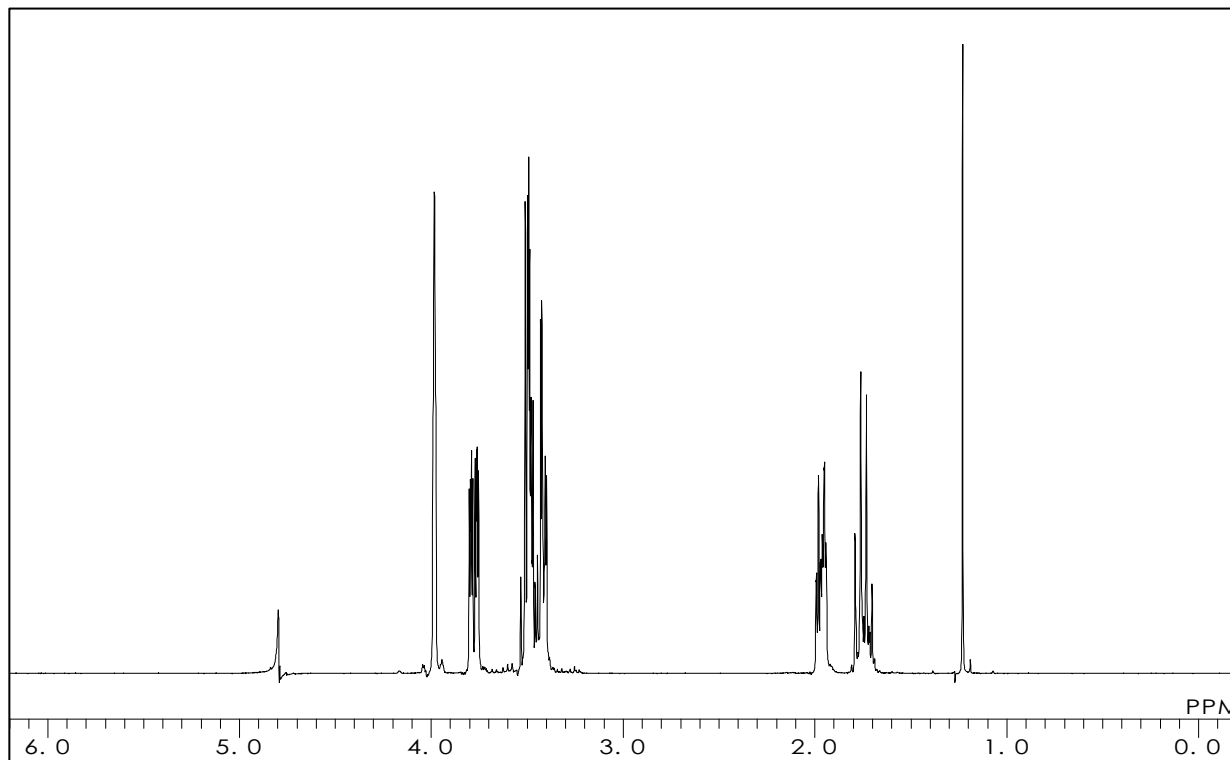
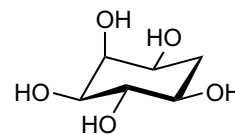
**(+)-*epi*-Quercitol**

$C_6H_{12}O_5 = 164.16$  [131435-06-8]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 22.0 °C



**Q0071**

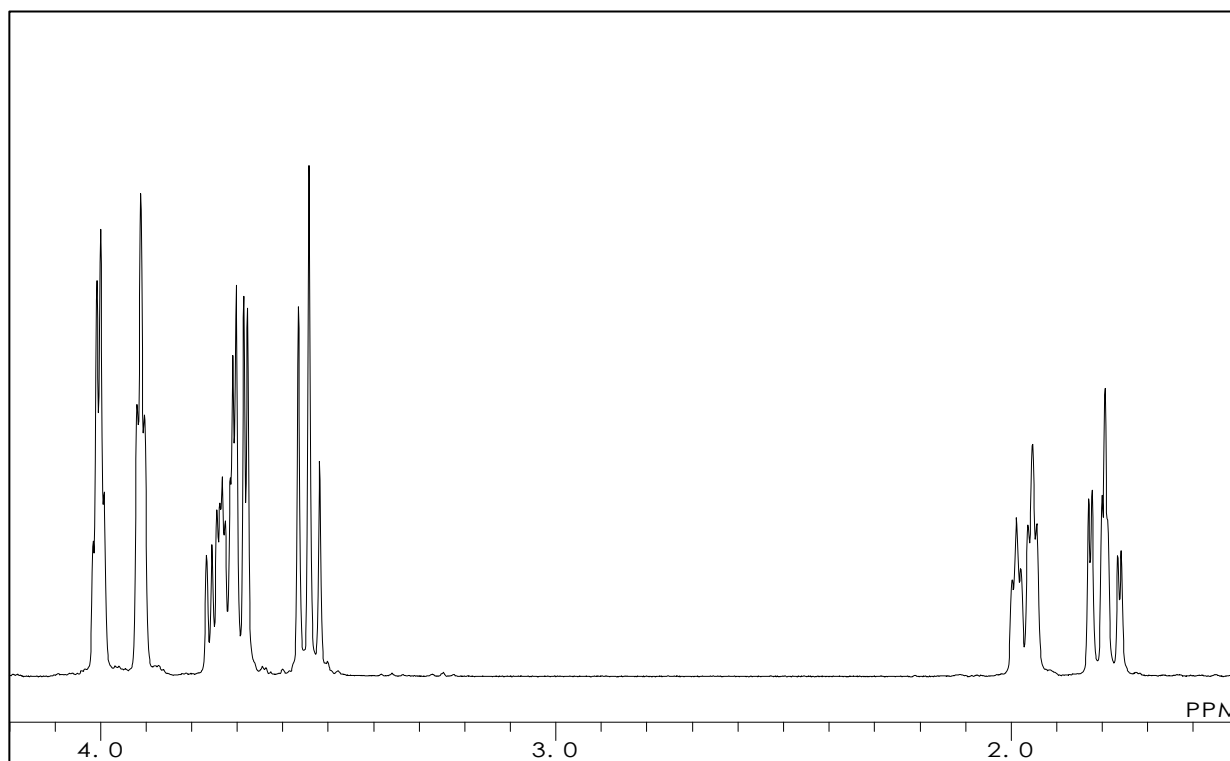
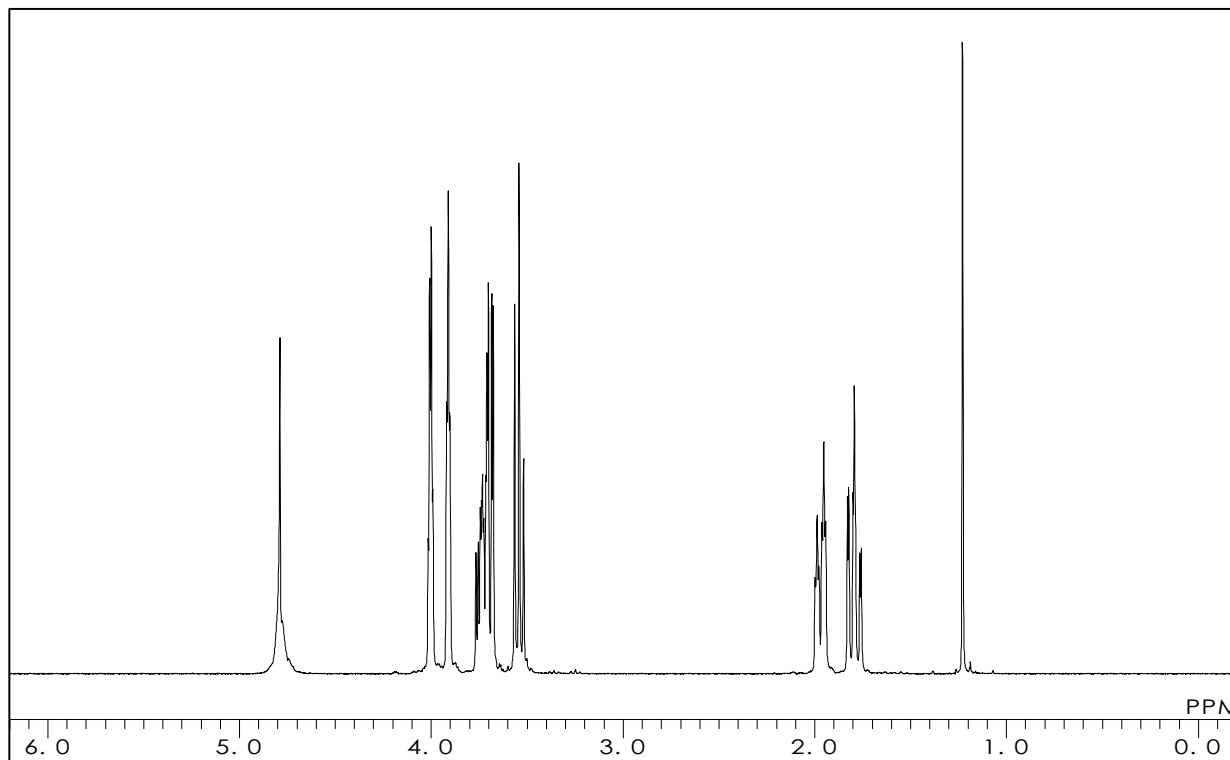
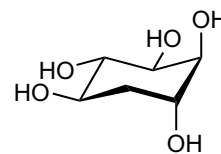
**(+)-proto-Quercitol**

$C_6H_{12}O_5 = 164.16$  [488-73-3]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 22.5 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。



**D5294**

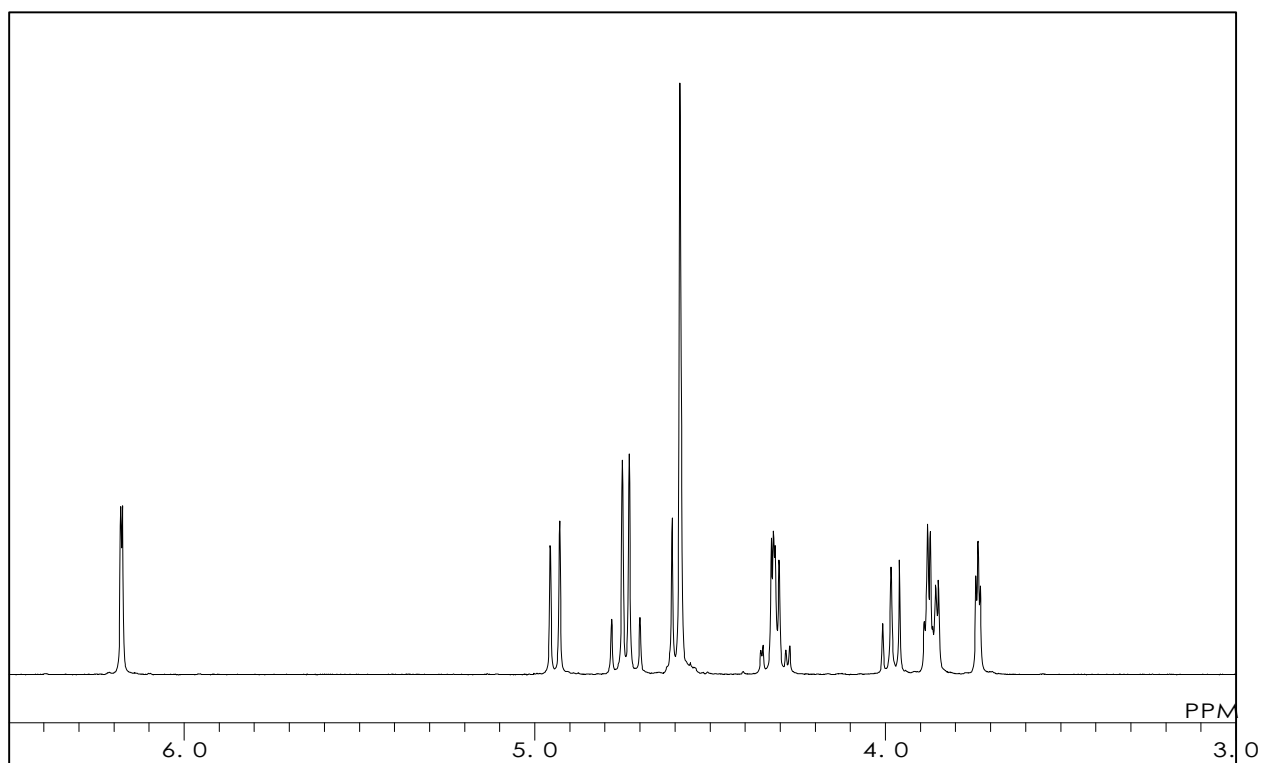
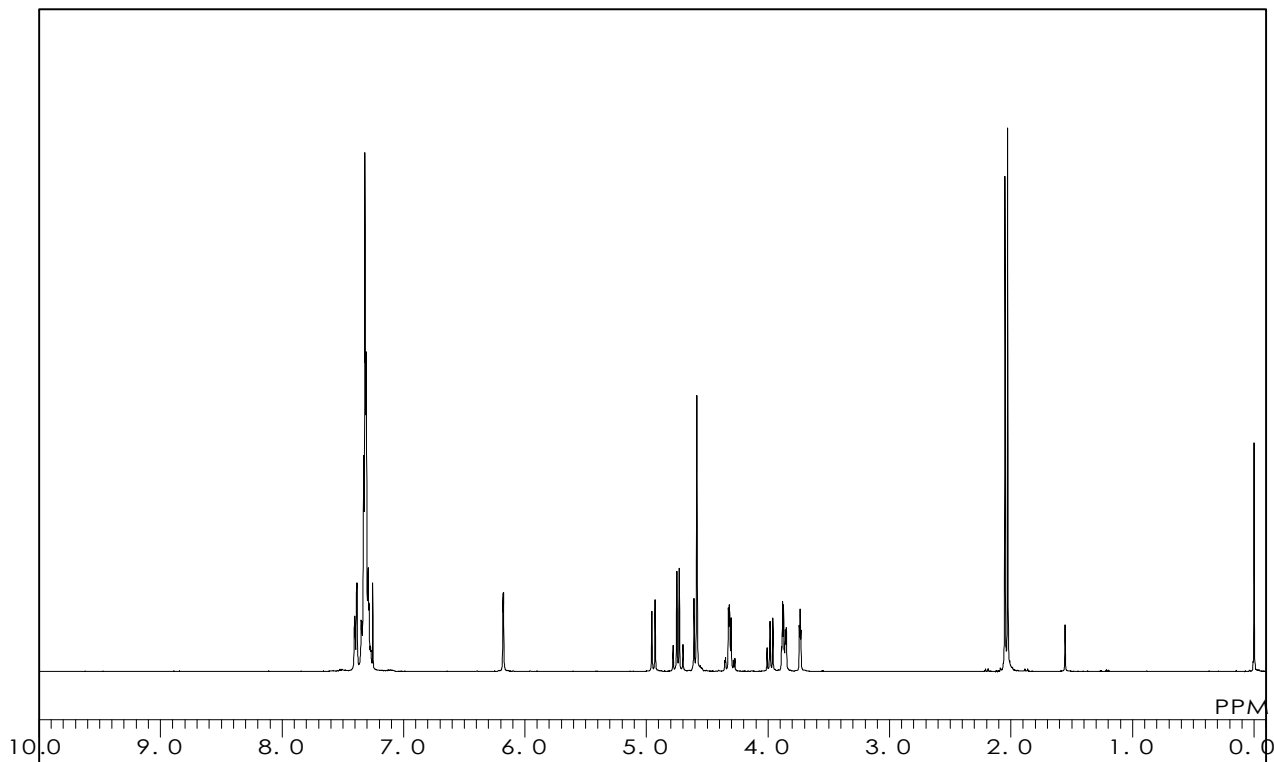
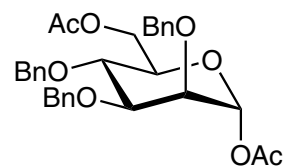
**1,6-Di-O-acetyl-2,3,4-tri-O-benzyl- $\alpha$ -D-mannopyranose**

$C_{31}H_{34}O_8 = 534.61$  [65556-30-1]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 27.1 °C



Please refrain from the conversion of these data without permission. These data have been released on our homepage.

**M2435**

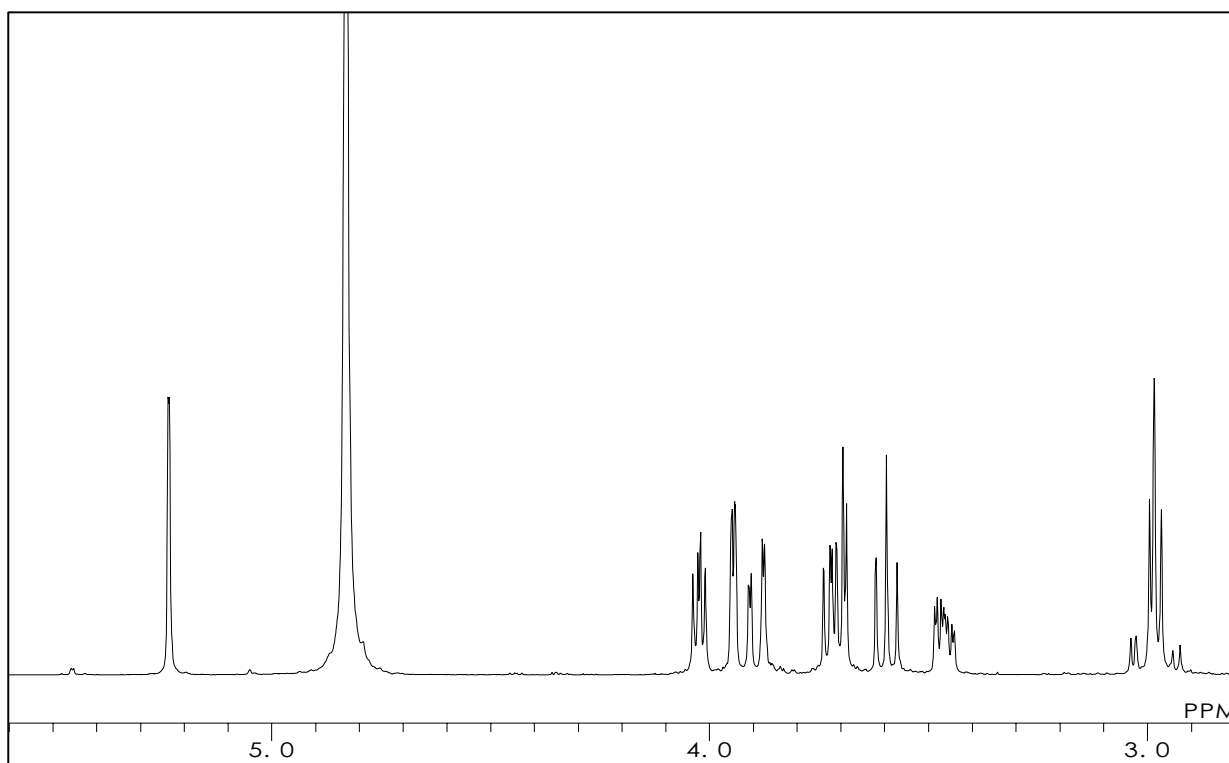
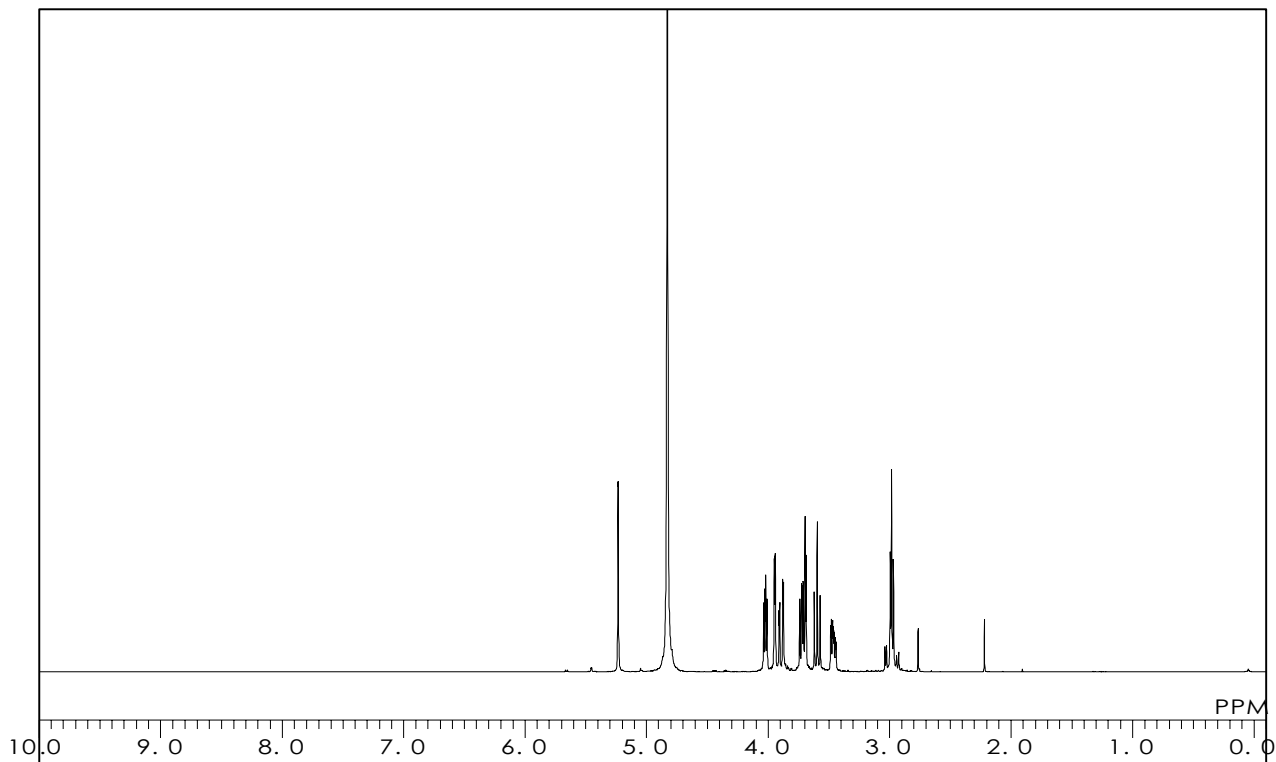
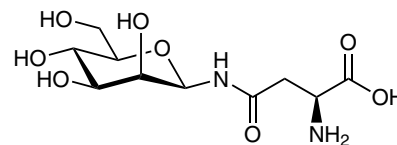
**$N^{\omega}$ -( $\beta$ -D-Mannopyranosyl)-L-asparagine**

$C_{10}H_{18}N_2O_8 = 294.26$  [41355-52-6]

Solvent :  $D_2O$

Internal Standard : Acetone ( $\delta$  2.22)

Measured Temperature : 19.6 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**M1646**

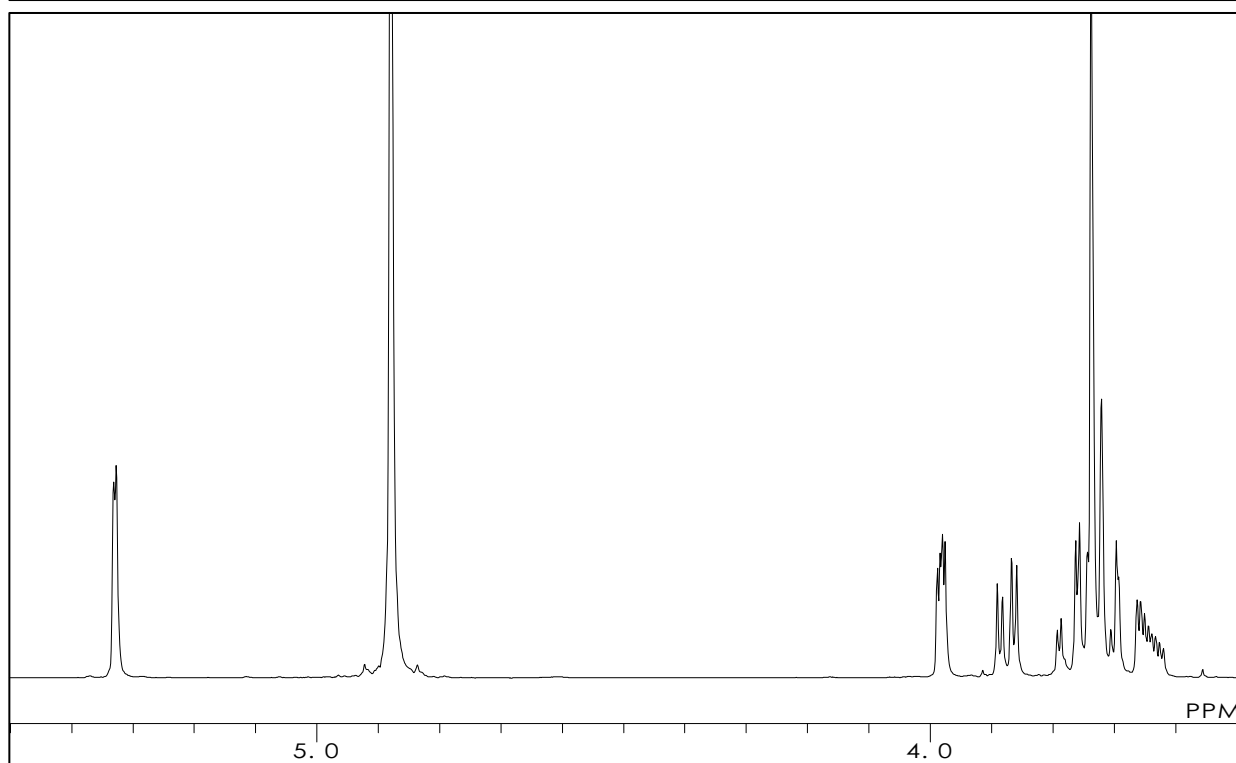
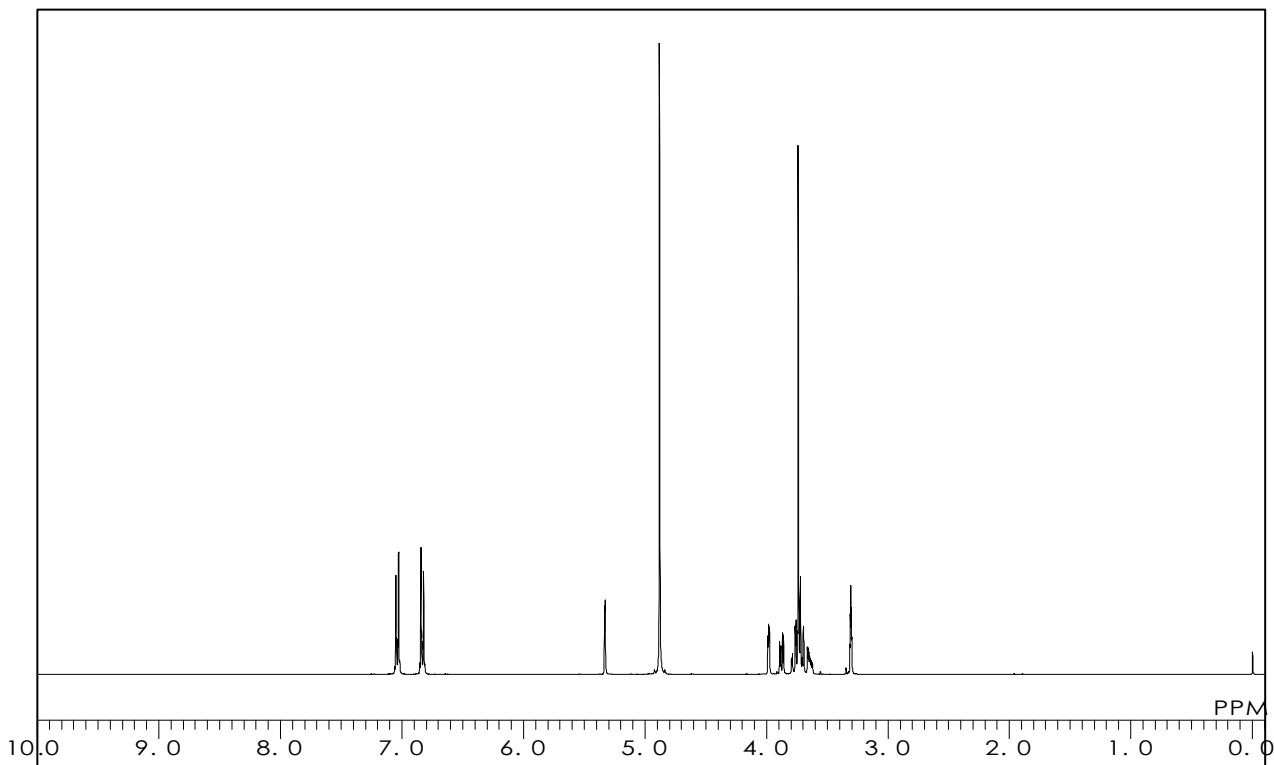
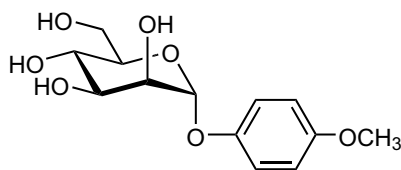
**4-Methoxyphenyl  $\alpha$ -D-Mannopyranoside**

$C_{13}H_{18}O_7 = 286.28$  [28541-75-5]

Solvent :  $CD_3OD$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 21.2 °C



**M1647**

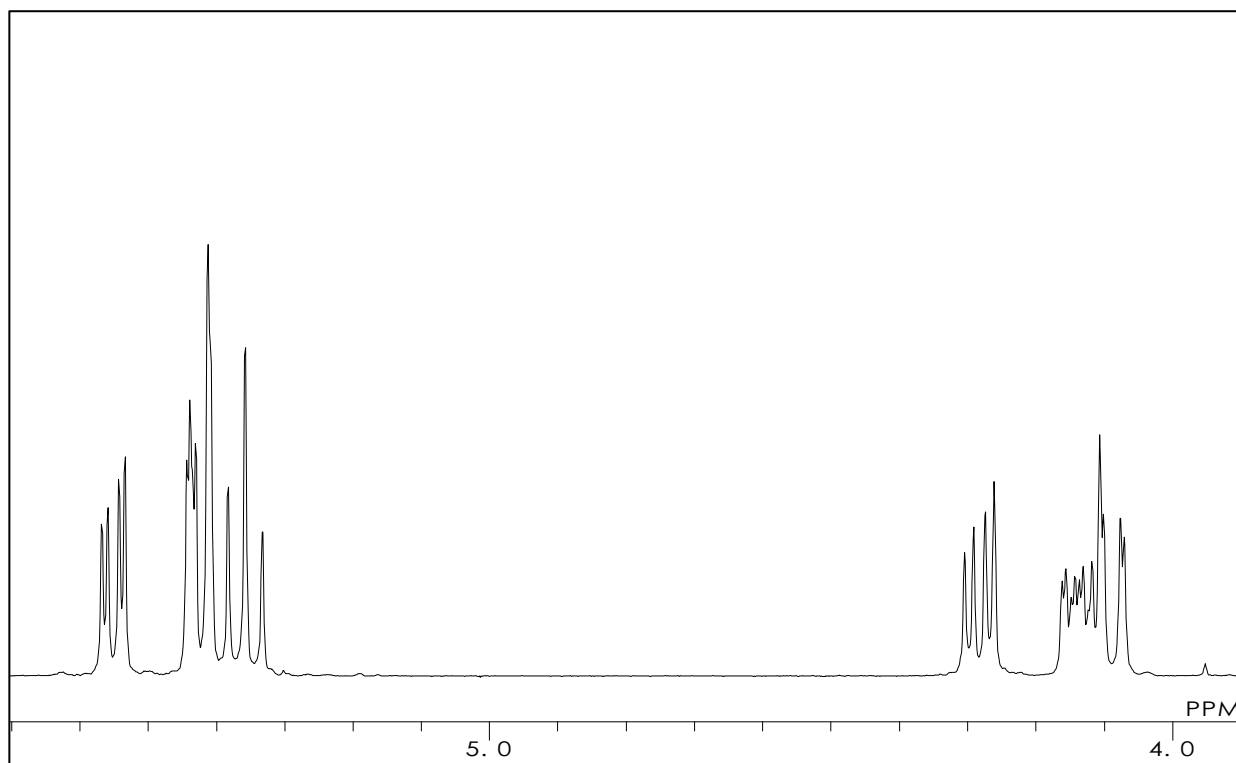
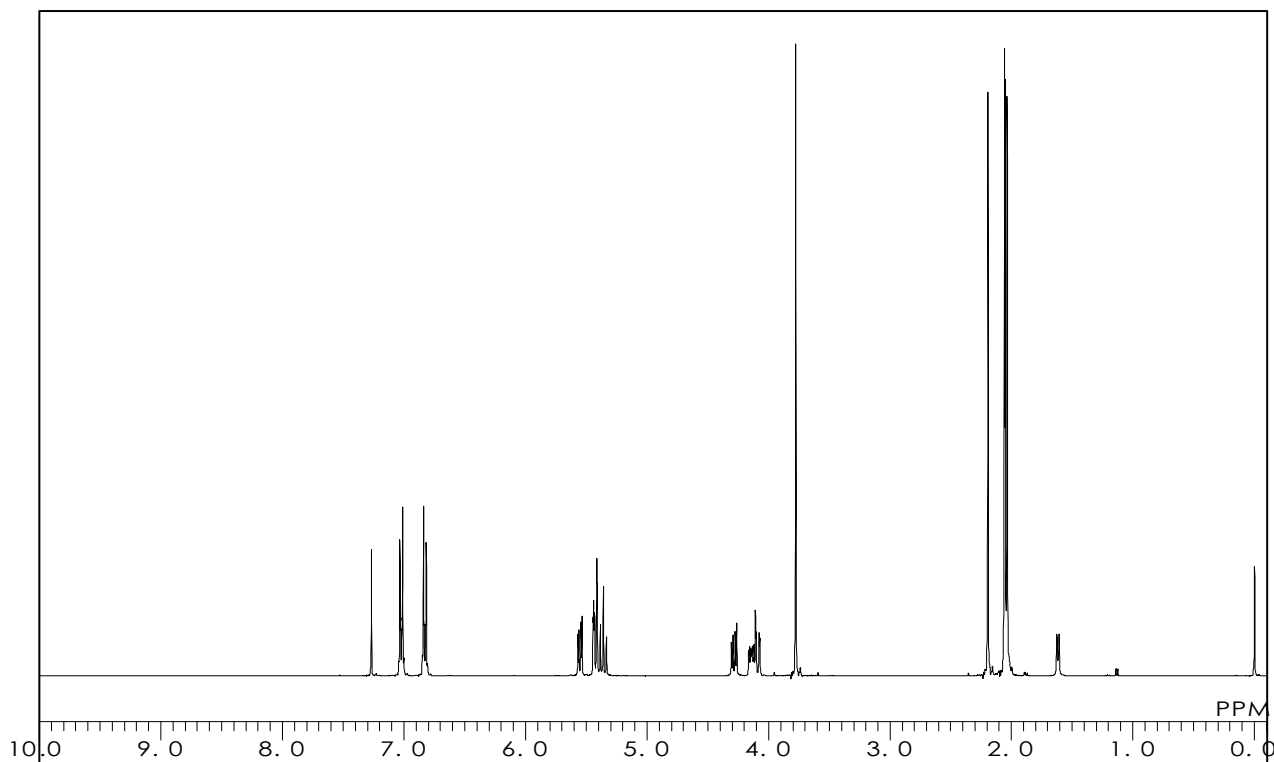
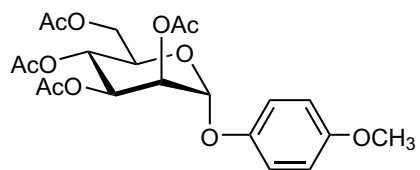
**4-Methoxyphenyl 2,3,4,6-Tetra-O-acetyl- $\alpha$ -D-mannopyranoside**

$C_{21}H_{26}O_{11}$  = 454.43 [17042-40-9]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 22.3 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**M1501**

**Methyl 2,3,4,6-Tetra-O-acetyl-1-thio- $\alpha$ -D-mannopyranoside**

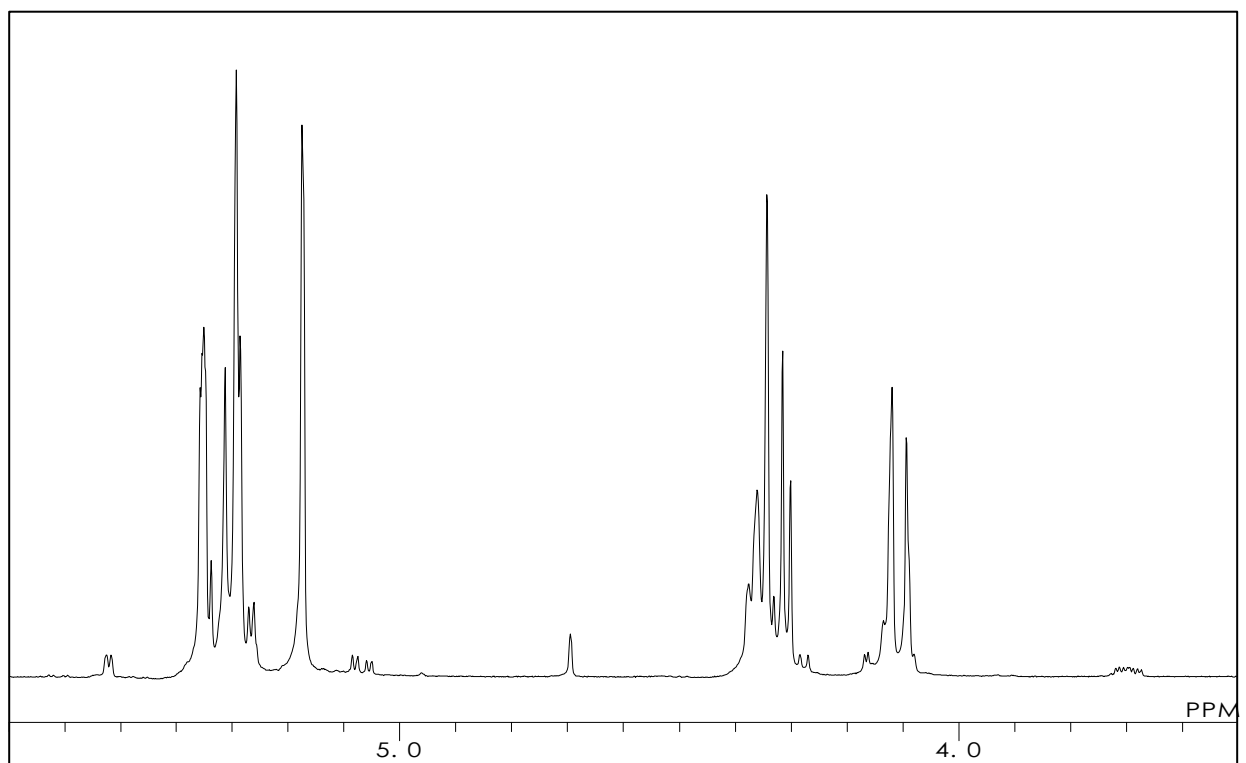
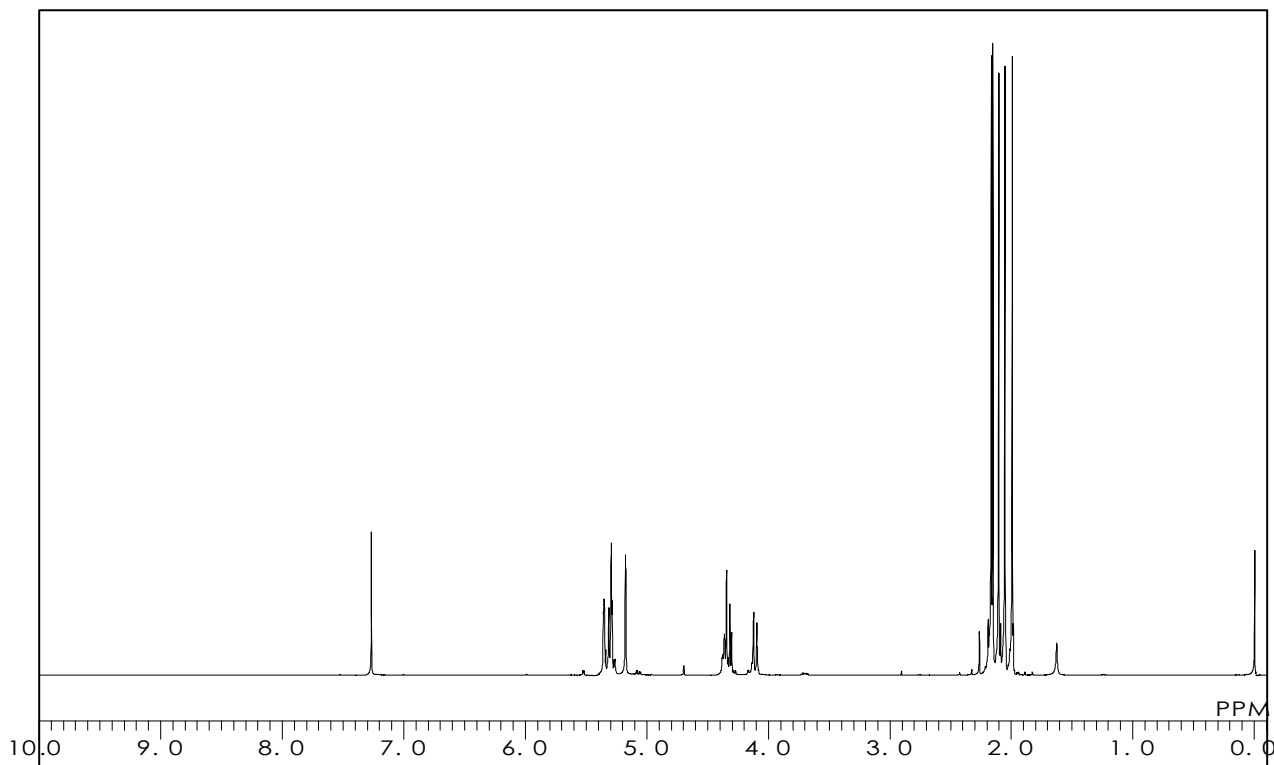
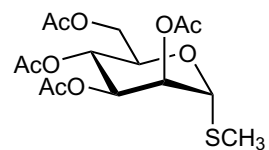
(contains ca.5%  $\beta$ -isomer)

$C_{15}H_{22}O_9S = 378.39$  [64550-71-6]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 21.9 °C



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**P1514**

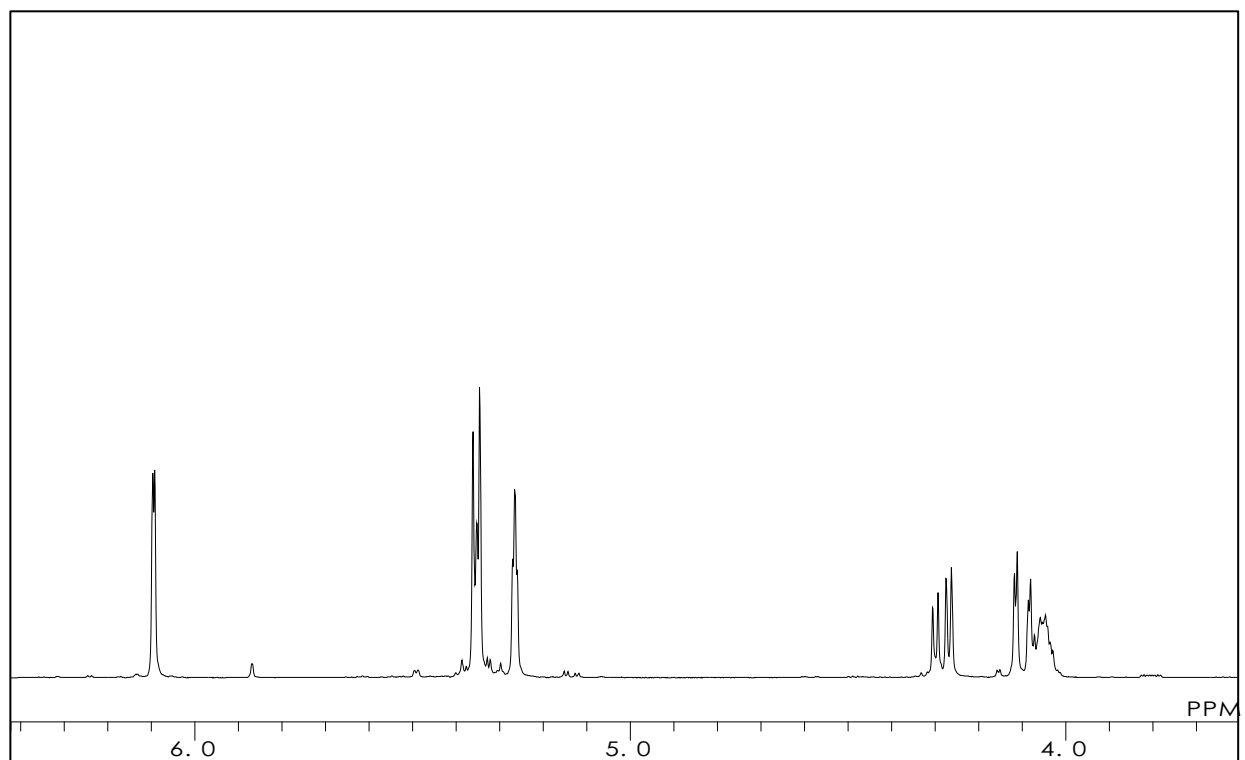
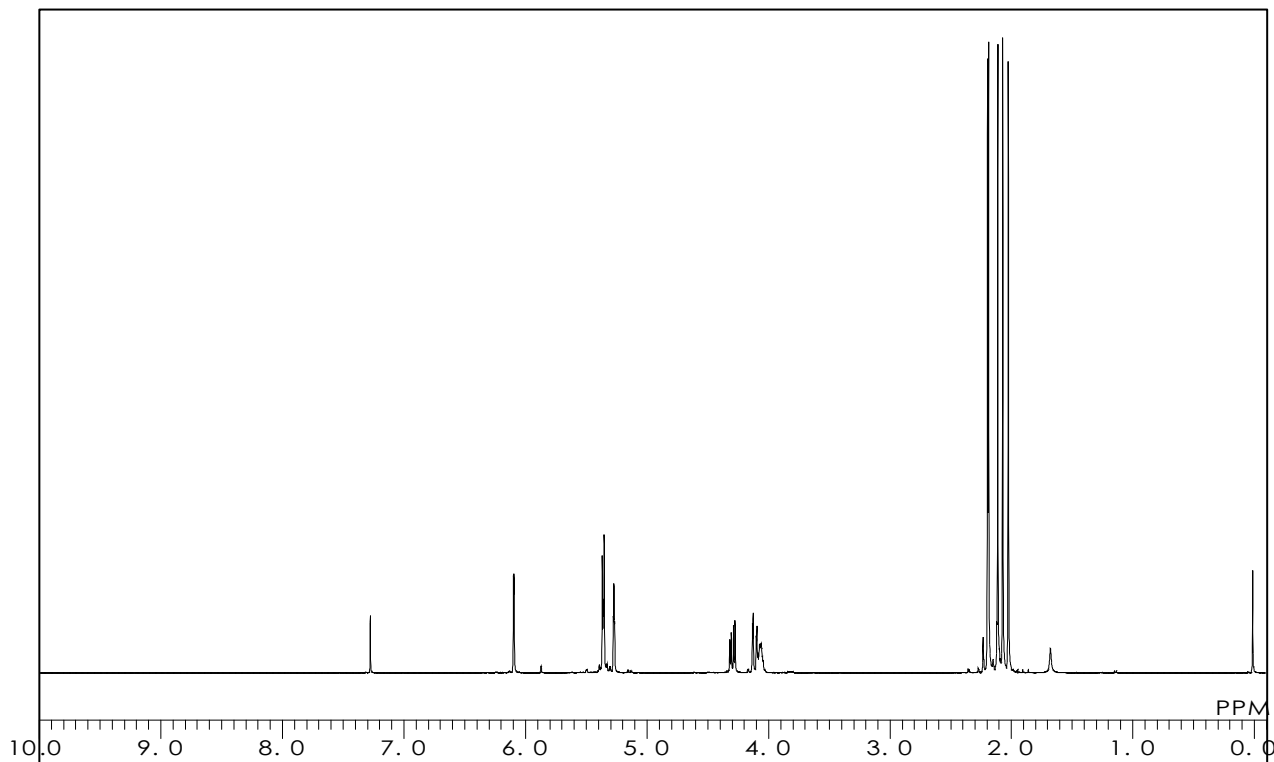
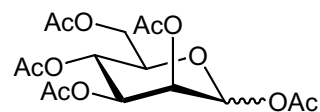
**1,2,3,4,6-Penta-O-acetyl-D-mannopyranose**

$C_{16}H_{22}O_{11}$  = 390.34 [25941-03-1]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 21.6 °C



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**P1803**

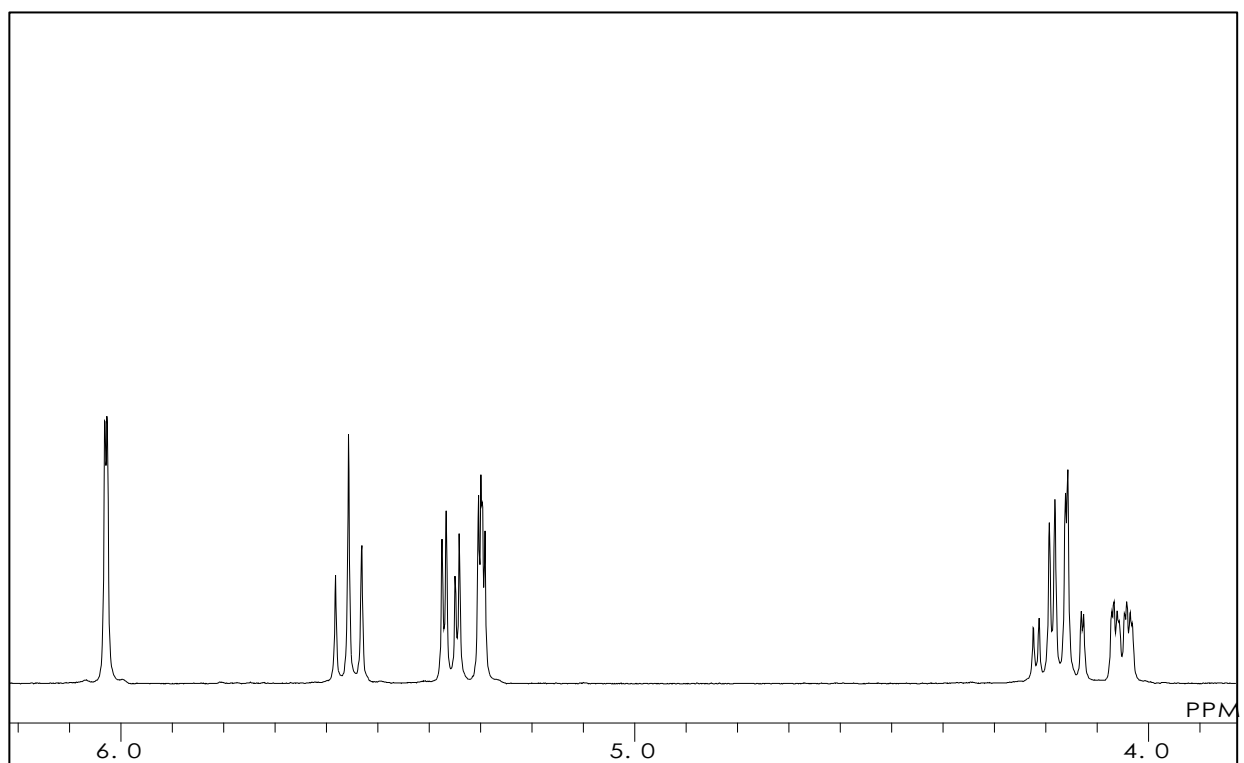
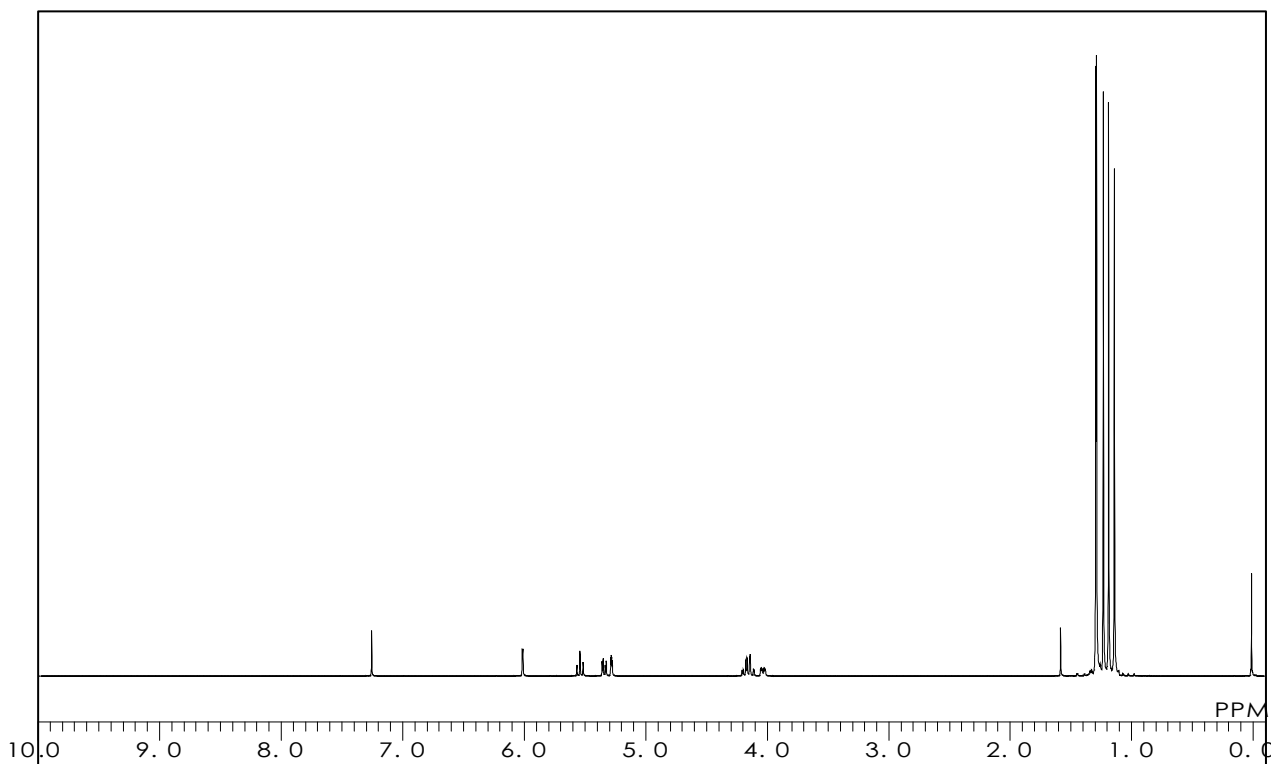
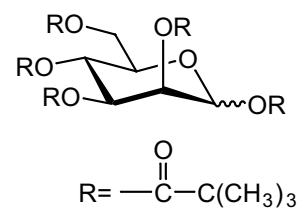
**1,2,3,4,6-Penta-O-pivaloyl-D-mannopyranose**

$C_{31}H_{52}O_{11}$  = 600.75 [220017-47-0]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 21.1 °C



**P2521**

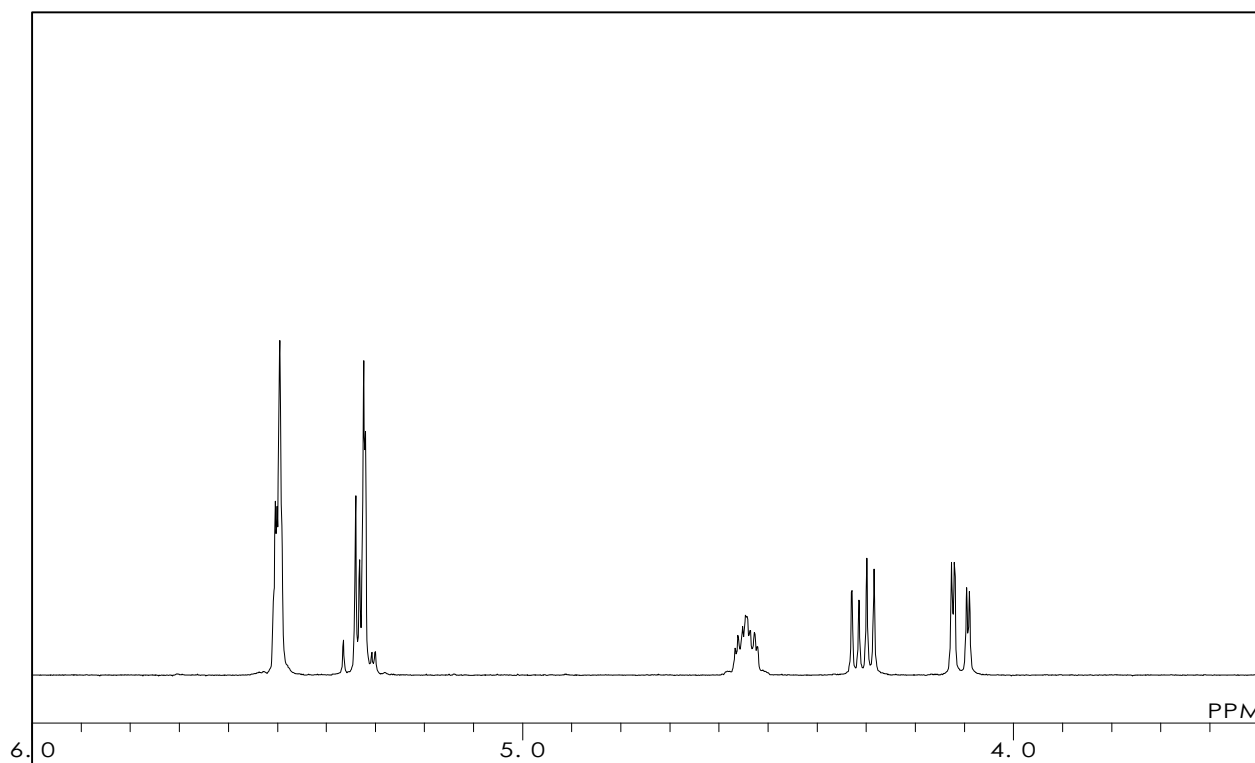
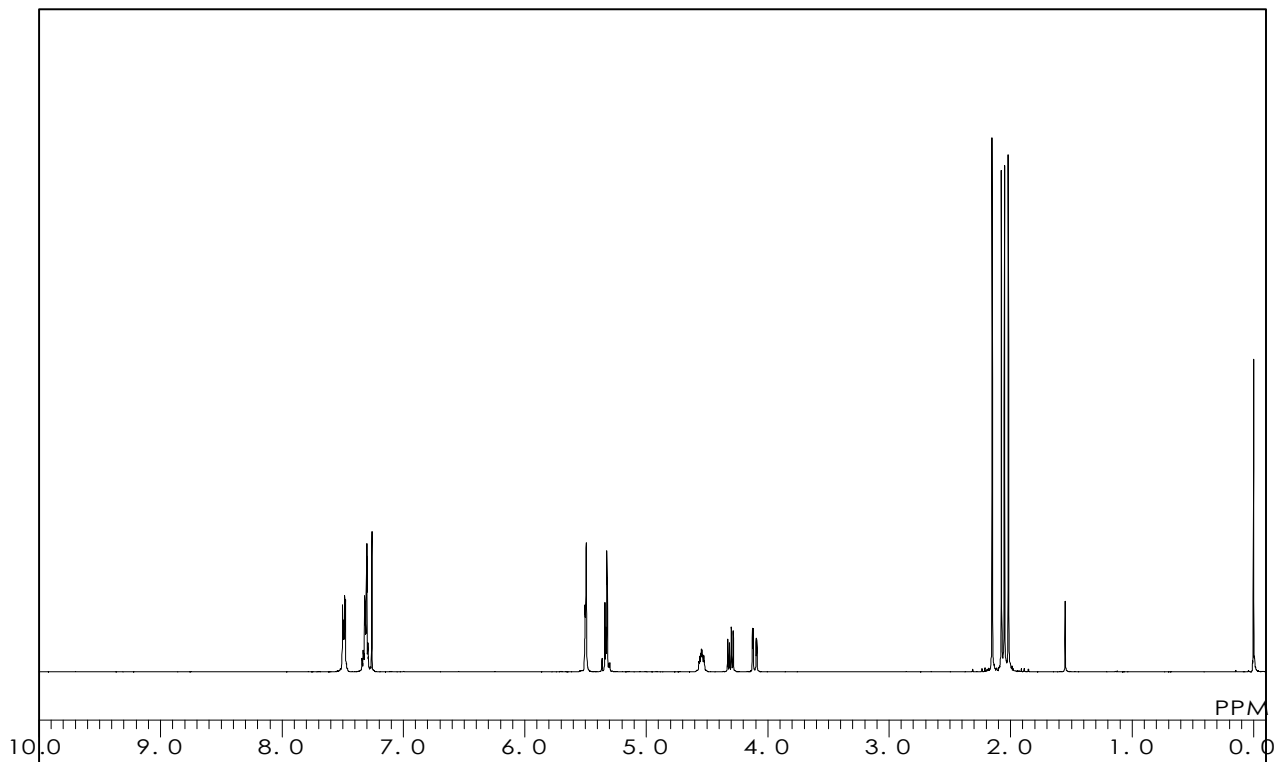
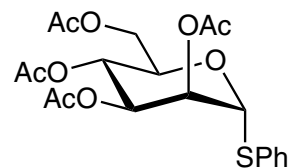
**Phenyl 2,3,4,6-Tetra-O-acetyl-1-thio- $\alpha$ -D-mannopyranoside**

$C_{20}H_{24}O_9S = 440.46$  [108032-93-5]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 27.1 °C



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**T2567**

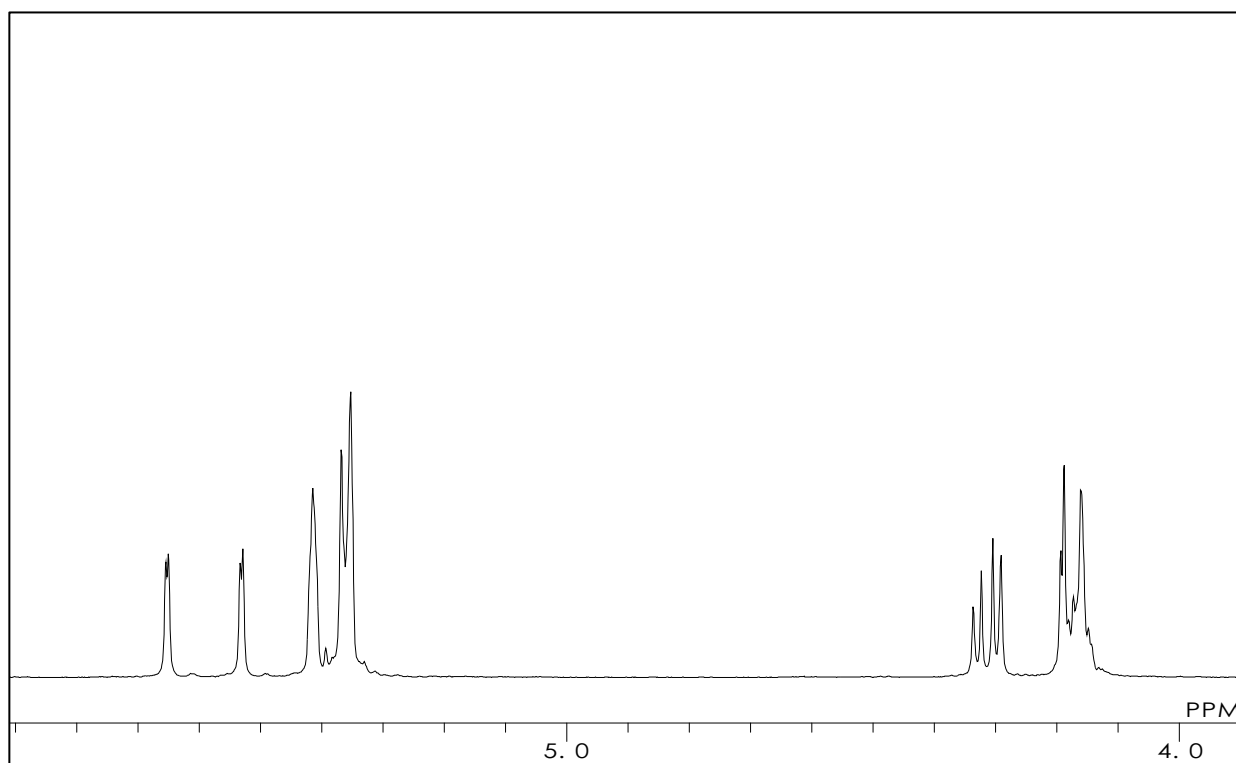
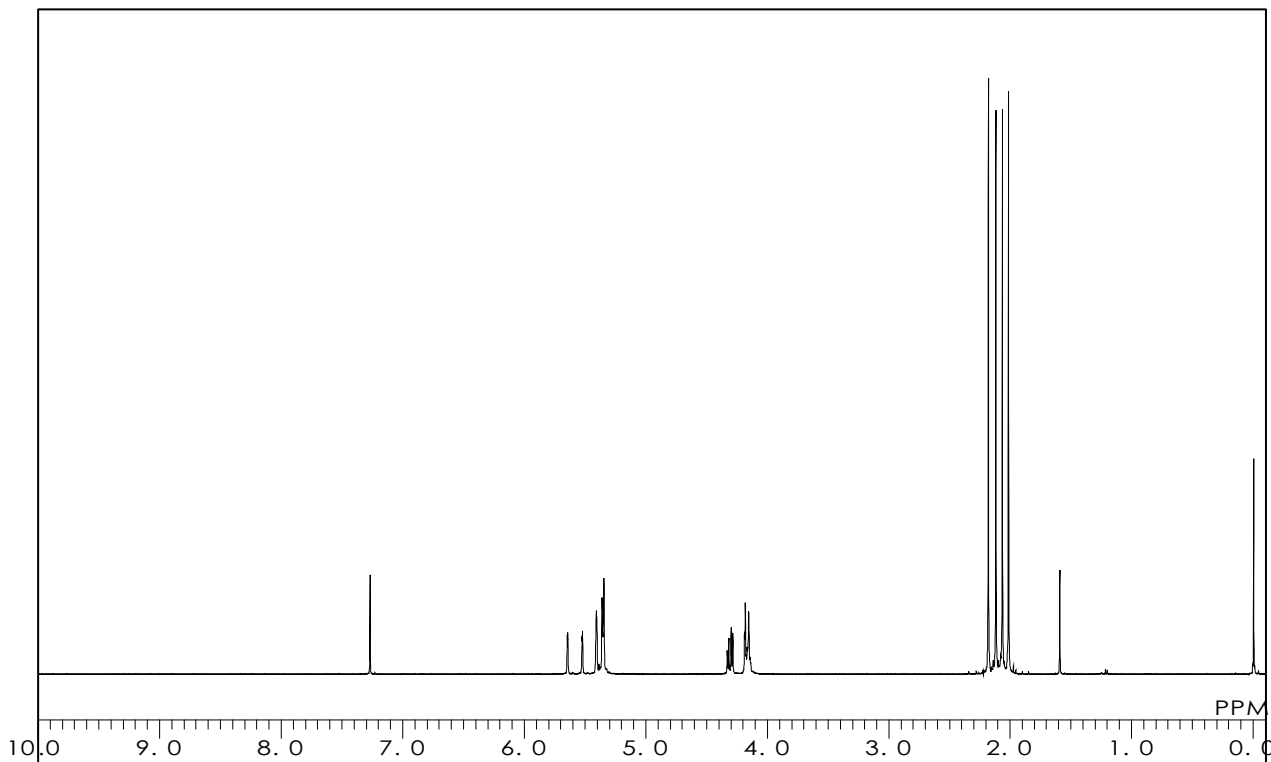
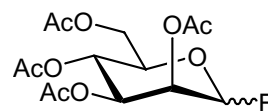
## 2,3,4,6-Tetra-O-acetyl-D-mannopyranosyl Fluoride

$C_{14}H_{19}FO_9 = 350.30$  [174511-17-2]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 20.9 °C



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T2307

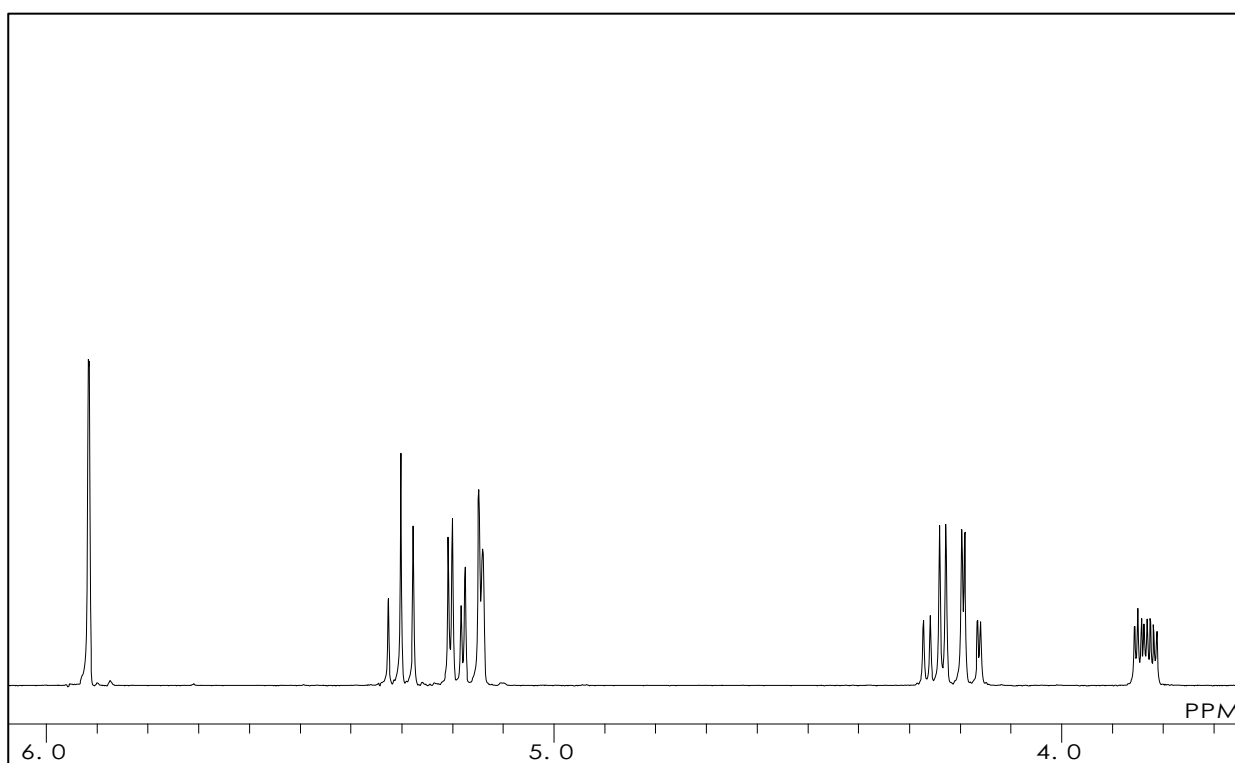
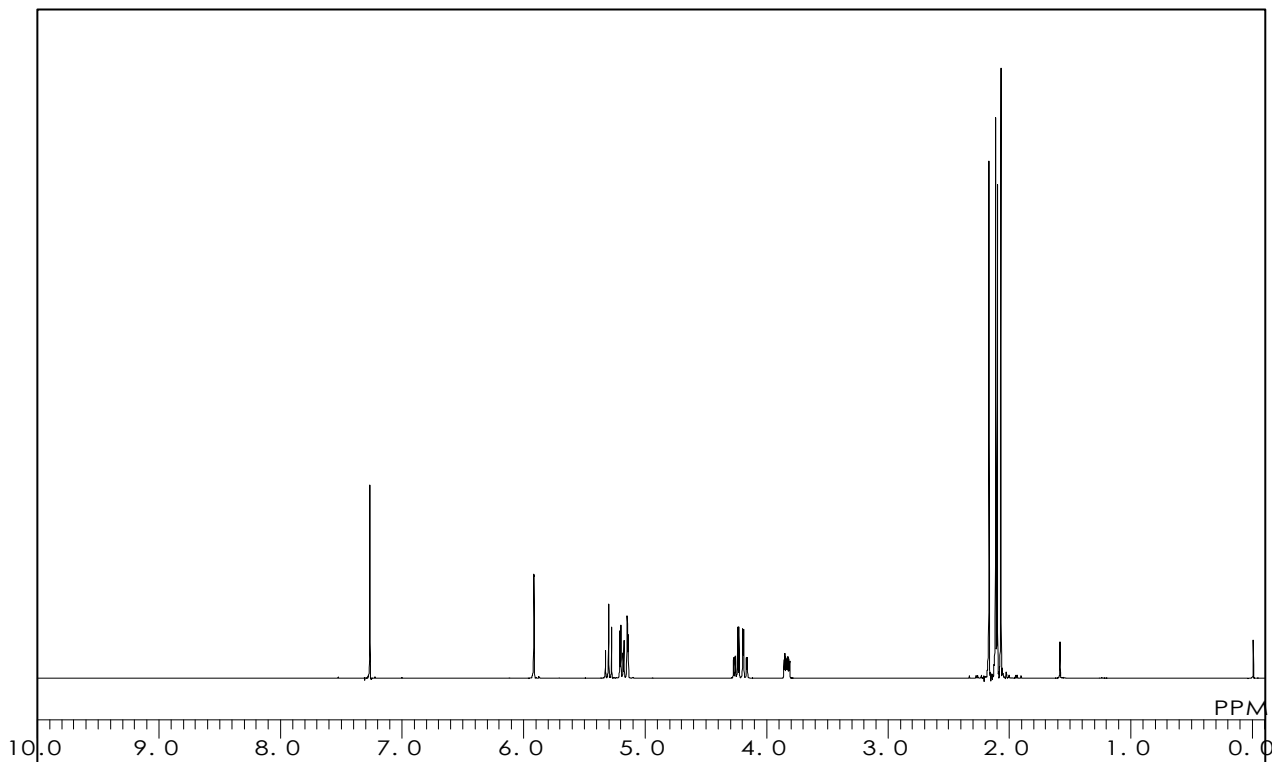
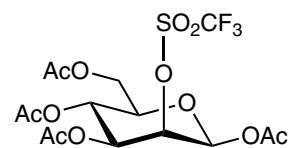
**1,3,4,6-Tetra-O-acetyl-2-O-(trifluoromethanesulfonyl)-  
β-D-mannopyranose**

C<sub>15</sub>H<sub>19</sub>F<sub>3</sub>O<sub>12</sub>S = 480.36 [92051-23-5]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 20.7 °C



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**T2568**

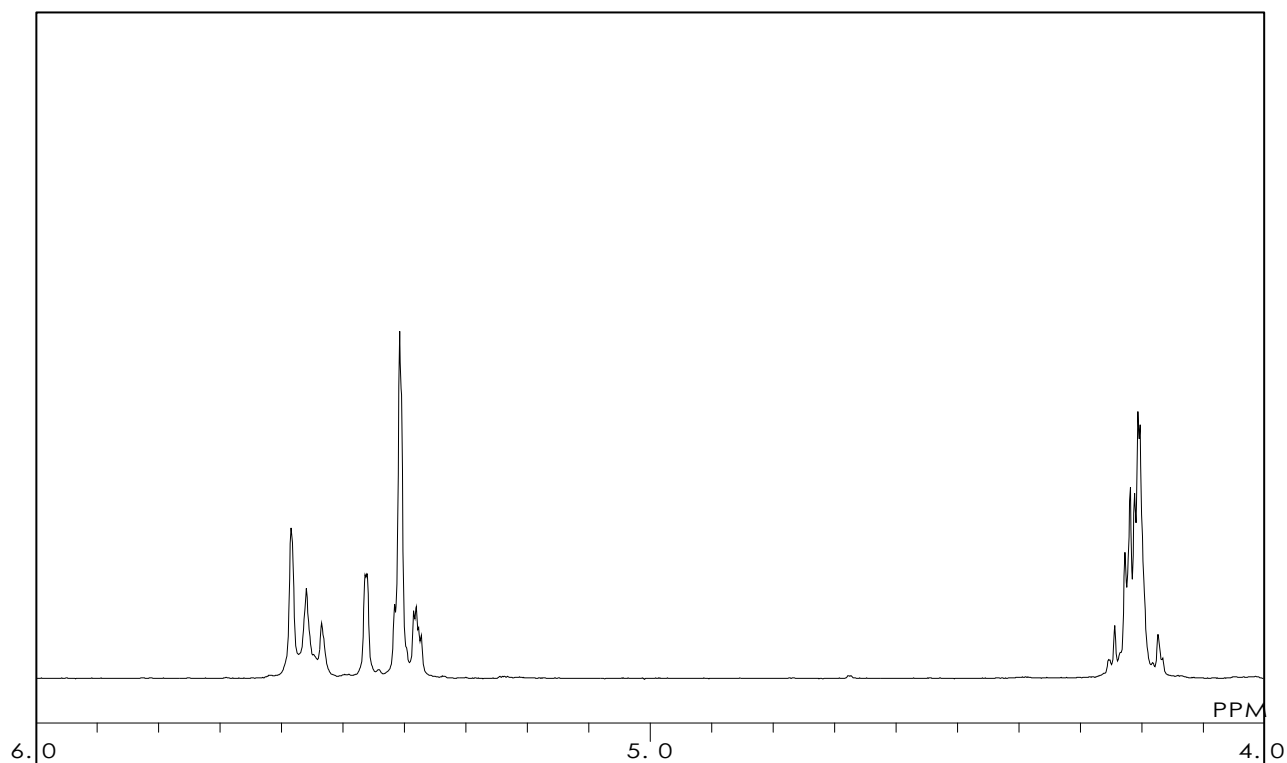
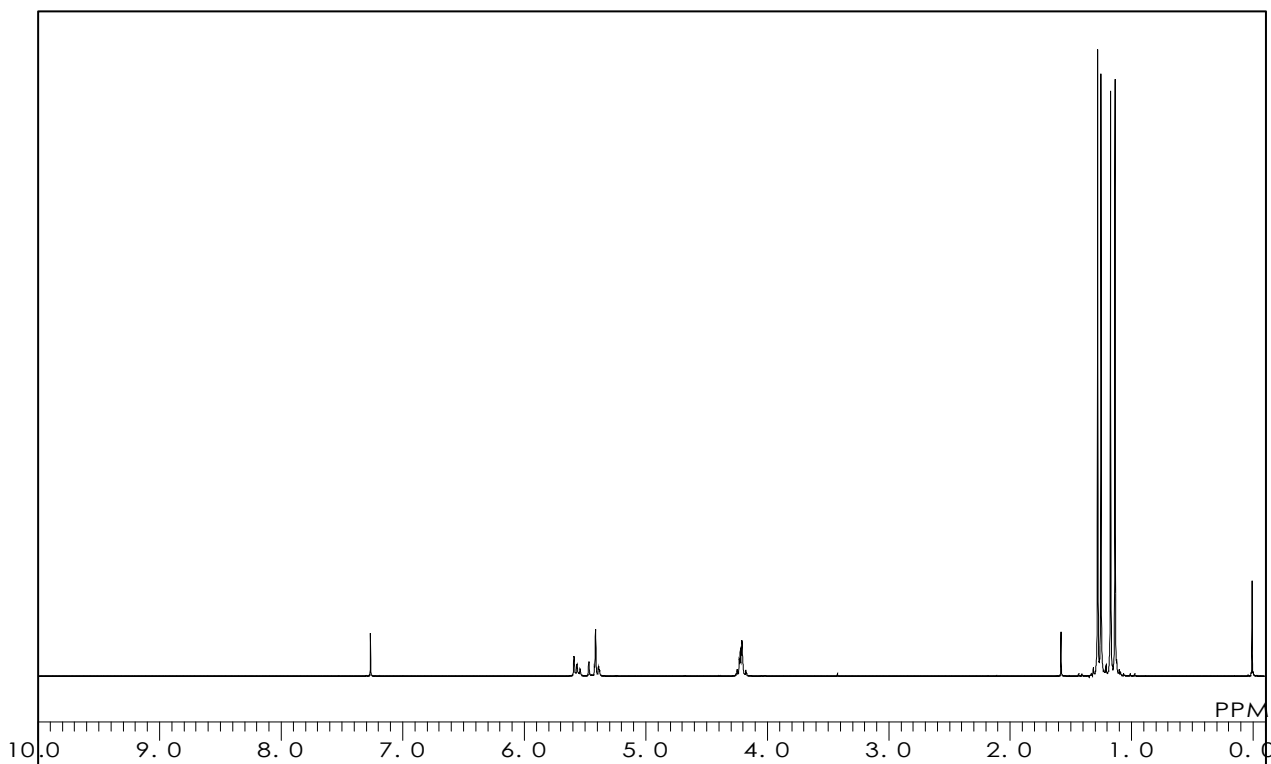
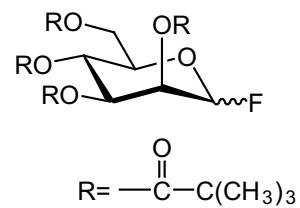
## 2,3,4,6-Tetra-O-pivaloyl-D-mannopyranosyl Fluoride

$C_{26}H_{43}FO_9 = 518.62$

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 21.7 °C



Please refrain from the conversion of these data without permission. These data have been released on our homepage.

G0463

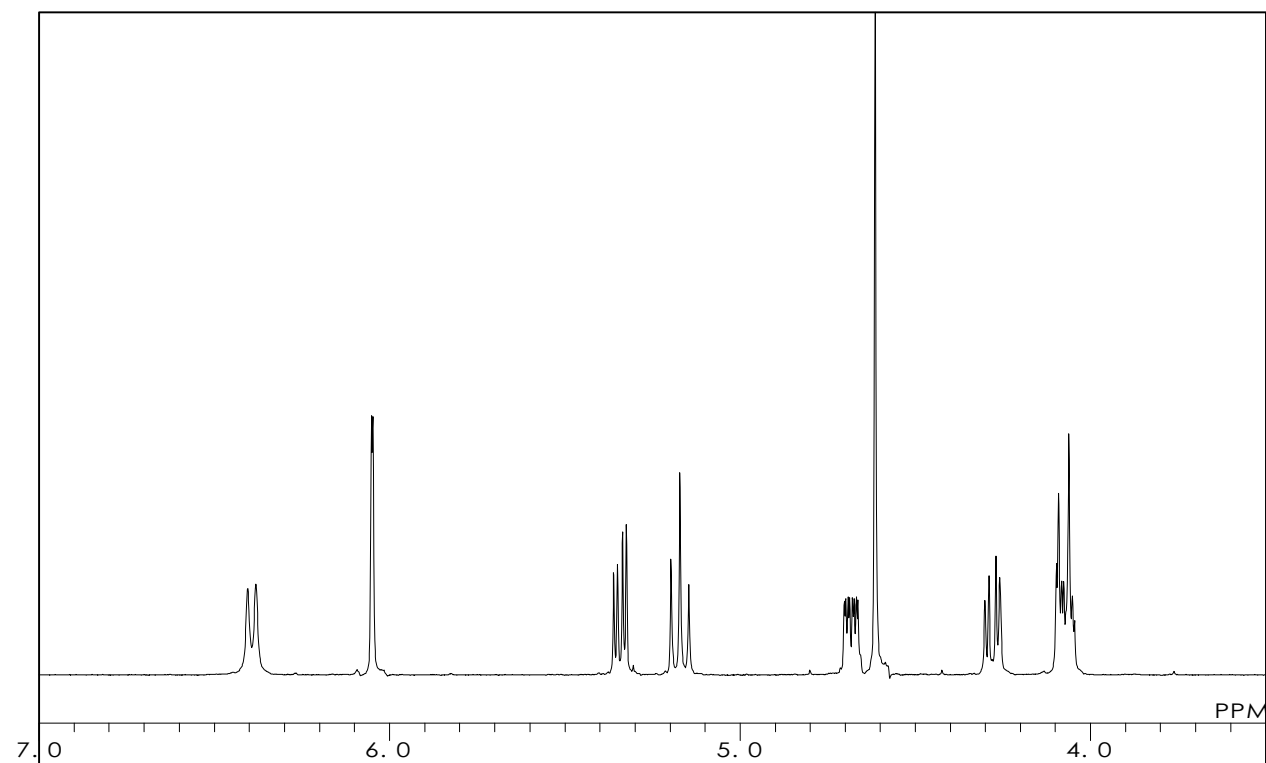
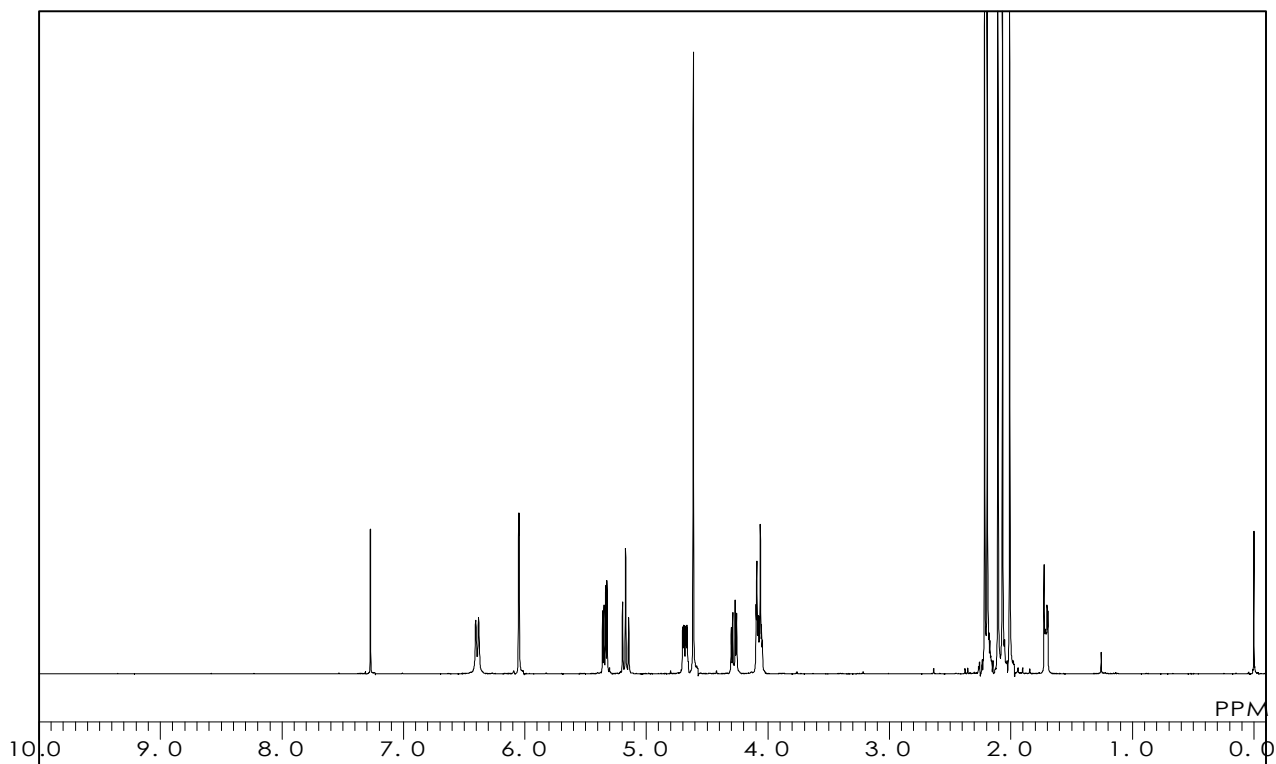
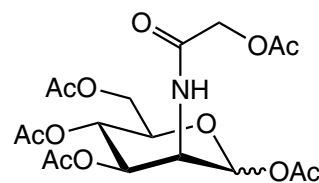
## N-Glycolyl-D-mannosamine Pentaacetate

$C_{18}H_{25}NO_{12}$  = 447.39 [258824-38-3]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 24.5 °C



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**T1733**

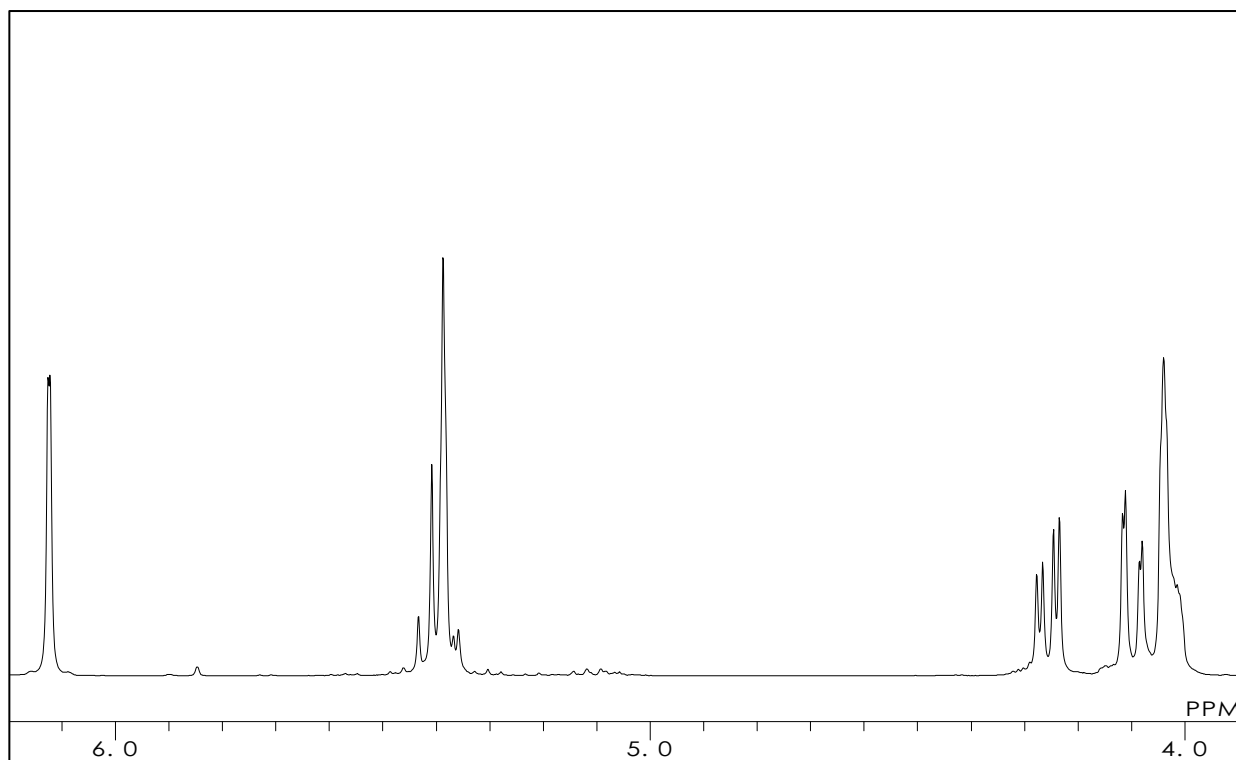
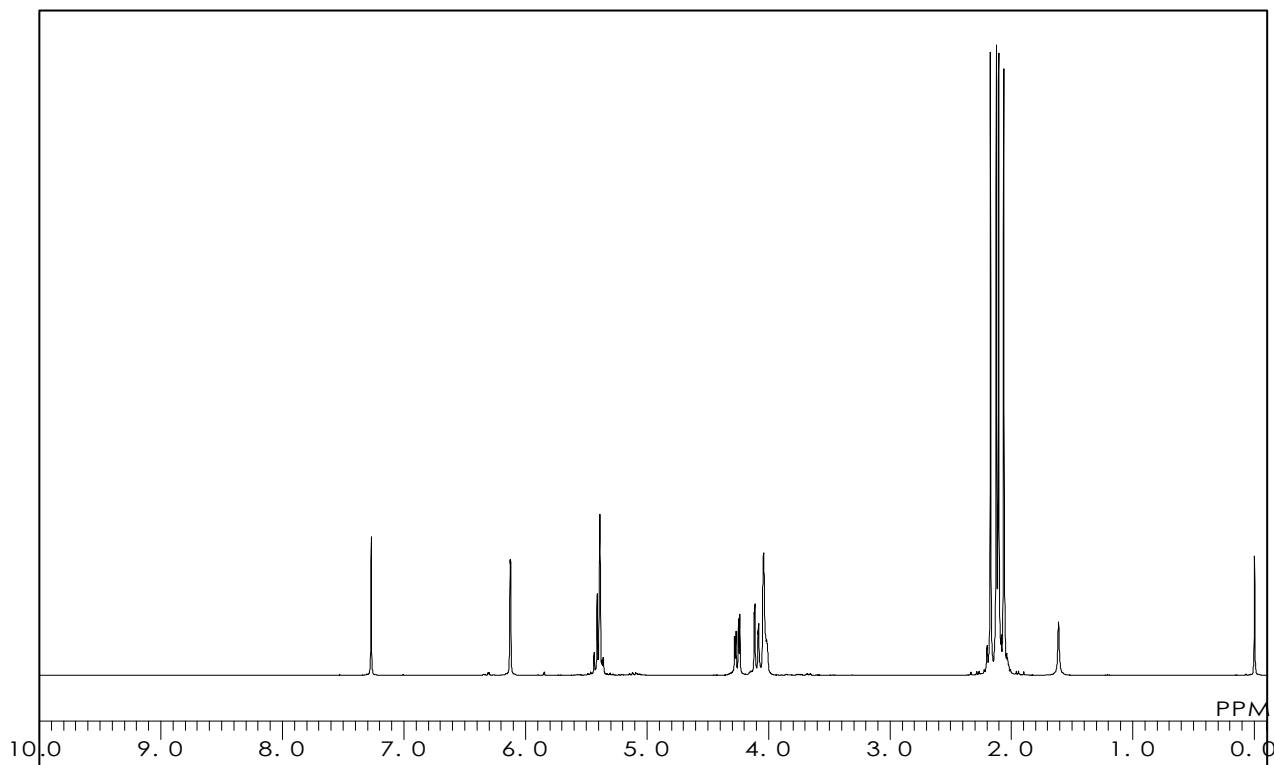
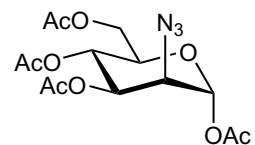
**1,3,4,6-Tetra-O-acetyl-2-azido-2-deoxy- $\alpha$ -D-mannopyranose**

$C_{14}H_{19}N_3O_9 = 373.32$  [68733-20-0]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 21.8 °C



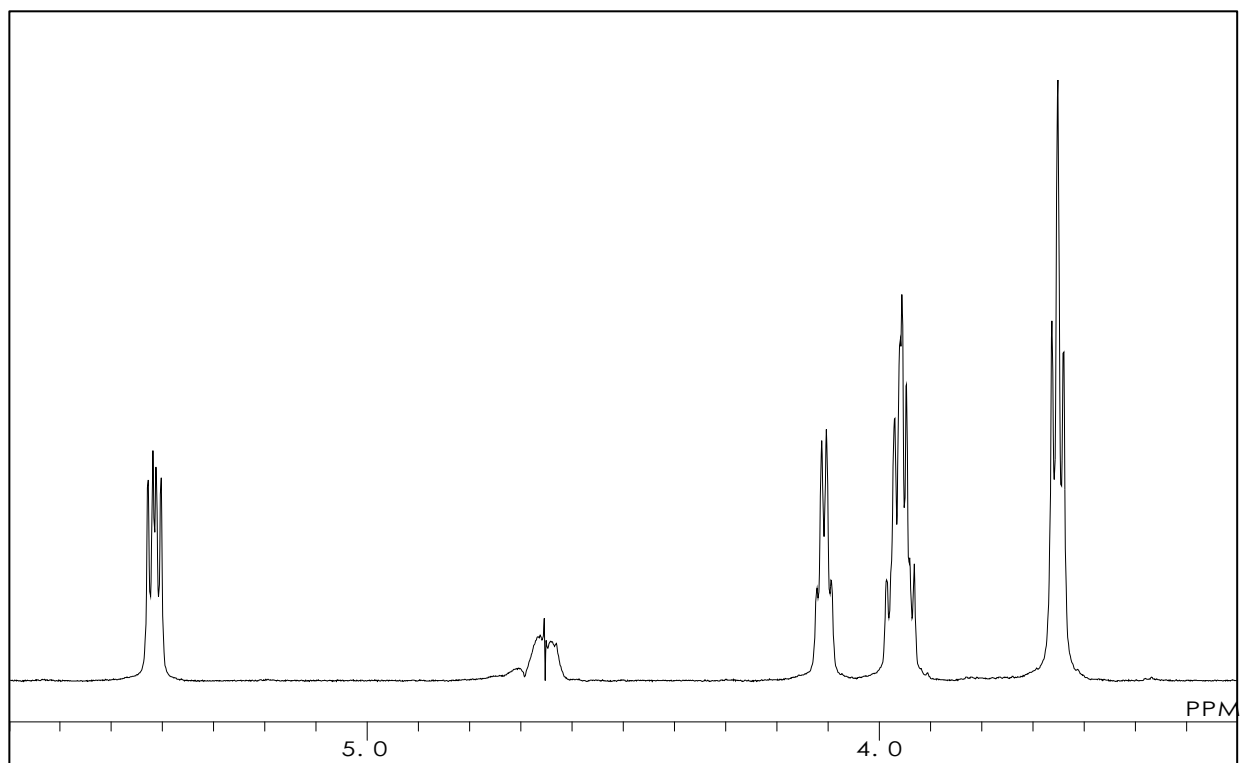
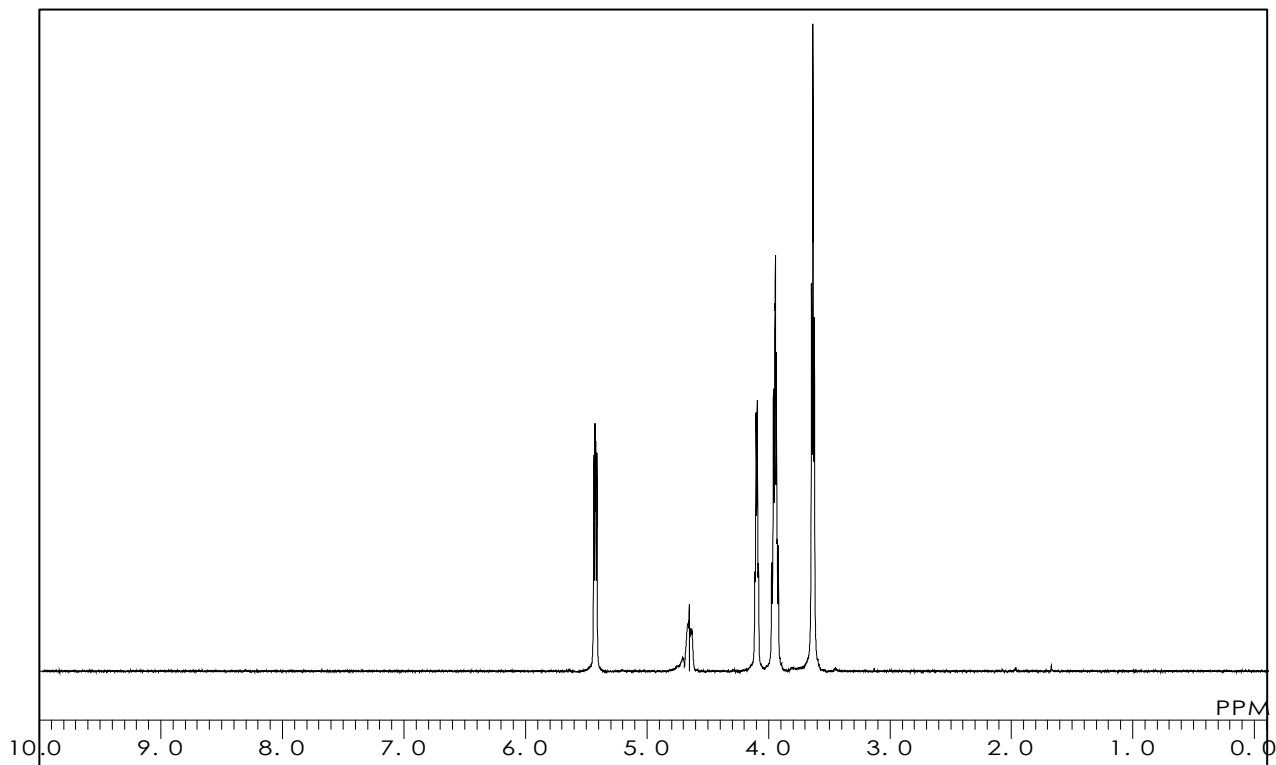
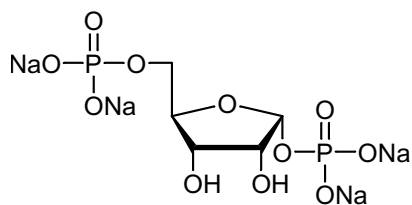
**R0082**

**$\alpha$ -D-Ribose 1,5-Bis(phosphate) Tetrasodium Salt**

$C_5H_8Na_4O_{11}P_2 = 398.01$  [113599-17-0]

Solvent :  $D_2O$

Measured Temperature : 19.3 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

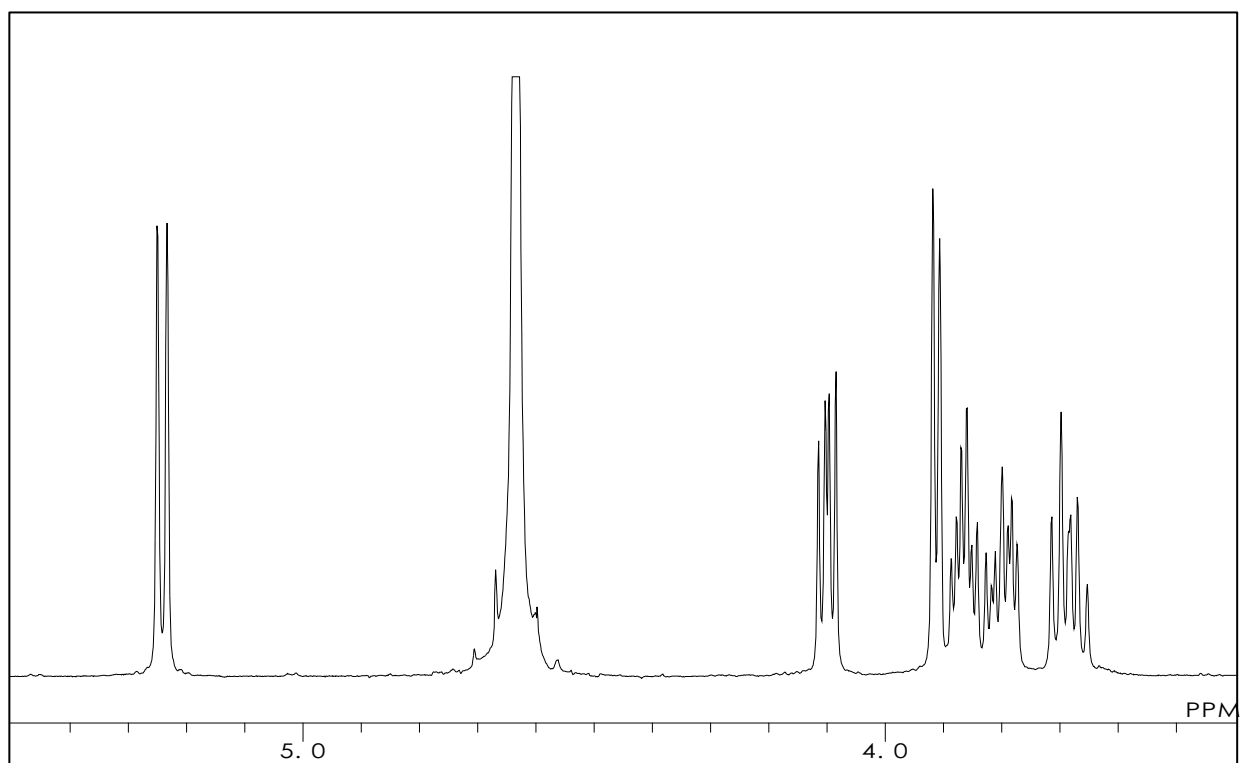
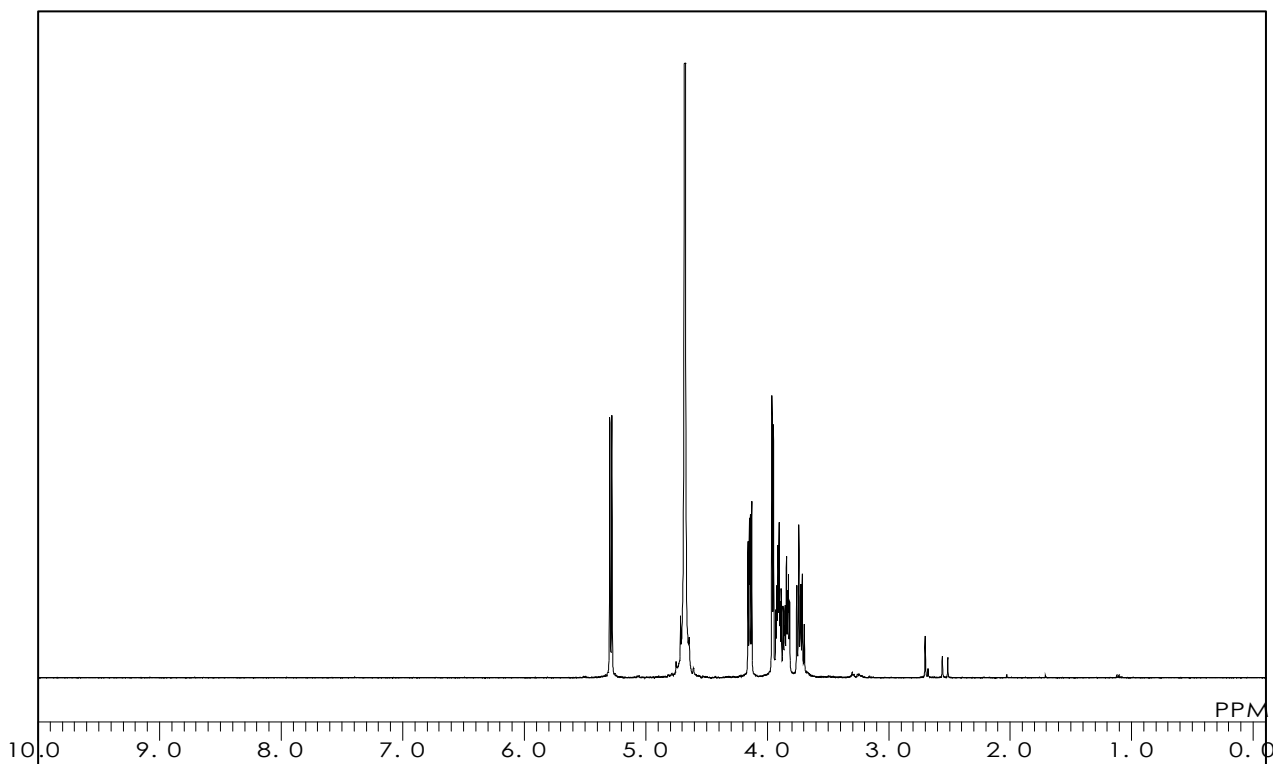
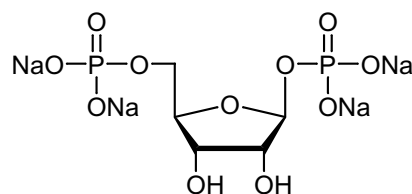
**R0083**

**$\beta$ -D-Ribose 1,5-Bis(phosphate) Tetrasodium Salt**

$C_5H_8Na_4O_{11}P_2 = 398.01$

Solvent :  $D_2O$

Measured Temperature : 19.3 °C



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**A2511**

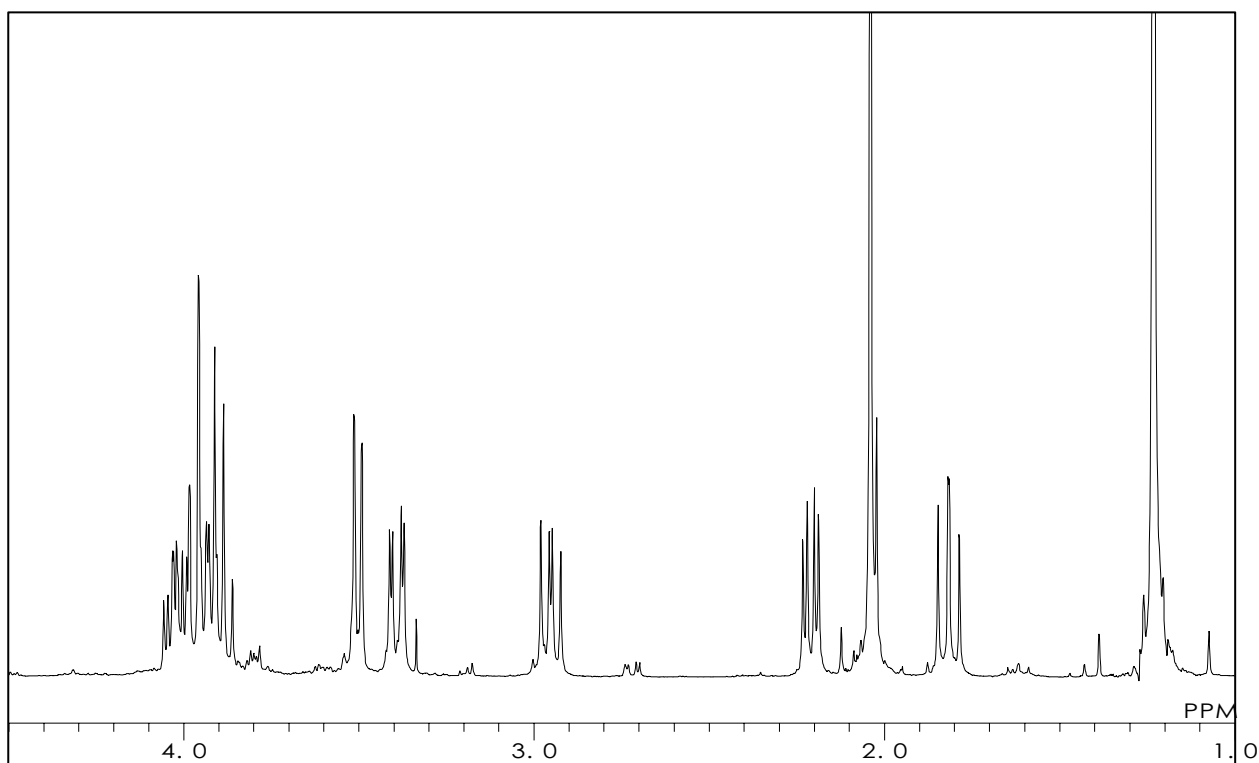
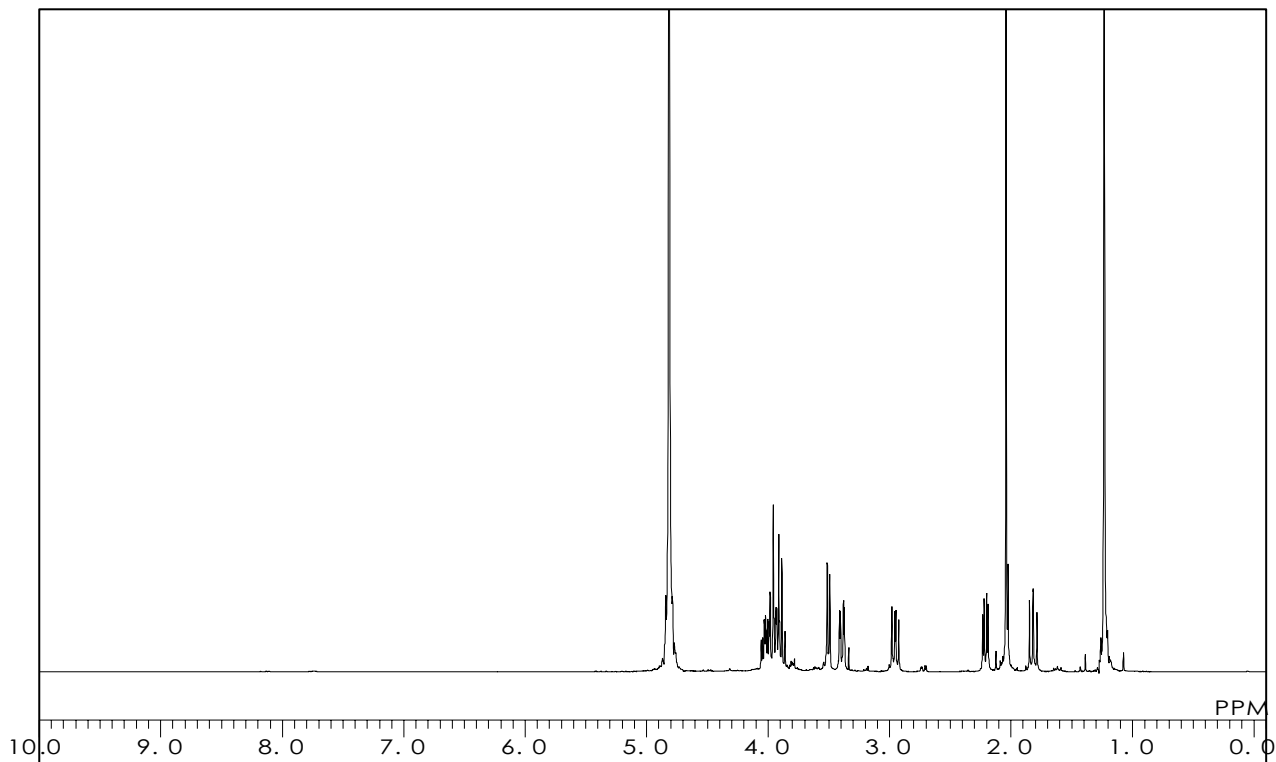
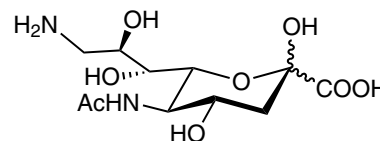
**N-Acetyl-9-deoxy-9-aminoneuraminic Acid**

$C_{11}H_{20}N_2O_8 = 308.29$  [112037-47-5]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 20.7 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。



**A2492**

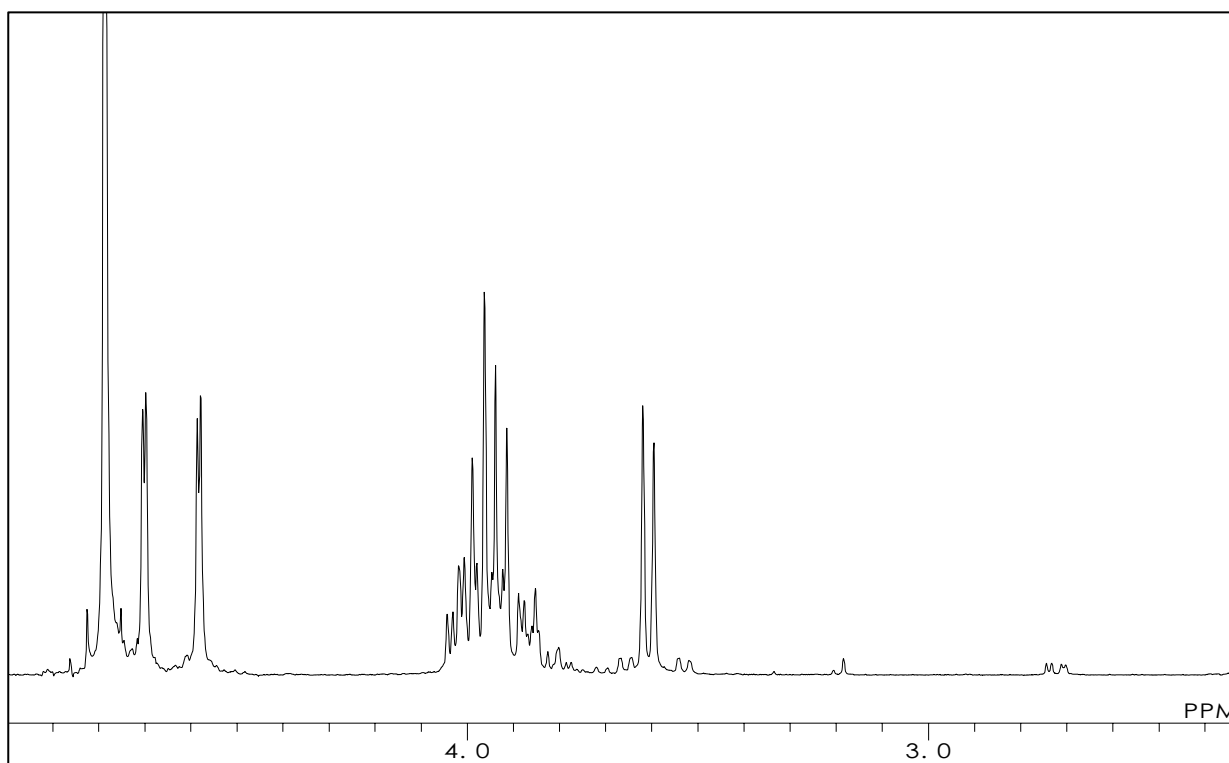
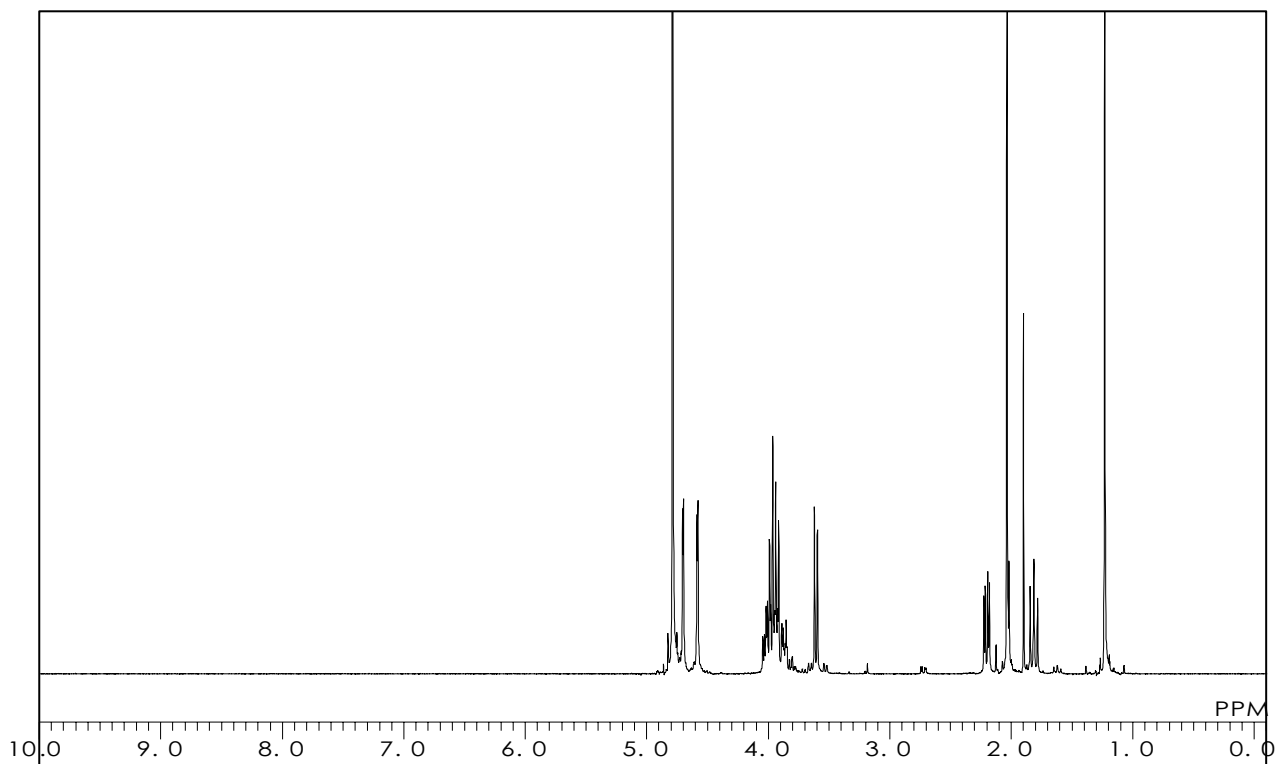
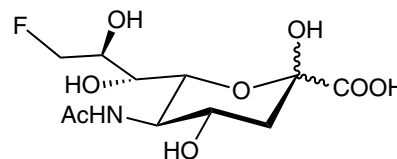
## **N-Acetyl-9-deoxy-9-fluoroneuraminic Acid**

$C_{11}H_{18}FNO_8 = 311.26$  [85819-28-9]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 22.2 °C



**A1821**

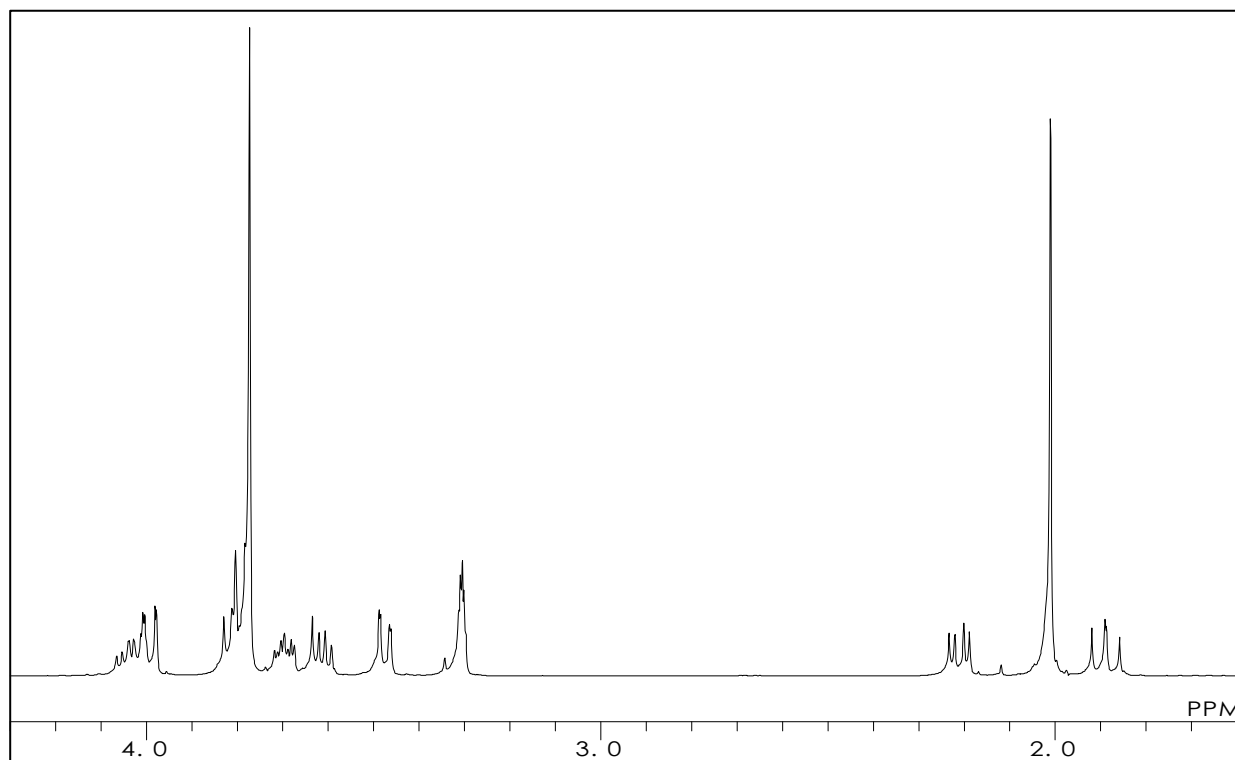
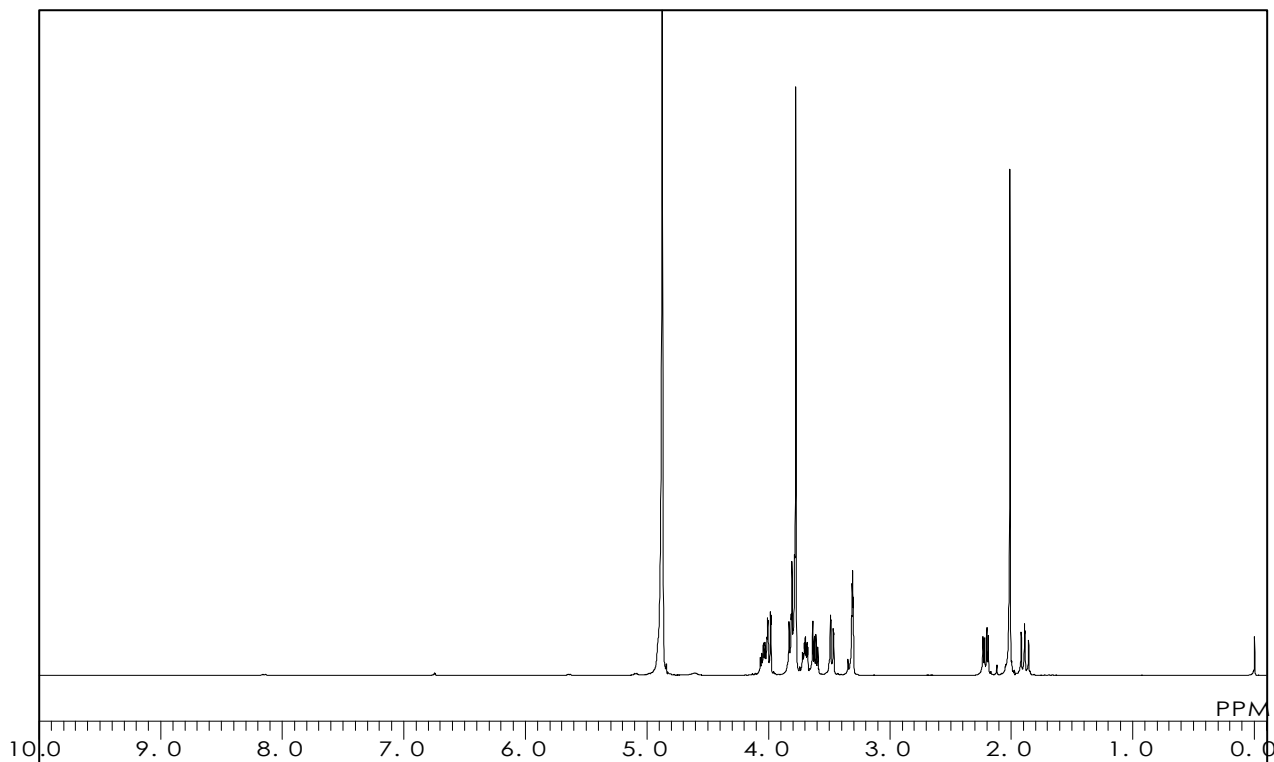
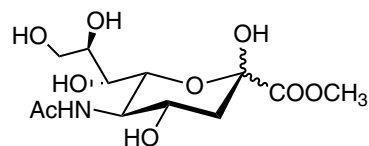
**N-Acetylneuraminic Acid Methyl Ester**

$C_{12}H_{21}NO_9 = 323.30$  [22900-11-4]

Solvent :  $CD_3OD$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 21.8 °C



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**M1706**

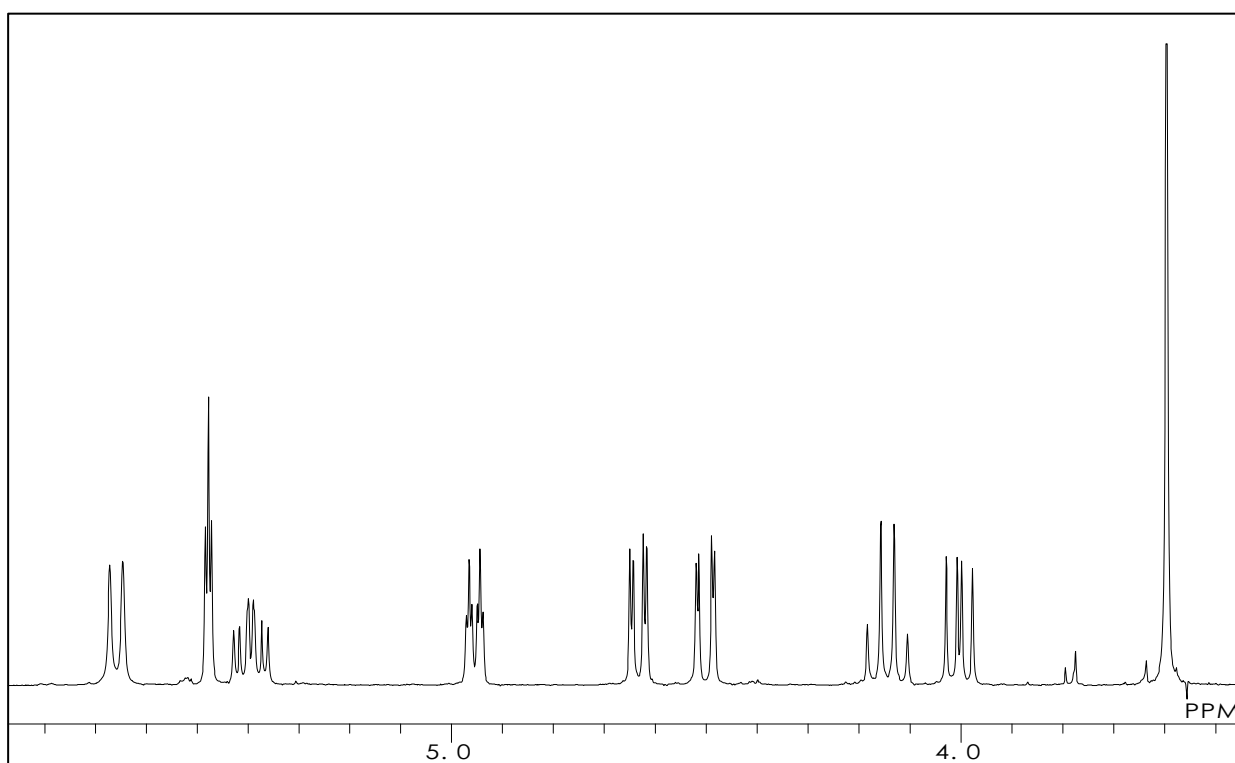
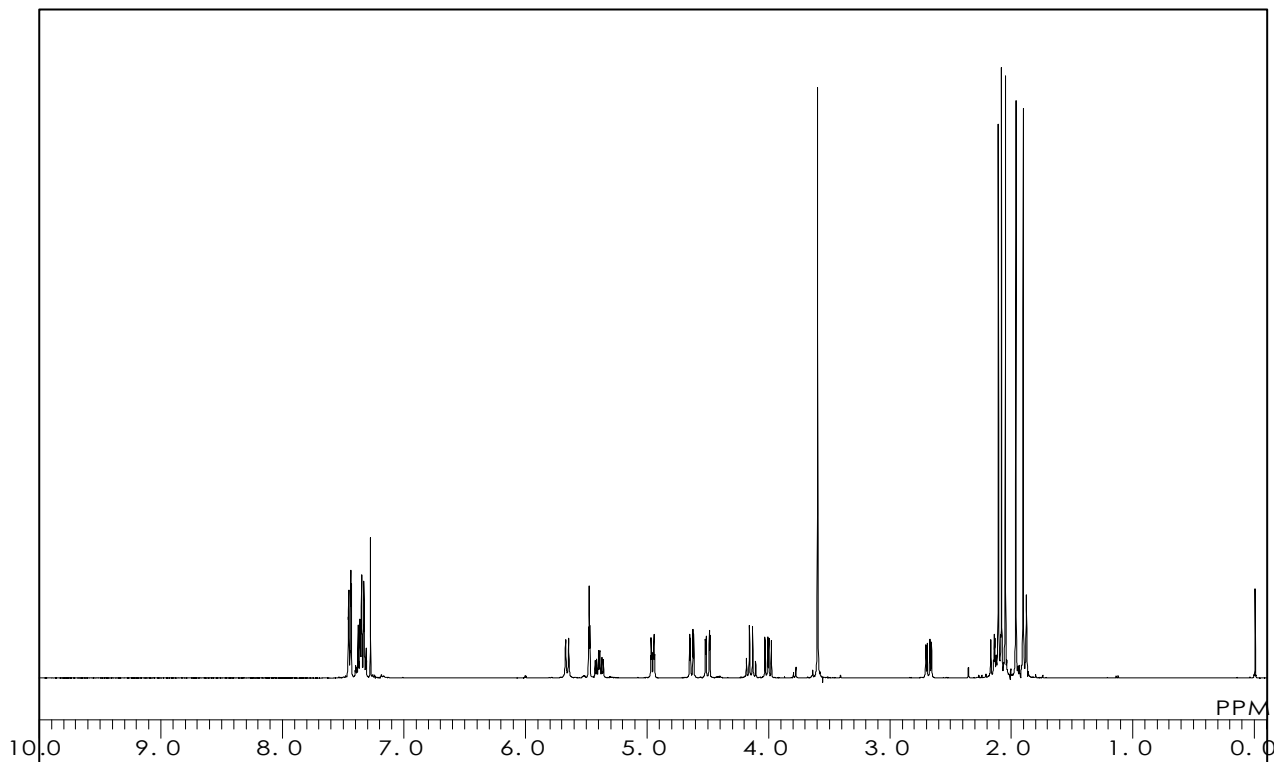
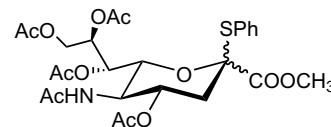
**Methyl 5-Acetamido-4,7,8,9-tetra-O-acetyl-3,5-dideoxy-2-S-phenyl-2-thio-D-glycero-D-galacto-2-nonulopyranosylonate**

$C_{26}H_{33}NO_{12}S = 583.61$  [155155-64-9]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 20.4 °C



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M2329

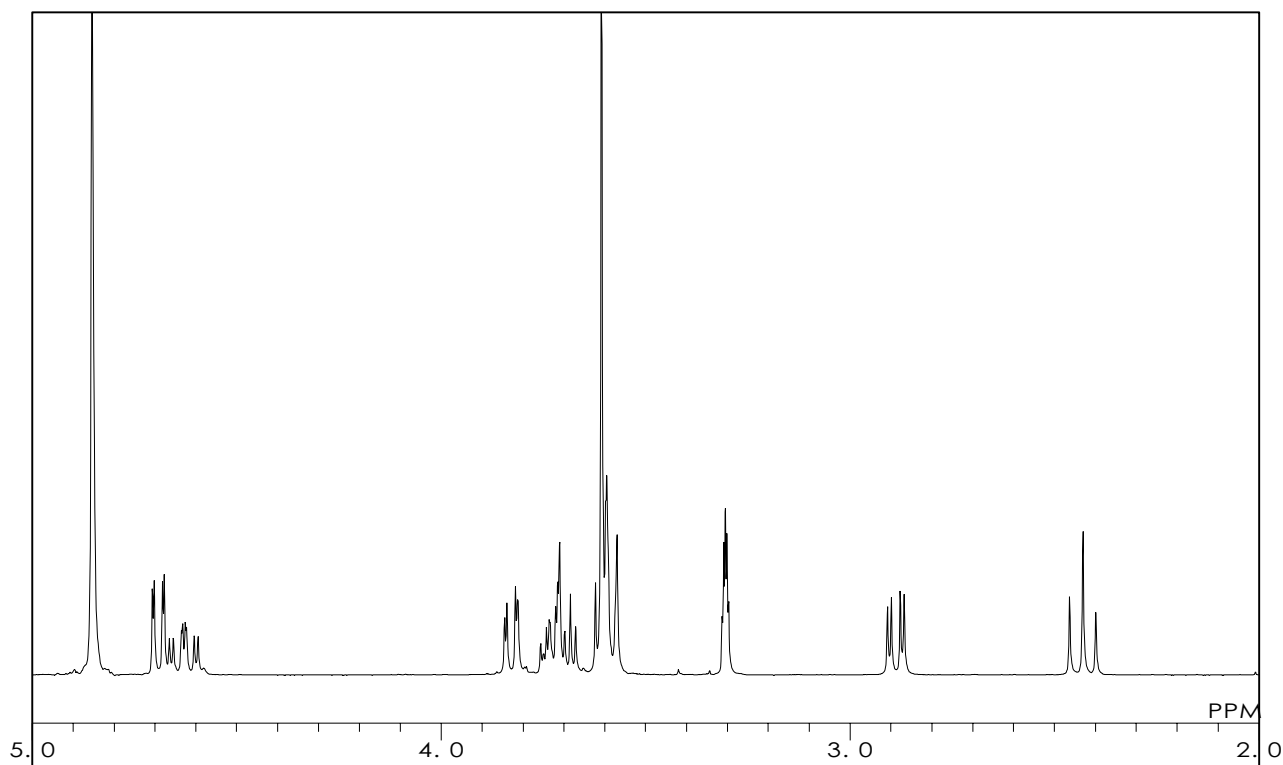
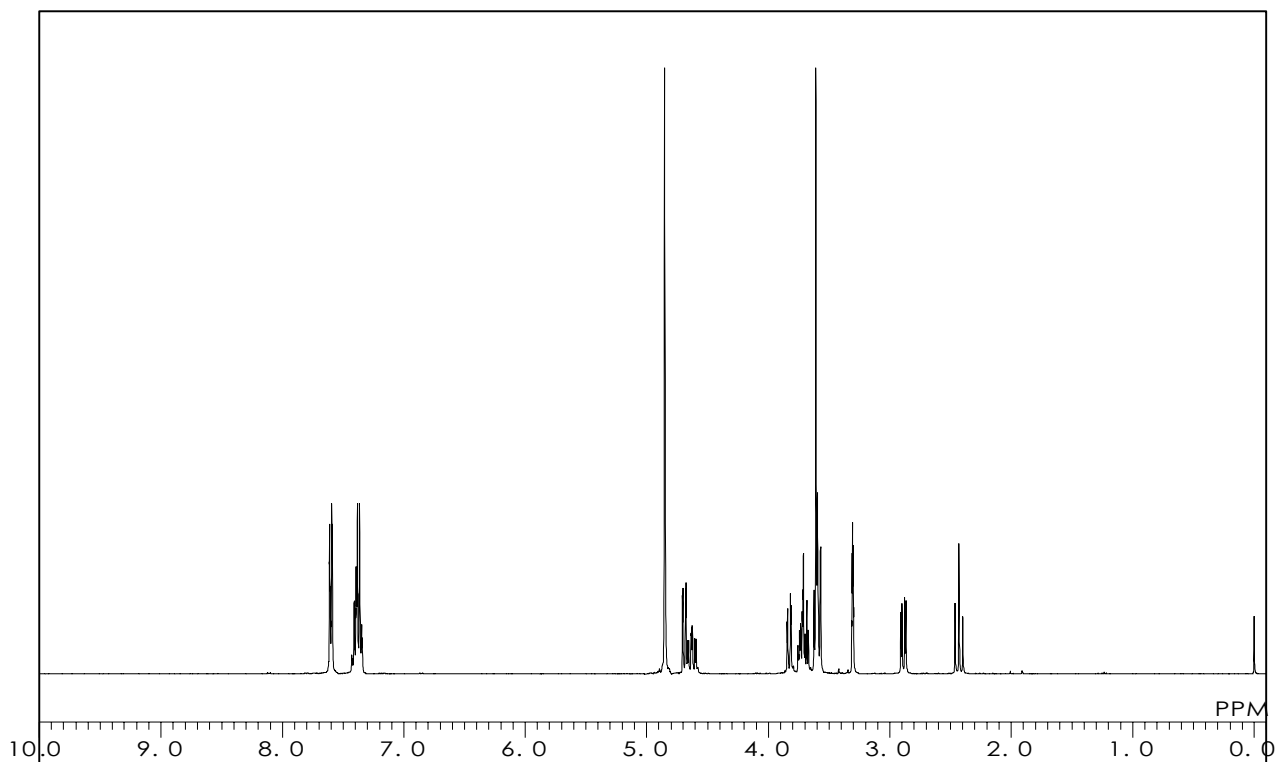
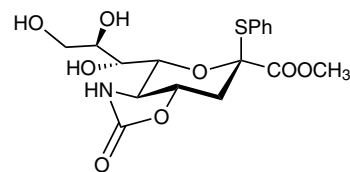
**Methyl 5-N,4-O-Carbonyl-3,5-dideoxy-2-S-phenyl-2-thio-  
D-glycero-β-D-galacto-2-nonulopyranosylonate**

C<sub>17</sub>H<sub>21</sub>NO<sub>8</sub>S = 399.41 [934591-79-4]

Solvent : CD<sub>3</sub>OD

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 23.7 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**M2695**

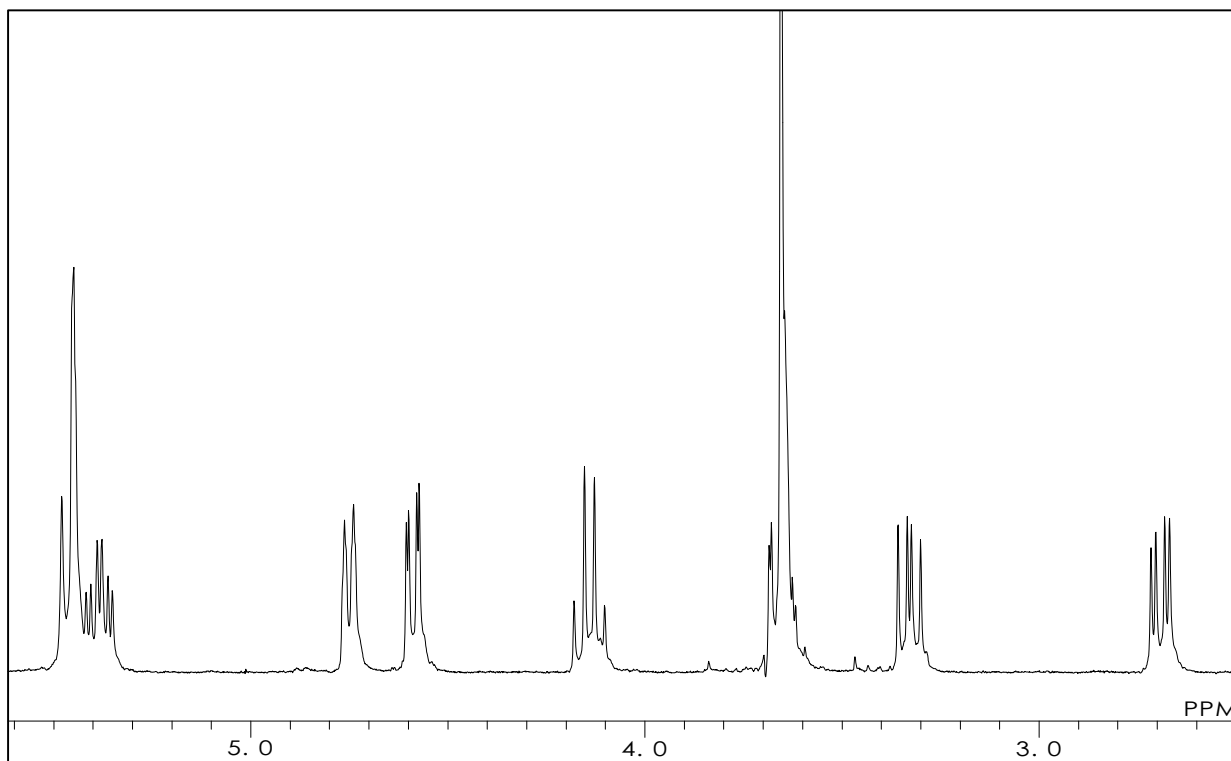
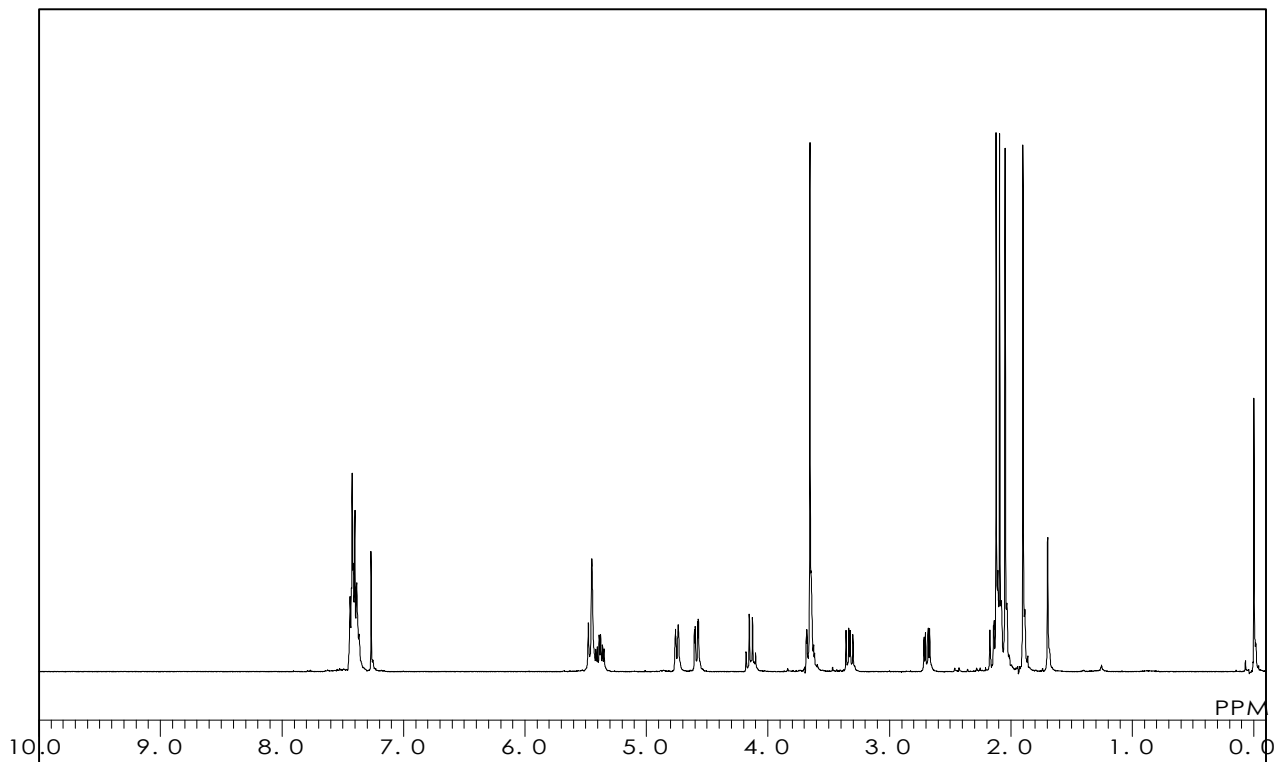
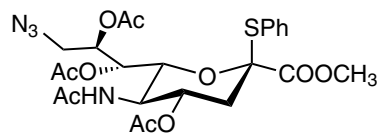
**Methyl (Phenyl 5-Acetamido-4,7,8-tri-O-acetyl-9-azido-3,5,9-trideoxy-2-thio- $\beta$ -D-galacto-2-nonulopyranosid)onate**

$C_{24}H_{30}N_4O_{10}S = 566.58$  [219814-65-0]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 22.0 °C



**M2696**

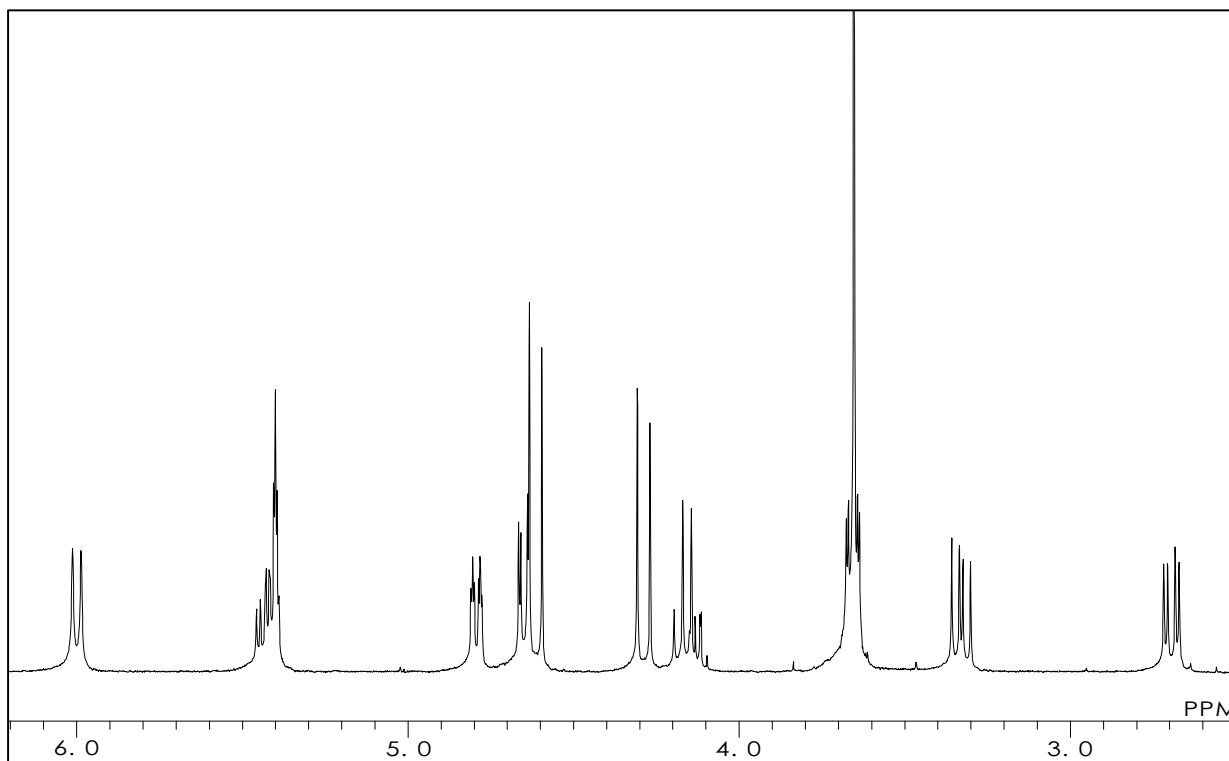
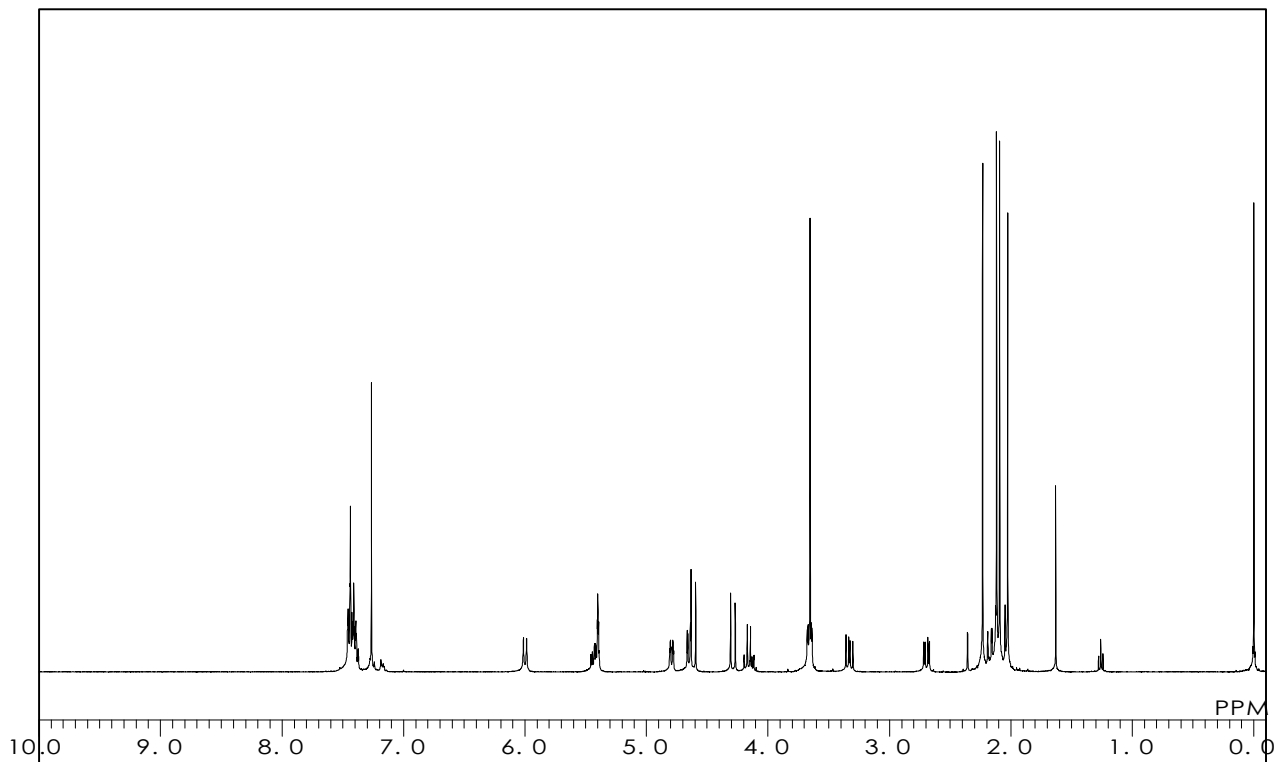
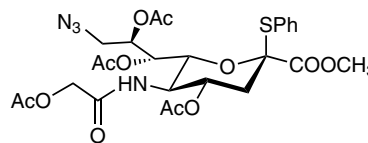
**Methyl (Phenyl 5-Acetoxyacetamido-4,7,8-tri-O-acetyl-9-azido-3,5,9-trideoxy-2-thio-D-glycero-β-D-galacto-2-nonulopyranosid)onate**

C<sub>26</sub>H<sub>32</sub>N<sub>4</sub>O<sub>12</sub>S = 624.62 [1195053-25-8]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 22.1 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**M2330**

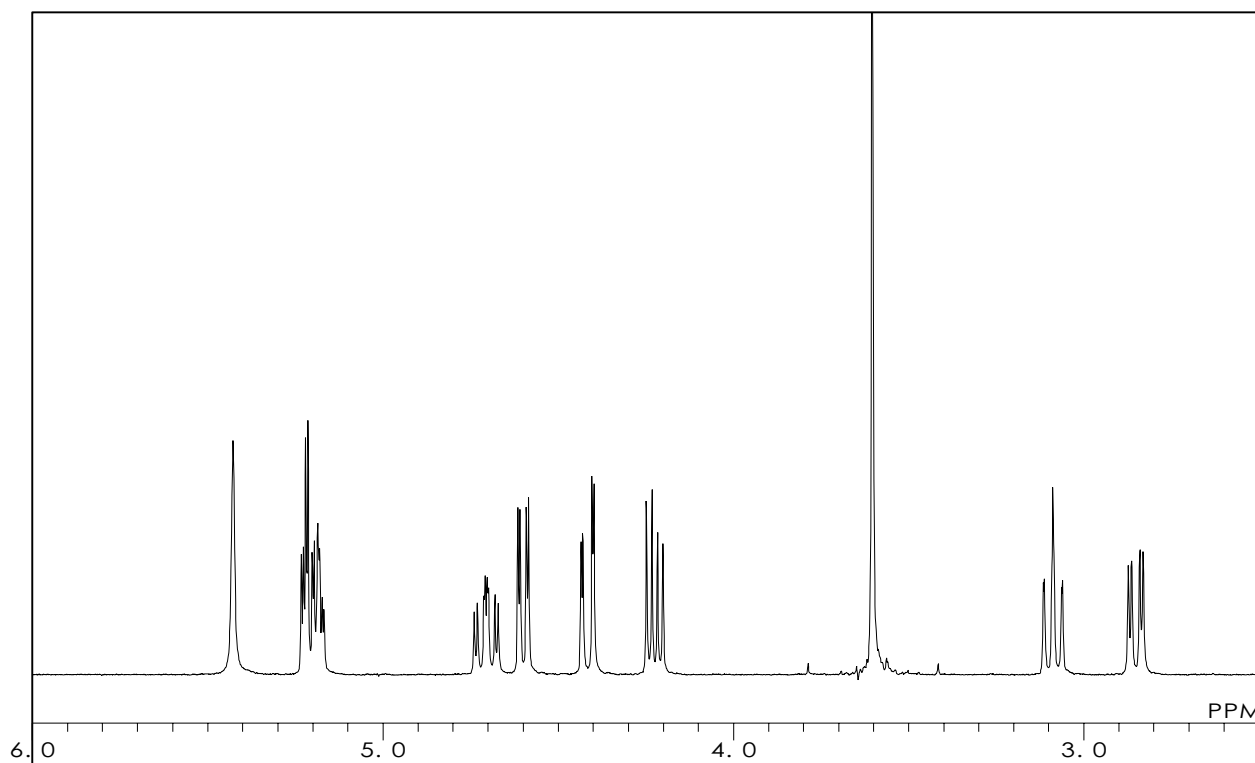
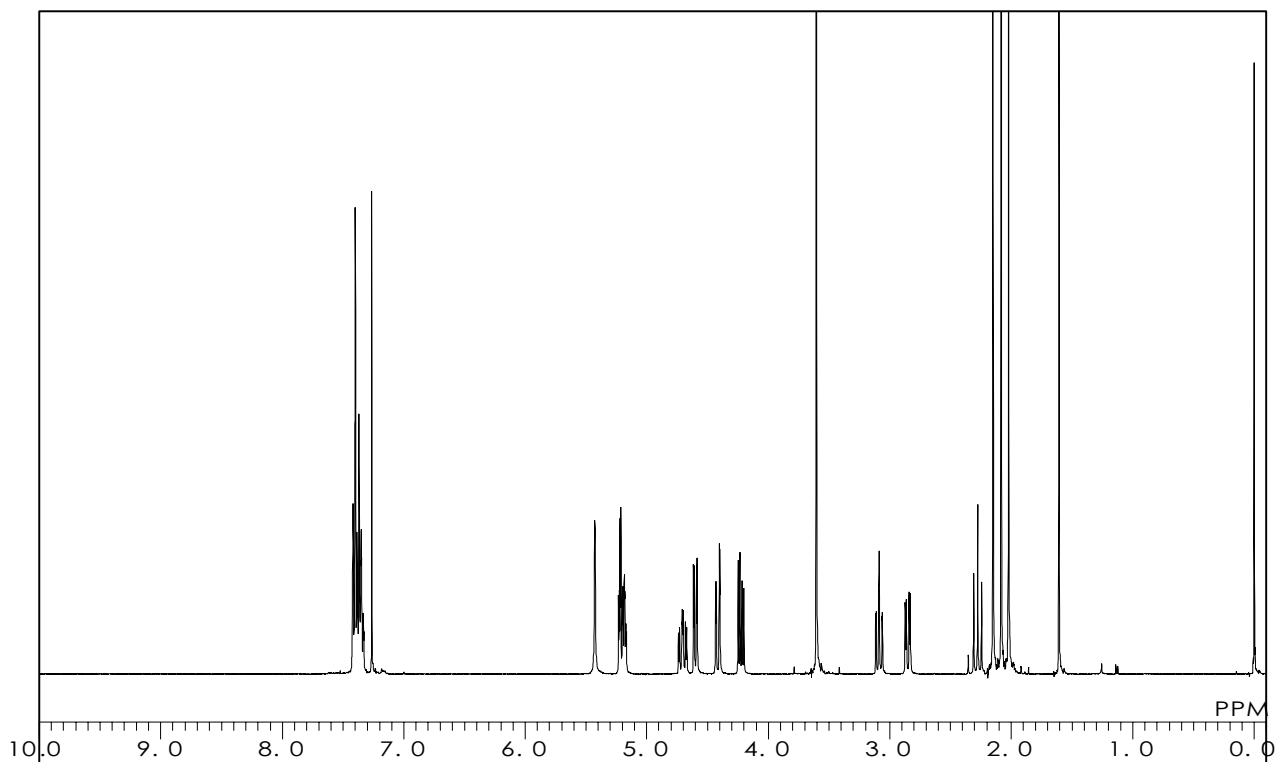
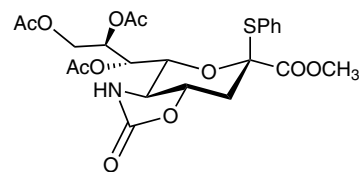
**Methyl 7,8,9-Tri-O-acetyl-5-N,4-O-carbonyl-3,5-dideoxy-2-S-phenyl-2-thio-D-glycero-β-D-galacto-2-nonulopyranosylonate**

C<sub>23</sub>H<sub>27</sub>NO<sub>11</sub>S = 525.53

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 27.7 °C



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**A1822**

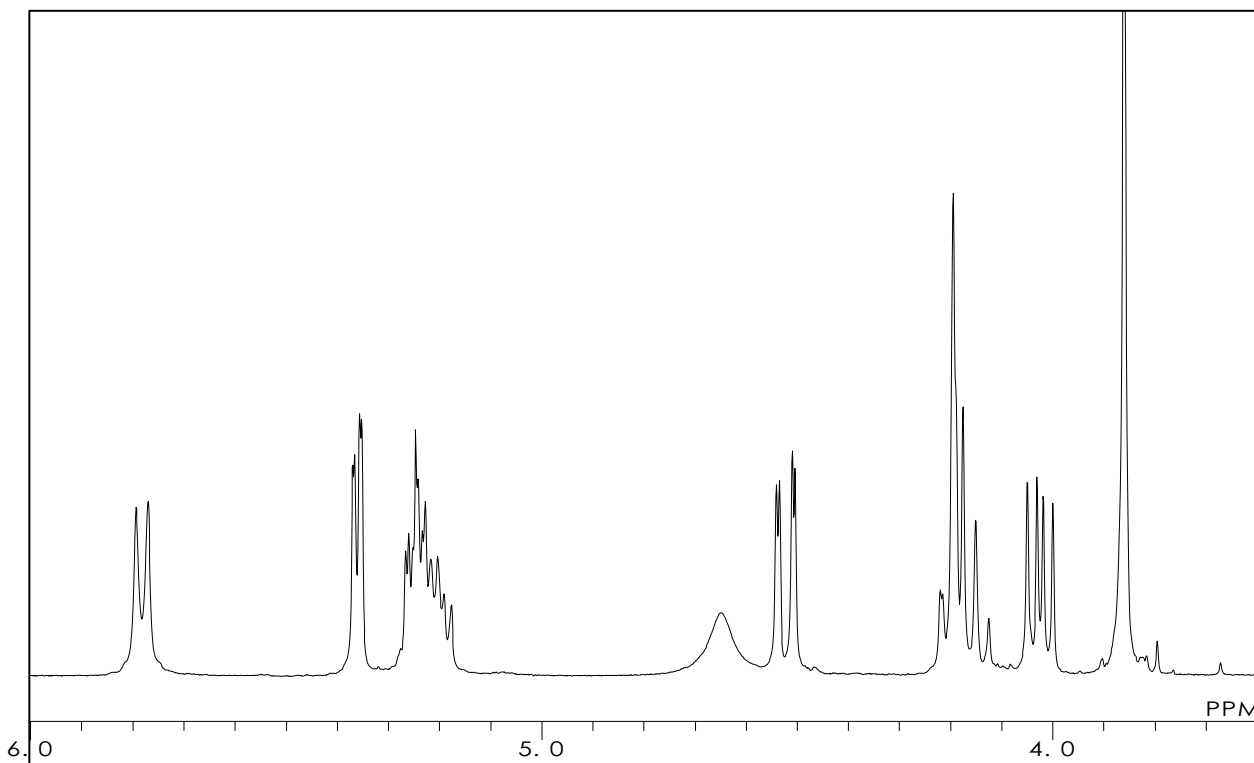
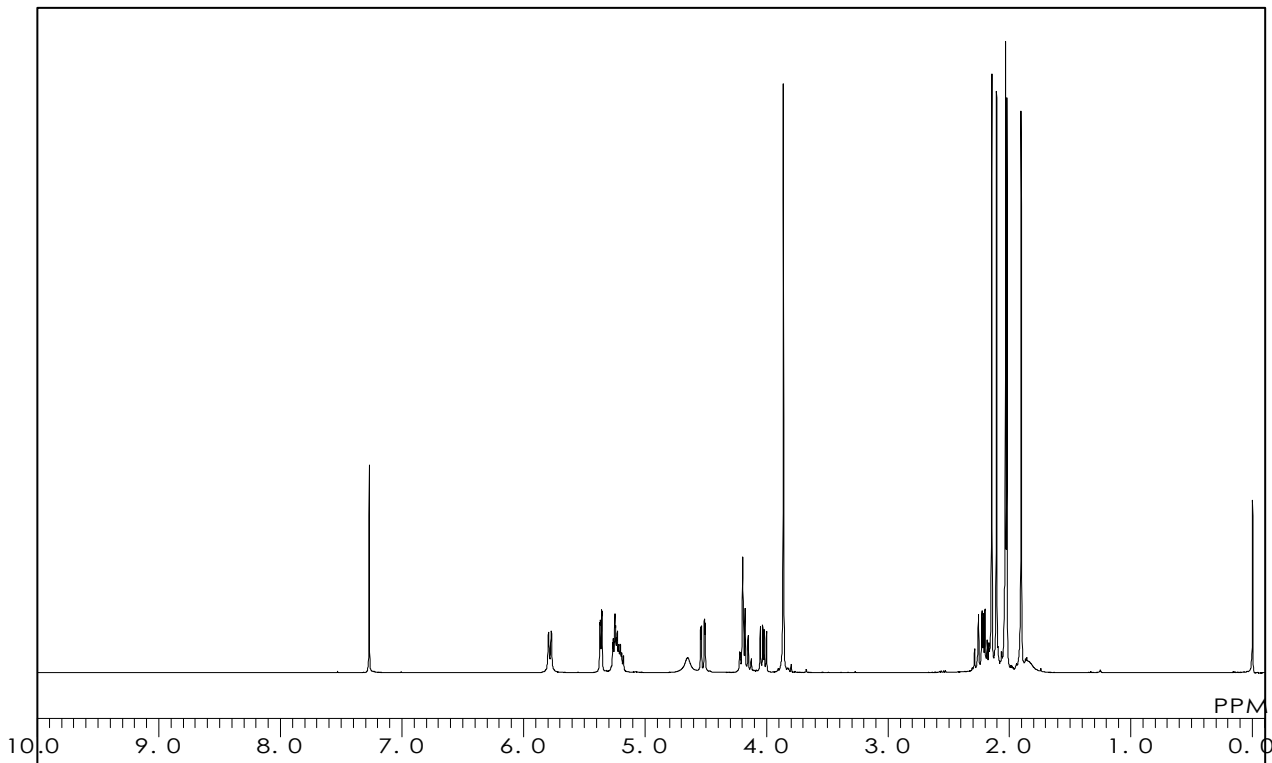
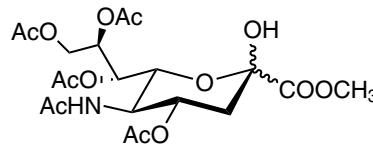
**4,7,8,9-Tetra-O-acetyl-N-acetylneuraminic Acid Methyl Ester**

$C_{20}H_{29}NO_{13} = 491.45$  [84380-10-9]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 21.5 °C



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**A2630**

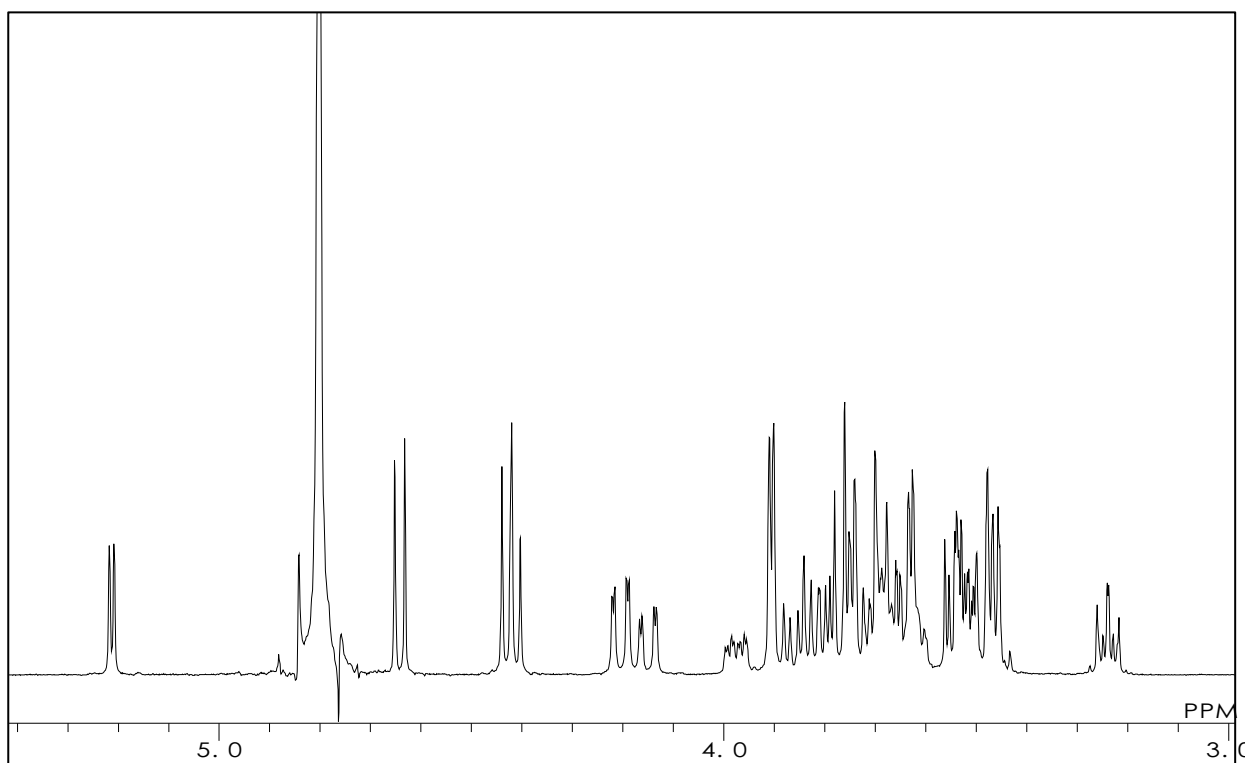
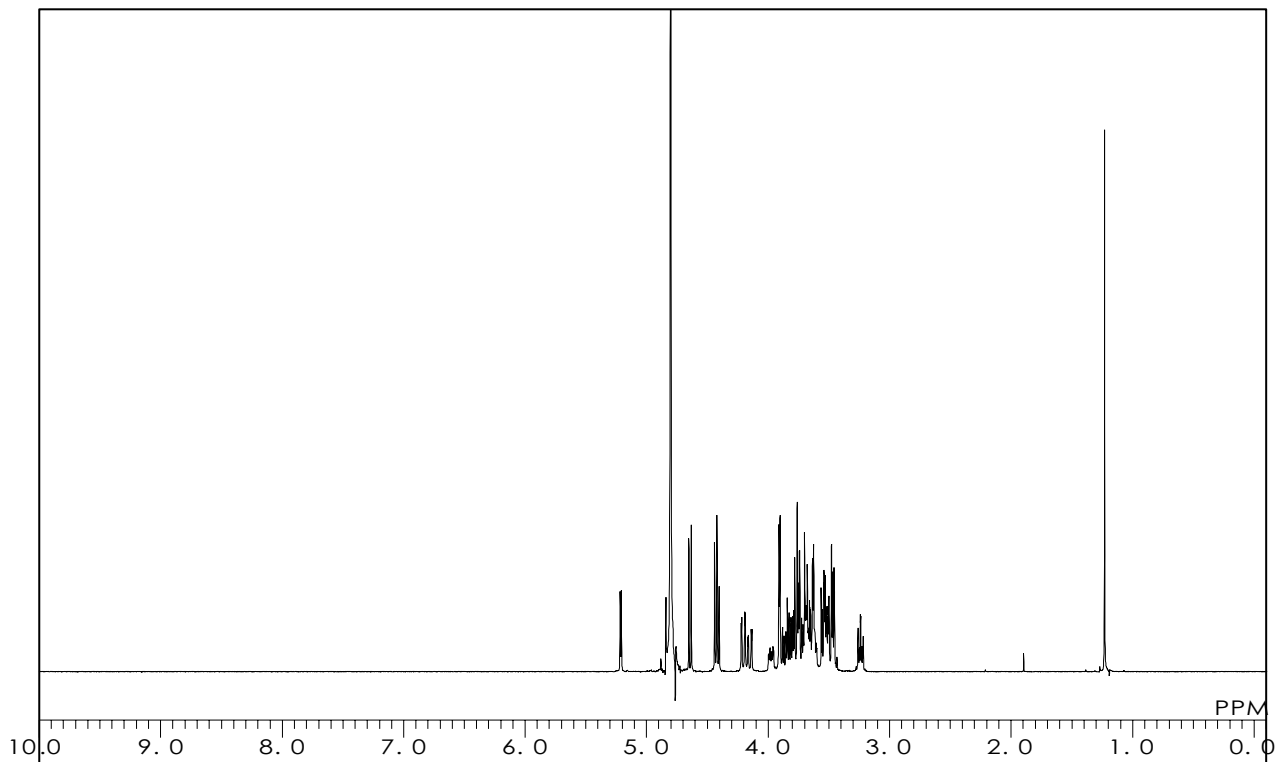
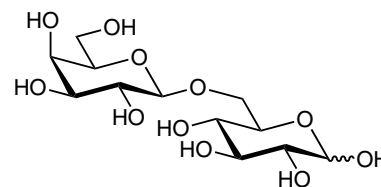
**Allolactose**

$C_{12}H_{22}O_{11}$  = 342.30 [28447-39-4]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 21.3 °C



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**D4215**

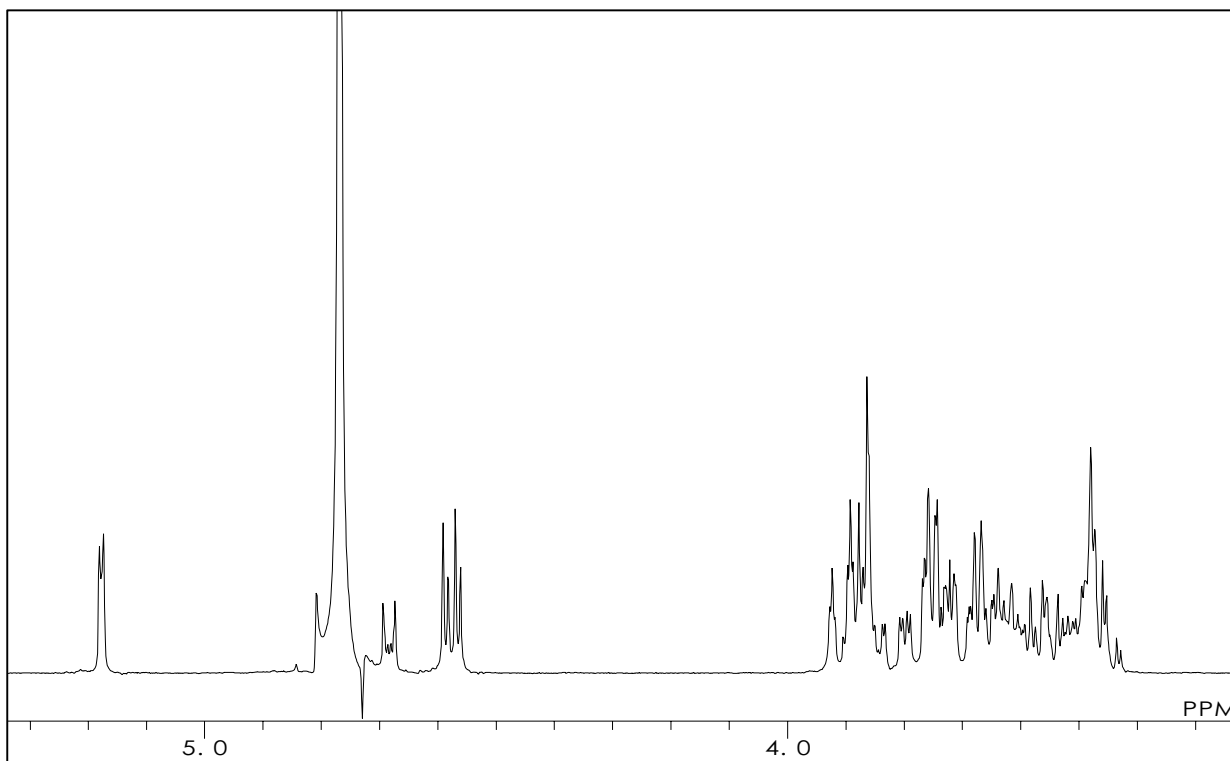
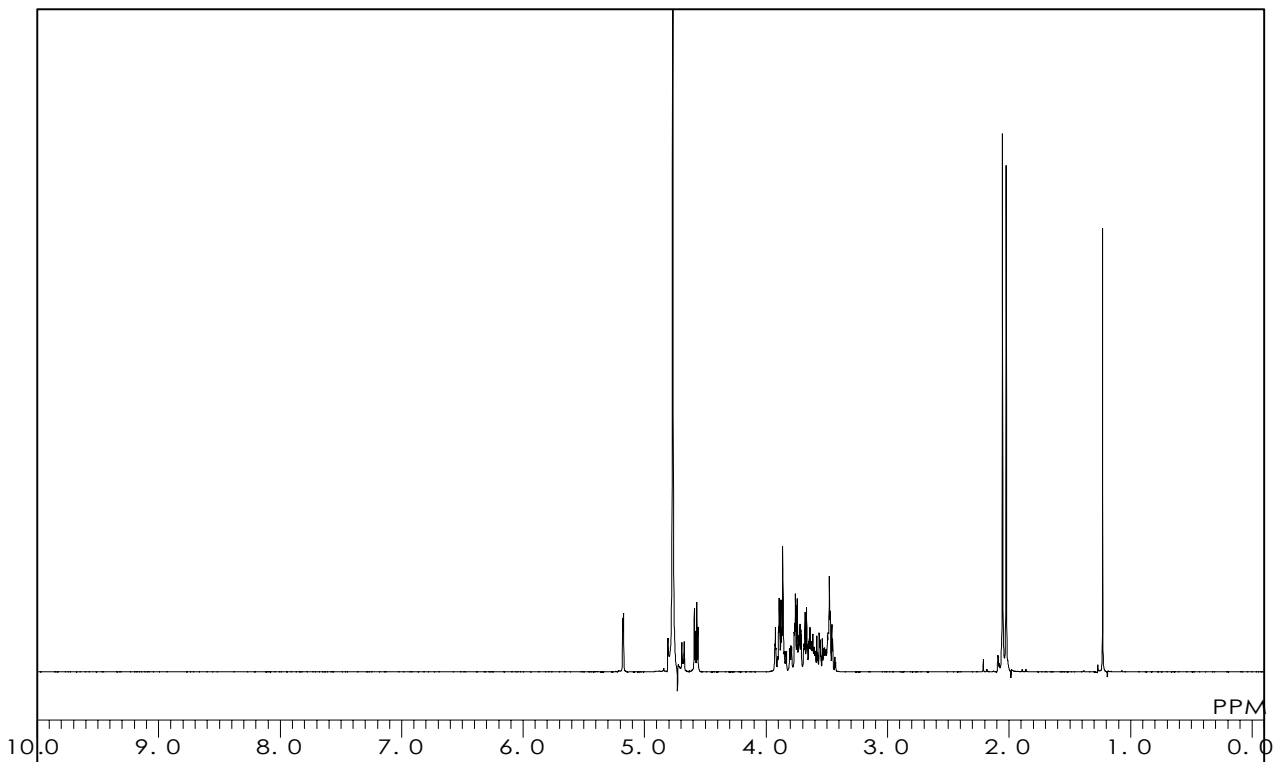
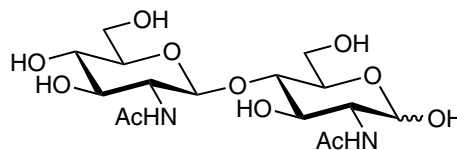
**N,N'-Diacetylchitobiose**

$C_{16}H_{28}N_2O_{11} = 424.40$  [35061-50-8]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 24.6 °C



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**D5372**

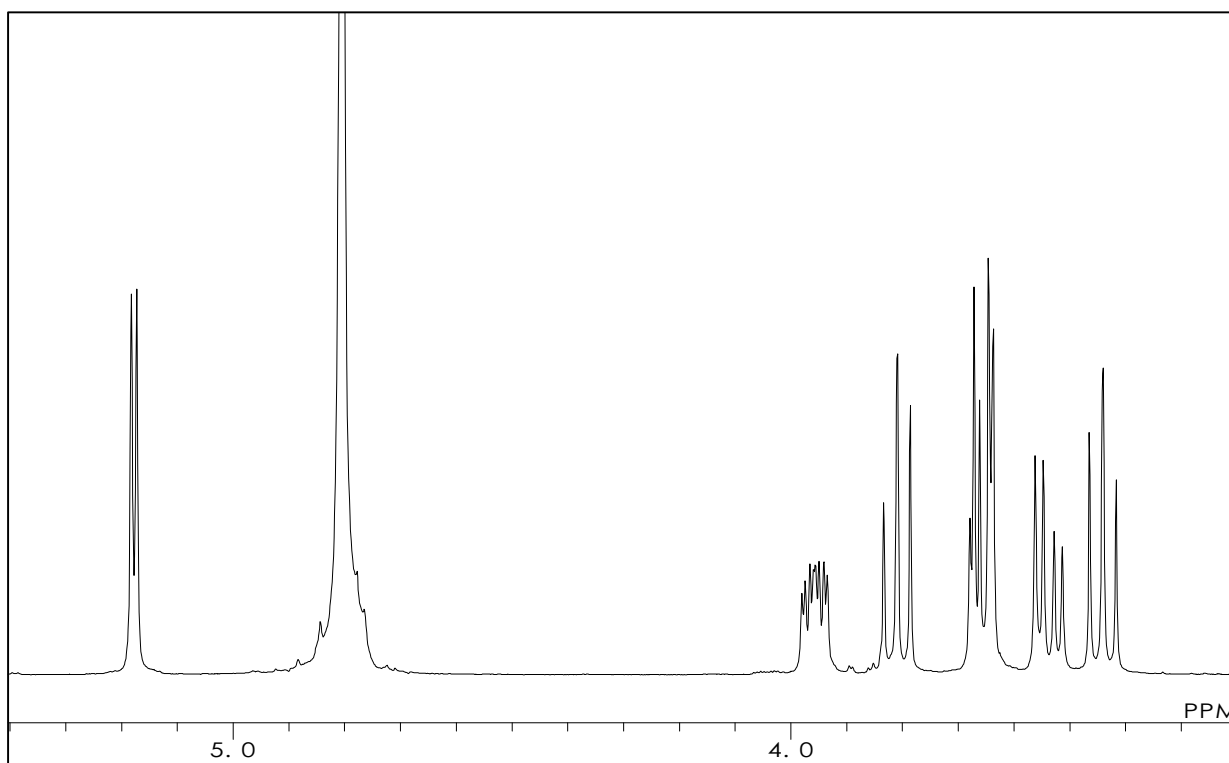
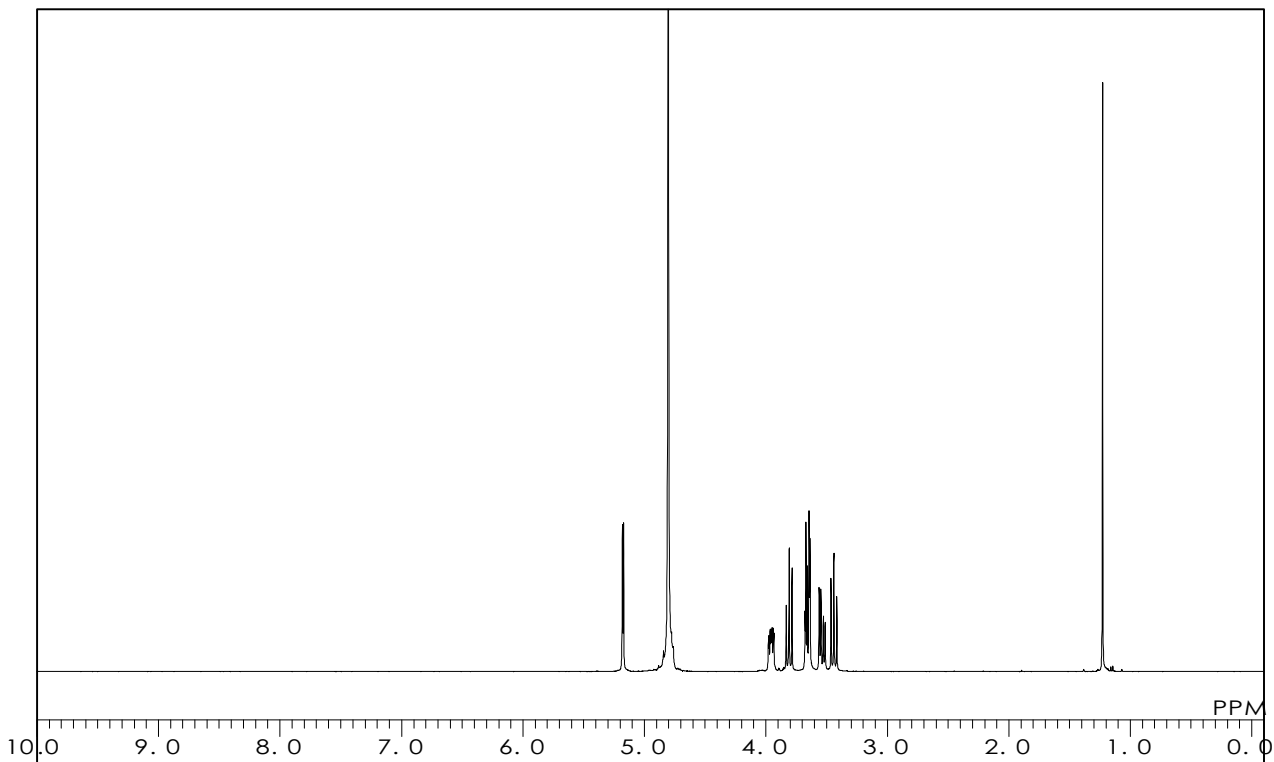
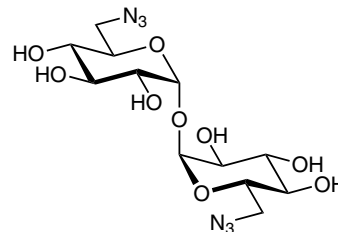
**6,6'-Diazido-6,6'-dideoxytrehalose**

$C_{12}H_{20}N_6O_9$ , = 392.33 [18933-88-5]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 21.1 °C



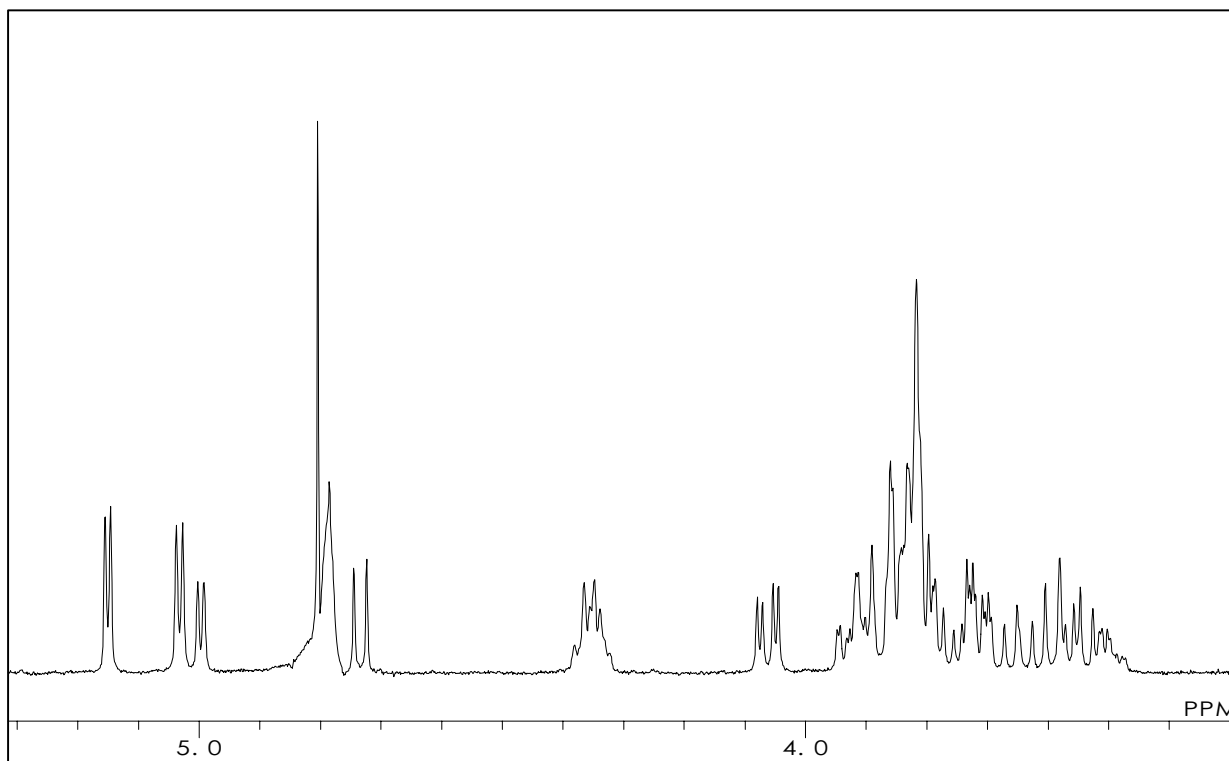
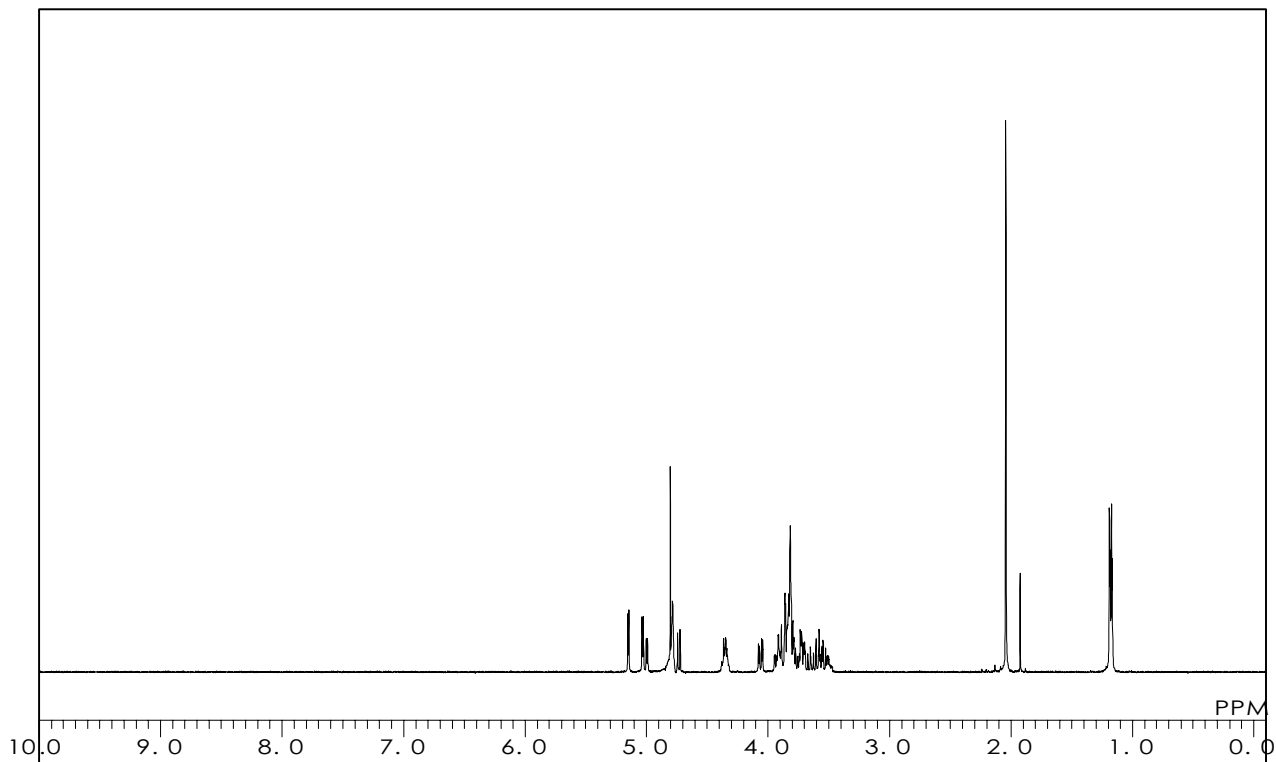
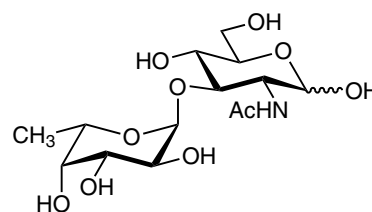
**F1030**

**Fuc  $\alpha$  (1-3)GlcNAc**

$C_{14}H_{25}NO_{10}$  = 367.35 [52630-68-9]

Solvent :  $D_2O$

Measured Temperature : 24.1 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**F0897**

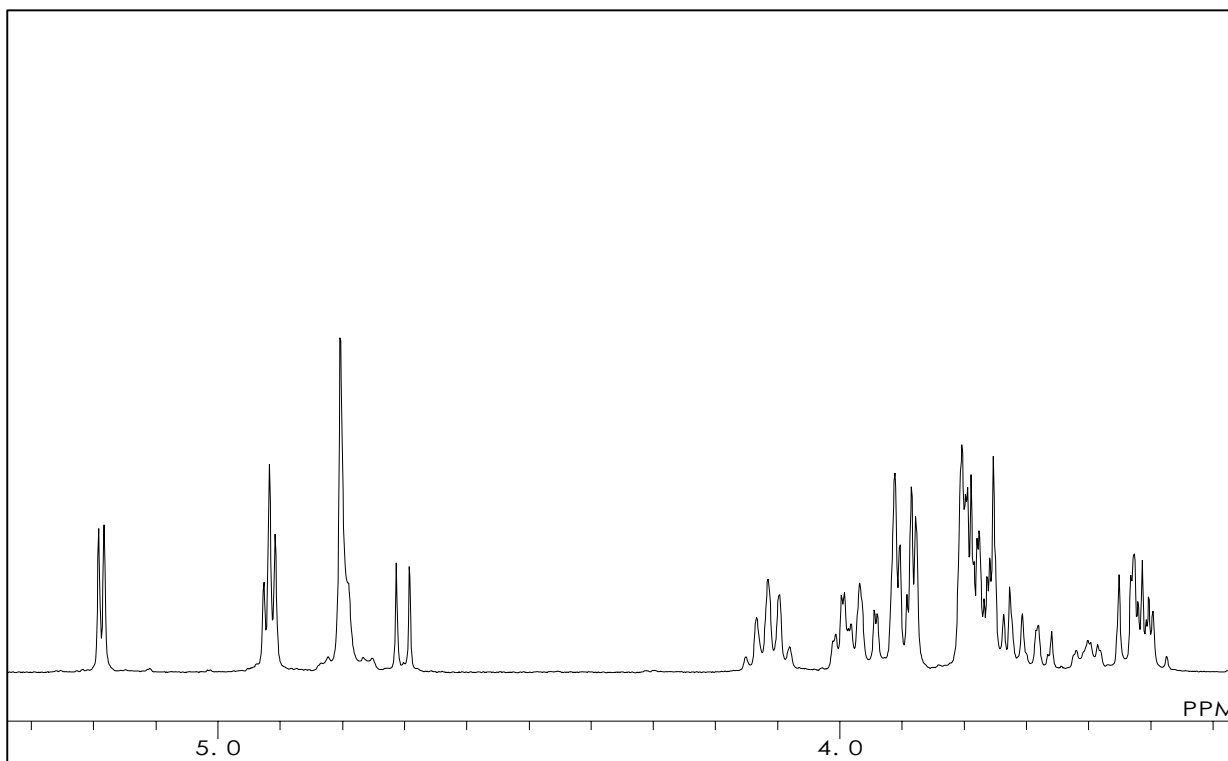
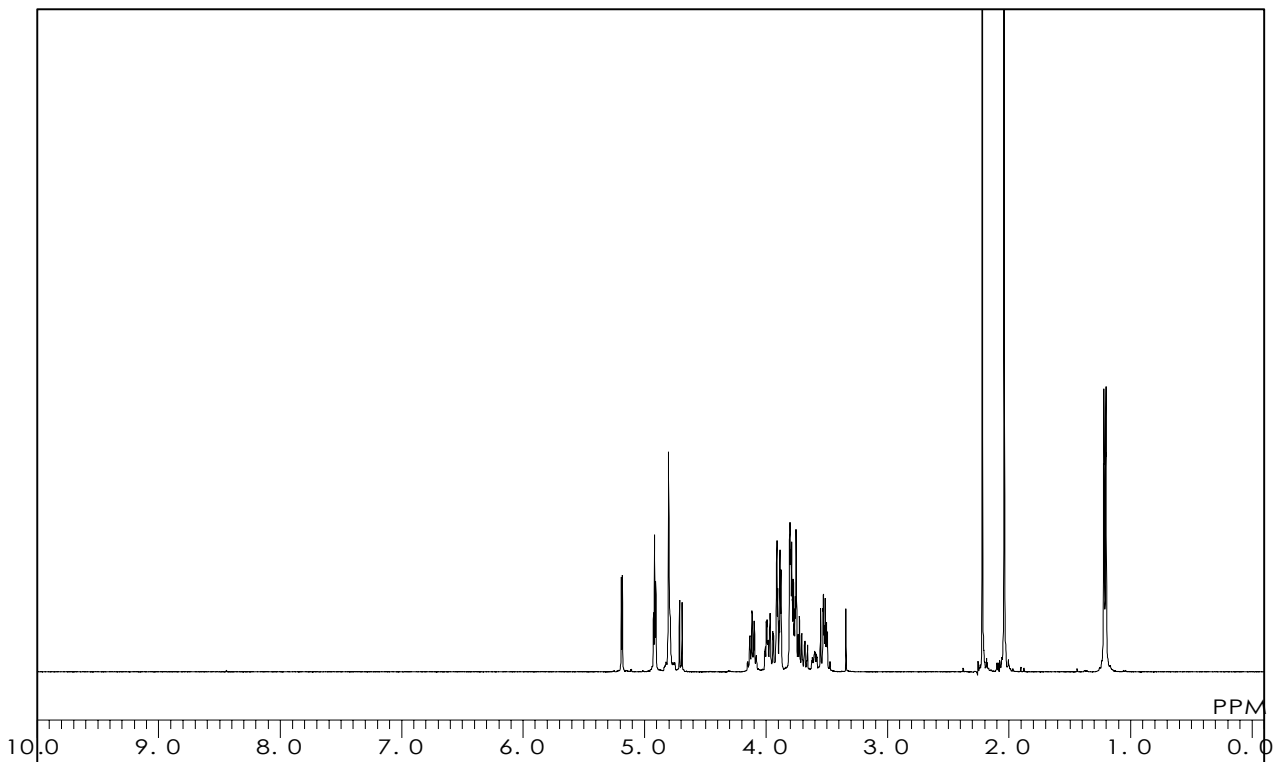
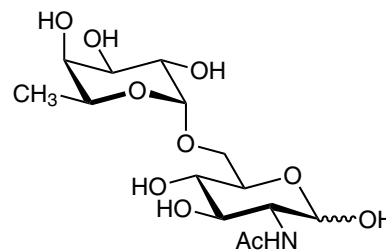
**Fuc  $\alpha$  (1-6)GlcNAc**

$C_{14}H_{25}NO_{10}$  = 367.35 [33639-80-4]

Solvent :  $D_2O$

Internal Standard : Acetone ( $\delta$  2.22)

Measured Temperature : 22.0 °C



# F1021

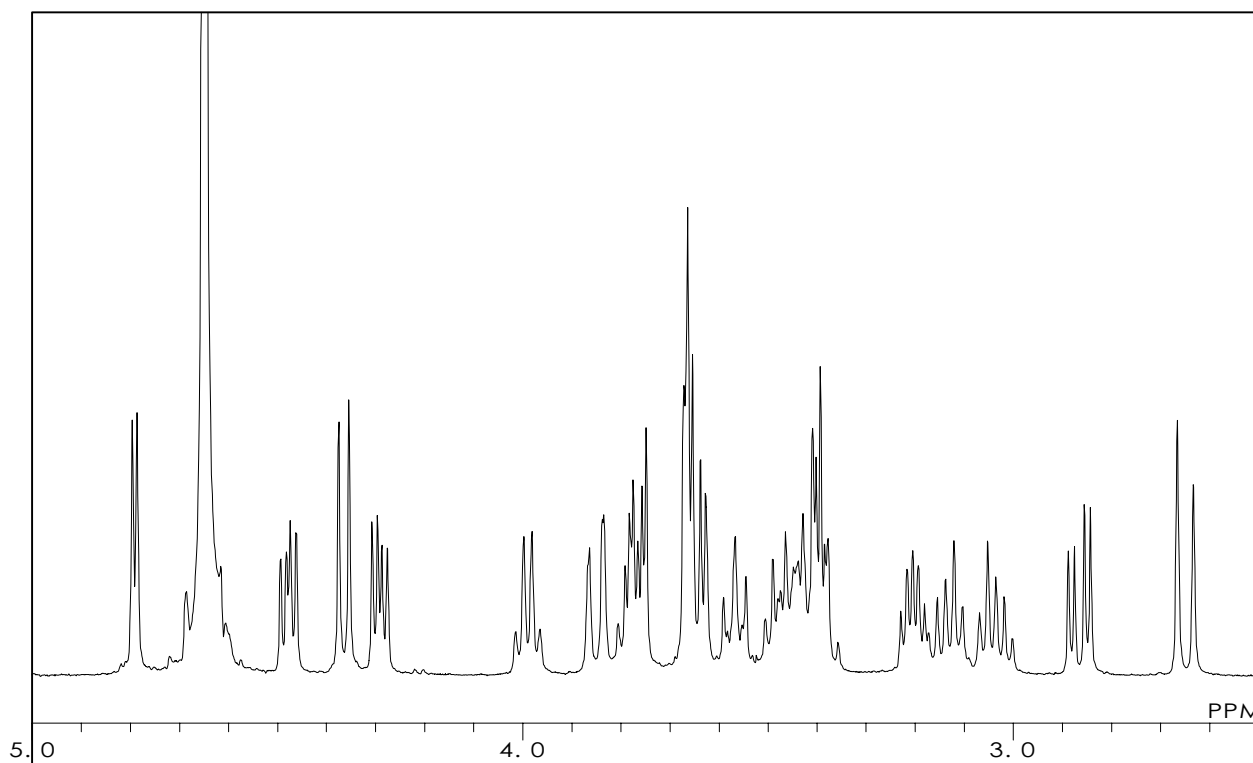
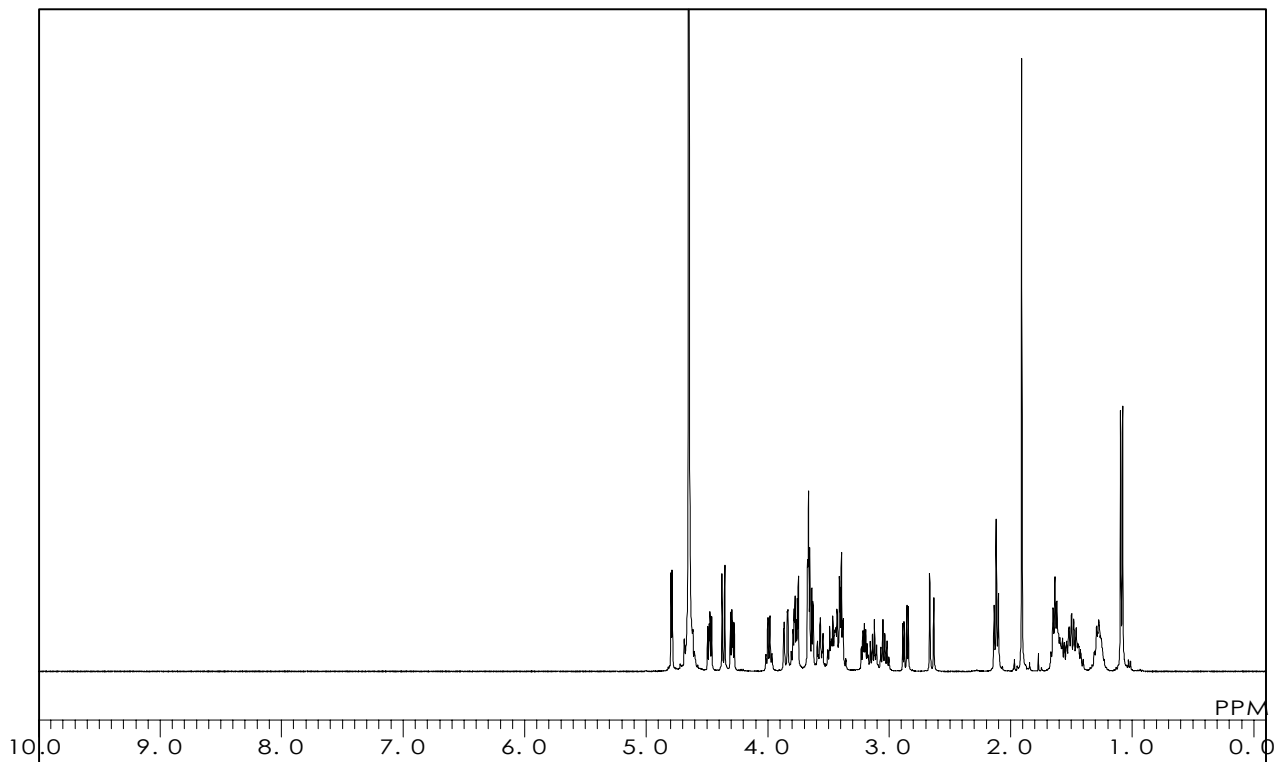
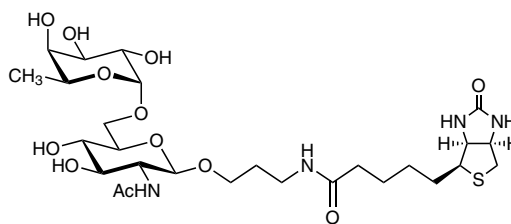
## Fuc $\alpha$ (1-6)GlcNAc- $\beta$ -propylamido-biotin

$C_{27}H_{46}N_4O_{12}S = 650.74$

Solvent :  $D_2O$

External Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 24.2 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**G0460**

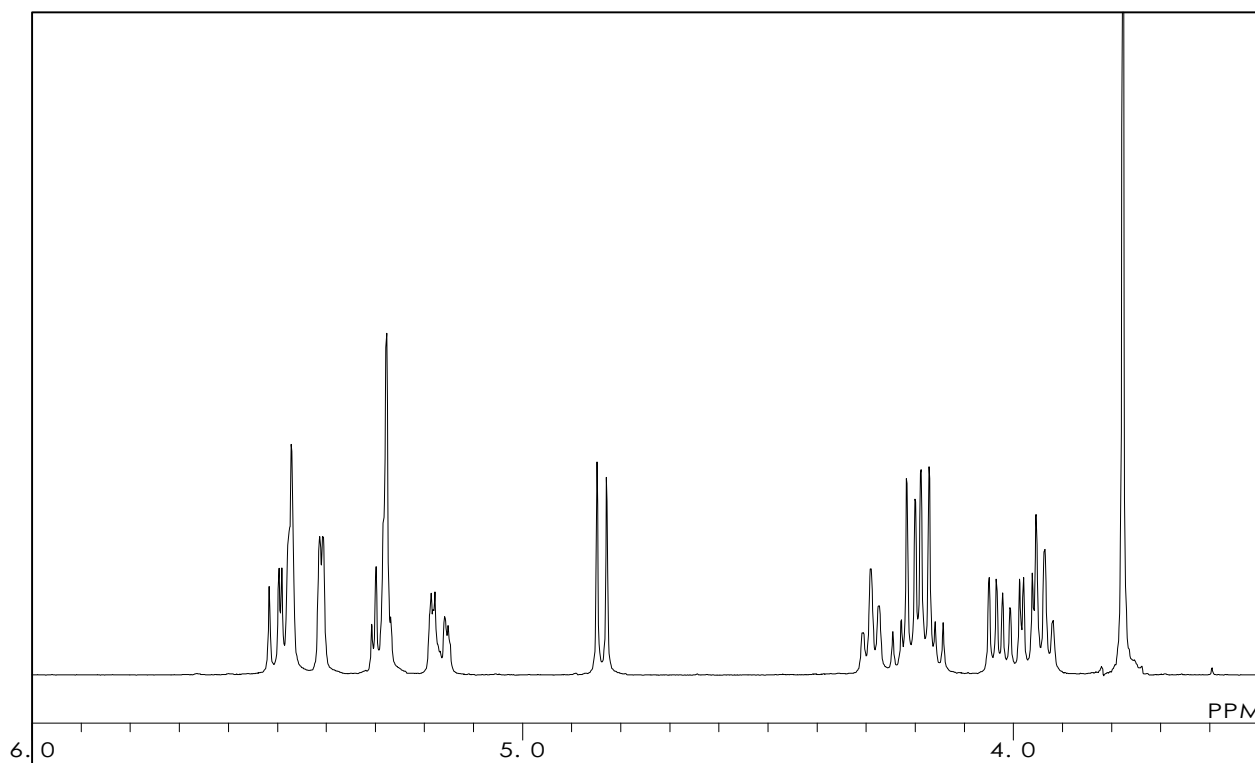
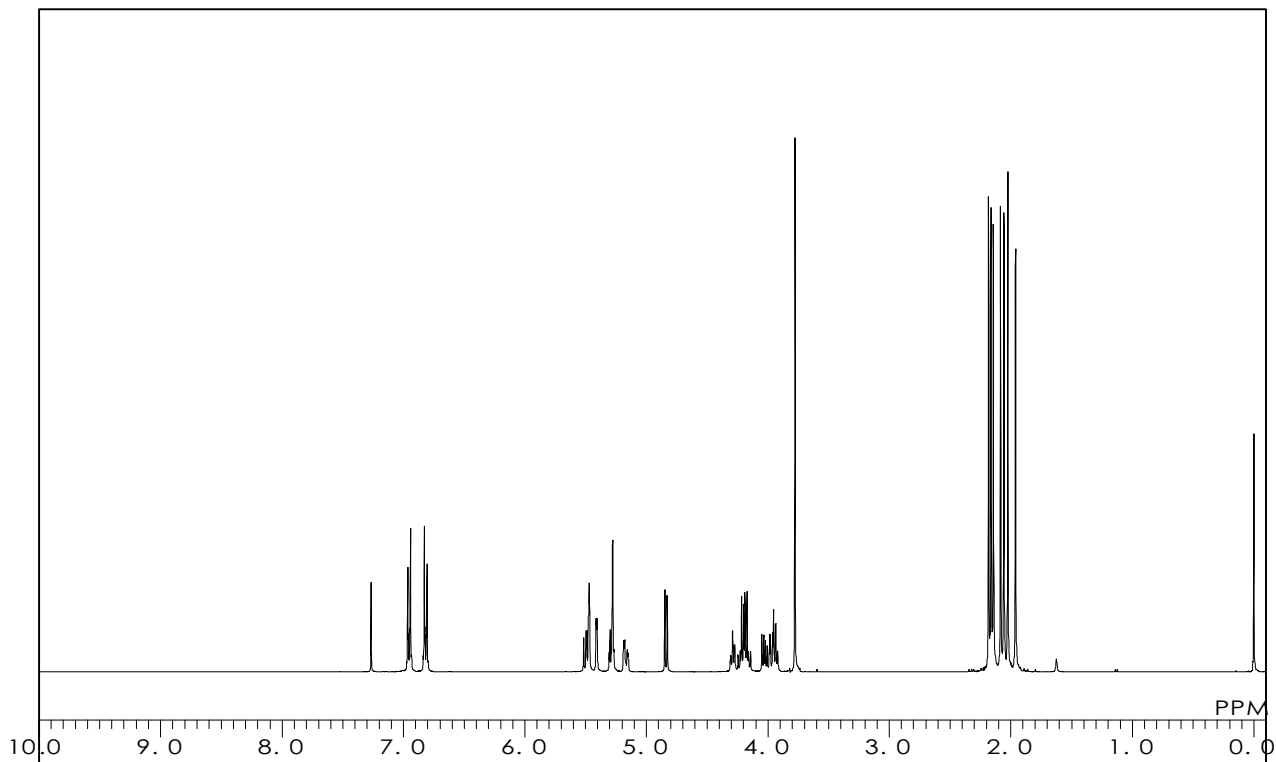
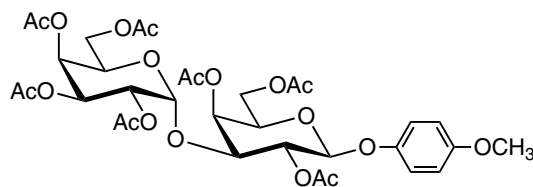
**Gal[2346Ac]  $\alpha$  (1-3)Gal[246Ac]-  $\beta$  -MP**

$C_{33}H_{42}O_{19}$  = 742.68 [1253645-85-0]

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 22.7°C



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**G0330**

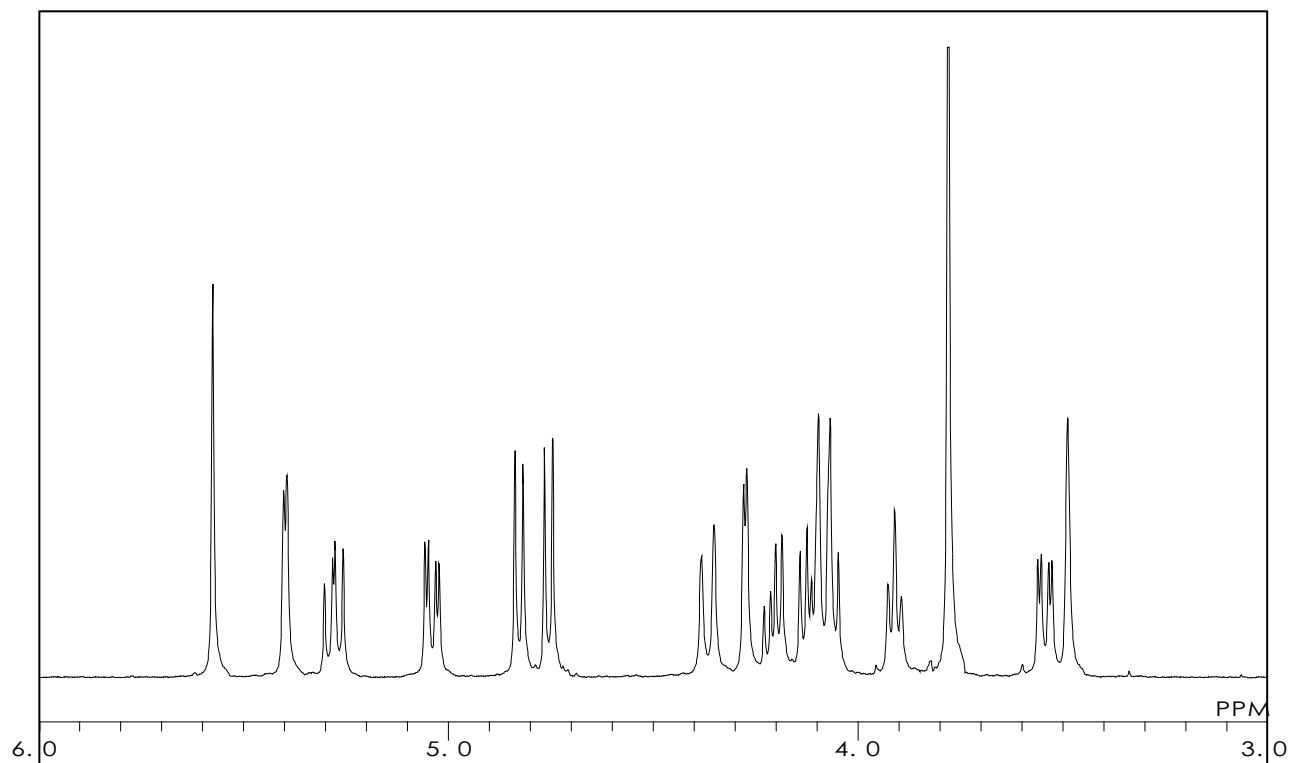
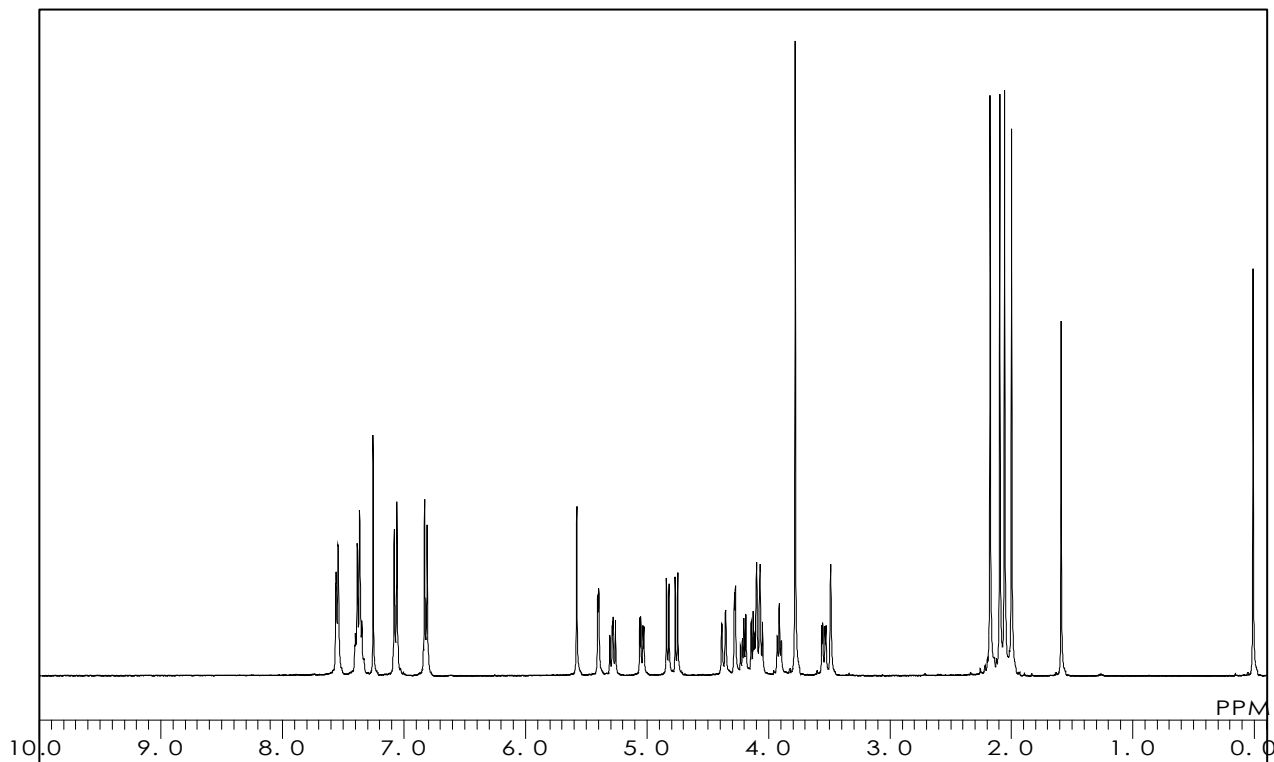
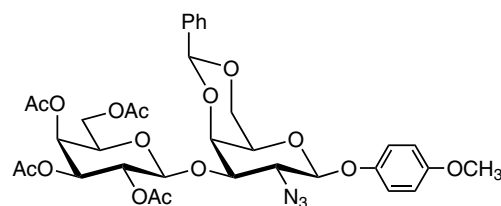
**Gal[2346Ac] $\beta$ (1-3)GalN<sub>3</sub>[46Bzd]- $\beta$ -MP**

C<sub>34</sub>H<sub>39</sub>N<sub>3</sub>O<sub>15</sub> = 729.69

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 22.9 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。



**G0329**

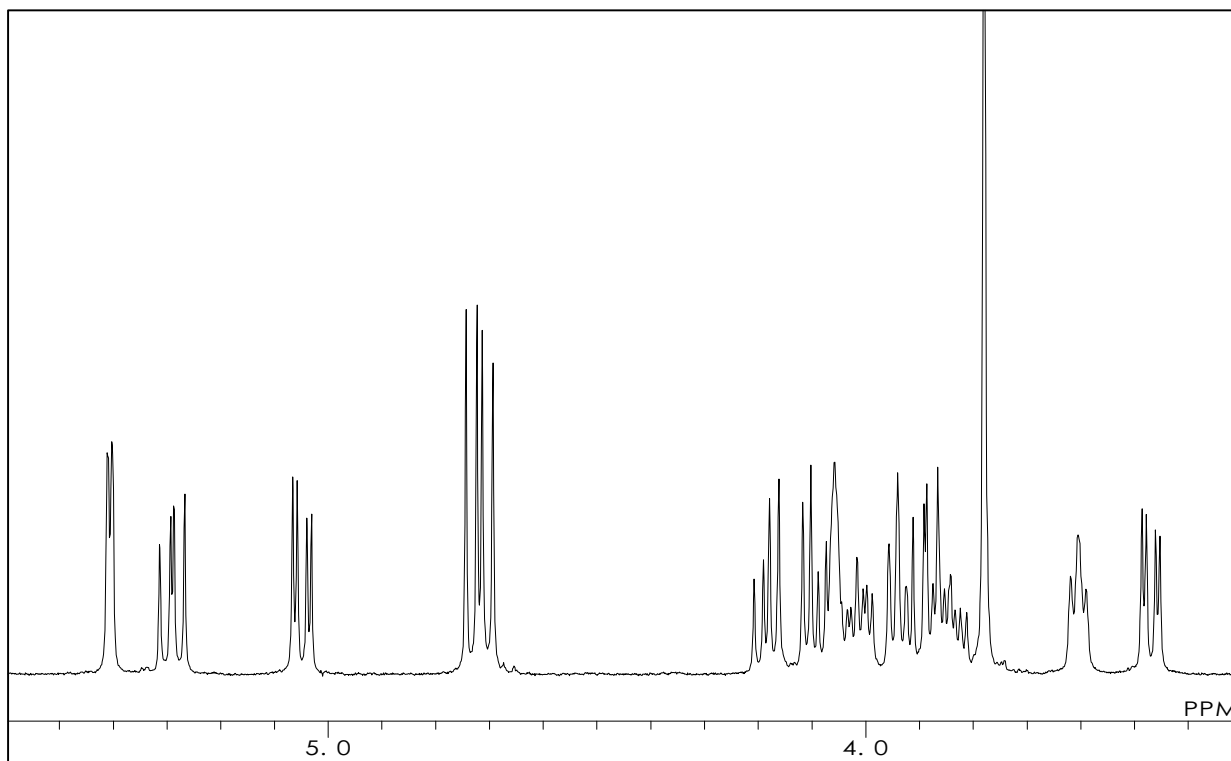
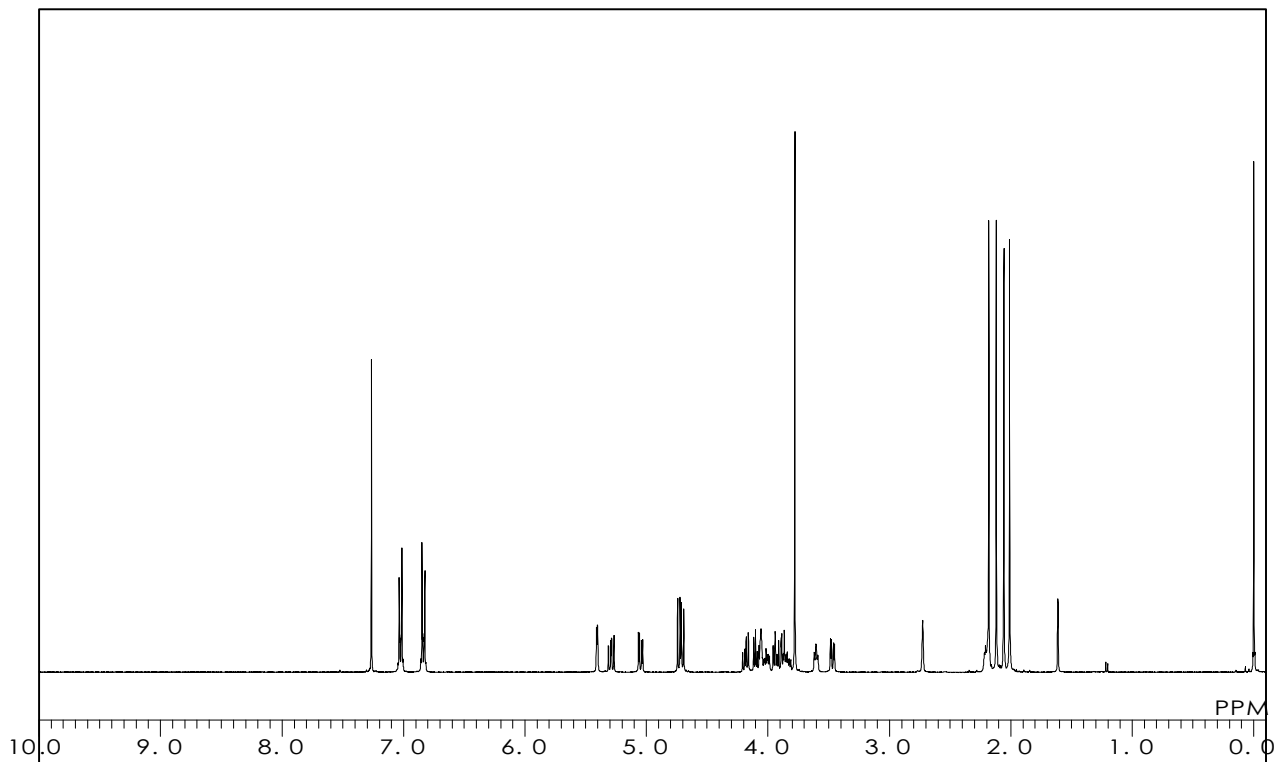
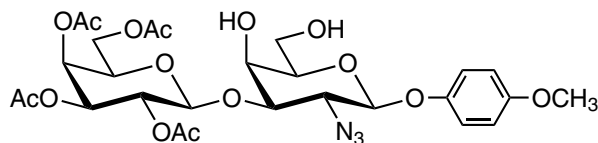
**Gal[2346Ac]  $\beta$  (1-3)GalN<sub>3</sub>-  $\beta$  -MP**

C<sub>27</sub>H<sub>35</sub>N<sub>3</sub>O<sub>15</sub> = 641.58

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 19.9 °C



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**G0309**

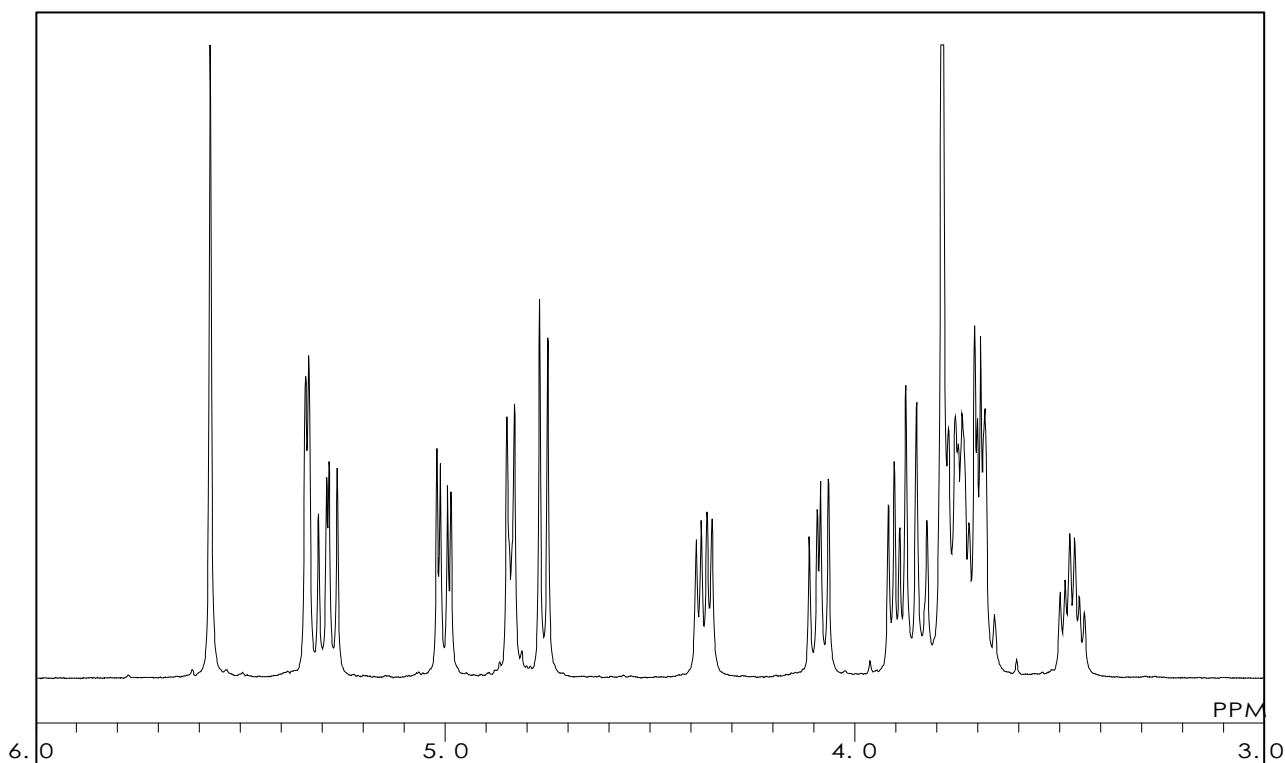
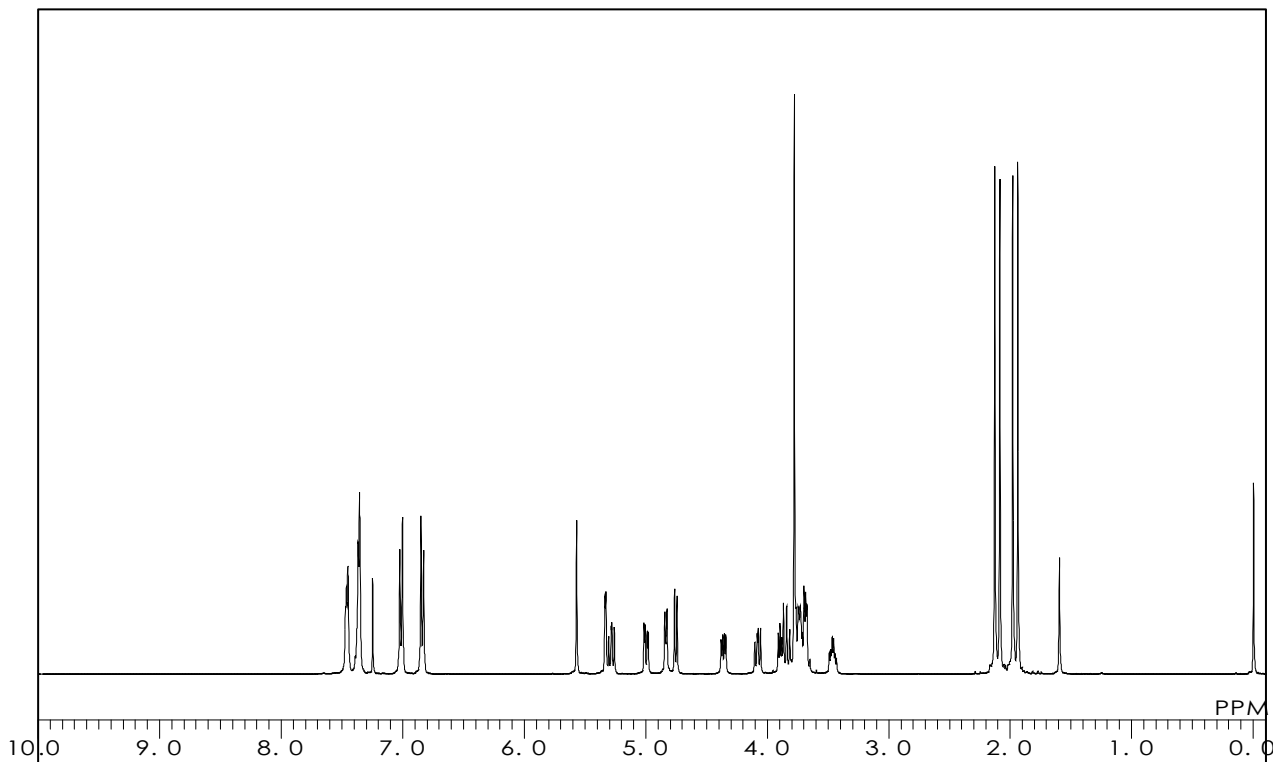
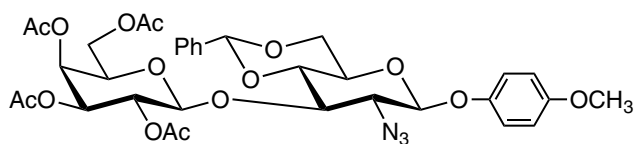
**Gal[2346Ac] $\beta$ (1-3)GlcN<sub>3</sub>[46Bzd]- $\beta$ -MP**

C<sub>34</sub>H<sub>39</sub>N<sub>3</sub>O<sub>15</sub> = 729.69

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 22.5 °C



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**G0311**

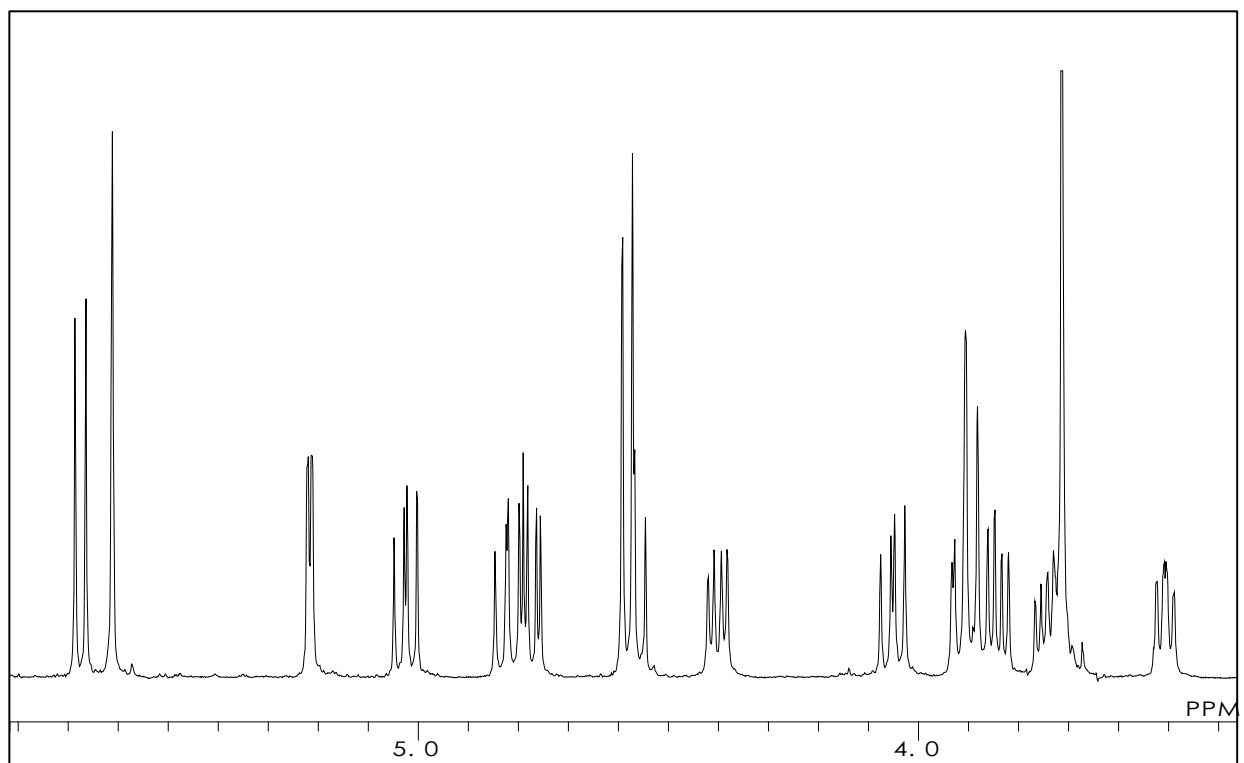
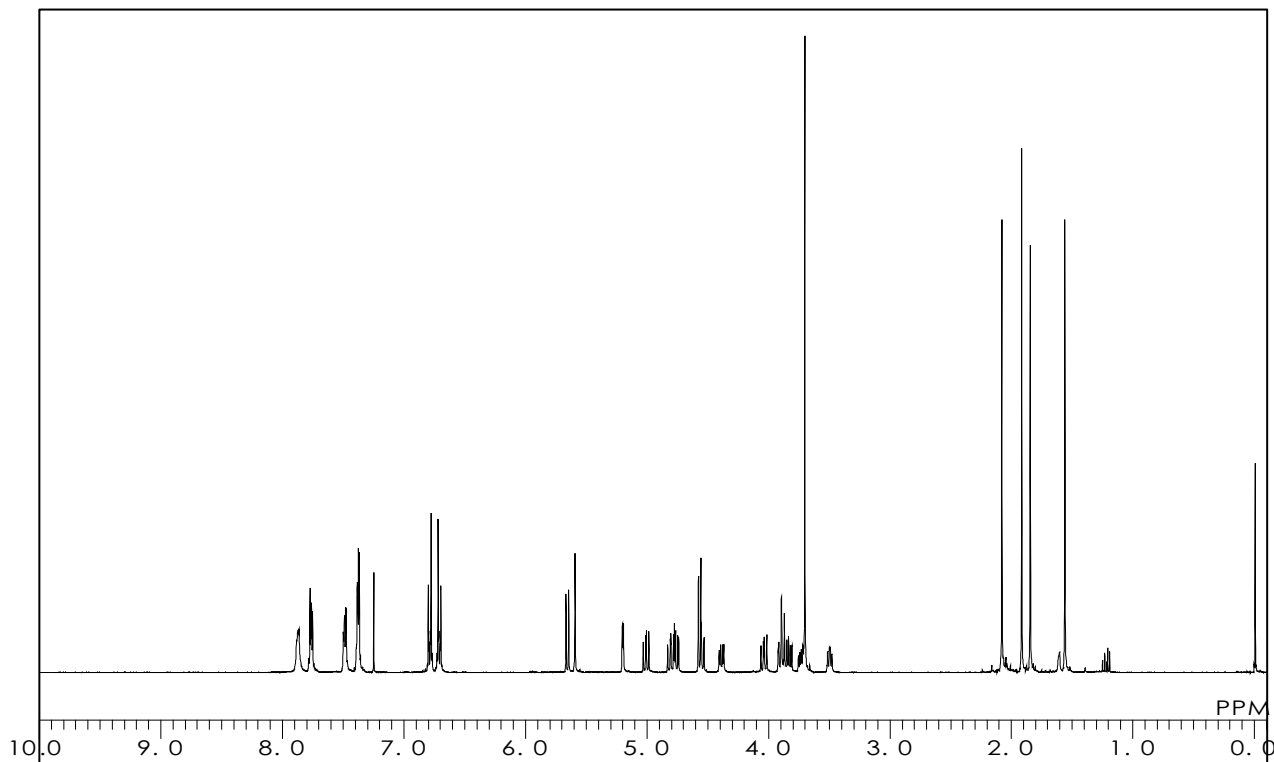
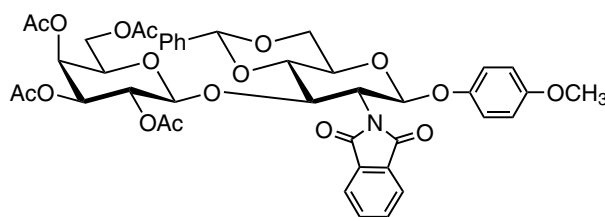
**Gal[2346Ac] $\beta$ (1-3)GlcNPhth[46Bzd]- $\beta$ -MP**

$C_{42}H_{43}NO_{17} = 833.80$

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 20.0  $^{\circ}C$



**M1686**

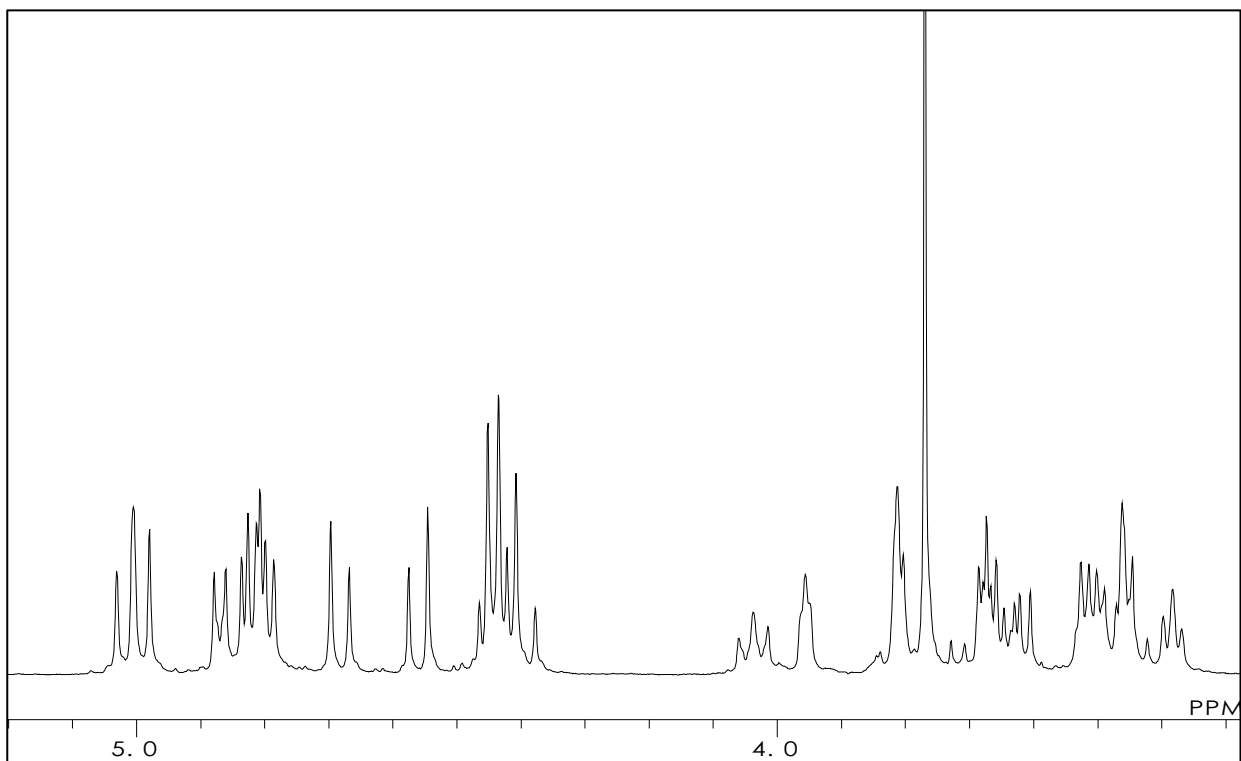
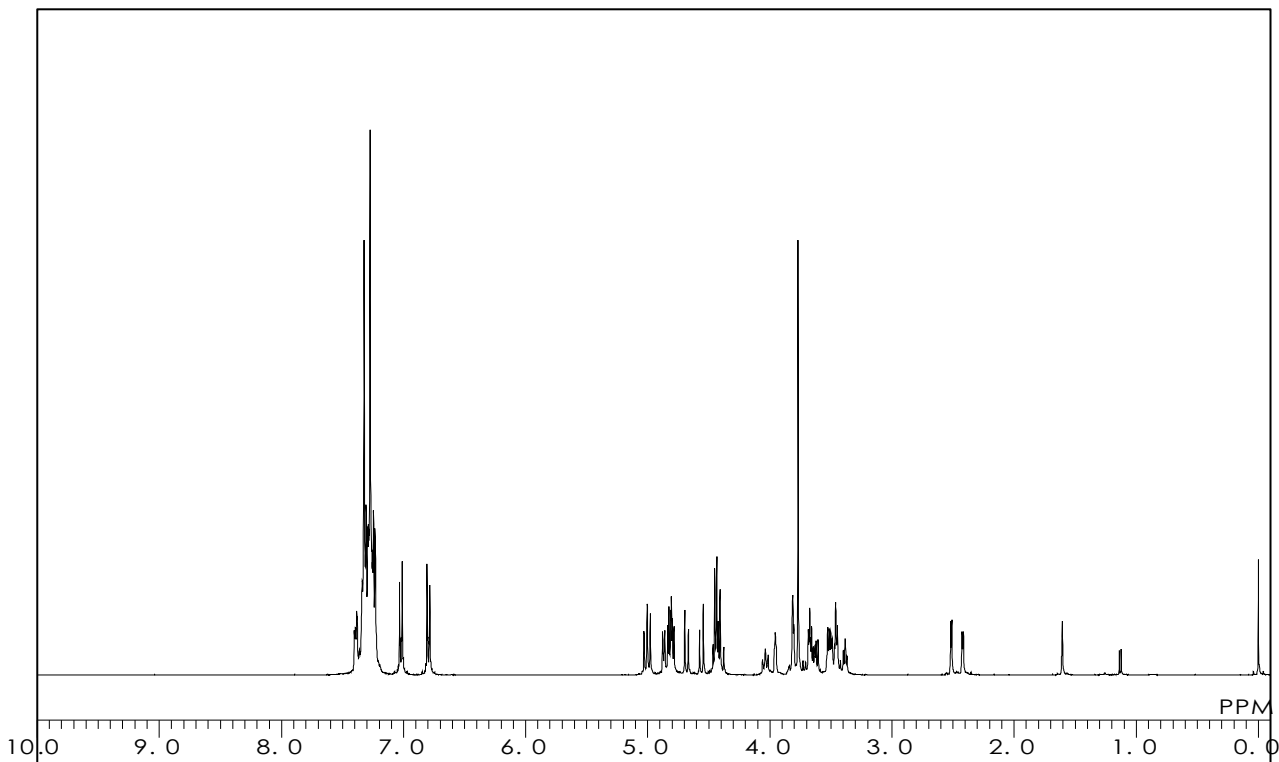
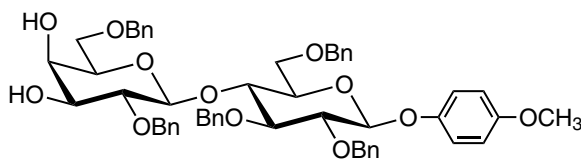
**Gal[26Bn] $\beta$ (1-4)Glc[236Bn]- $\beta$ -MP**

C<sub>54</sub>H<sub>58</sub>O<sub>12</sub> = 899.05 [358681-61-5]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 23.1 °C



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**M1727**

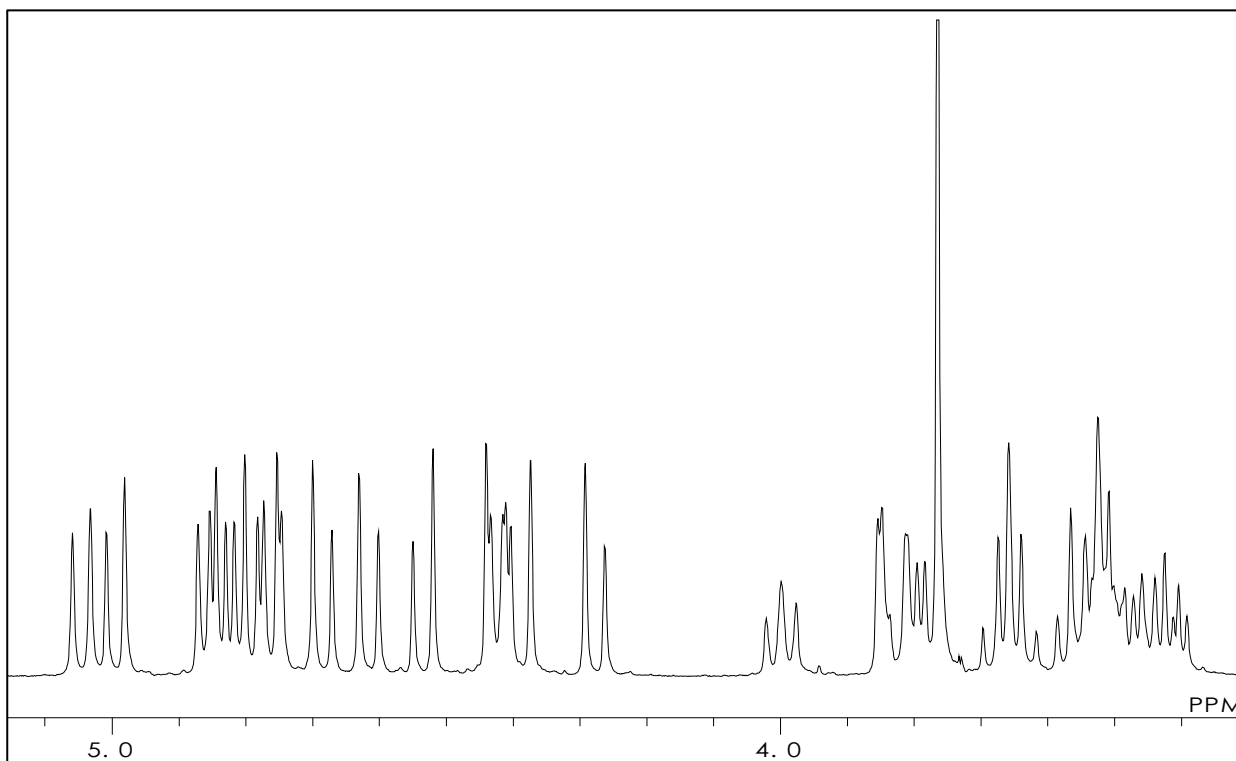
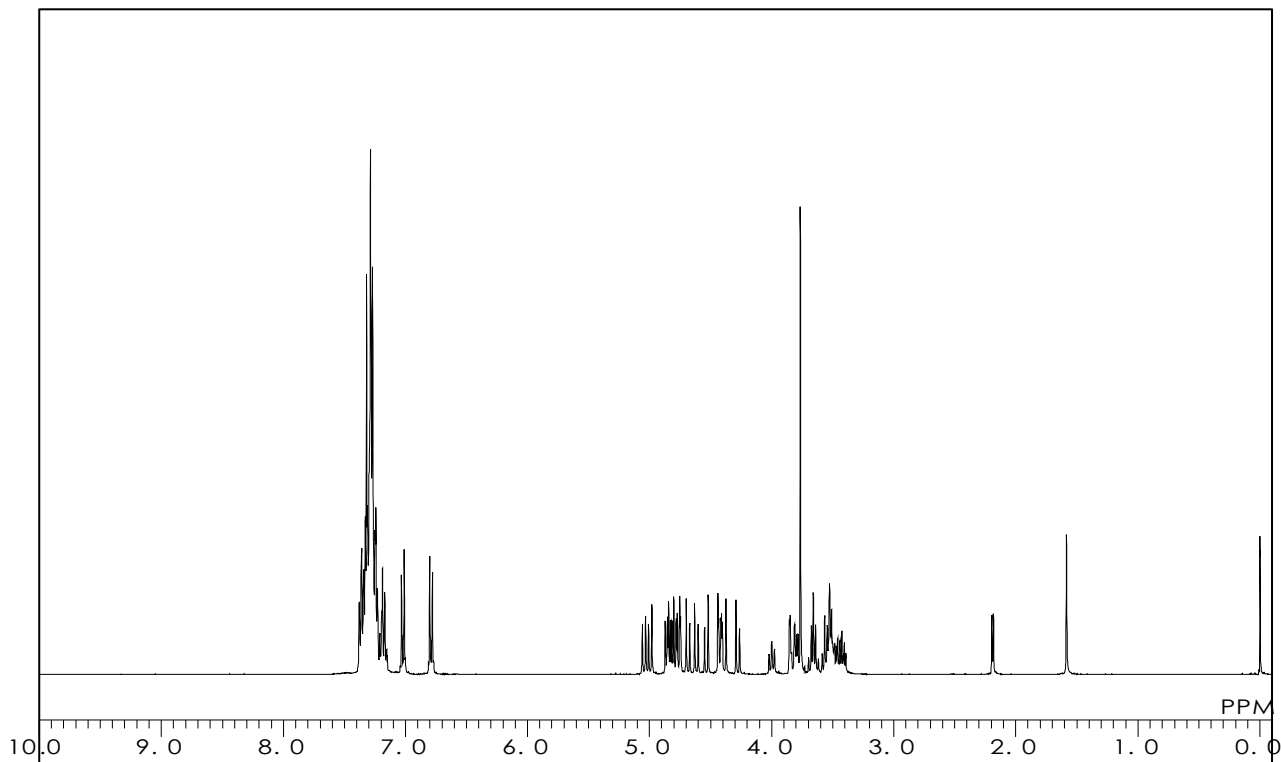
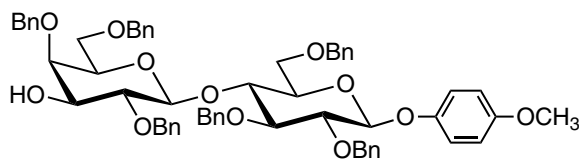
**Gal[246Bn] $\beta$ (1-4)Glc[236Bn]- $\beta$ -MP**

C<sub>61</sub>H<sub>64</sub>O<sub>12</sub> = 989.17 [717132-49-5]

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 23.4 °C



# G0461

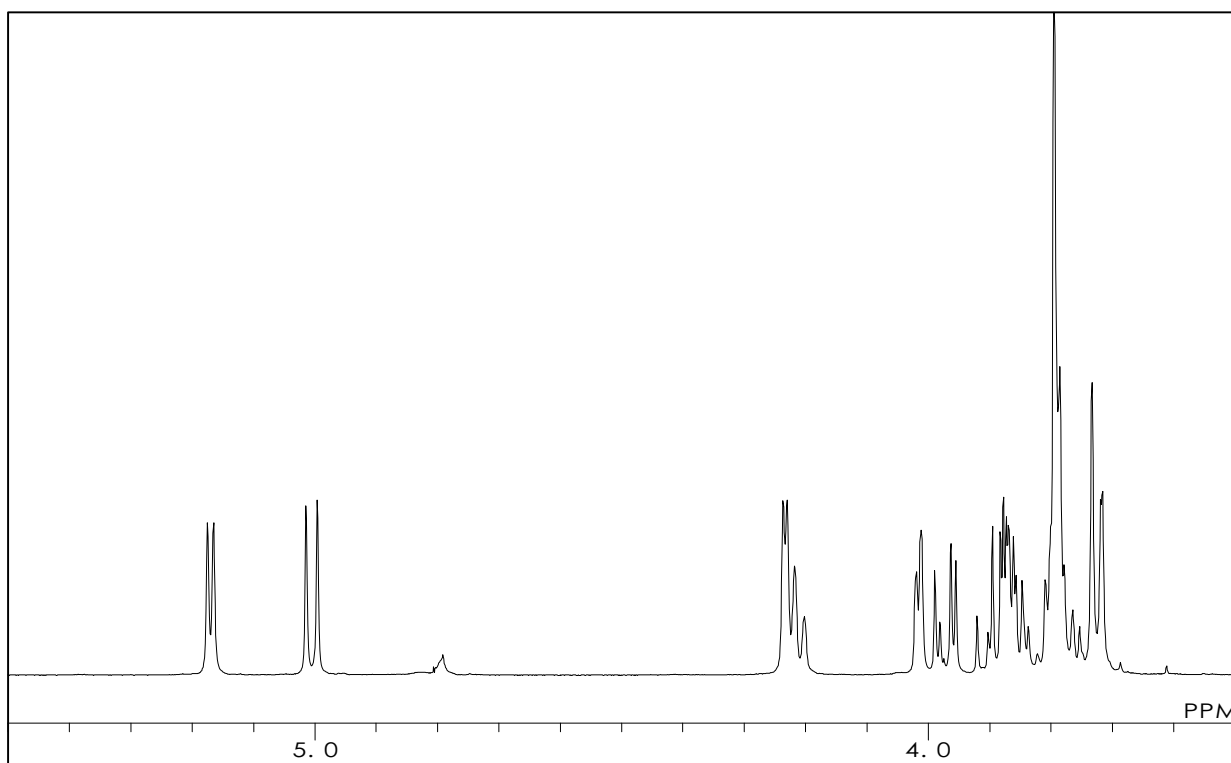
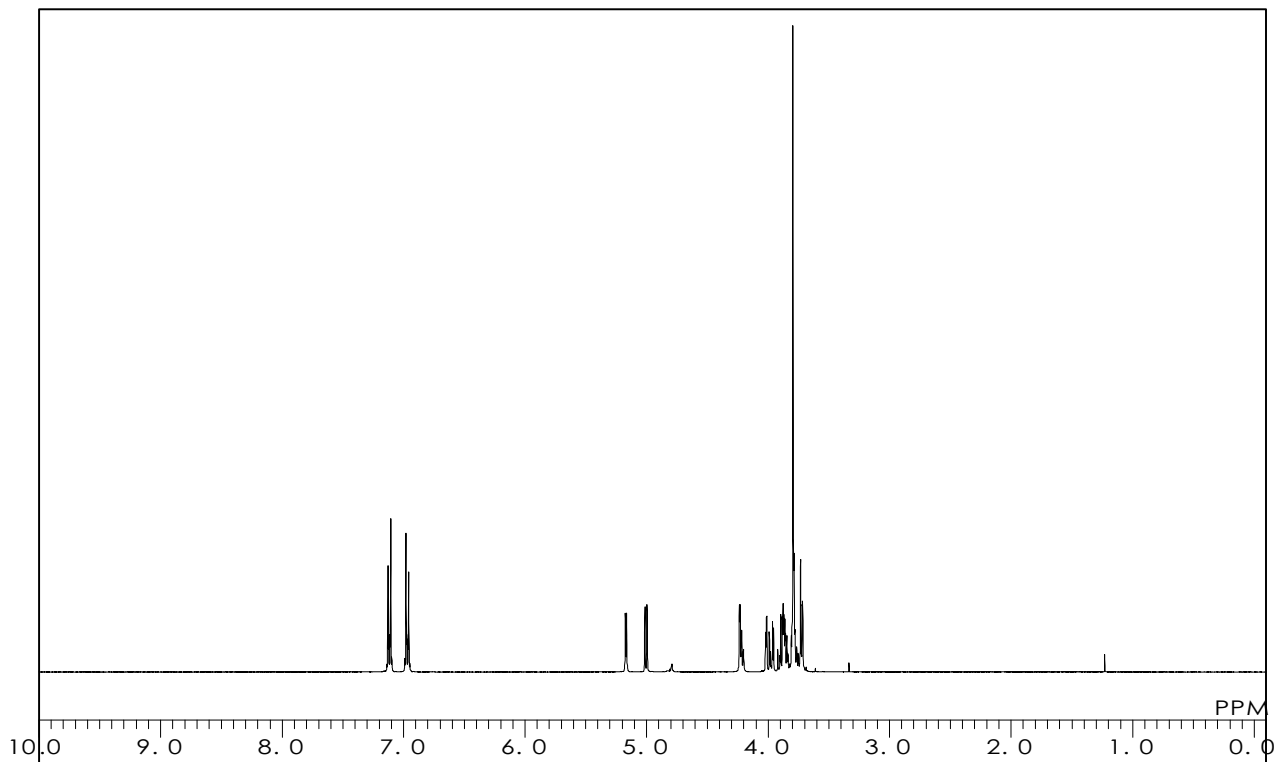
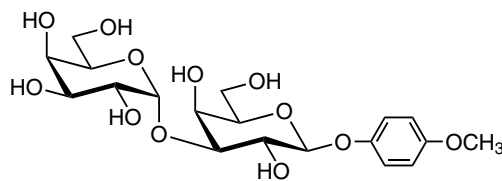
## Gal $\alpha$ (1-3)Gal- $\beta$ -MP

$C_{19}H_{28}O_{12} = 448.42$

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 21.4 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

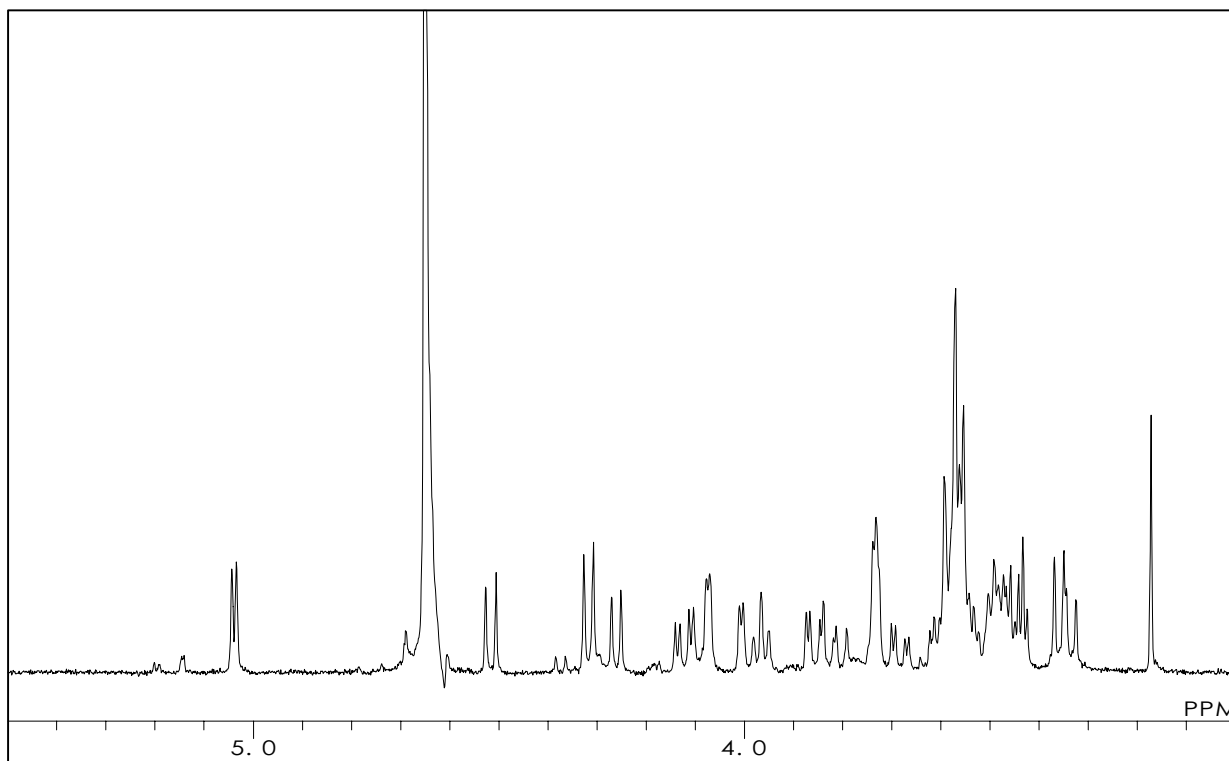
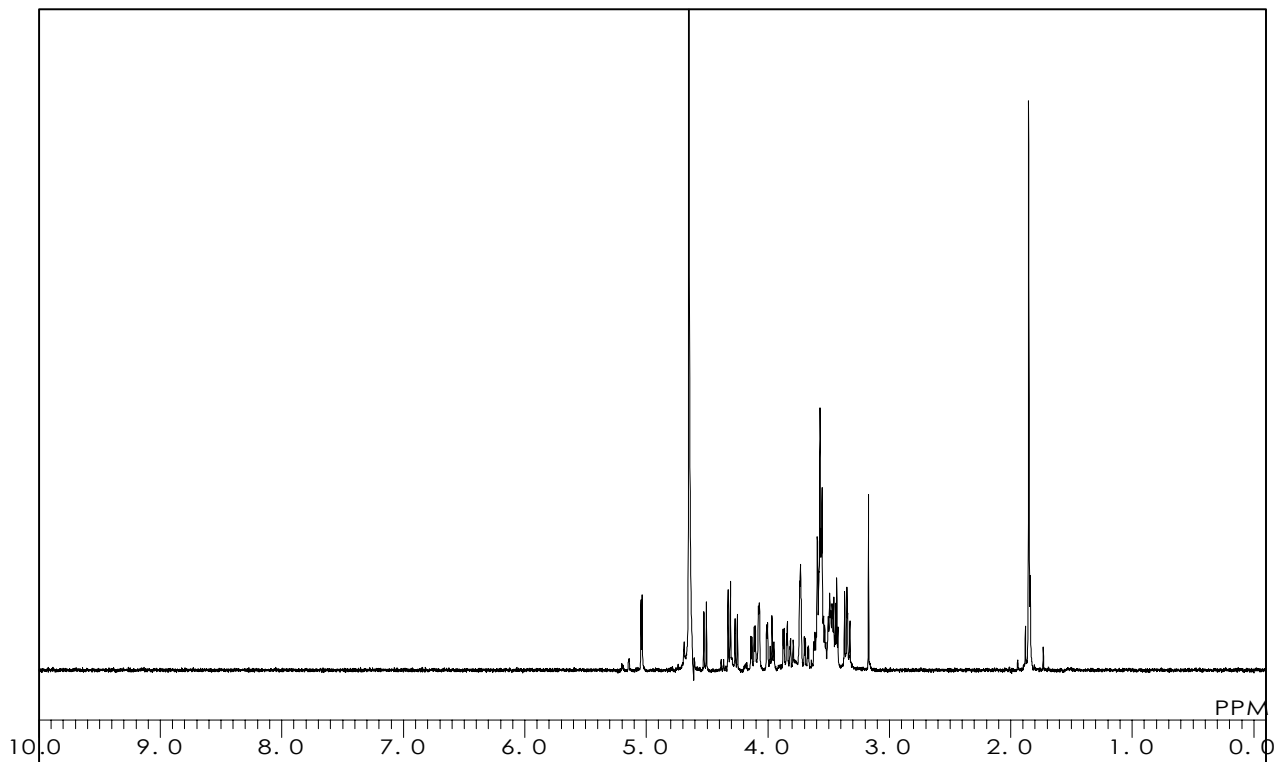
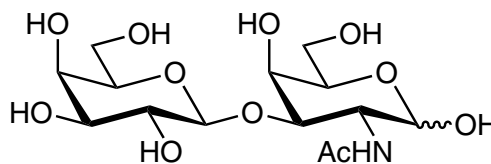
**G0439**

**Gal  $\beta$  (1-3)GalNAc**

$C_{14}H_{25}NO_{11}$  = 383.35 [20972-29-6]

Solvent :  $D_2O$

Measured Temperature : 20.5  $^{\circ}C$



**G0375**

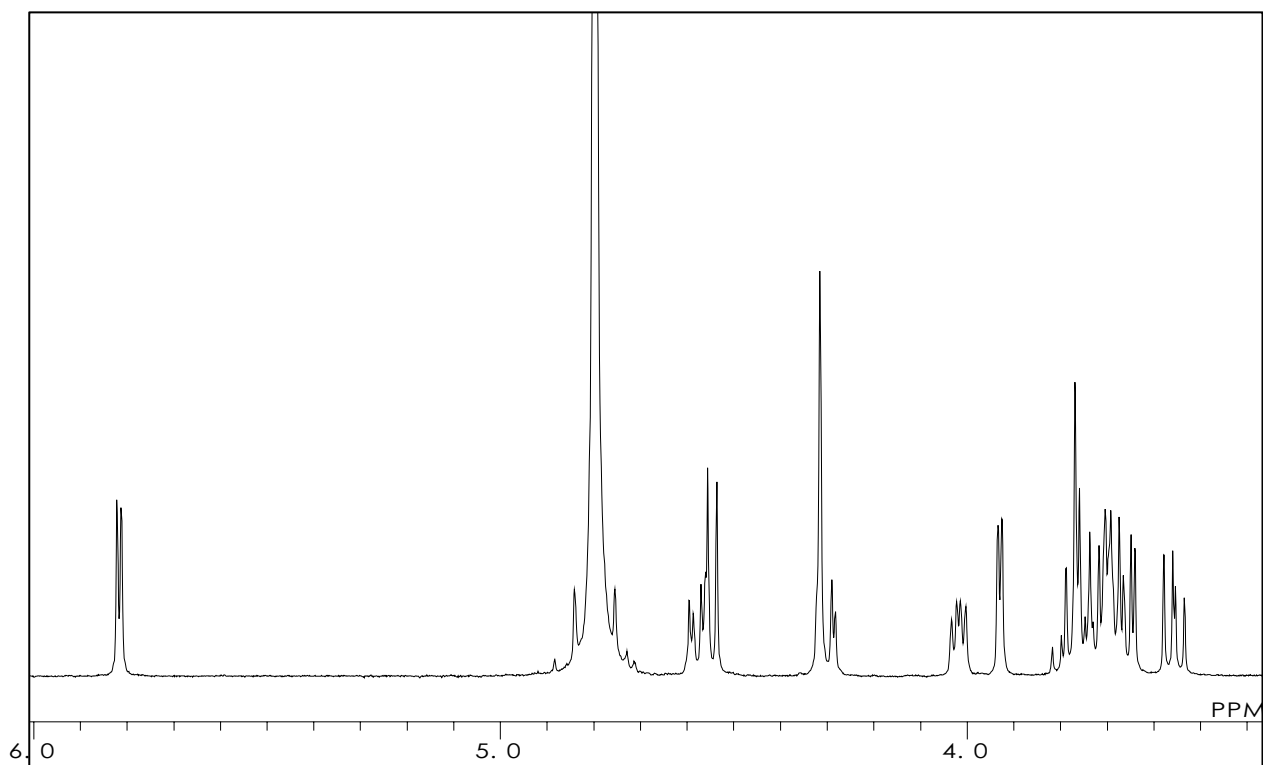
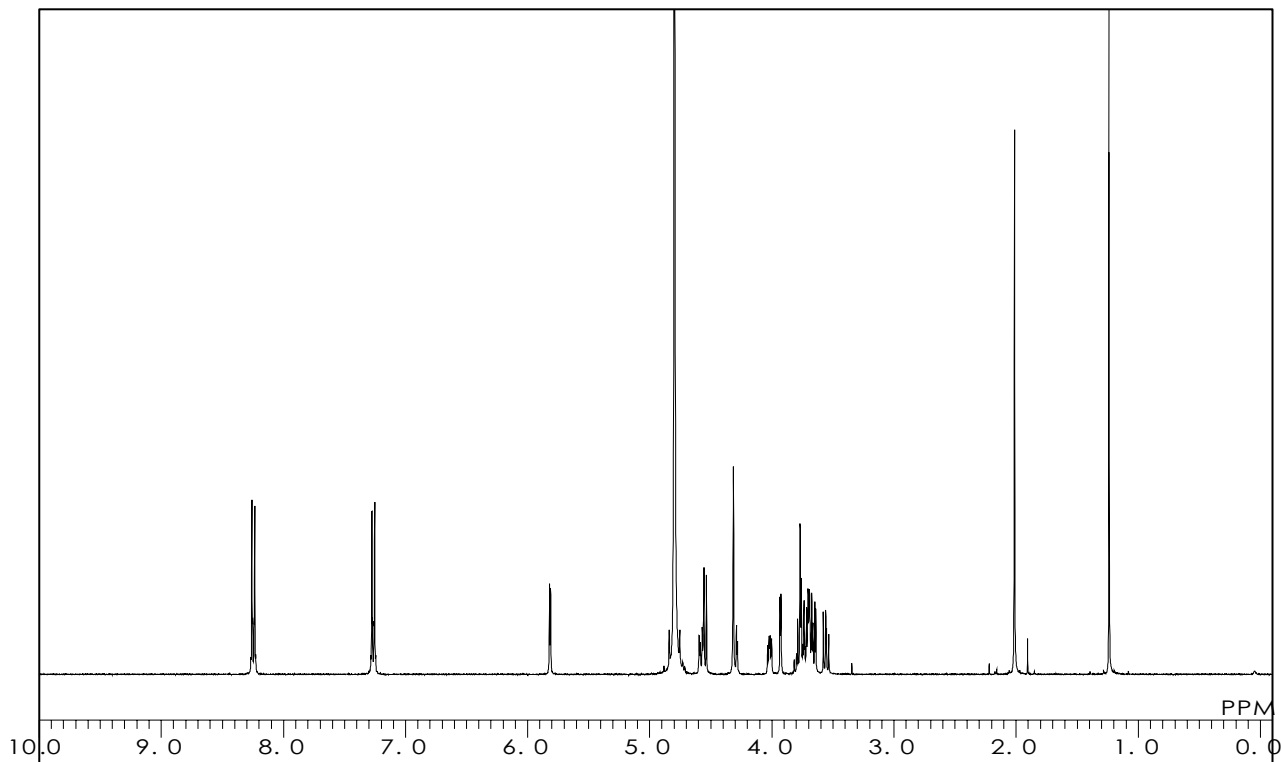
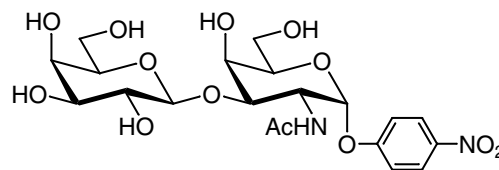
**Gal $\beta$ (1-3)GalNAc- $\alpha$ -pNP**

C<sub>20</sub>H<sub>28</sub>N<sub>2</sub>O<sub>13</sub> = 504.45 [59837-14-8]

Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 22.7 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。



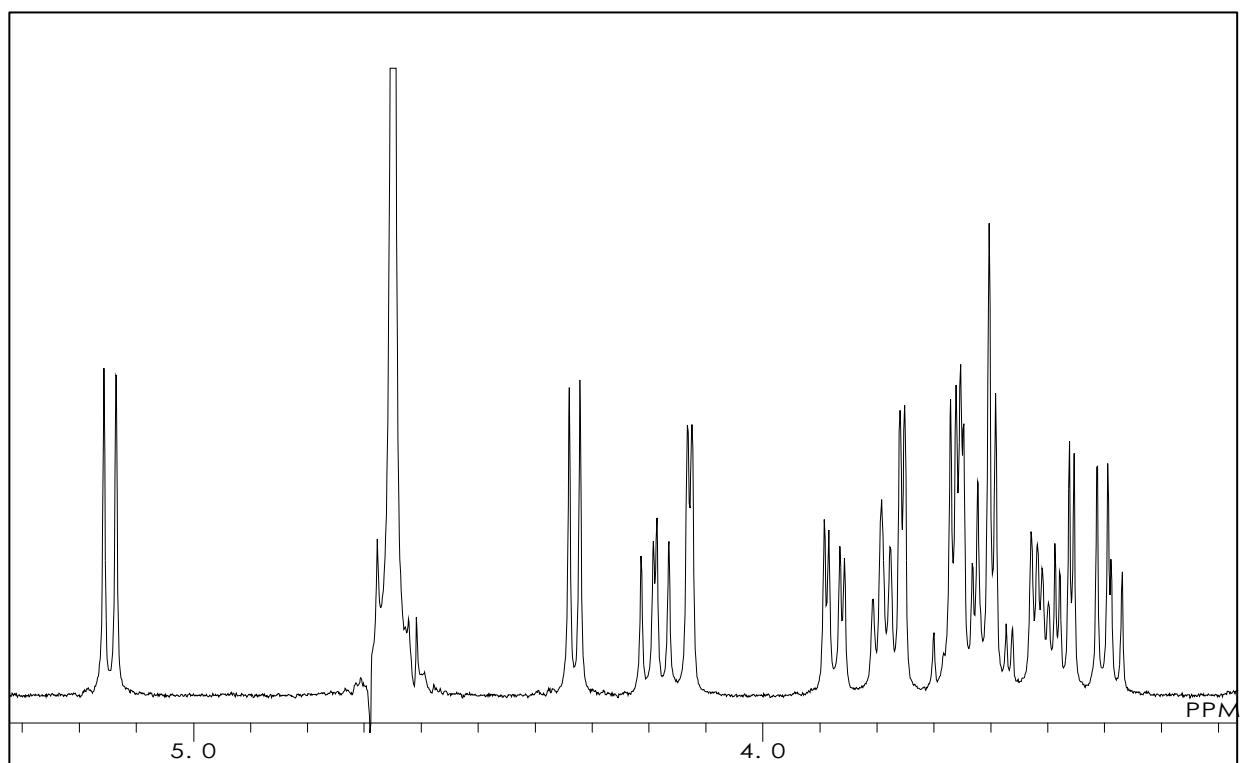
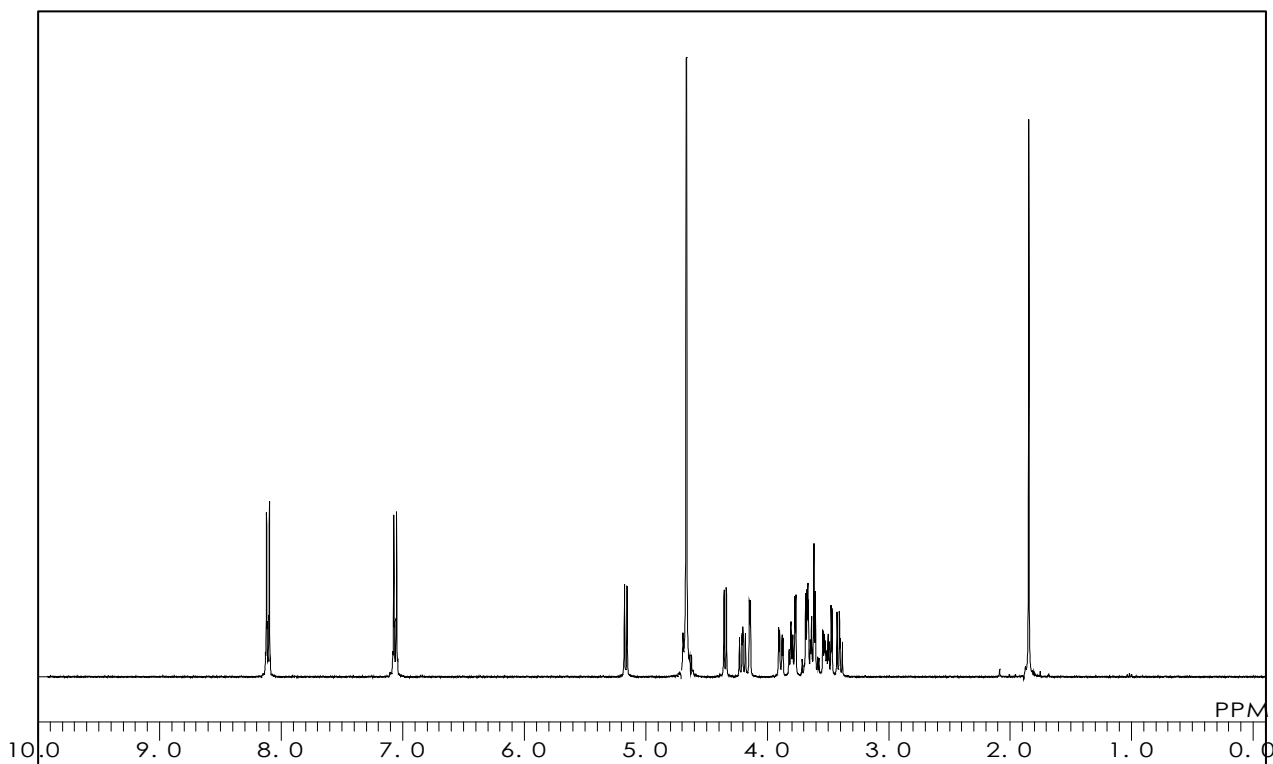
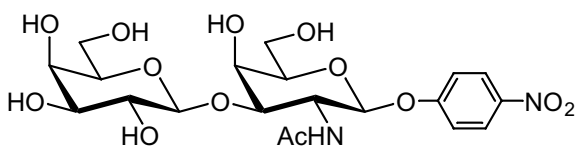
**G0344**

**Gal $\beta$ (1-3)GalNAc- $\beta$ -pNP**

C<sub>20</sub>H<sub>28</sub>N<sub>2</sub>O<sub>13</sub> = 504.45 [59837-15-9]

Solvent : D<sub>2</sub>O

Measured Temperature : 21.5 °C



Please refrain from the conversion of these data without permission. These data have been released on our homepage.

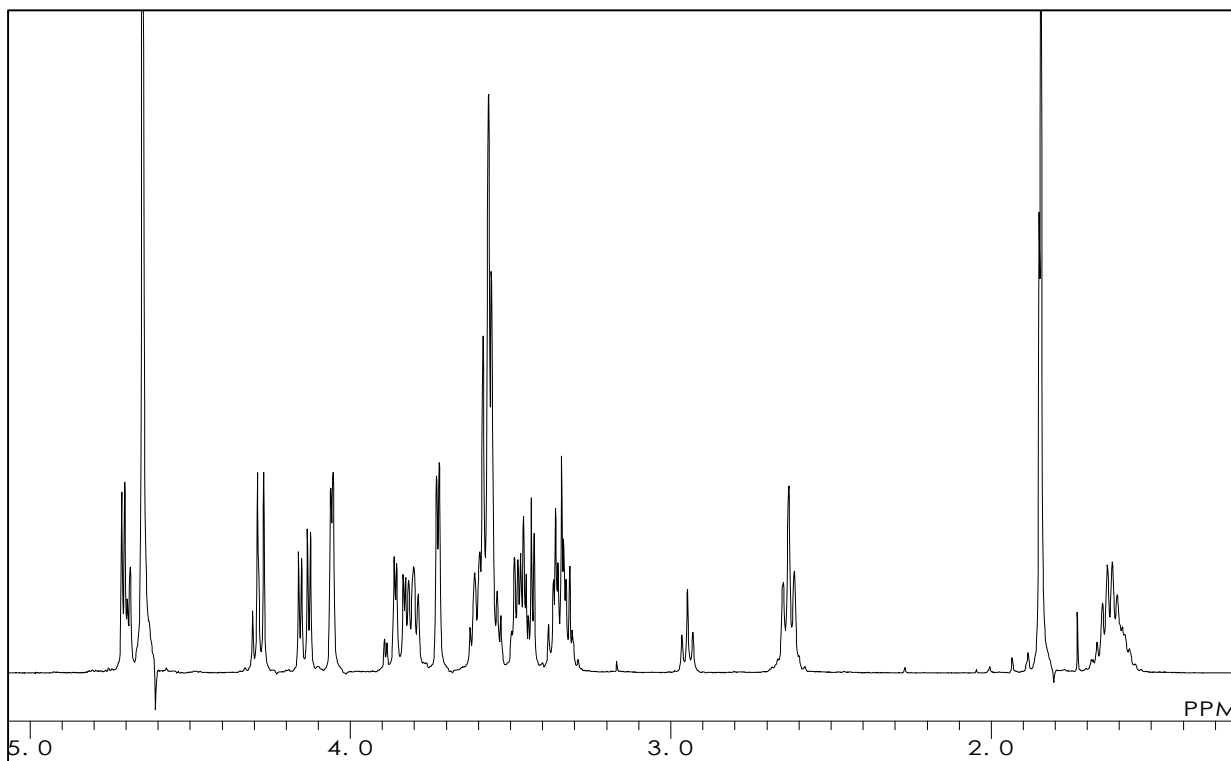
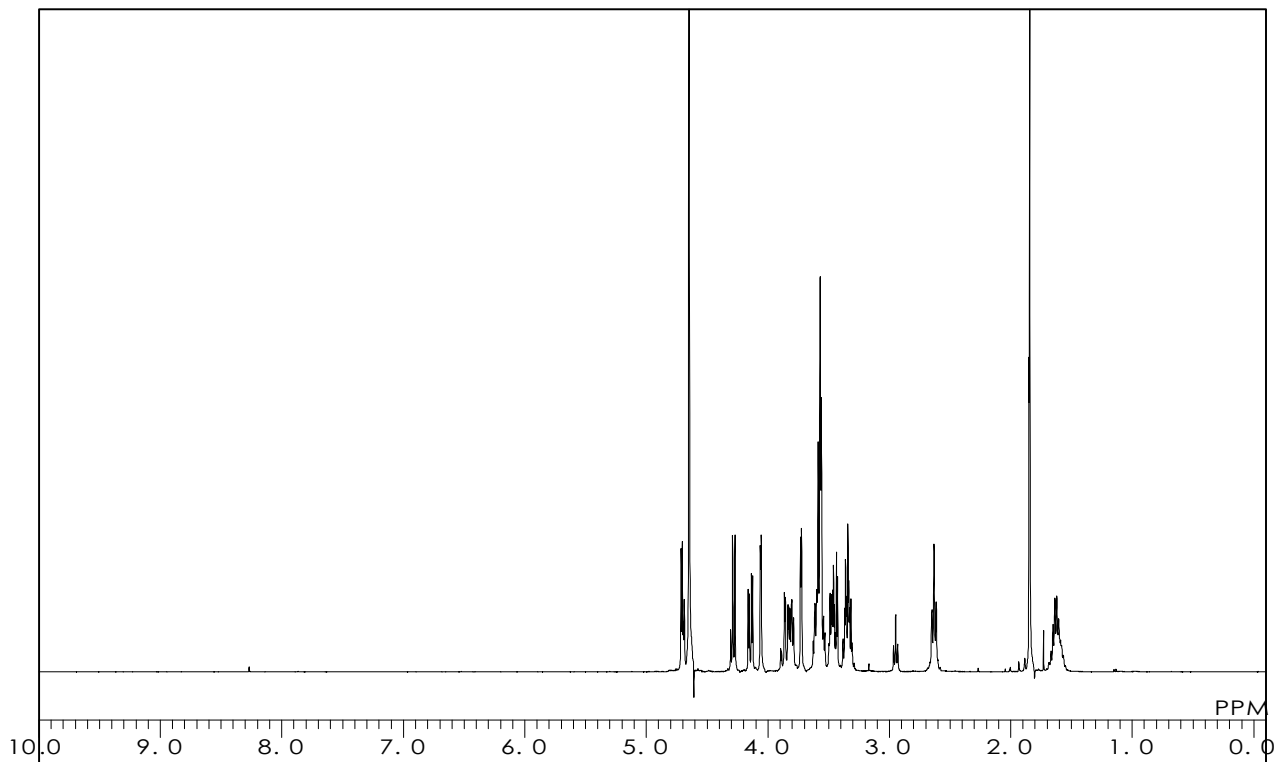
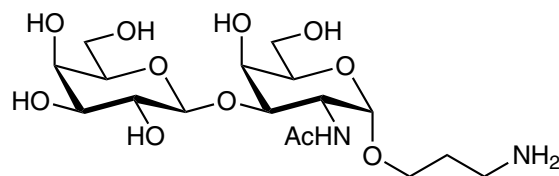
**G0528**

**Gal  $\beta$  (1-3)GalNAc- $\alpha$ -propylamine**

$C_{17}H_{32}N_2O_{11} = 440.45$  [100496-29-5]

Solvent :  $D_2O$

Measured Temperature : 20.7 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**G0340**

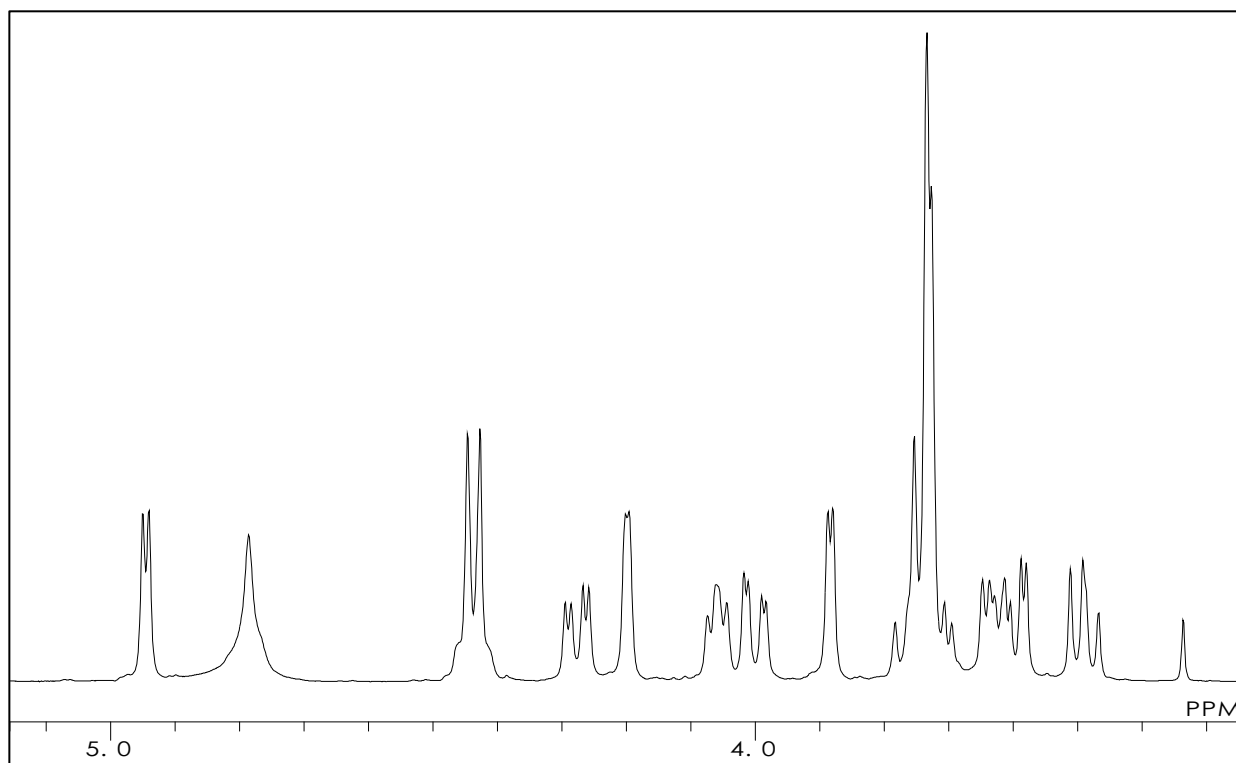
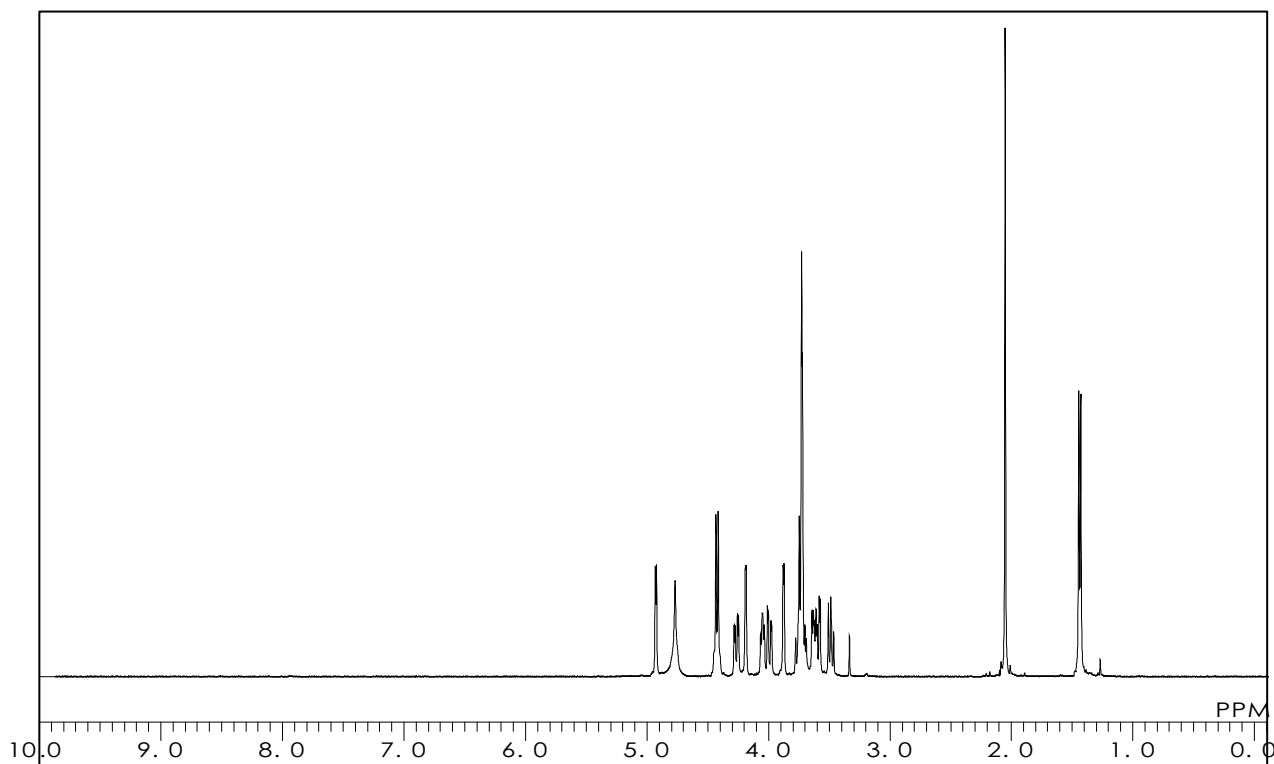
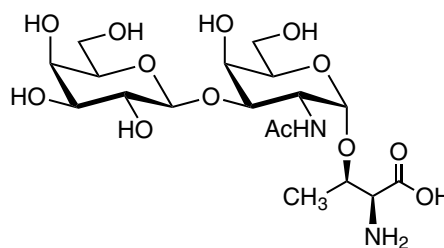
**Gal $\beta$ (1-3)GalNAc- $\alpha$ -Thr**

C<sub>18</sub>H<sub>32</sub>N<sub>2</sub>O<sub>13</sub> = 484.46 [60280-58-2]

Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 22.0 °C



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**G0420**

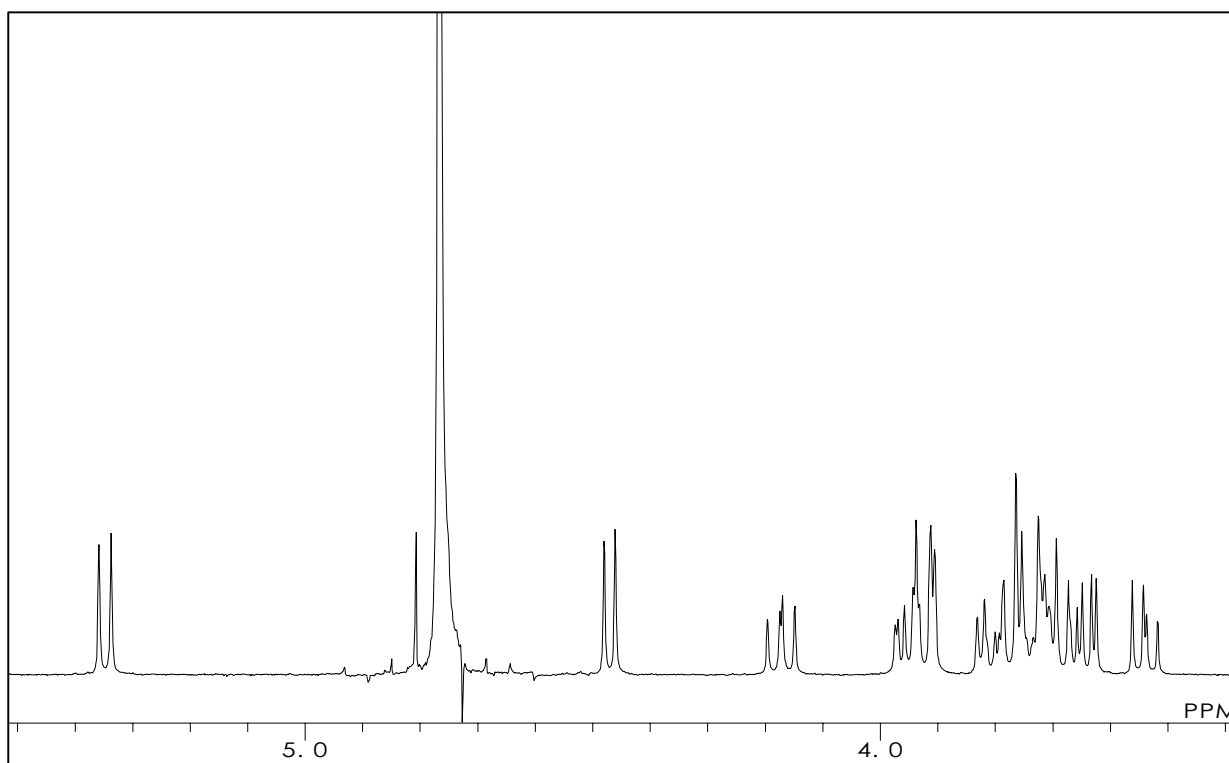
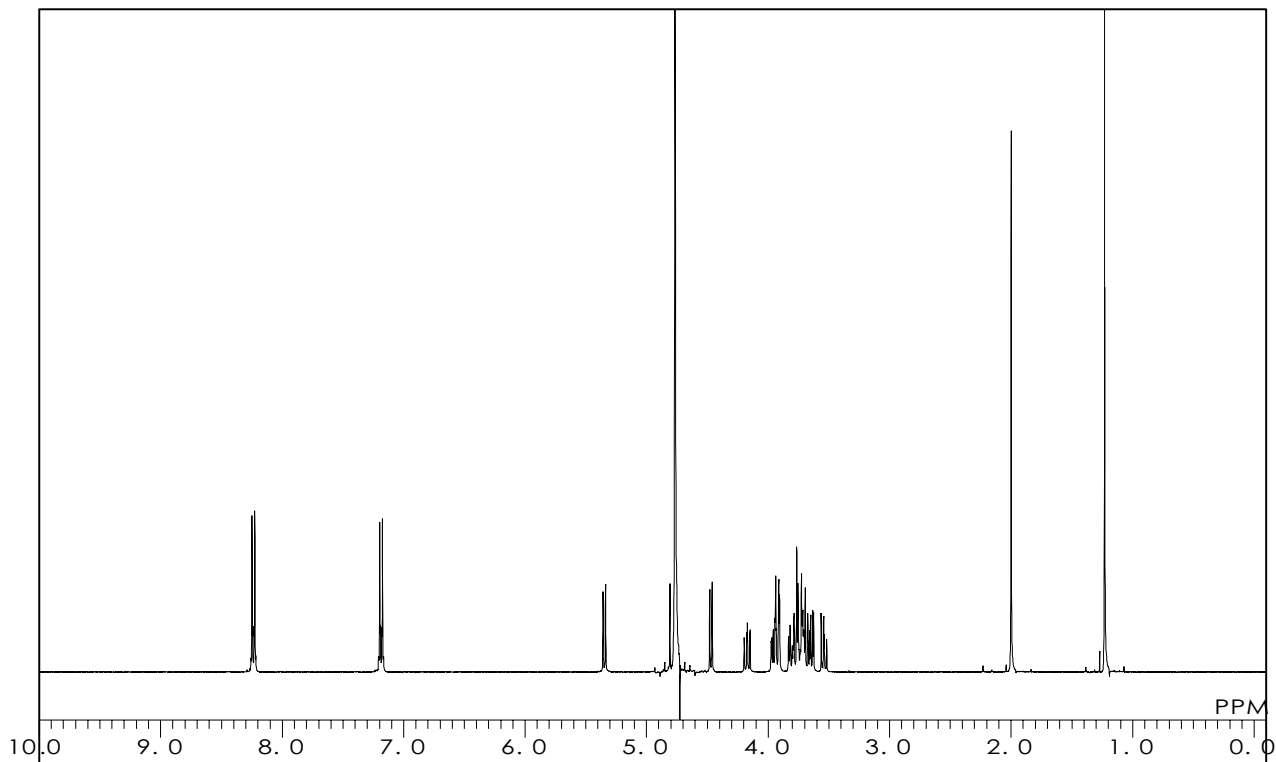
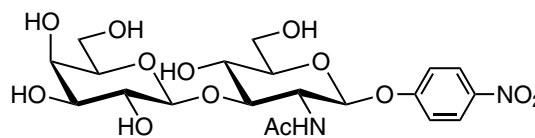
**Gal  $\beta$  (1-3)GlcNAc- $\beta$ -pNP**

$C_{20}H_{28}N_2O_{13}$  = 504.45 [57467-13-7]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 24.8 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**G0373**

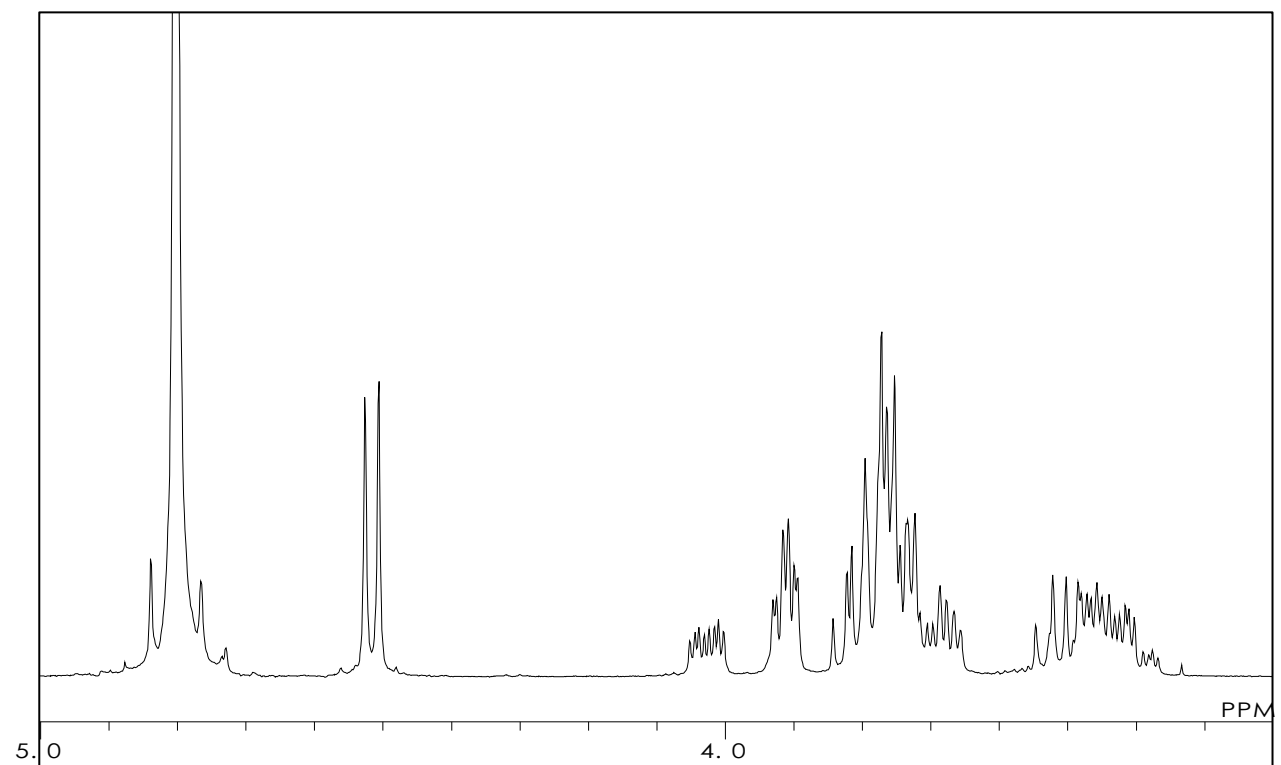
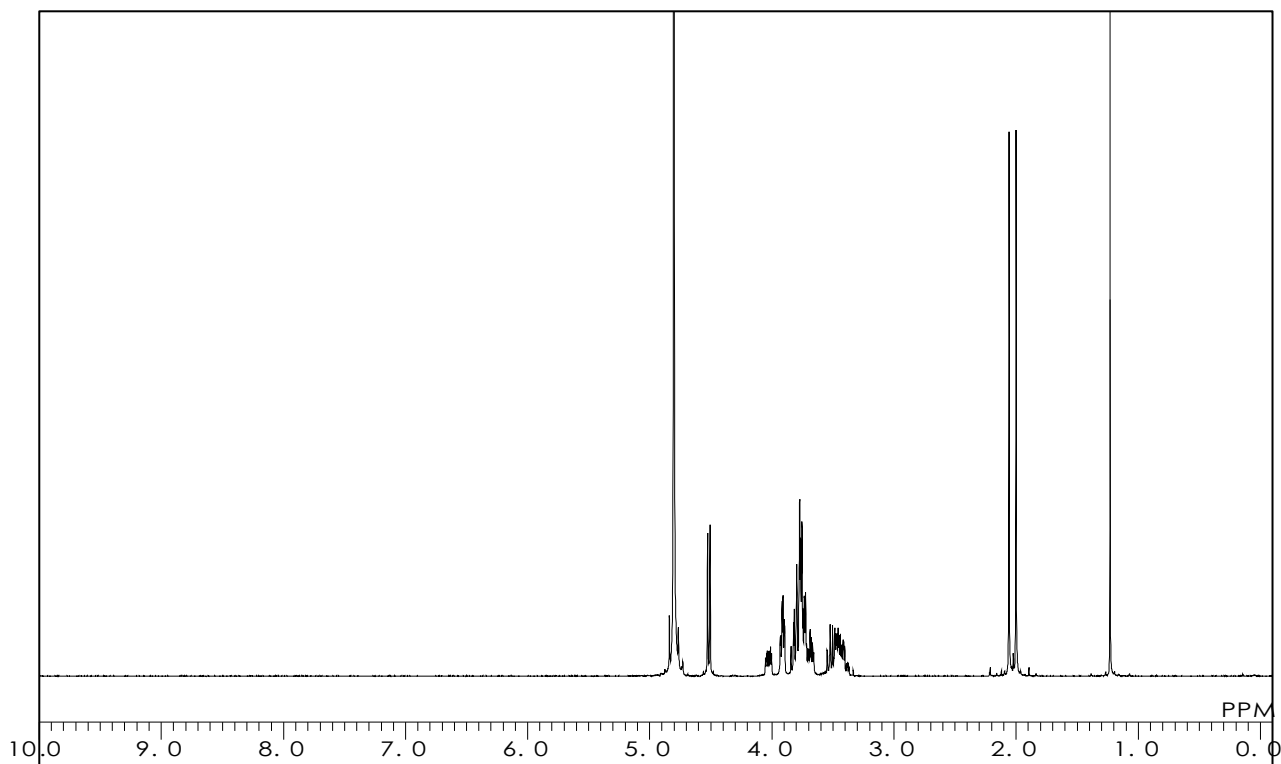
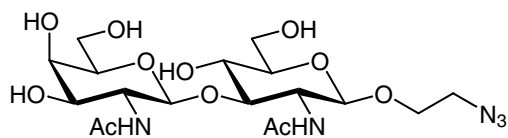
**GalNAc $\beta$ (1-3)GlcNAc- $\beta$ -ethylazide**

$C_{18}H_{31}N_5O_{11} = 493.47$

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 21.5 °C



Please refrain from the conversion of these data without permission. These data have been released on our homepage.

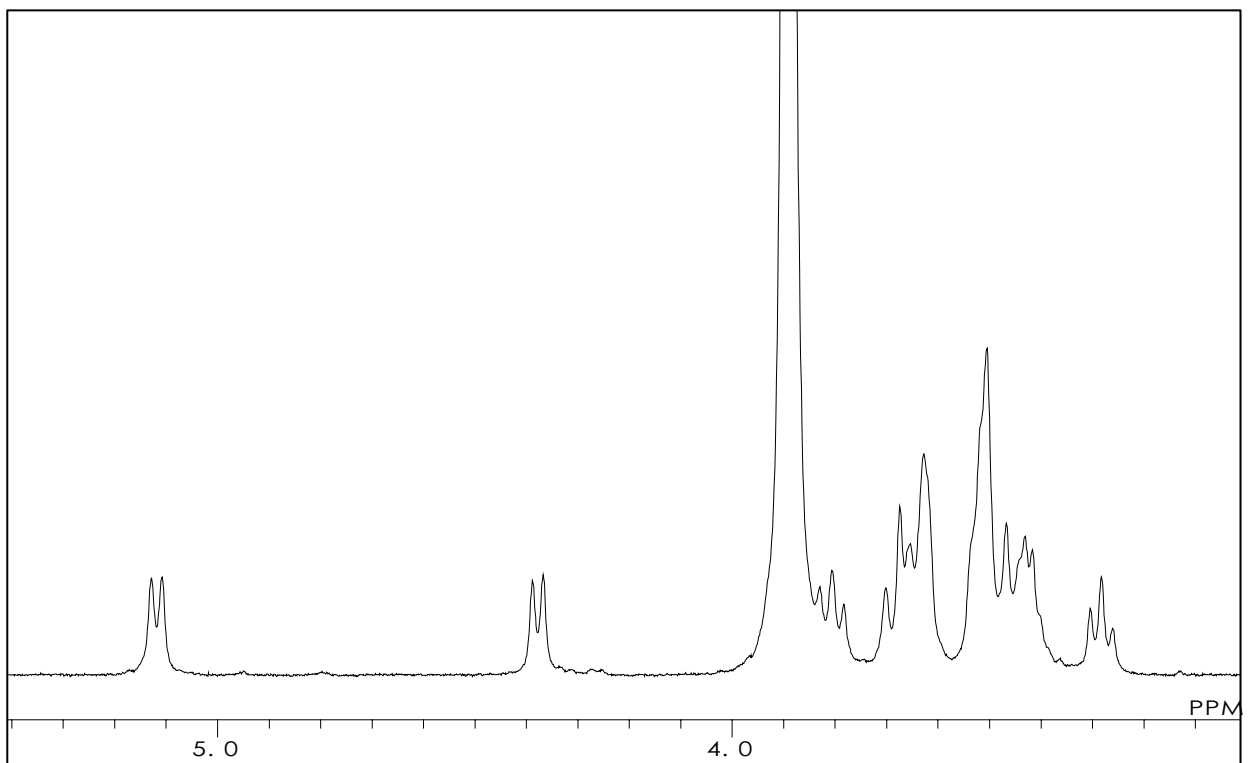
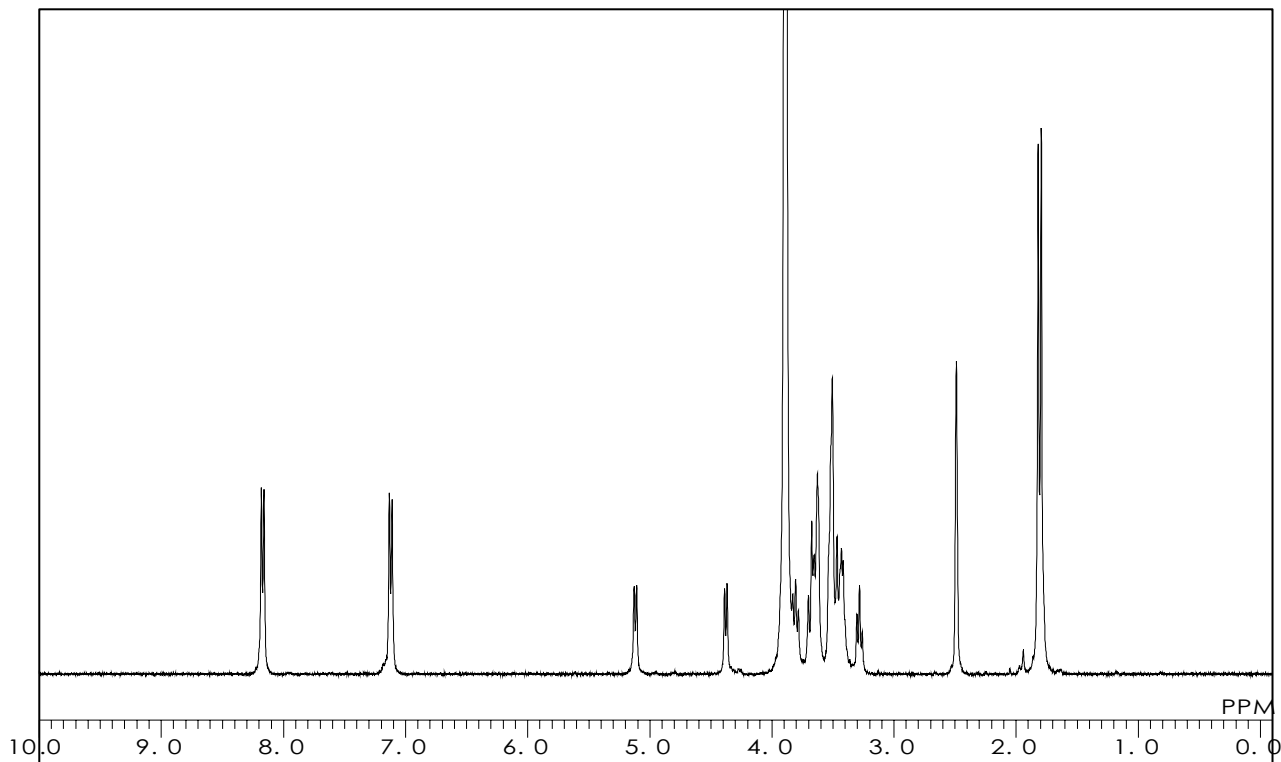
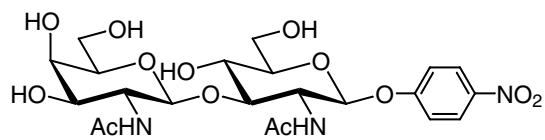
**G0352**

**GalNAc $\beta$ (1-3)GlcNAc- $\beta$ -pNP**

C<sub>22</sub>H<sub>31</sub>N<sub>3</sub>O<sub>13</sub> = 545.50 [1456553-26-6]

Solvent : DMSO-d<sub>6</sub>

Measured Temperature : 21.8 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**G0356**

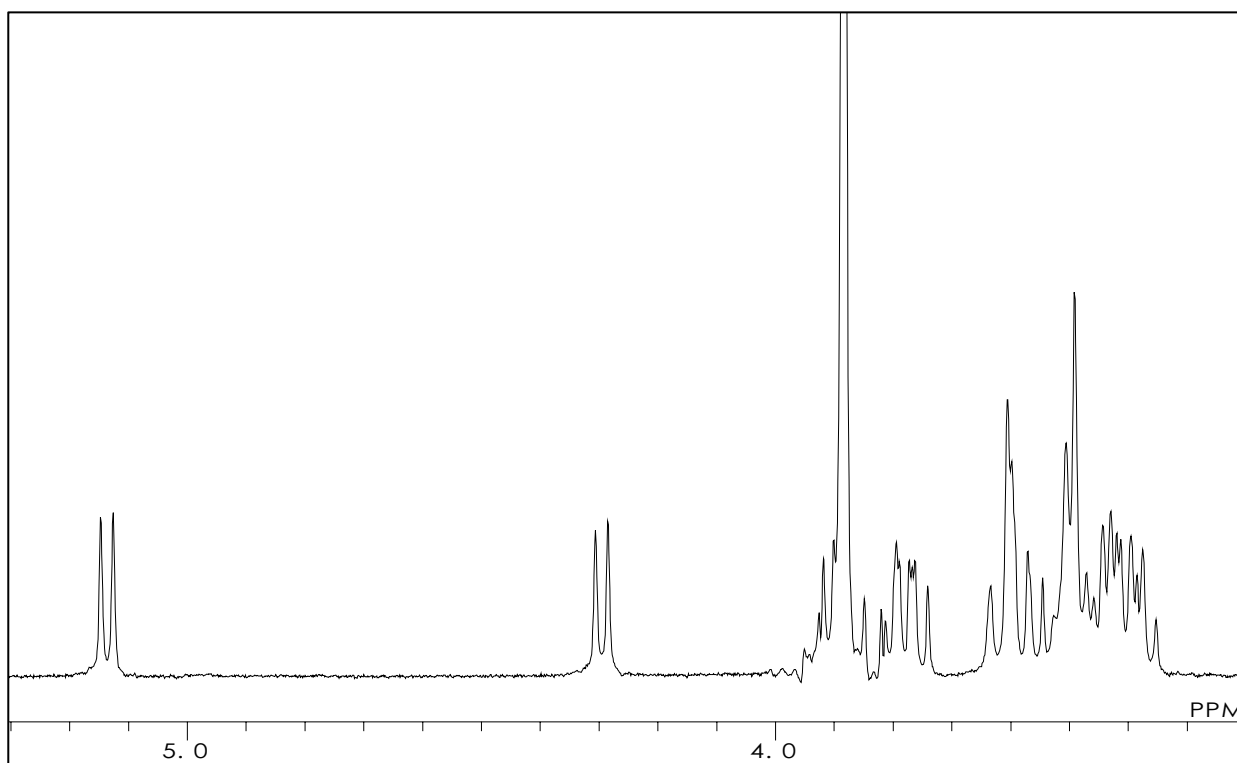
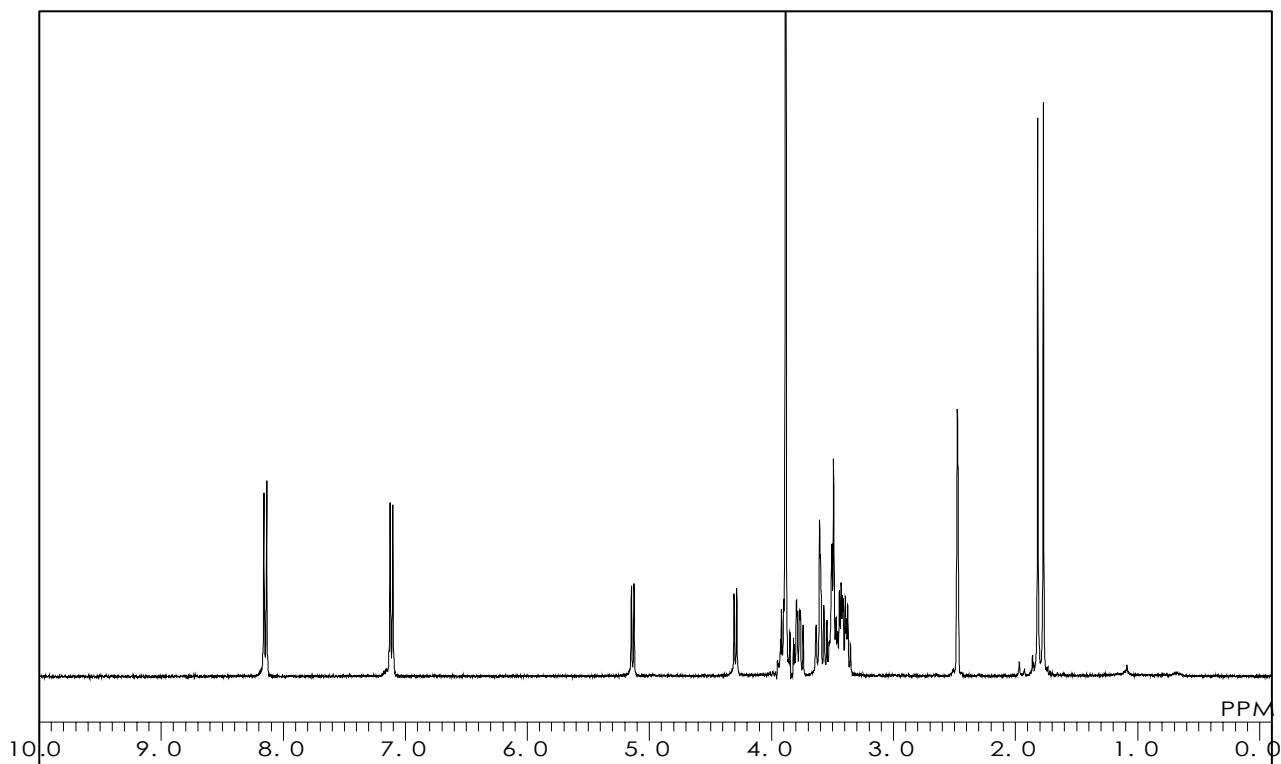
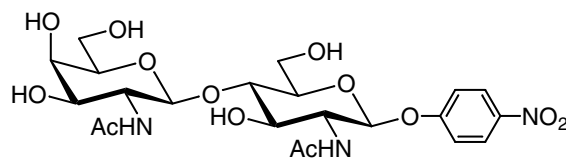
**GalNAc $\beta$ (1-4)GlcNAc- $\beta$ -pNP**

C<sub>22</sub>H<sub>31</sub>N<sub>3</sub>O<sub>13</sub> = 545.50 [872578-72-8]

Solvent : DMSO-d<sub>6</sub>/D<sub>2</sub>O=8/2

Internal Standard : DMSO ( $\delta$  2.49)

Measured Temperature : 23.8 °C



G0376

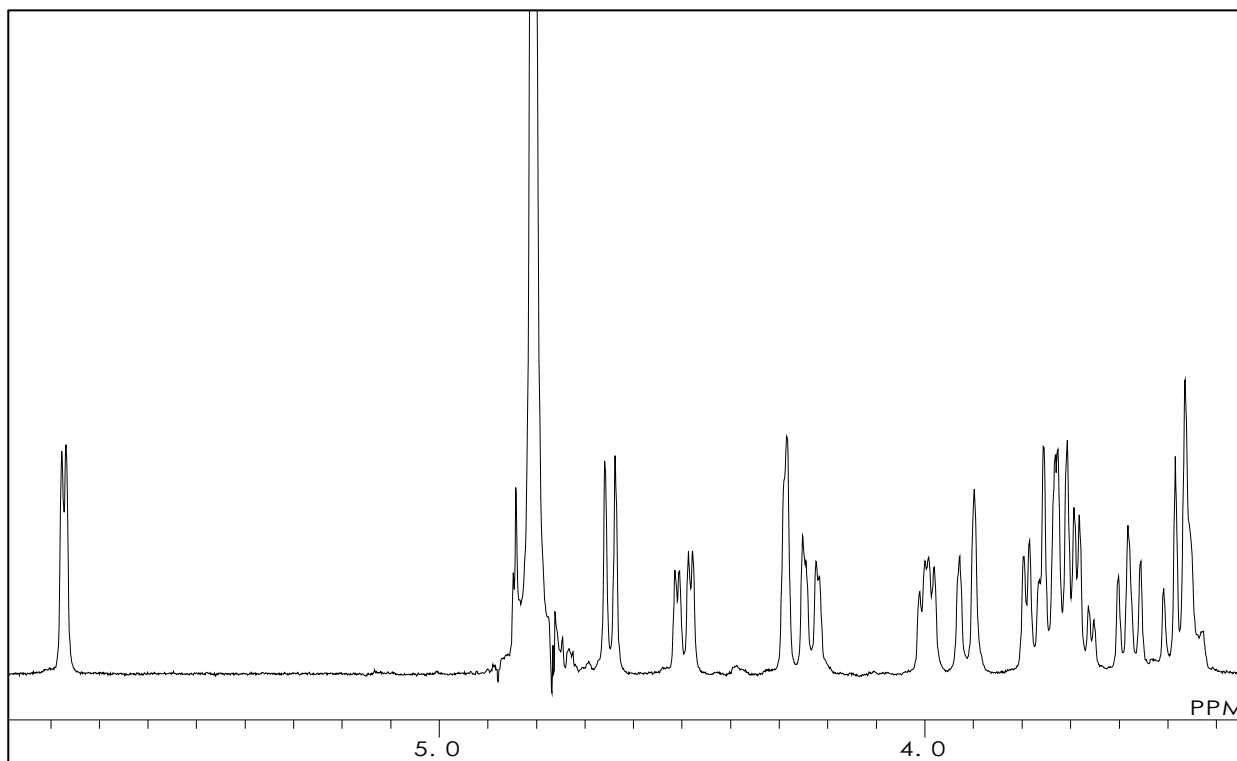
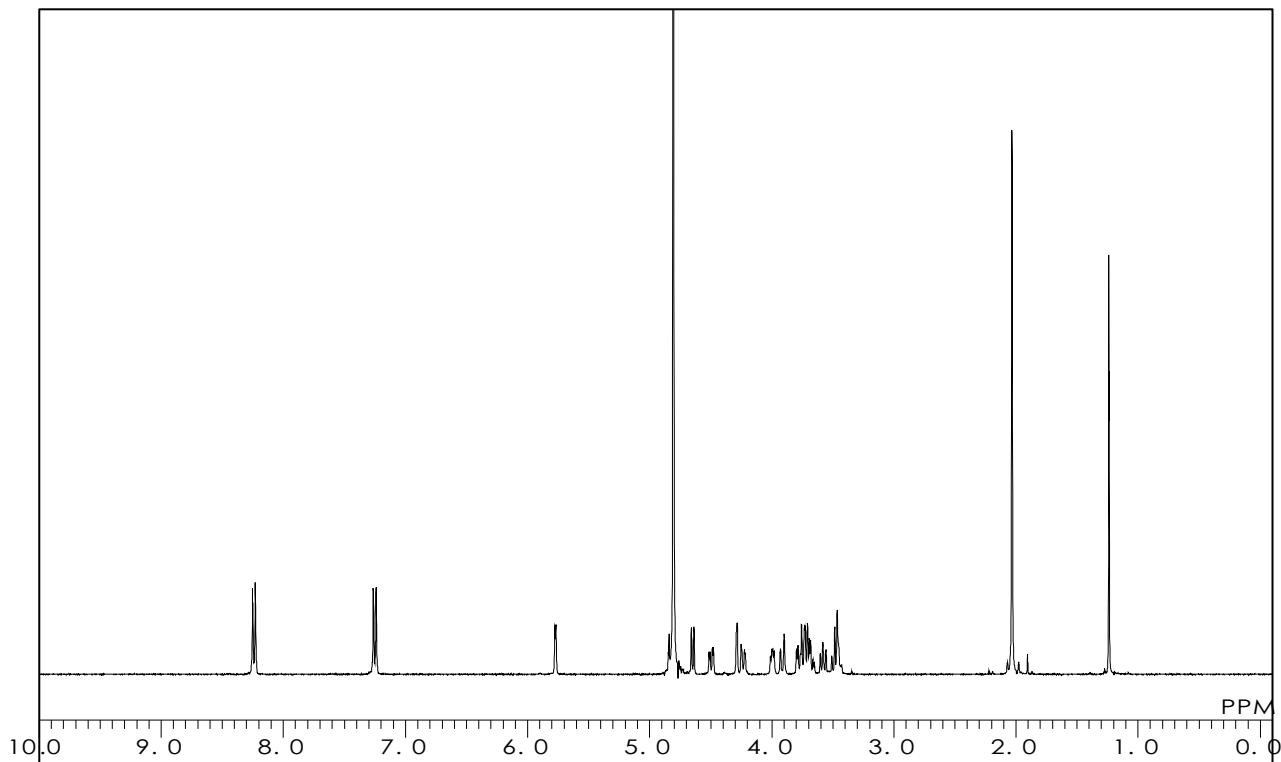
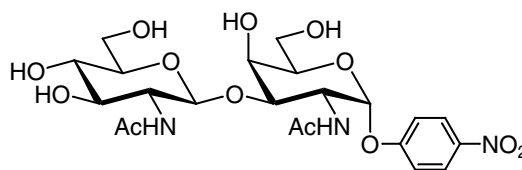
**GlcNAc $\beta$ (1-3)GalNAc- $\alpha$ -pNP**

C<sub>22</sub>H<sub>31</sub>N<sub>3</sub>O<sub>13</sub> = 545.50 [125455-64-3]

Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 21.8 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。



**G0341**

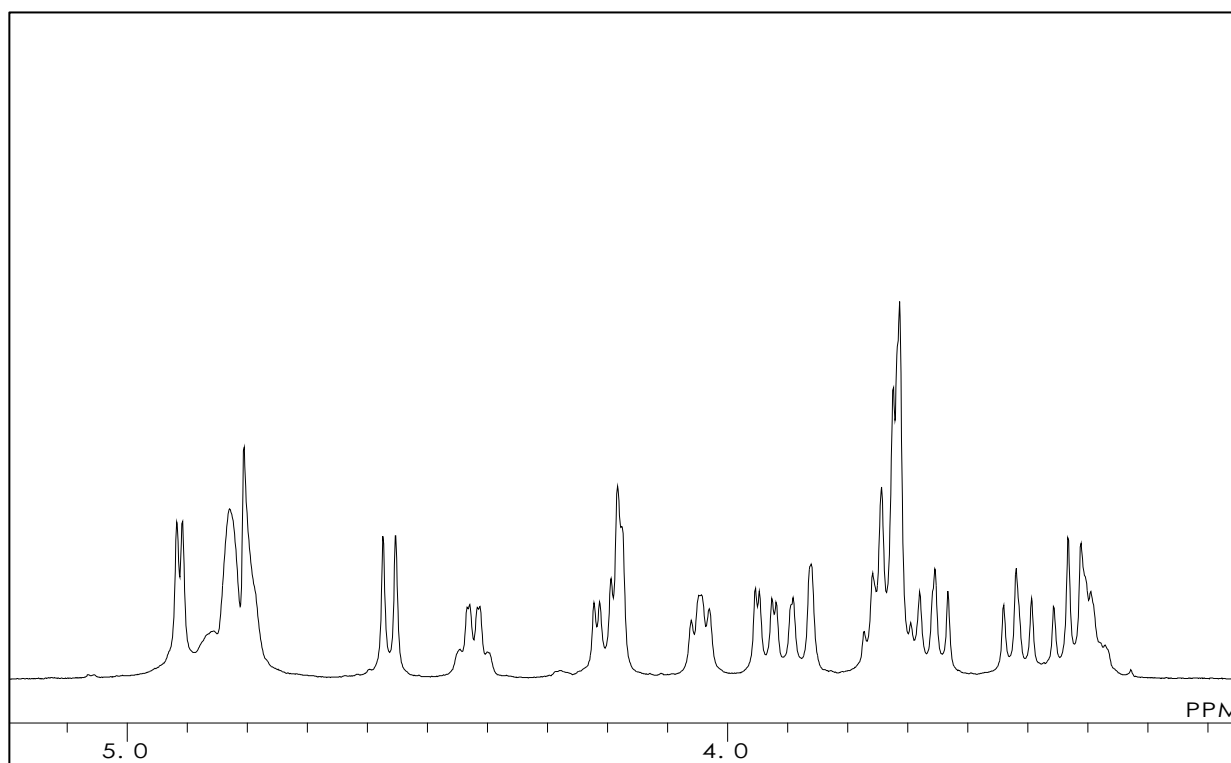
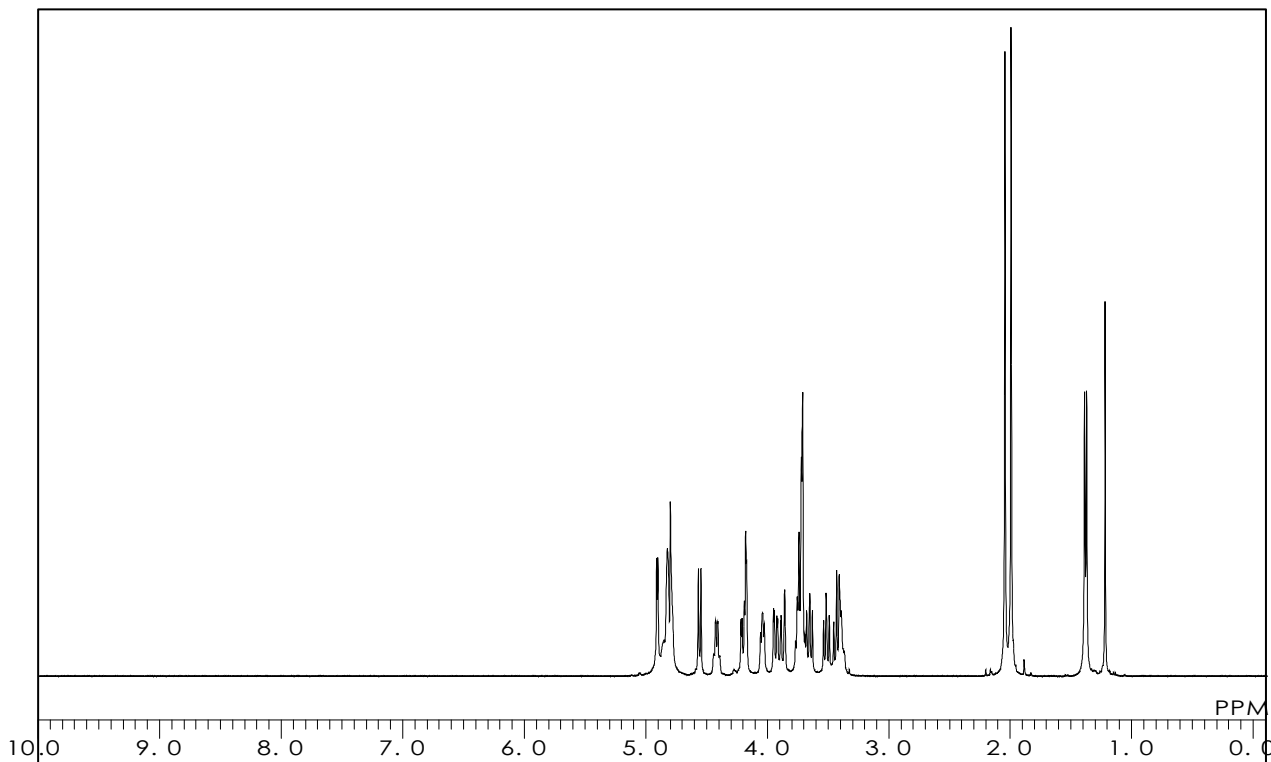
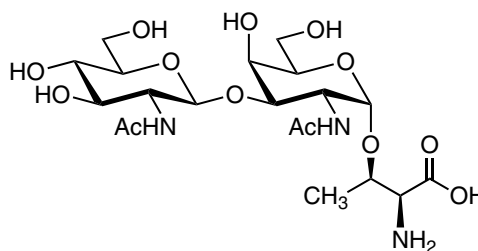
**GlcNAc $\beta$ (1-3)GalNAc- $\alpha$ -Thr**

C<sub>20</sub>H<sub>35</sub>N<sub>3</sub>O<sub>13</sub> = 525.51 [286959-52-2]

Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 20.6 °C



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**G0337**

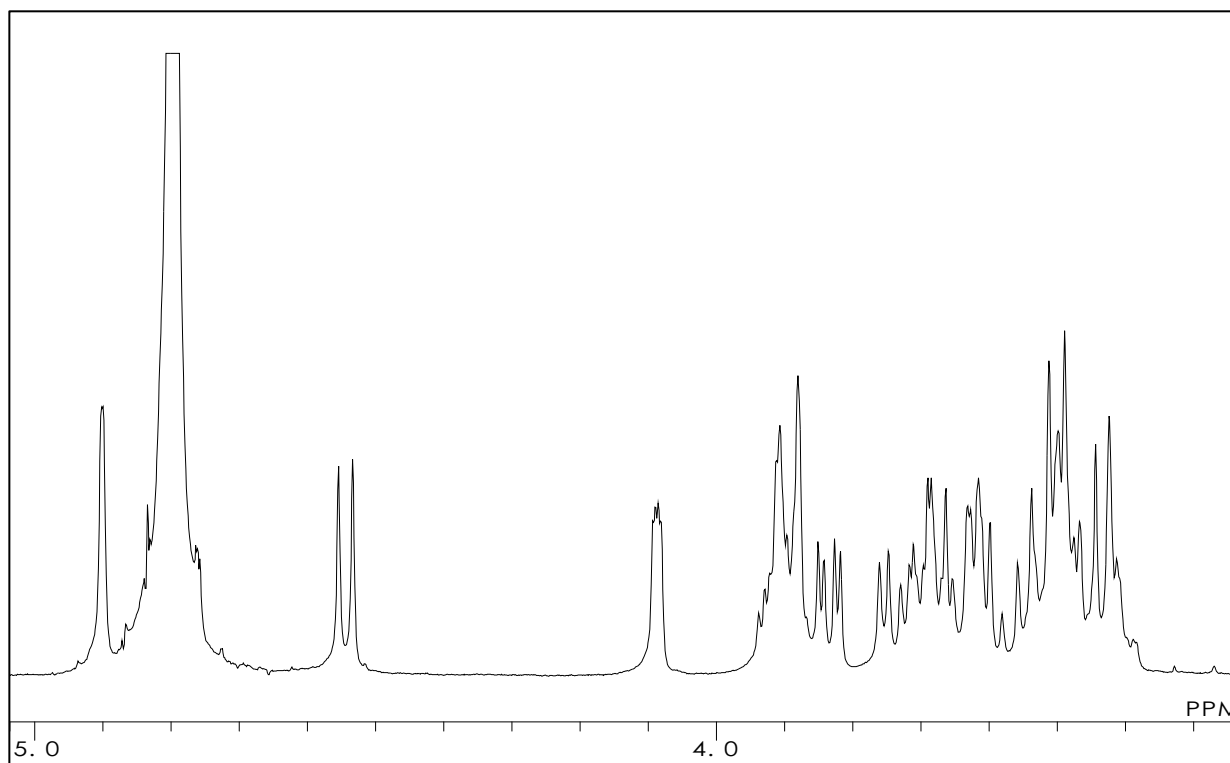
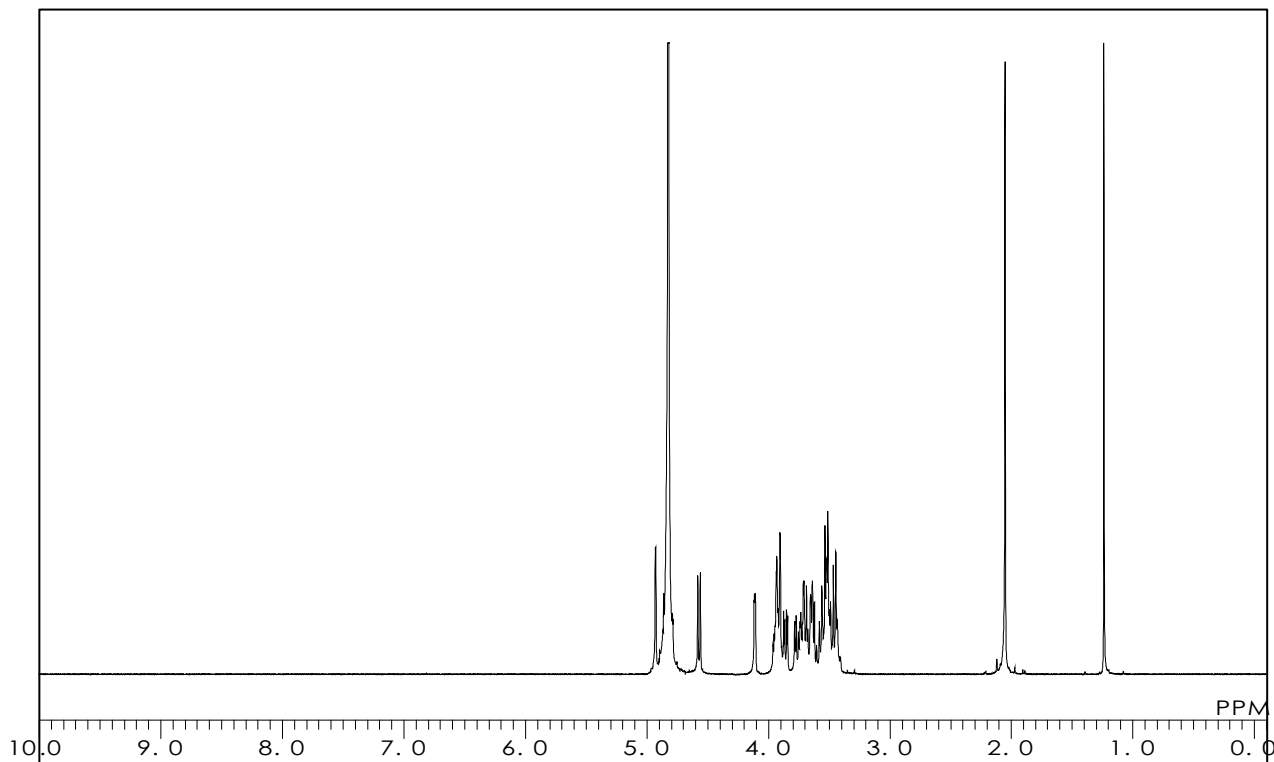
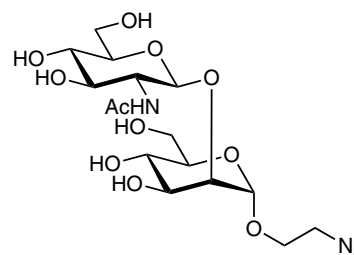
**GlcNAc $\beta$ (1-2)Man- $\alpha$ -ethylazide**

$C_{16}H_{28}N_4O_{11} = 452.42$

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 21.1 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**G0299**

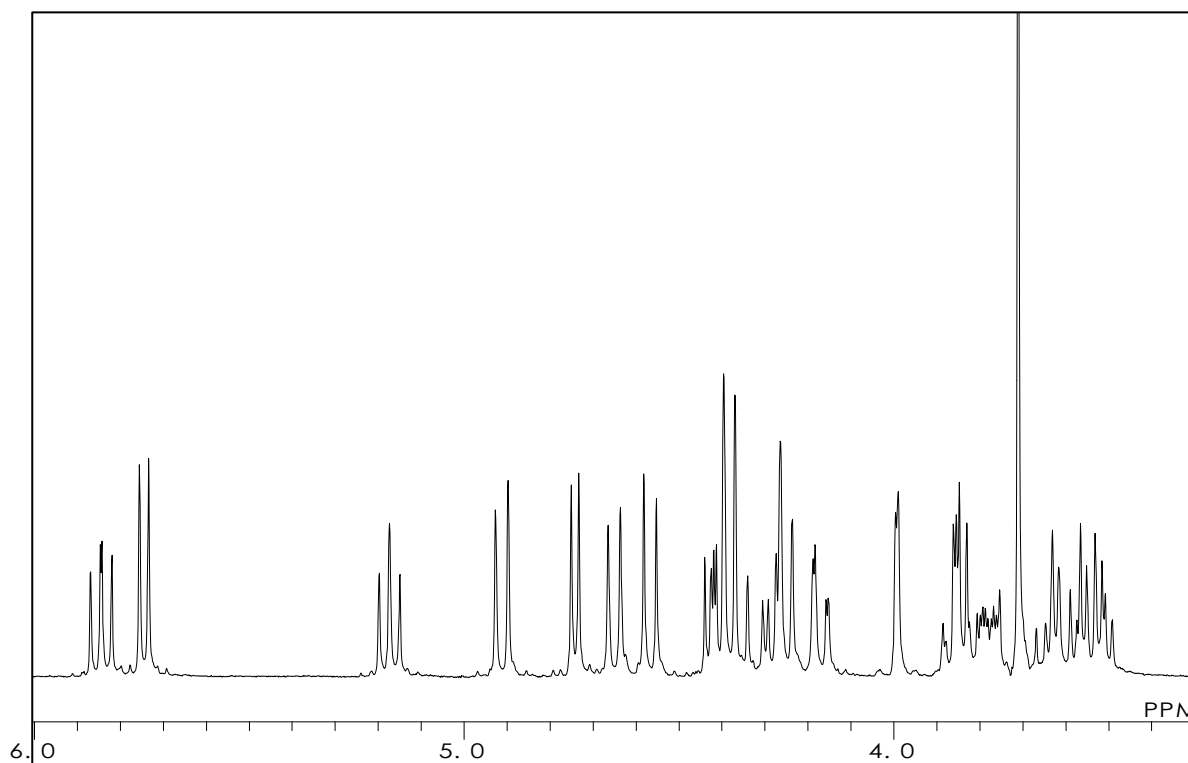
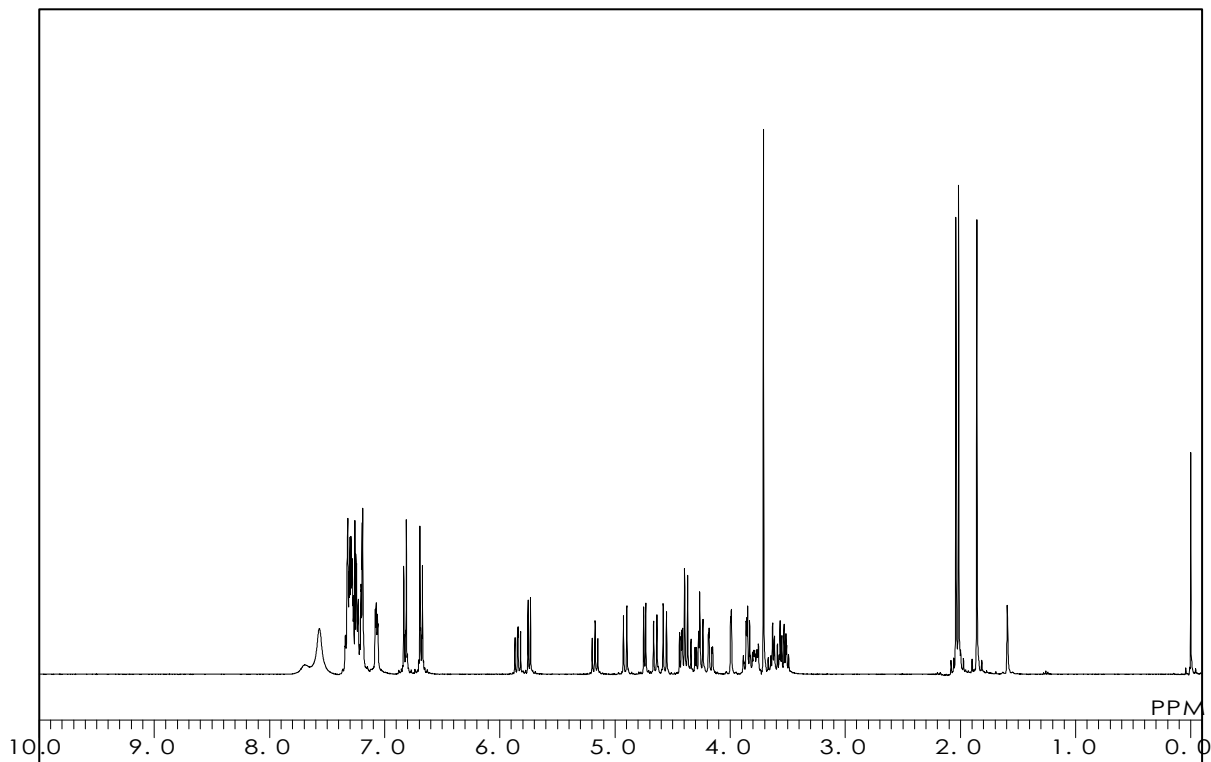
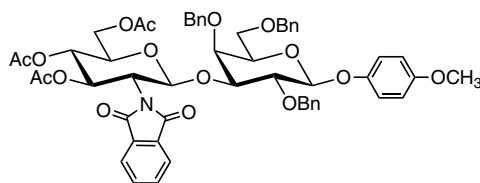
**GlcNPhth[346Ac] $\beta$ (1-3)Gal[246Bn]- $\beta$ -MP**

C<sub>54</sub>H<sub>55</sub>NO<sub>16</sub> = 974.03

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 20.5 °C



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**L0324**

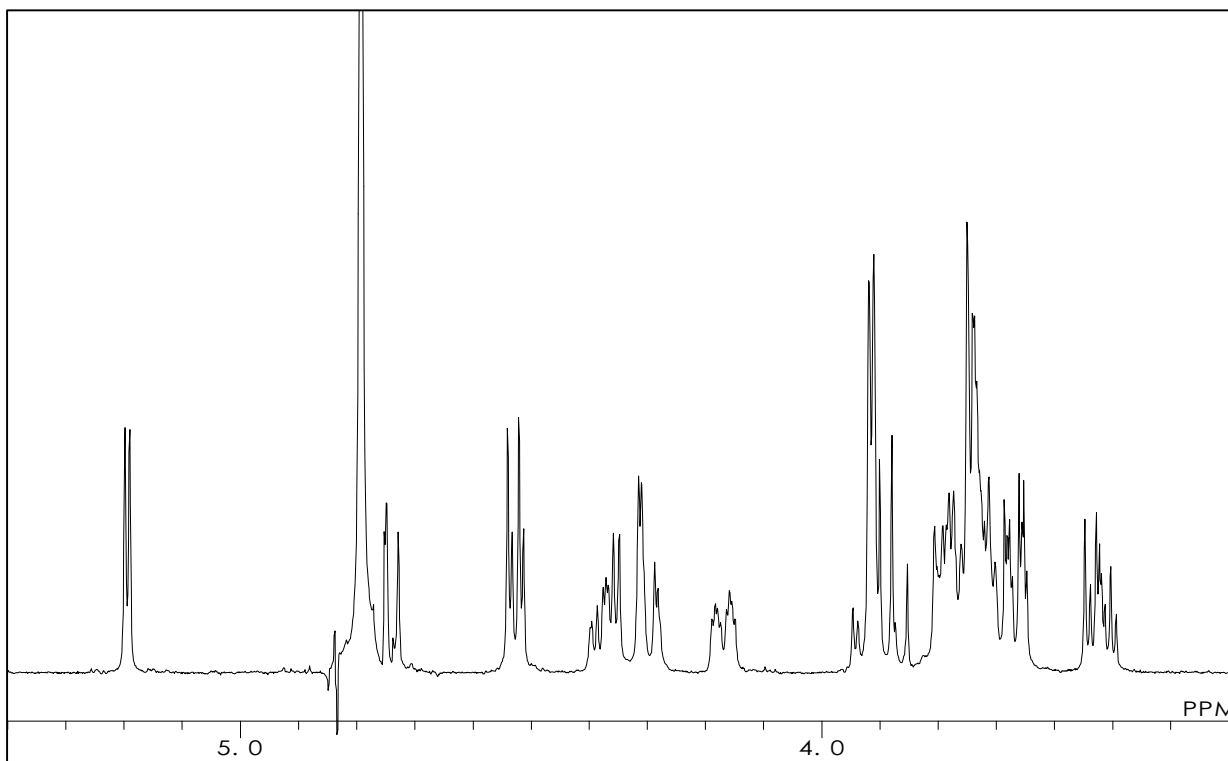
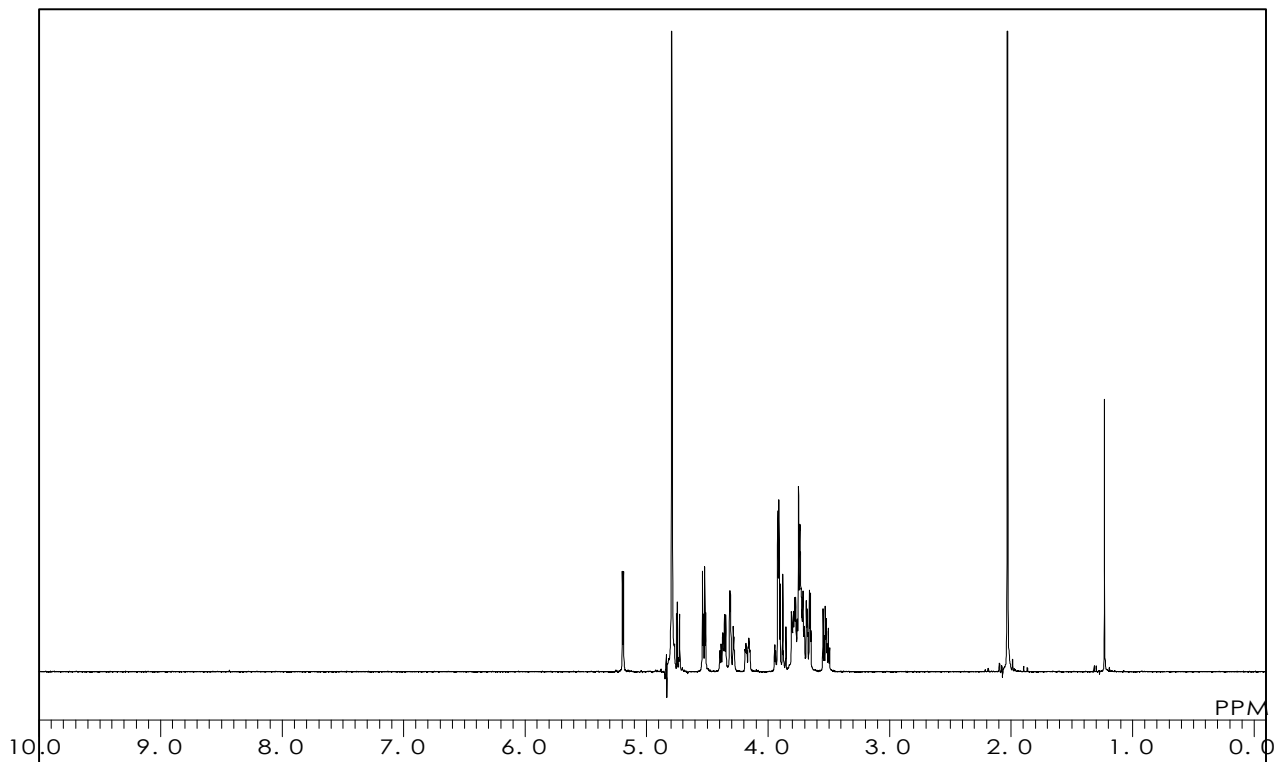
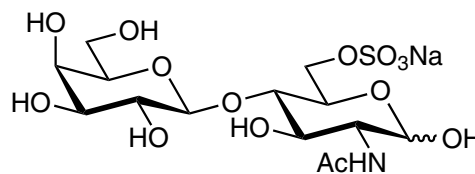
**L2**

$C_{14}H_{24}NNaO_{14}S = 485.39$  [145447-78-5]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 22.0 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**L0325**

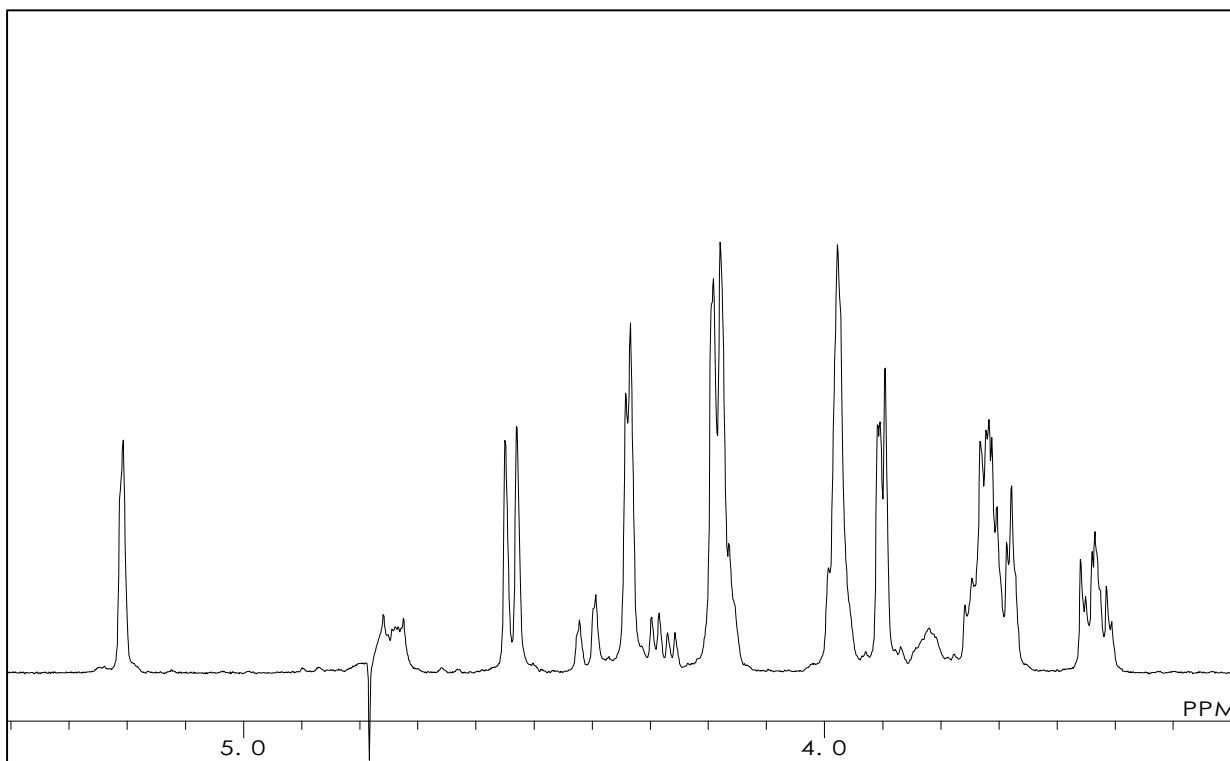
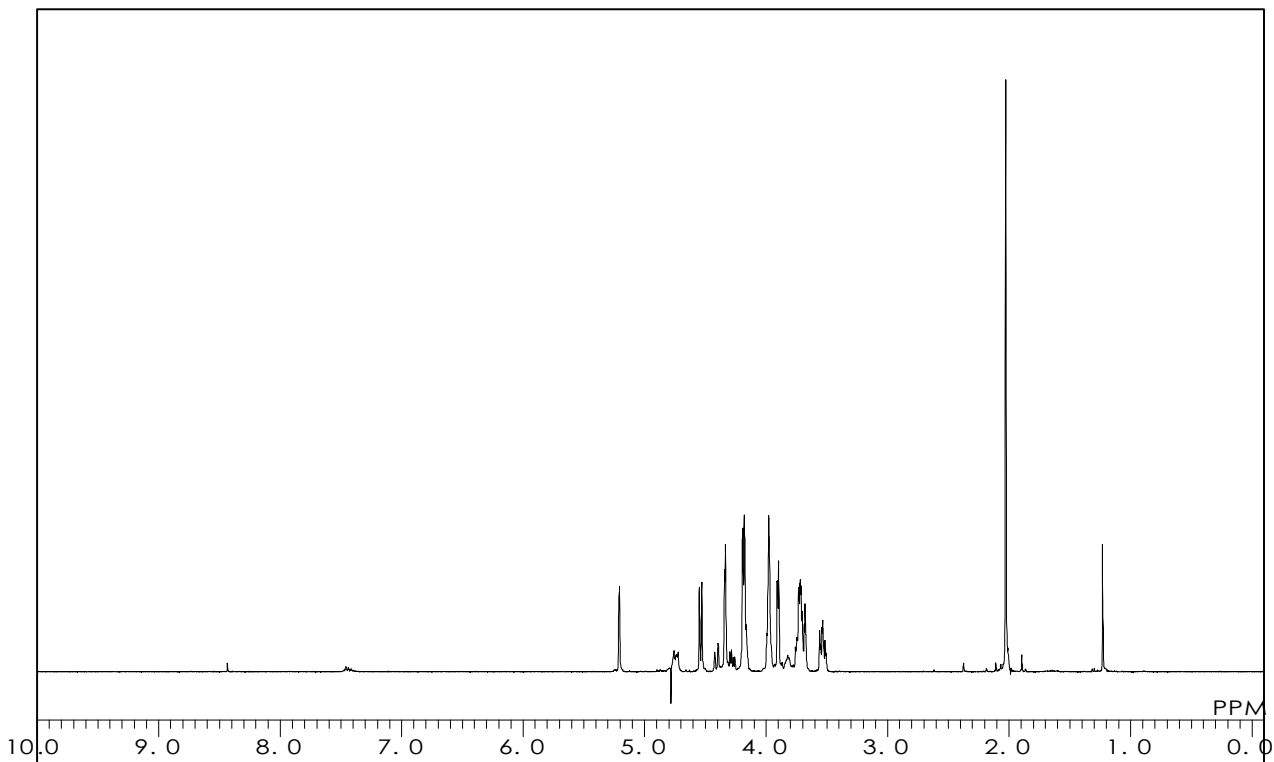
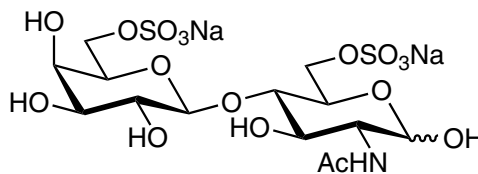
**L4**

$C_{14}H_{23}NNa_2O_{17}S_2 = 587.43$  [321897-68-1]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 21.9 °C



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**M1733**

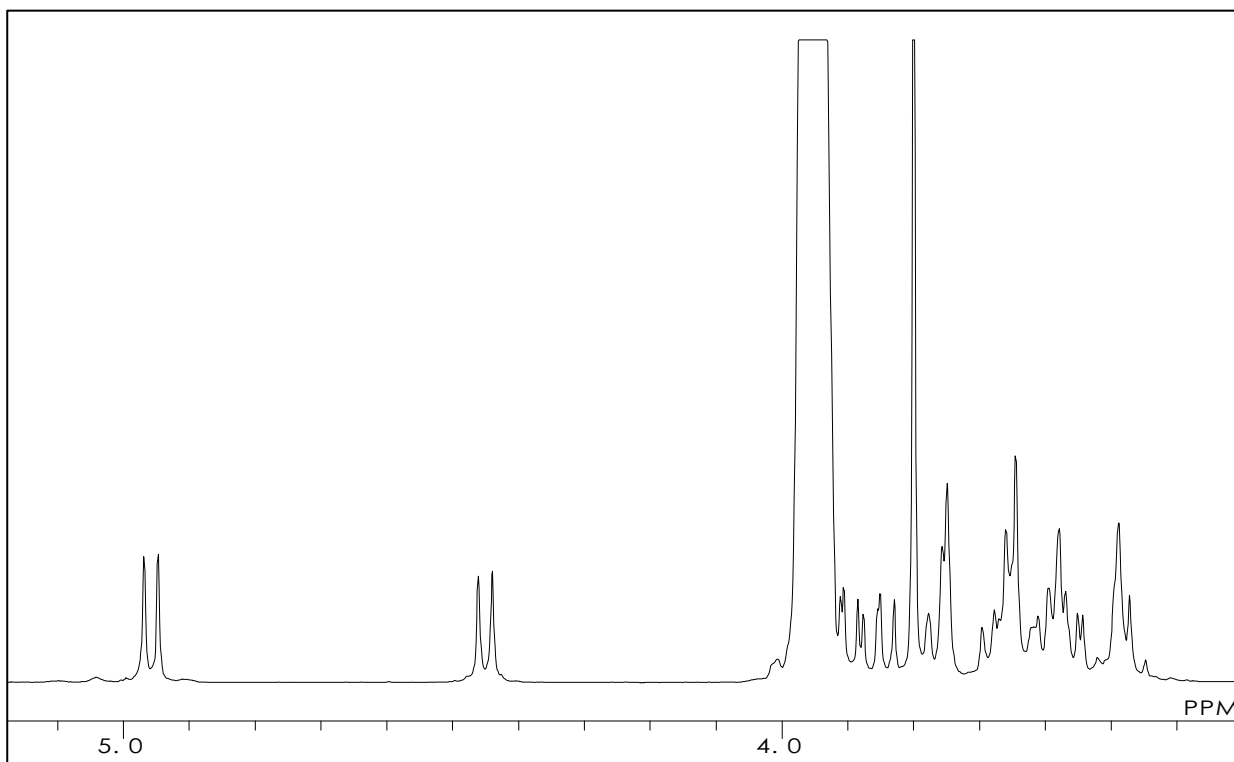
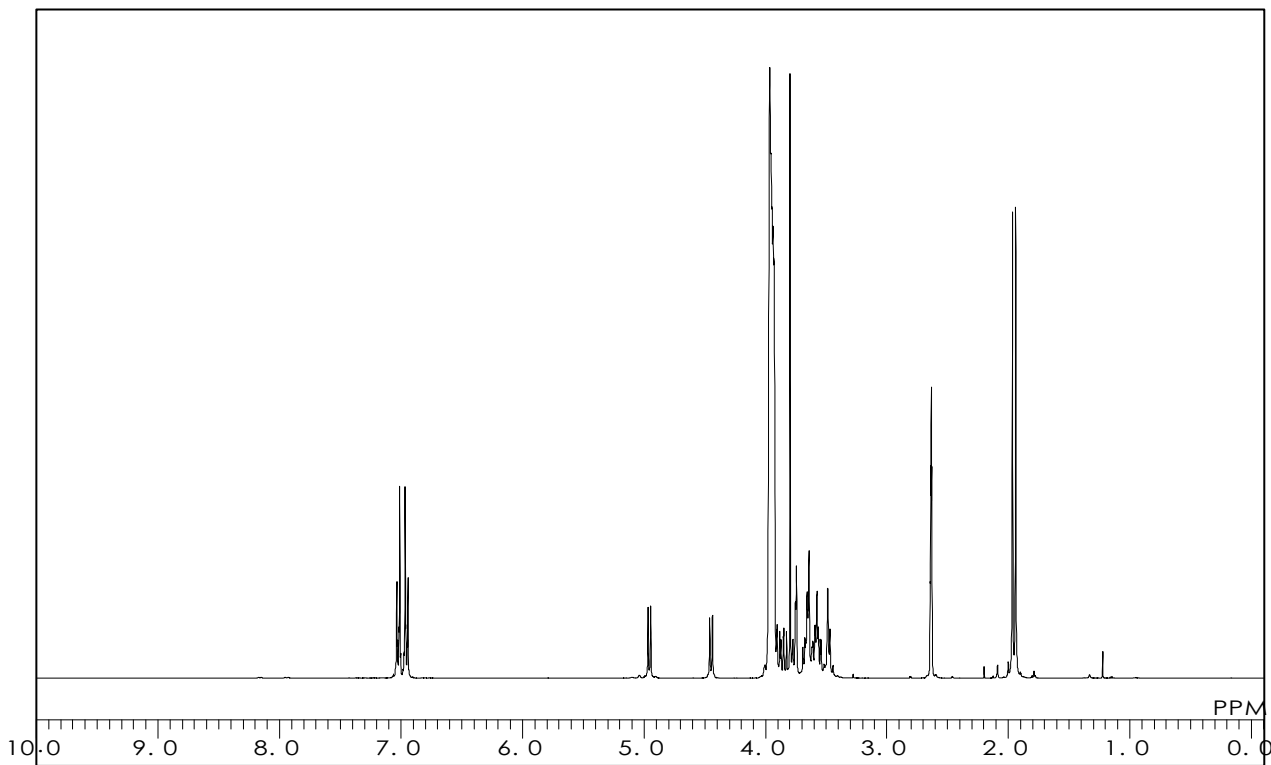
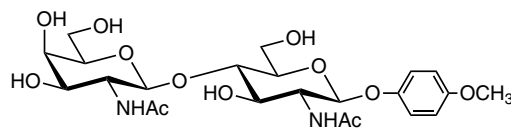
**LacDiNAc MP Glycoside**

$C_{23}H_{34}N_2O_{12} = 530.53$

Solvent : DMSO- $d_6$ /D $_2$ O=49/1

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 22.3 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**M1776**

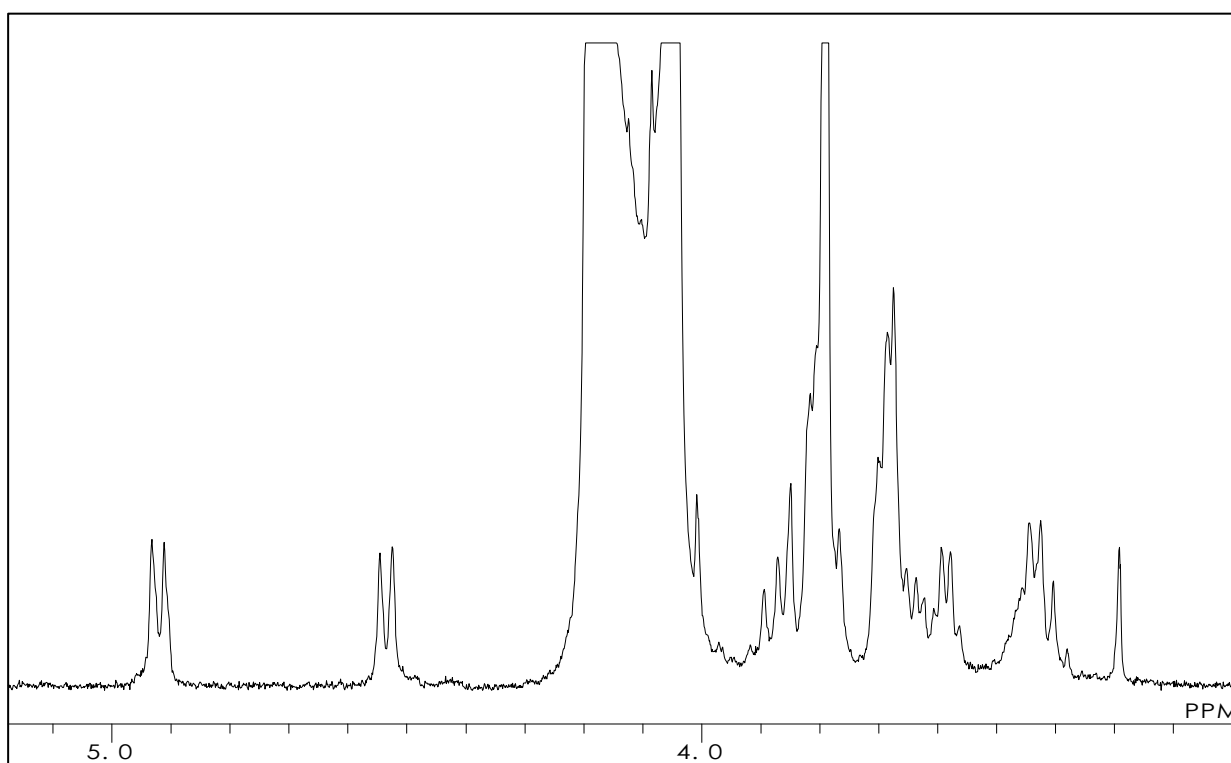
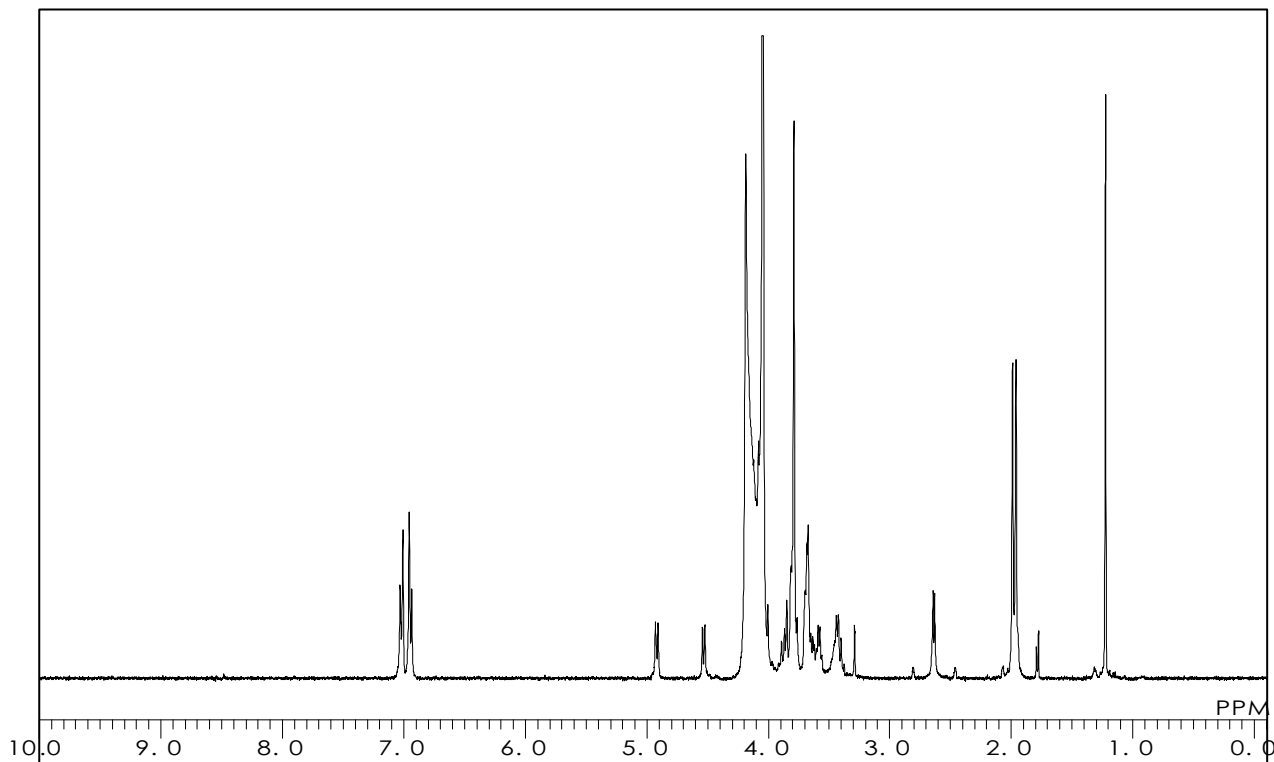
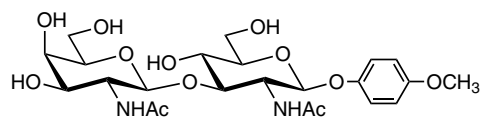
**LacDiNAc(I) MP Glycoside**

$C_{23}H_{34}N_2O_{12} = 530.53$

Solvent : DMSO- $d_6$ /D $_2$ O=49/1

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 50.0 °C



Please refrain from the conversion of these data without permission. These data have been released on our homepage.

**N0791**

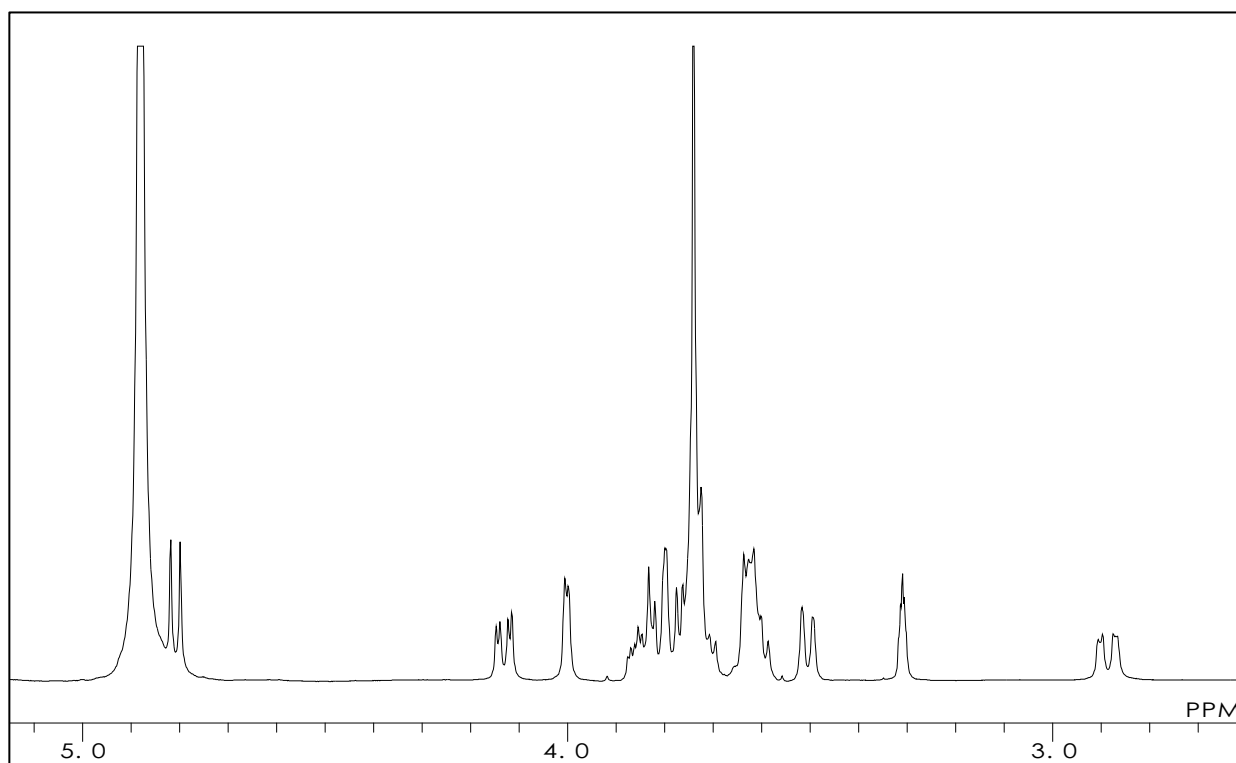
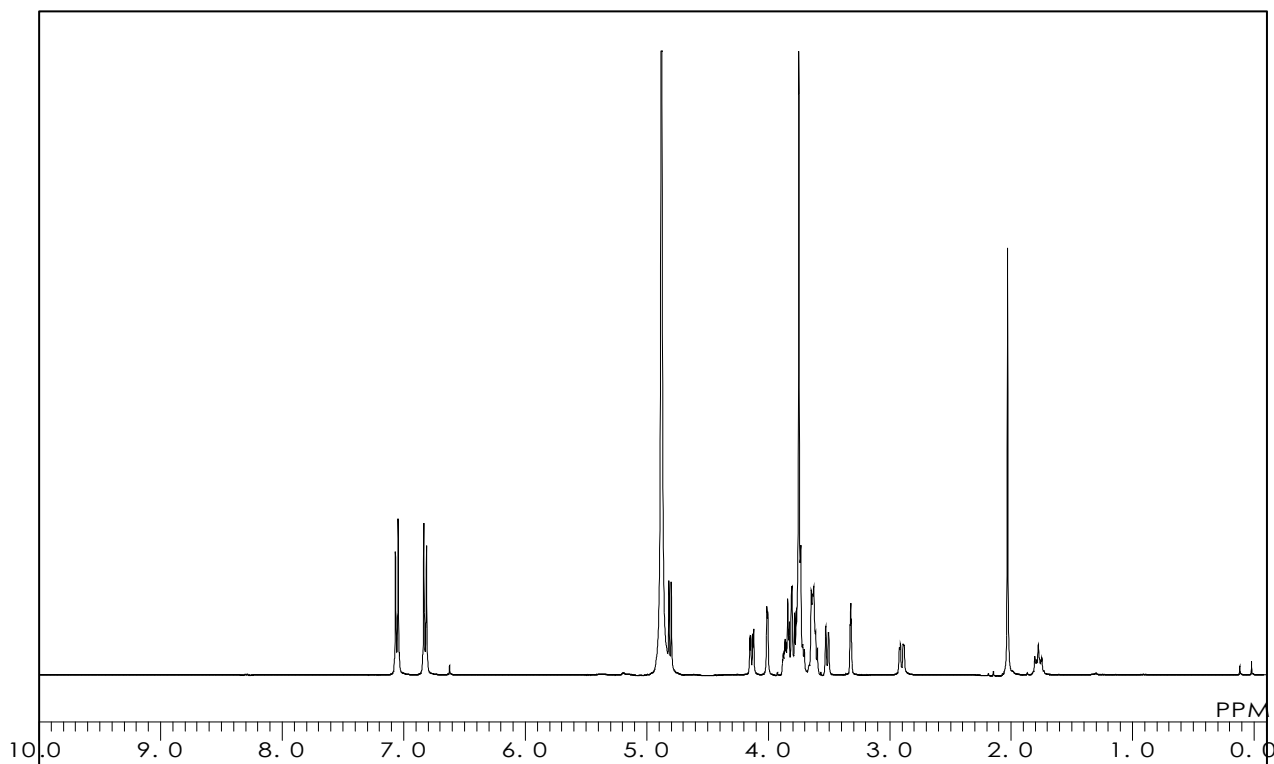
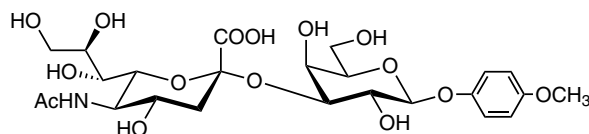
**Neu5Aca(2-3)Gal $\beta$  MP Glycoside**

$C_{24}H_{35}NO_{15} = 577.54$  [159922-54-0]

Solvent :  $CD_3OD$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 23.2 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。



**N0792**

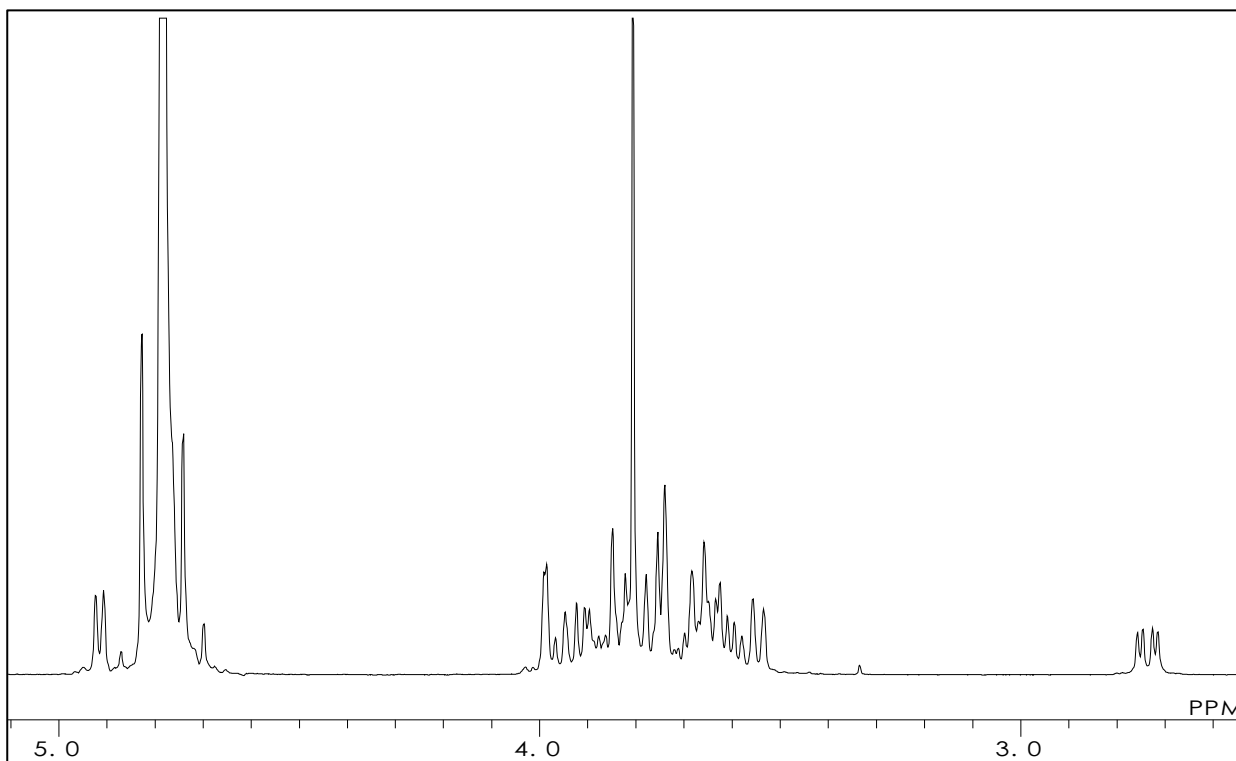
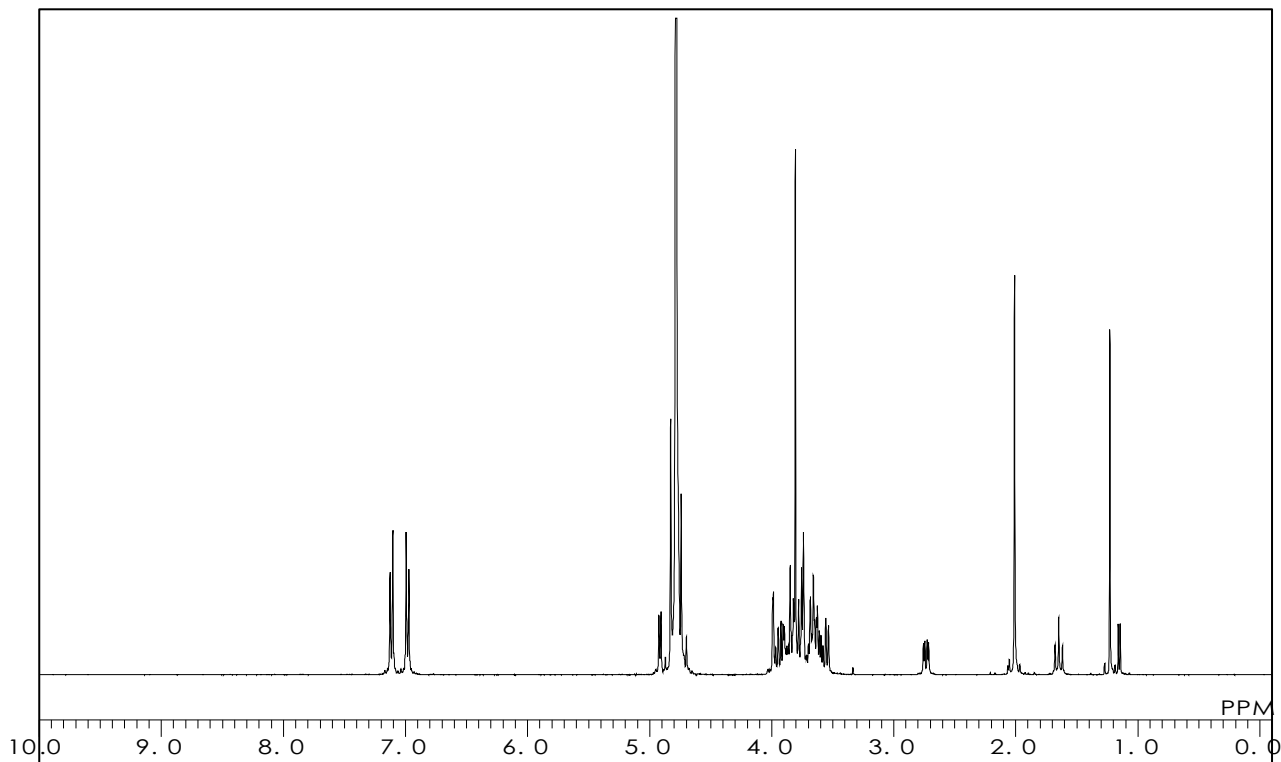
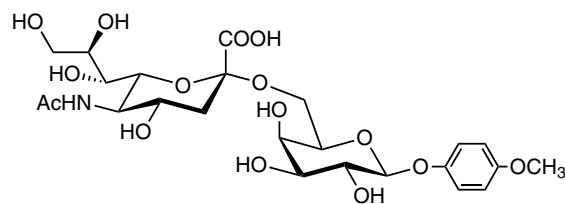
**Neu5Ac $\alpha$ (2-6)Gal $\beta$  MP Glycoside**

C<sub>24</sub>H<sub>35</sub>NO<sub>15</sub> = 577.54

Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 23.0 °C



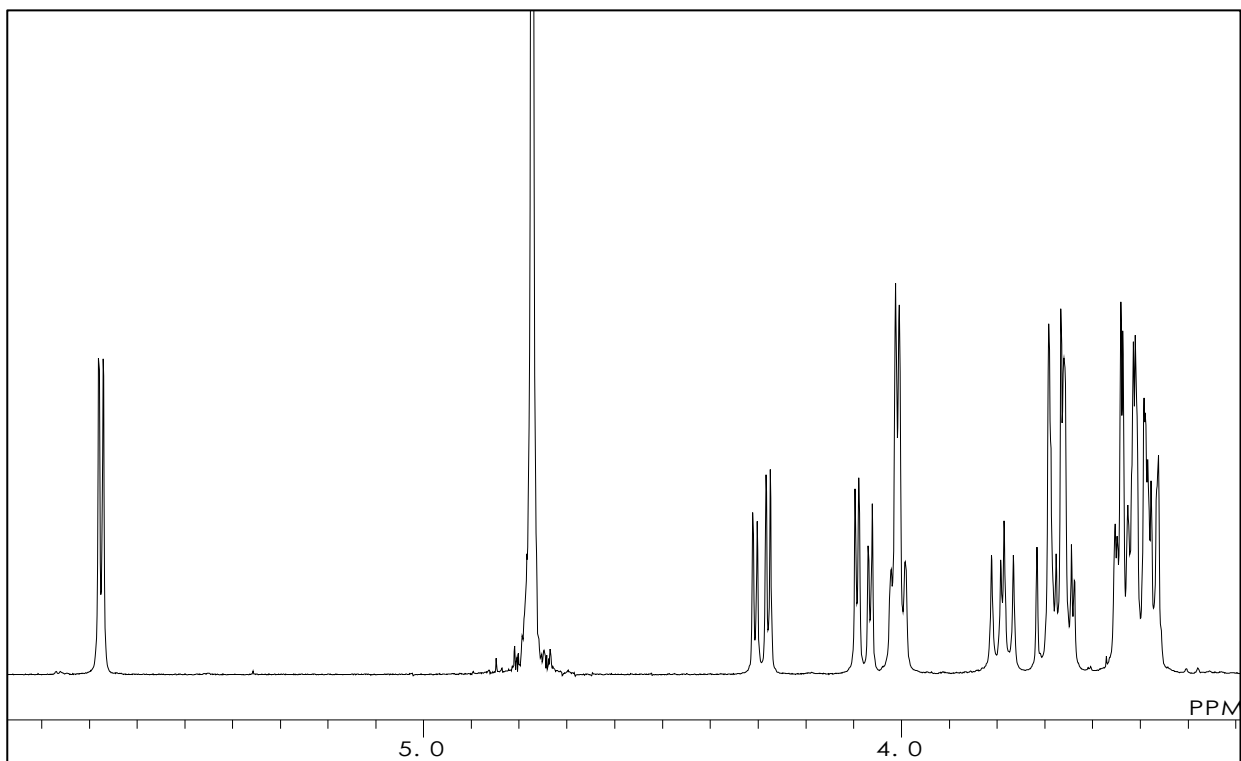
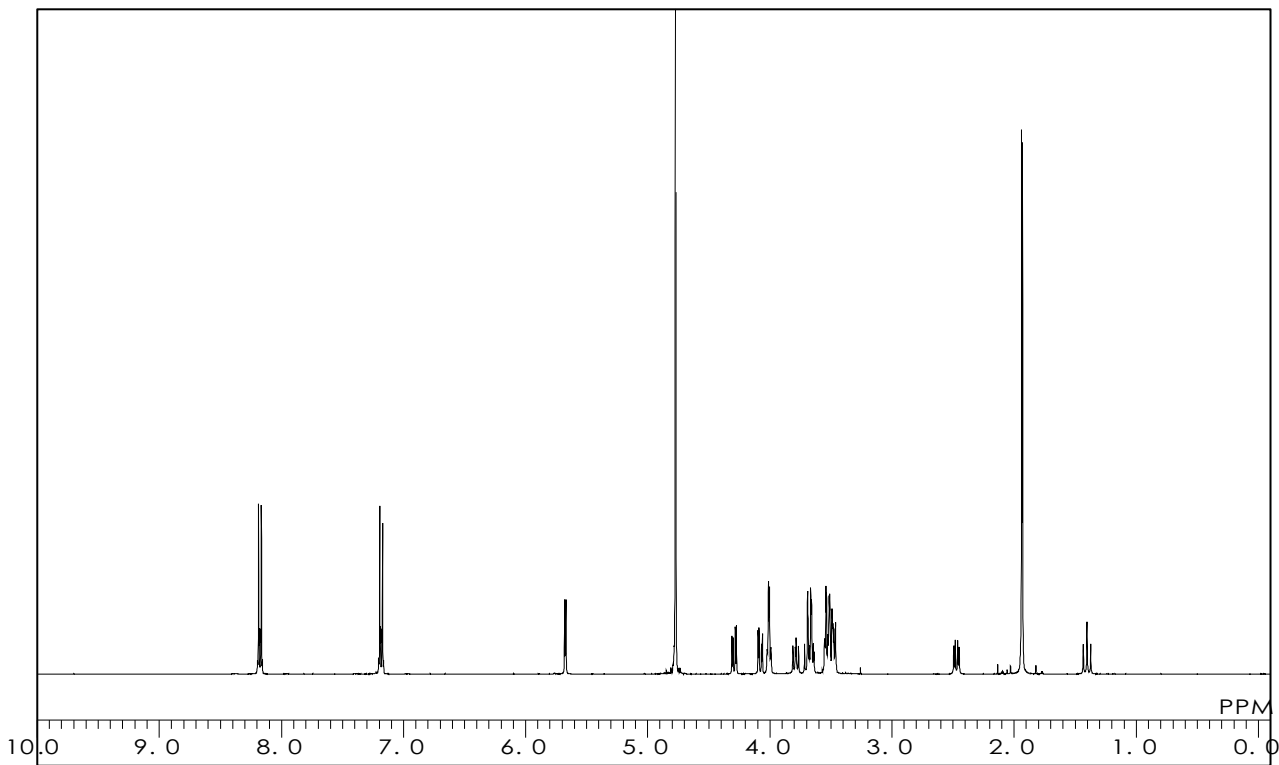
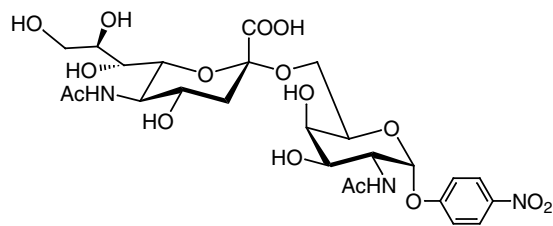
**N0890**

**Neu5Ac $\alpha$ (2-6)GalNAc- $\alpha$ -pNP**

$C_{25}H_{35}N_3O_{16} = 633.56$

Solvent : D<sub>2</sub>O

Measured Temperature : 16.8 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**M1761**

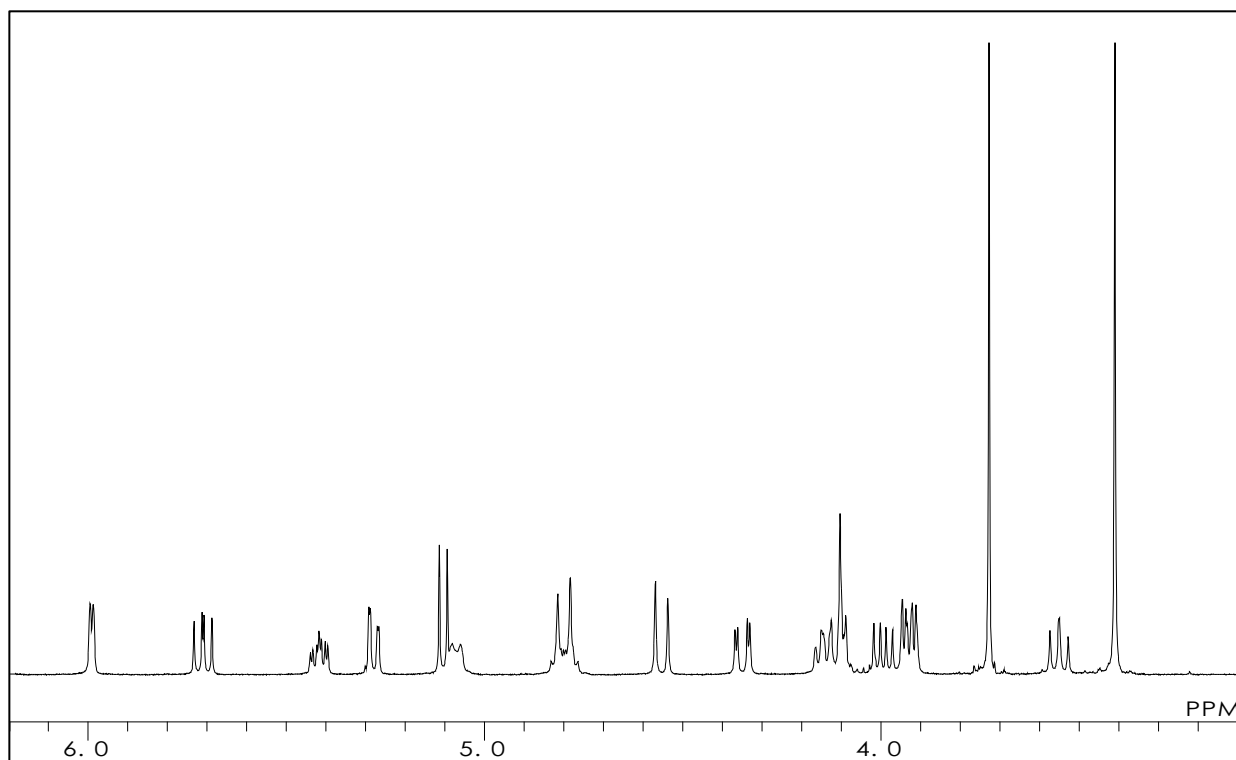
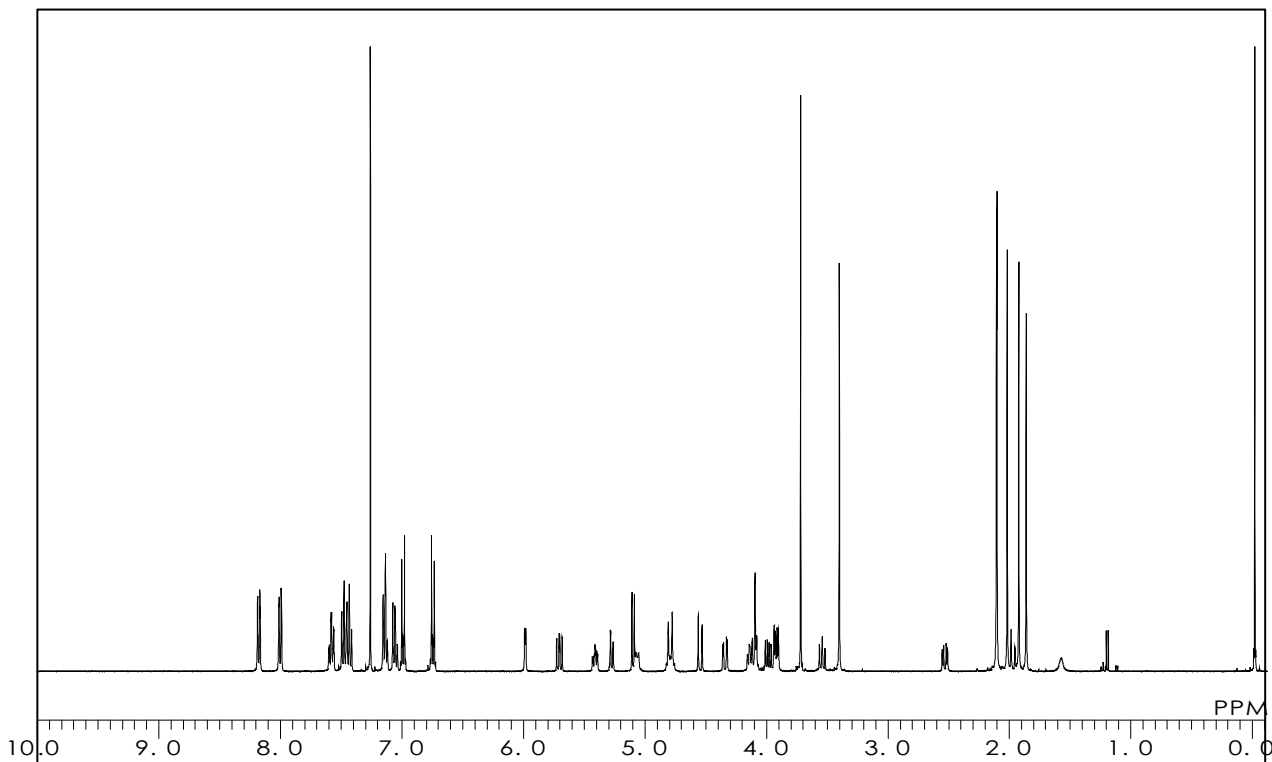
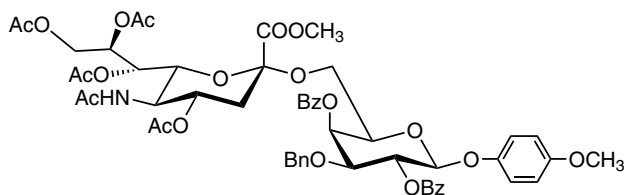
**Neu5Ac[1Me,4789Ac] $\alpha$ (2-6)Gal[24Bz,3Bn]- $\beta$ -MP**

$C_{54}H_{59}NO_{21} = 1058.05$

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 21.2 °C



**N0846**

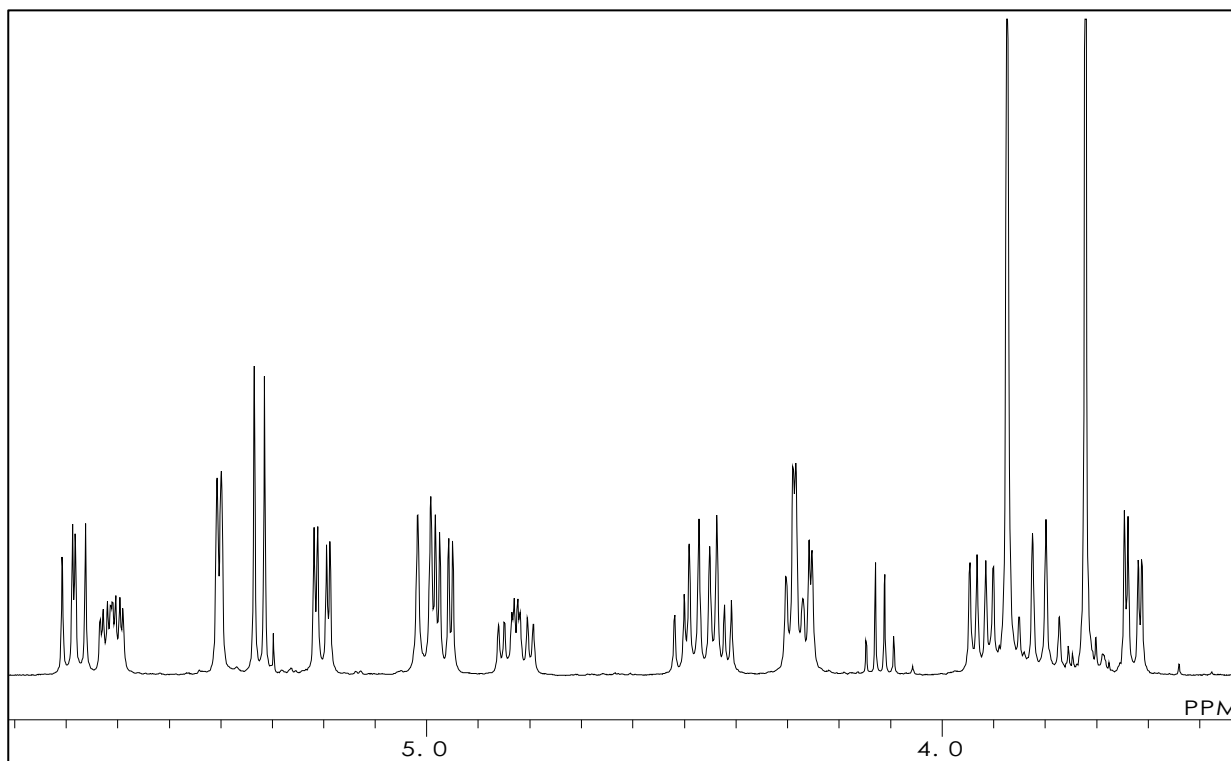
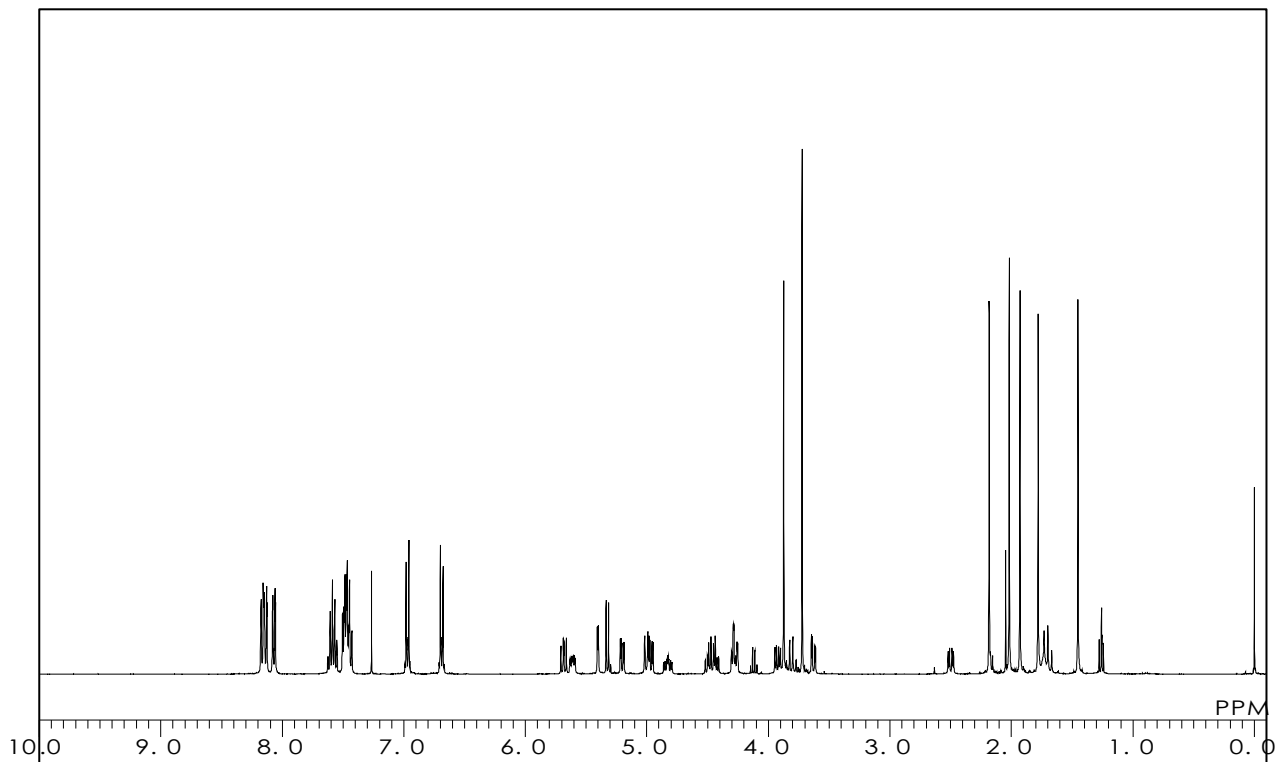
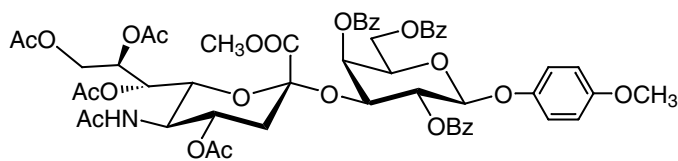
**Neu5Ac[1Me,4789Ac] $\alpha$ (2-3)Gal[246Bz]- $\beta$ -MP**

$C_{54}H_{57}NO_{22} = 1072.04$

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 21.0 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**M1763**

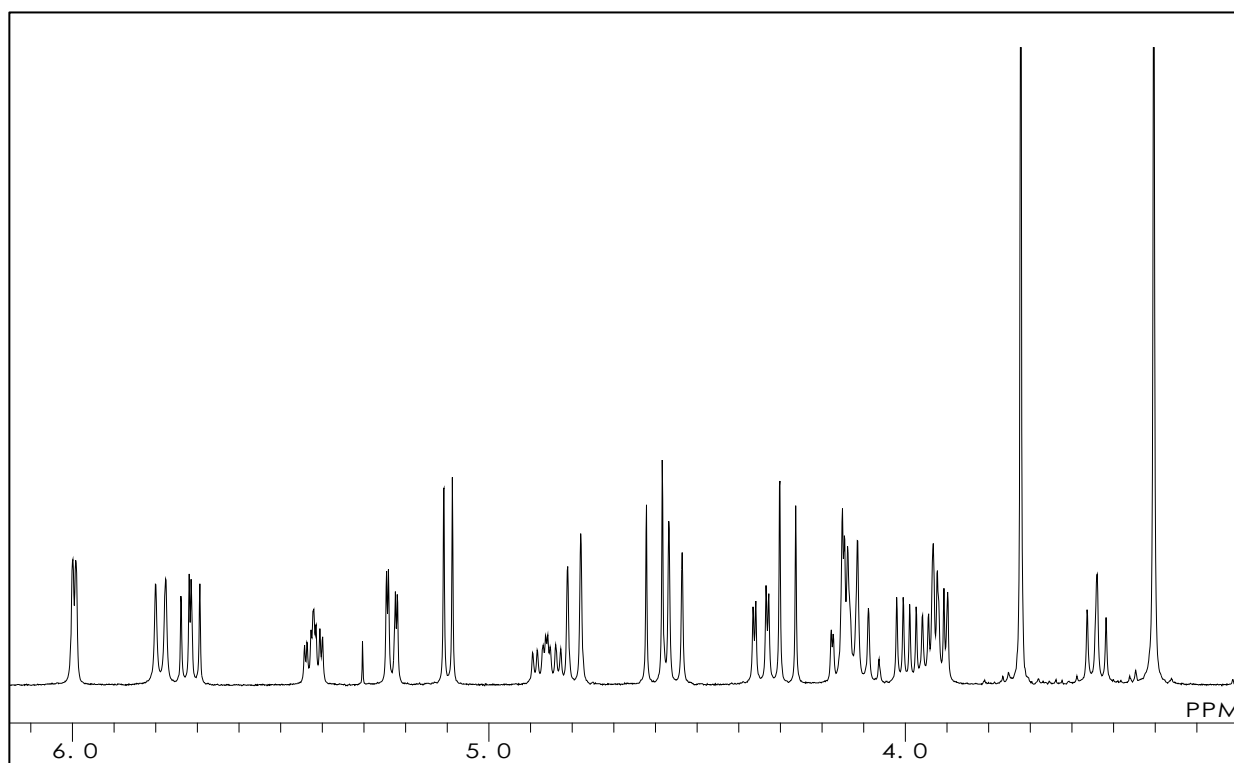
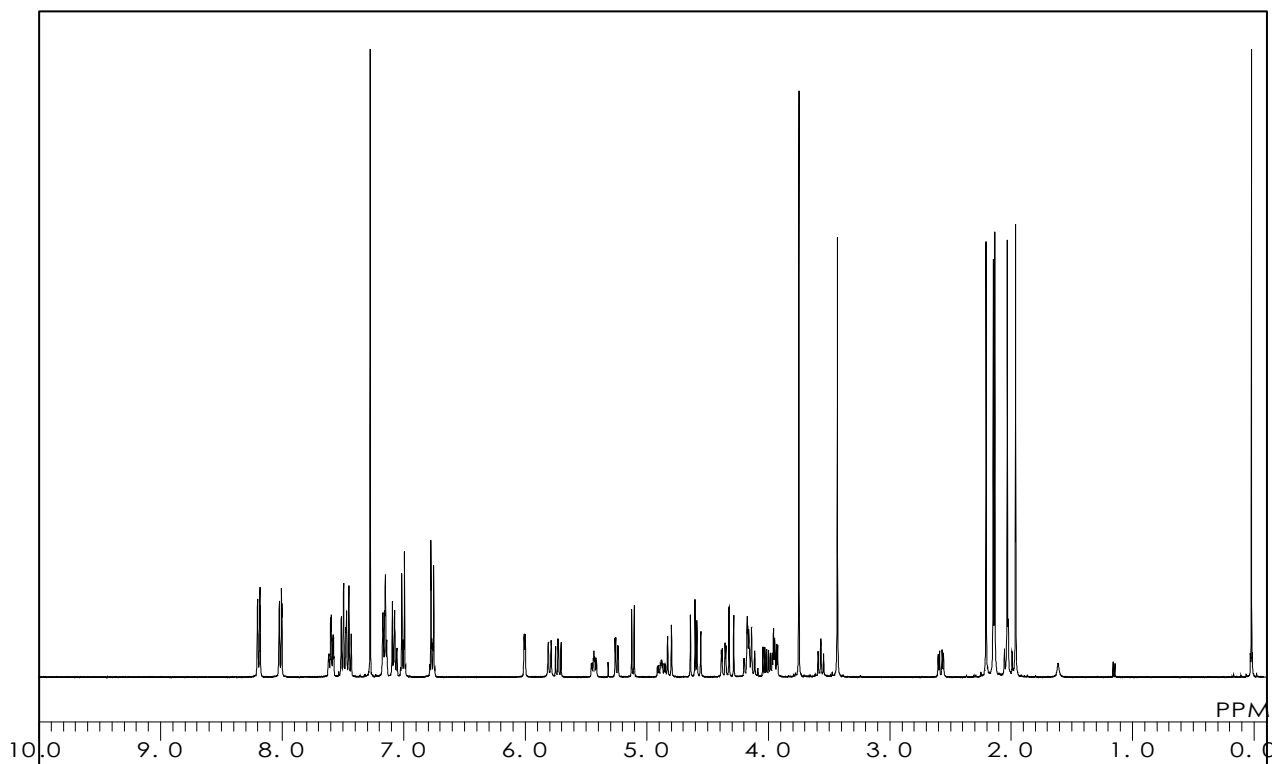
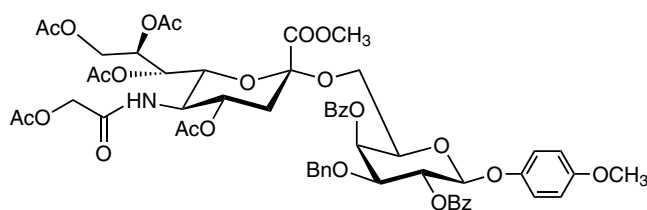
**Neu5GcAc[1Me,4789Ac] $\alpha$ (2-6)Gal[24Bz,3Bn]- $\beta$ -MP**

$C_{56}H_{61}NO_{23} = 1116.09$

Solvent :  $CDCl_3$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 20.9 °C



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**N0816**

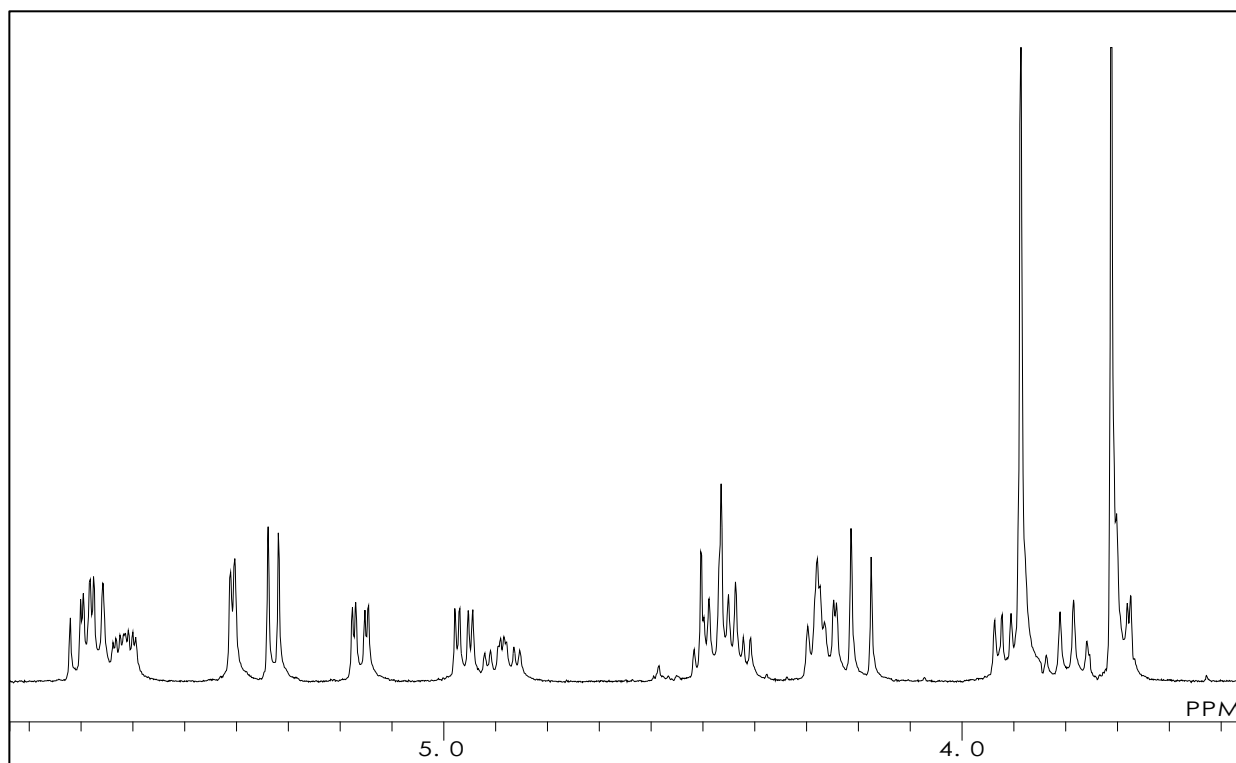
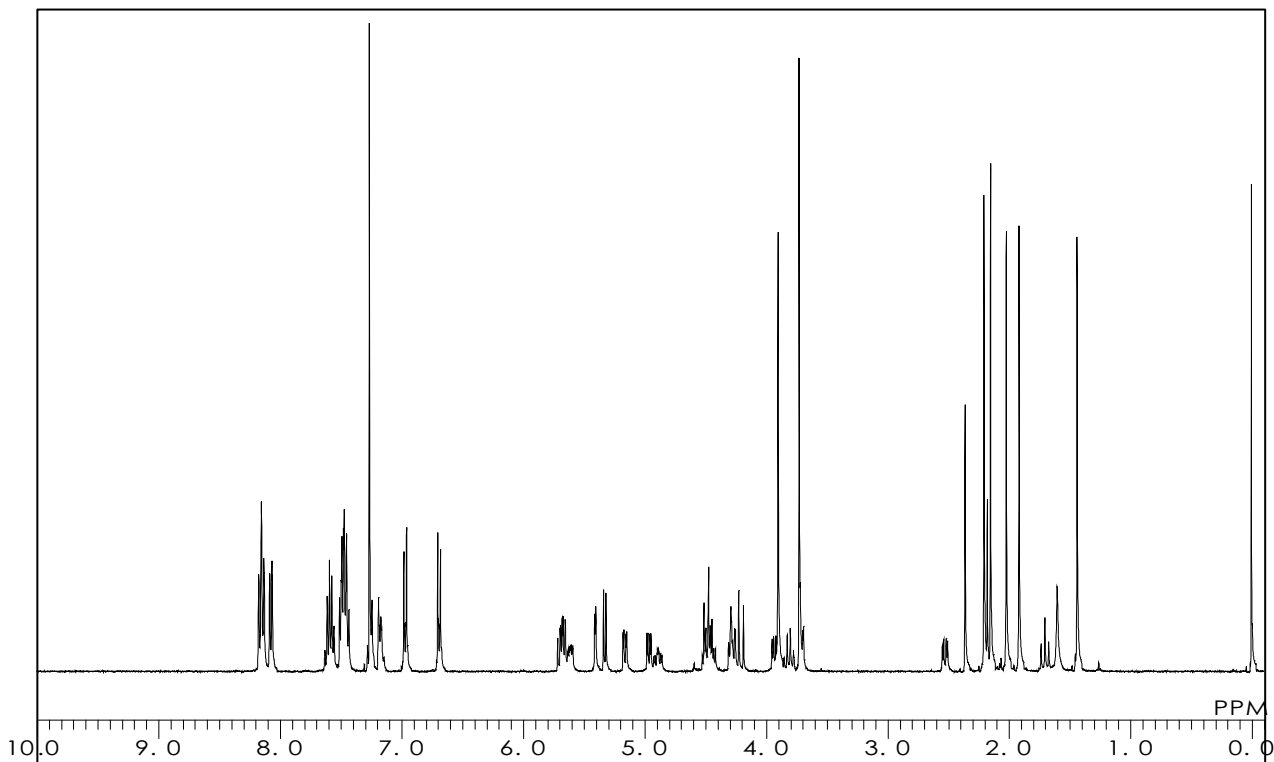
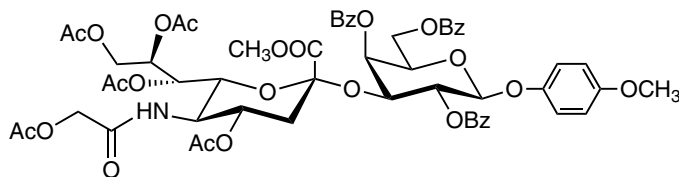
**Neu5GcAc[1Me,4789Ac] $\alpha$ (2-3)Gal[246Bz]- $\beta$ -MP**

C<sub>56</sub>H<sub>59</sub>NO<sub>24</sub> = 1130.07

Solvent : CDCl<sub>3</sub>

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 20.5 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**A2631**

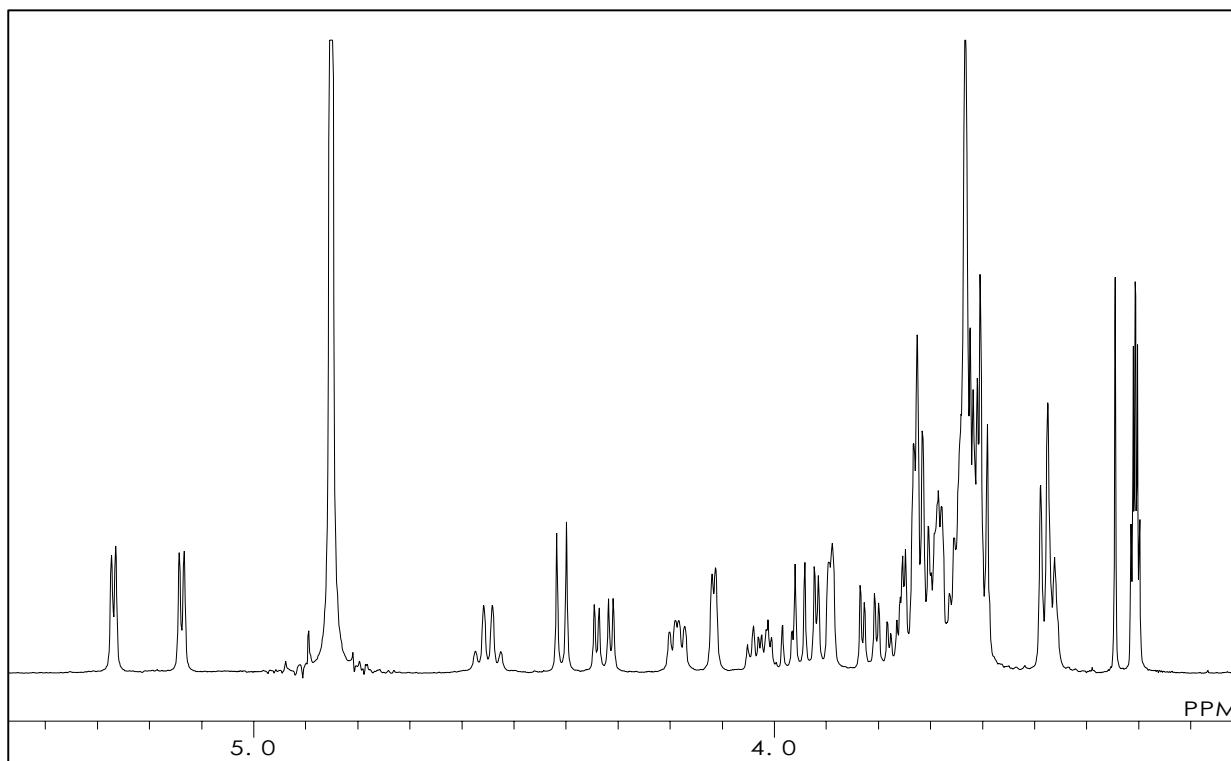
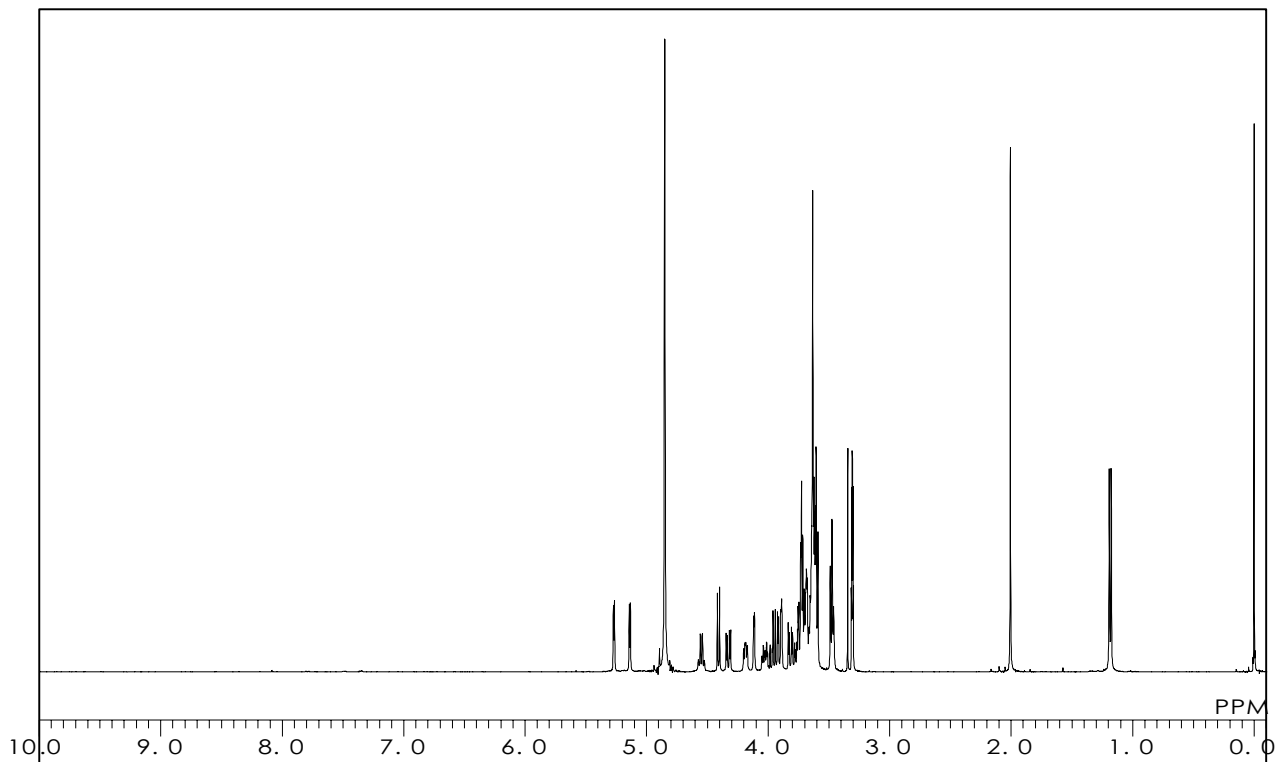
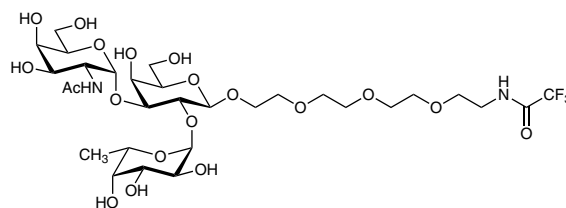
**A Antigen PEG-trifluoroacetamide**

$C_{30}H_{51}F_3N_2O_{19} = 800.73$

Solvent :  $CD_3OD$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 24.1 °C



**B4172**

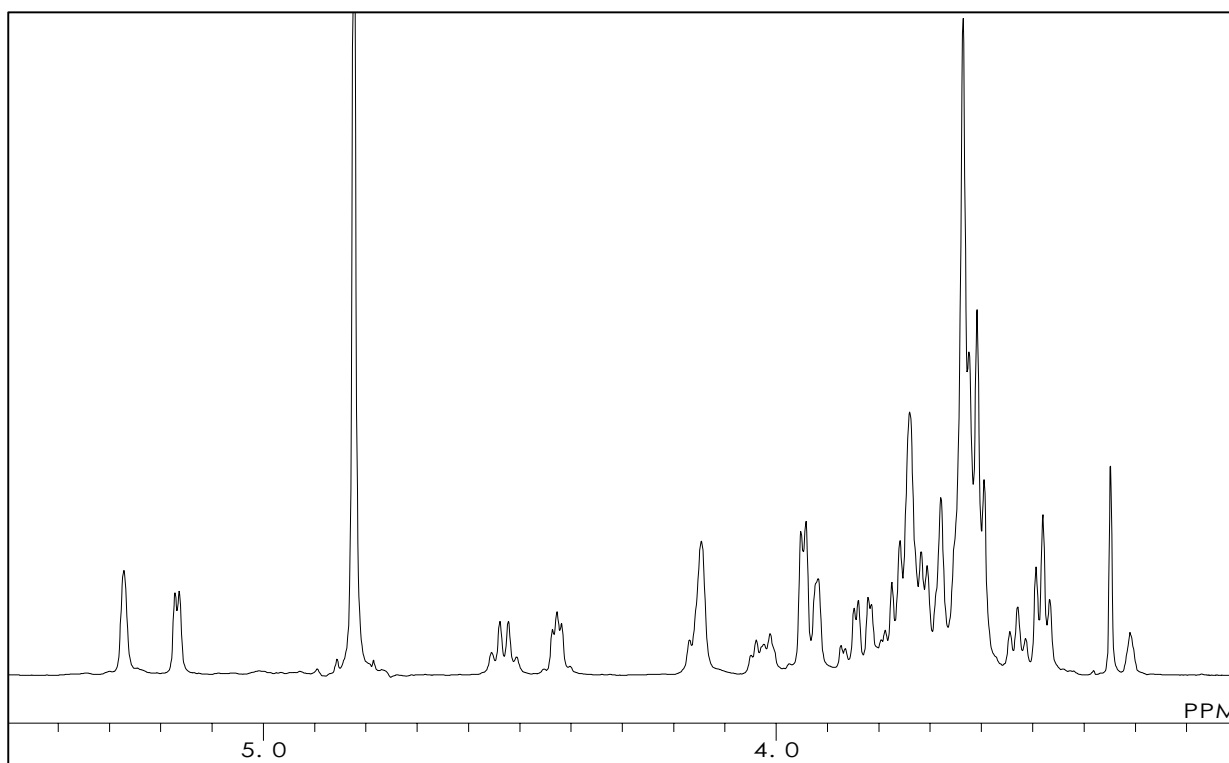
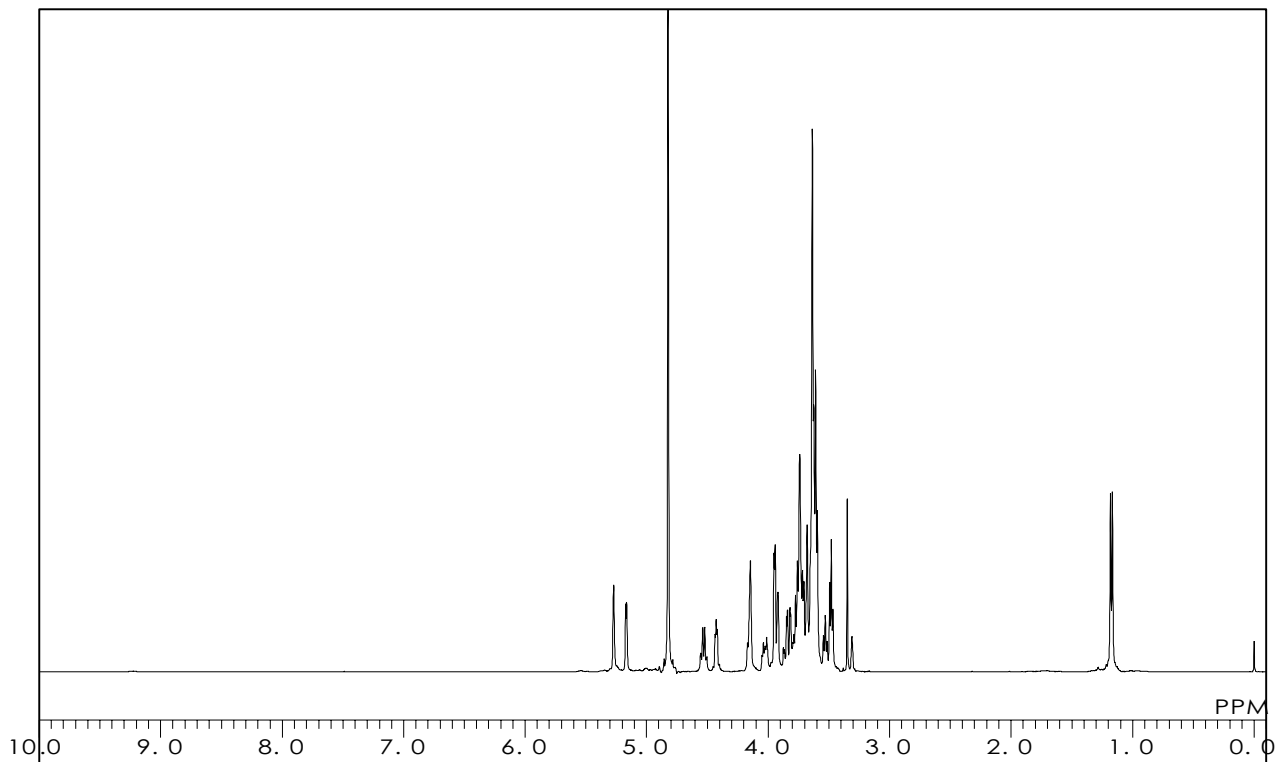
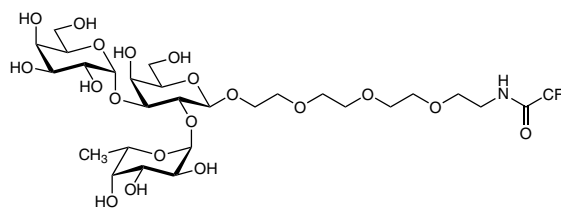
**B Antigen PEG-trifluoroacetamide**

$C_{28}H_{48}F_3NO_{19} = 759.68$

Solvent :  $CD_3OD$

Internal Standard :  $Si(CH_3)_4$

Measured Temperature : 23.2 °C



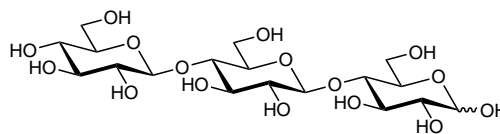
本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。



**C2795**

**Cellotriose**

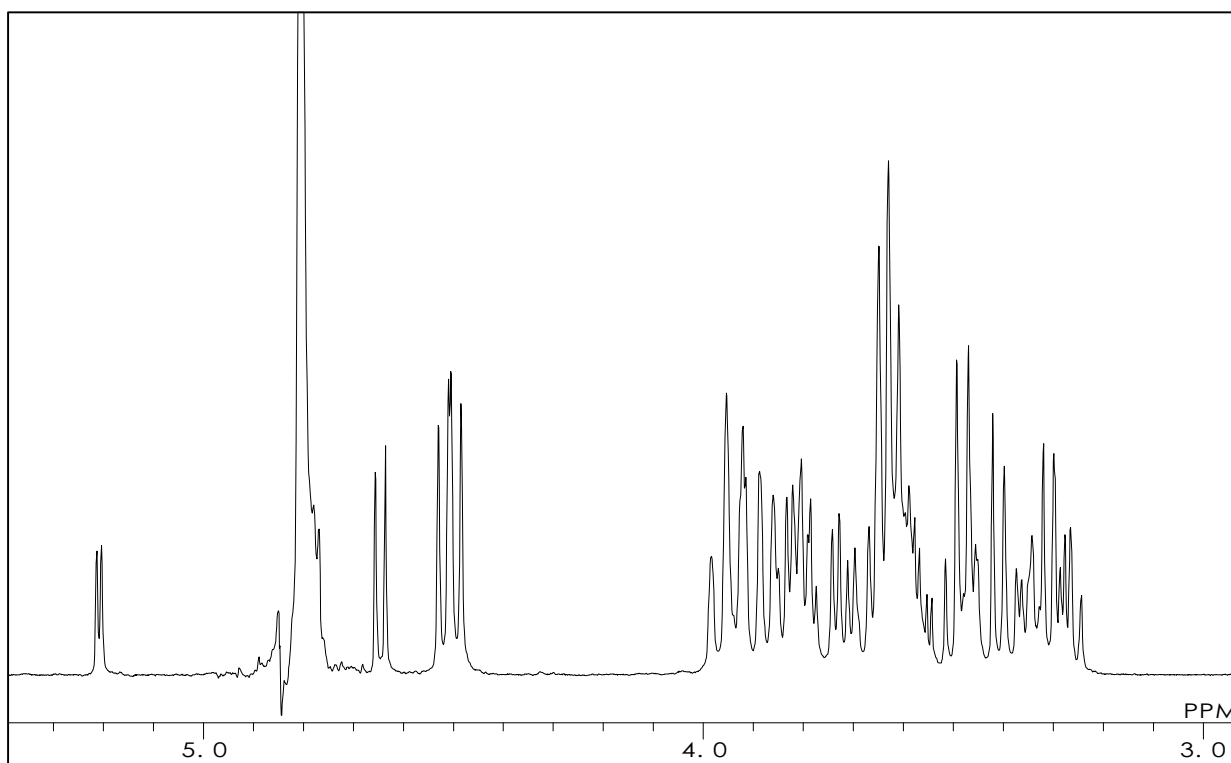
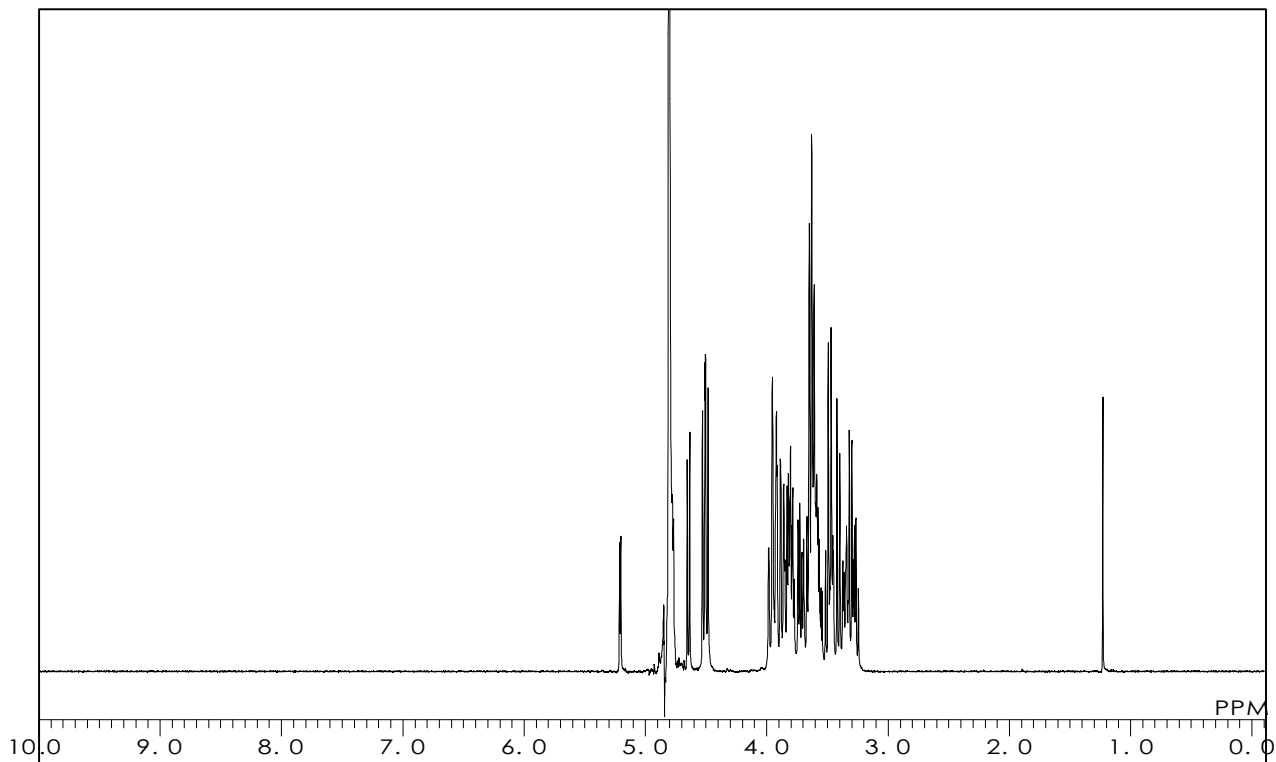
$C_{18}H_{32}O_{16} = 504.44$  [33404-34-1]



Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 21.0 °C



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**F0895**

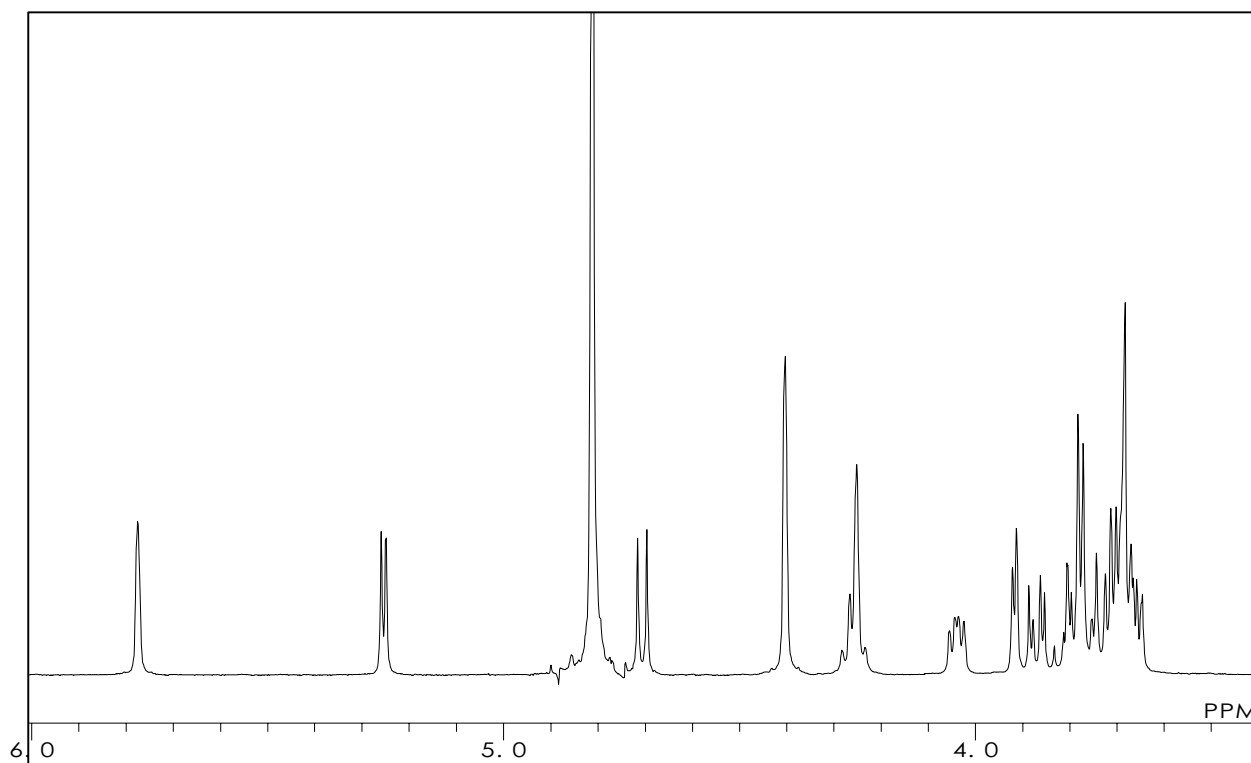
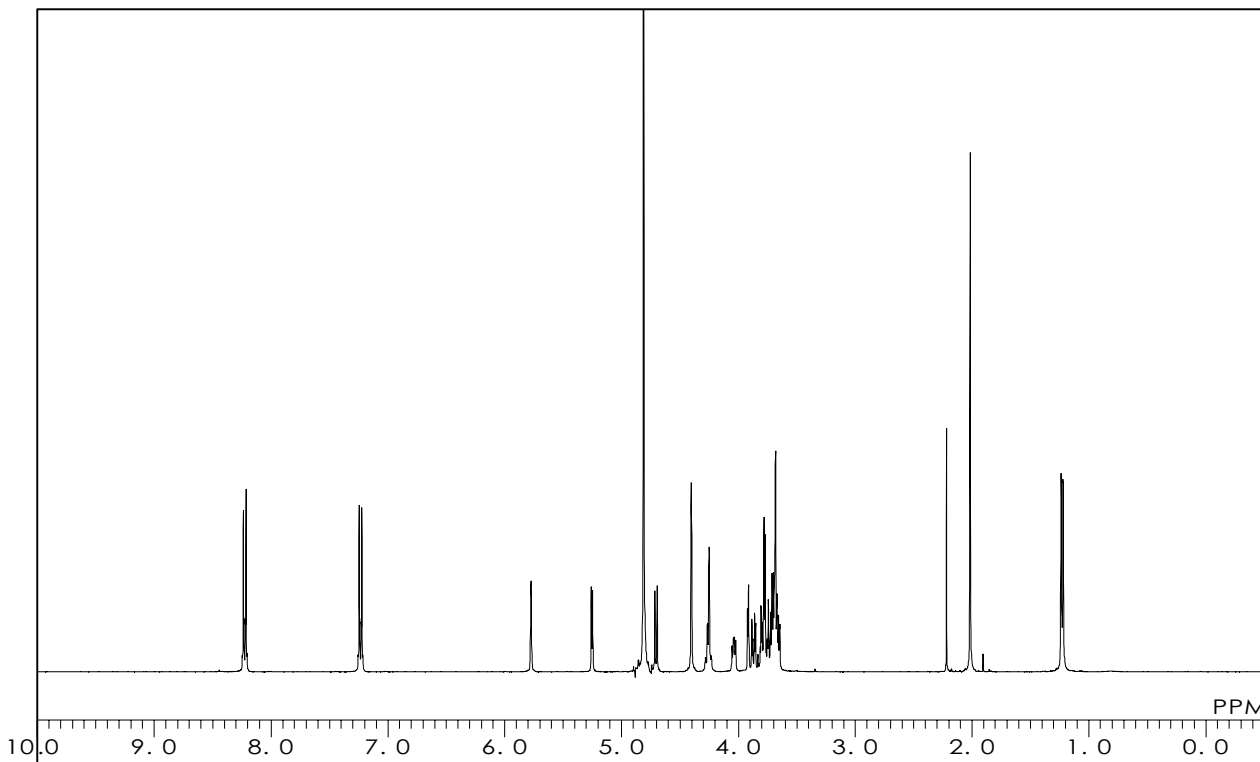
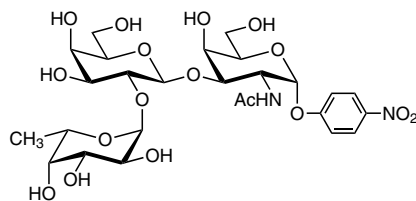
**Fuc  $\alpha$  (1-2)Gal  $\beta$  (1-3)GalNAc- $\alpha$ -pNP (=H type 3  $\alpha$ -pNP Glycoside)**

$C_{26}H_{38}N_2O_{17} = 650.59$  [1105508-81-3]

Solvent :  $D_2O$

Internal Standard : Acetone ( $\delta$  2.22)

Measured Temperature : 21.6 °C



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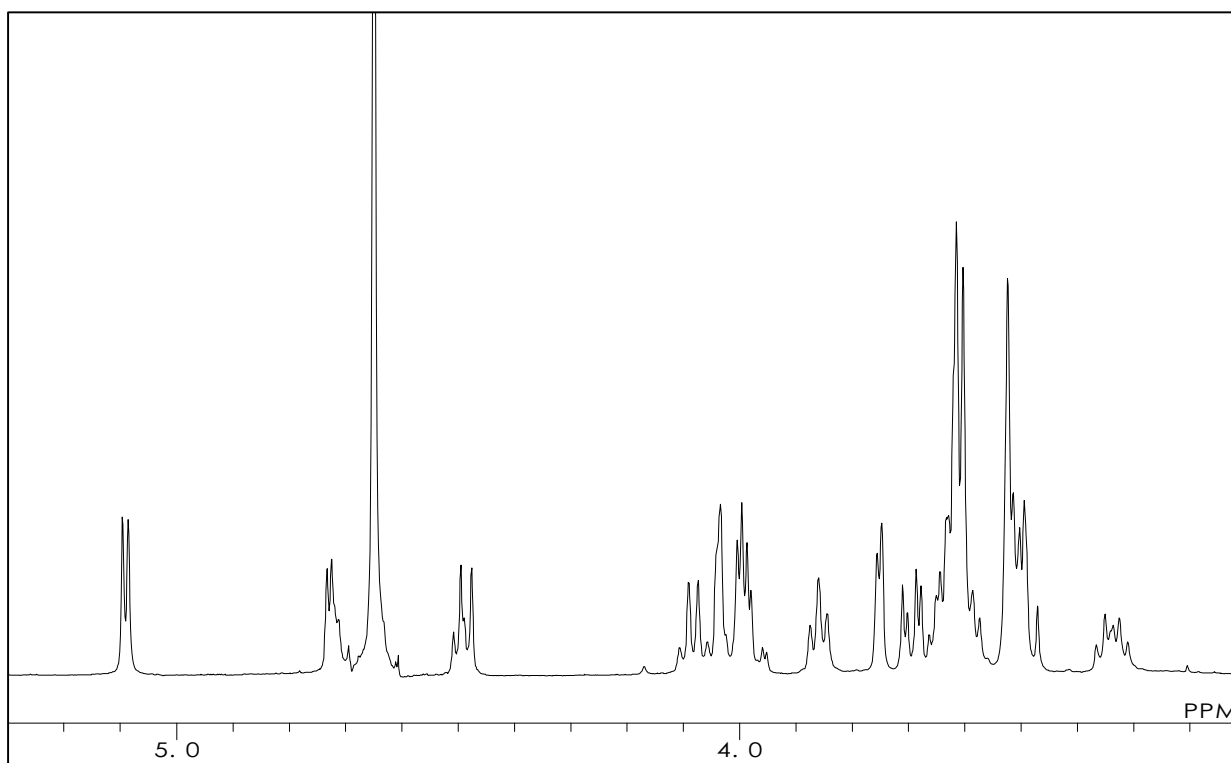
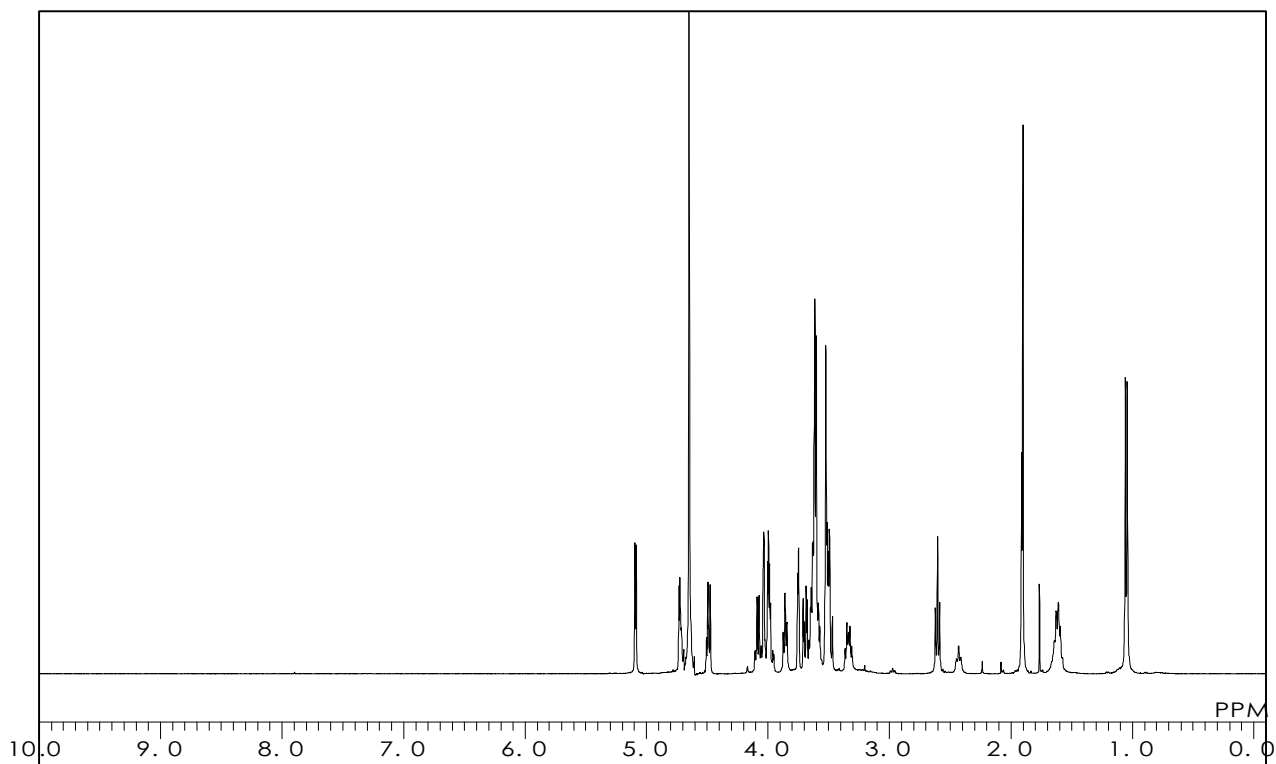
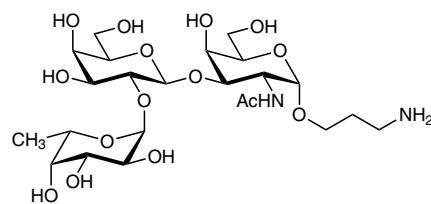
**F1189**

**Fuc  $\alpha$  (1-2)Gal  $\beta$  (1-3)GalNAc- $\alpha$  -propylamine**

$C_{23}H_{42}N_2O_{15} = 586.59$  [1016164-81-0]

Solvent :  $D_2O$

Measured Temperature : 24.2  $^{\circ}C$



Please refrain from the conversion of these data without permission. These data have been released on our homepage.

**F0894**

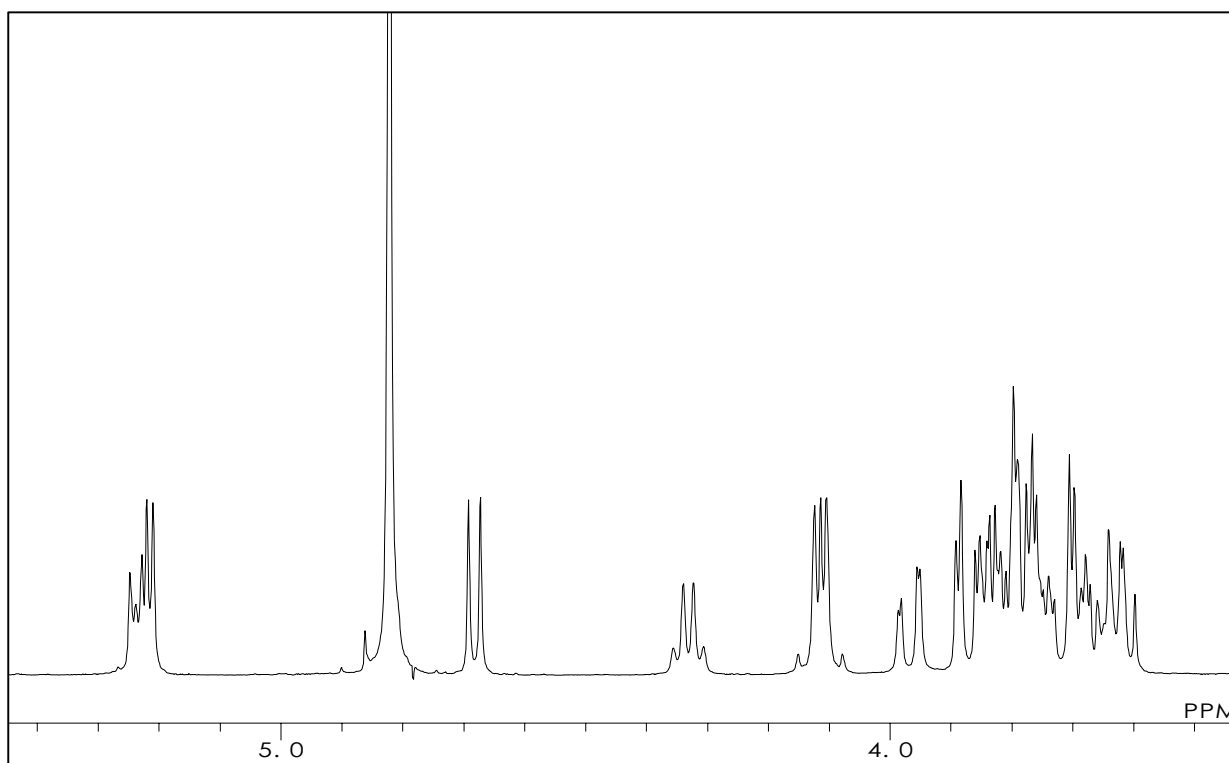
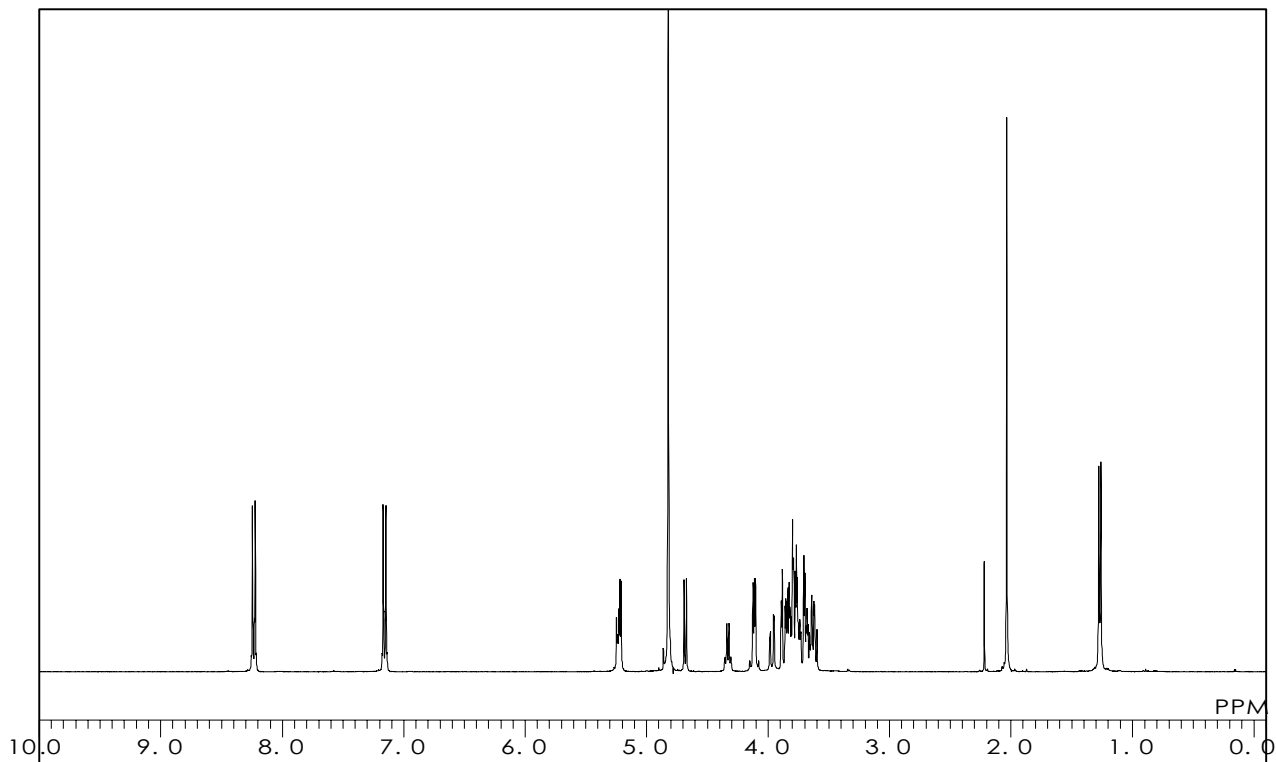
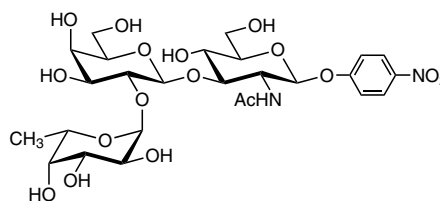
**Fuc  $\alpha$  (1-2)Gal  $\beta$  (1-3)GlcNAc- $\beta$ -pNP (=H type 1  $\beta$ -pNP Glycoside)**

$C_{26}H_{38}N_2O_{17} = 650.59$  [93496-53-8]

Solvent :  $D_2O$

Internal Standard : Acetone ( $\delta$  2.22)

Measured Temperature : 20.9  $^{\circ}C$



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**G0529**

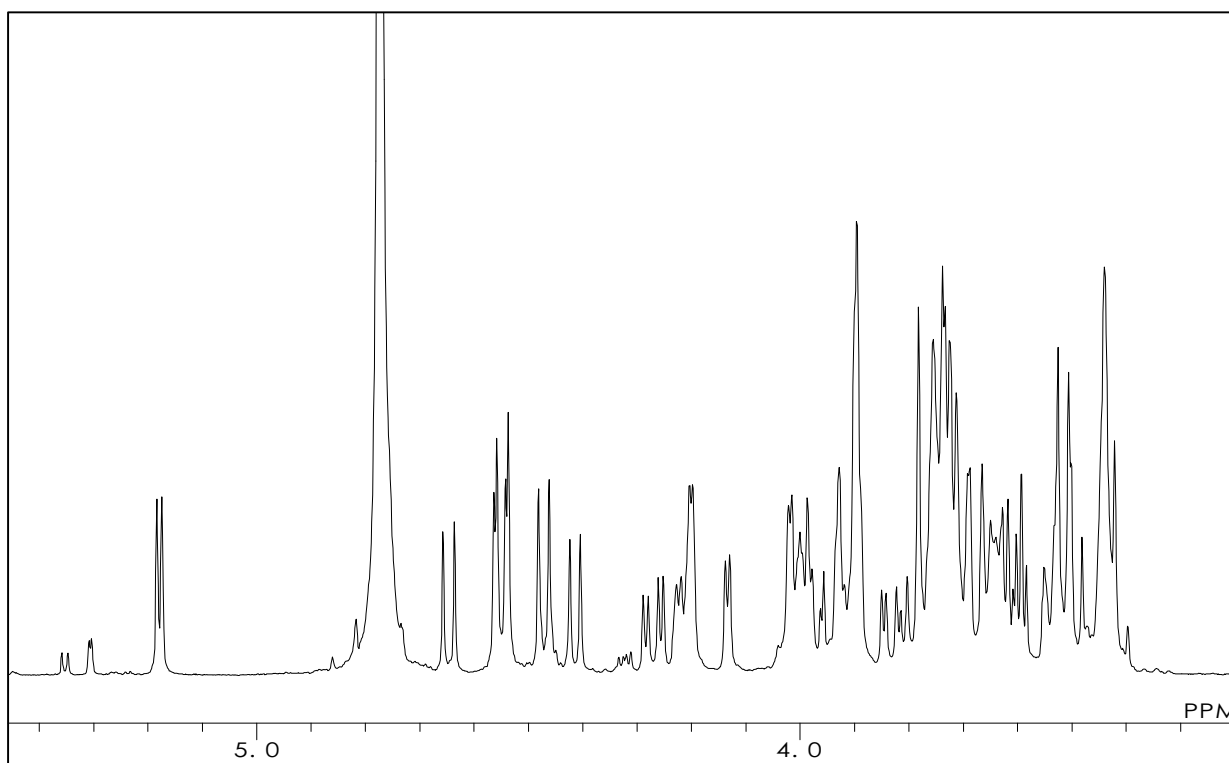
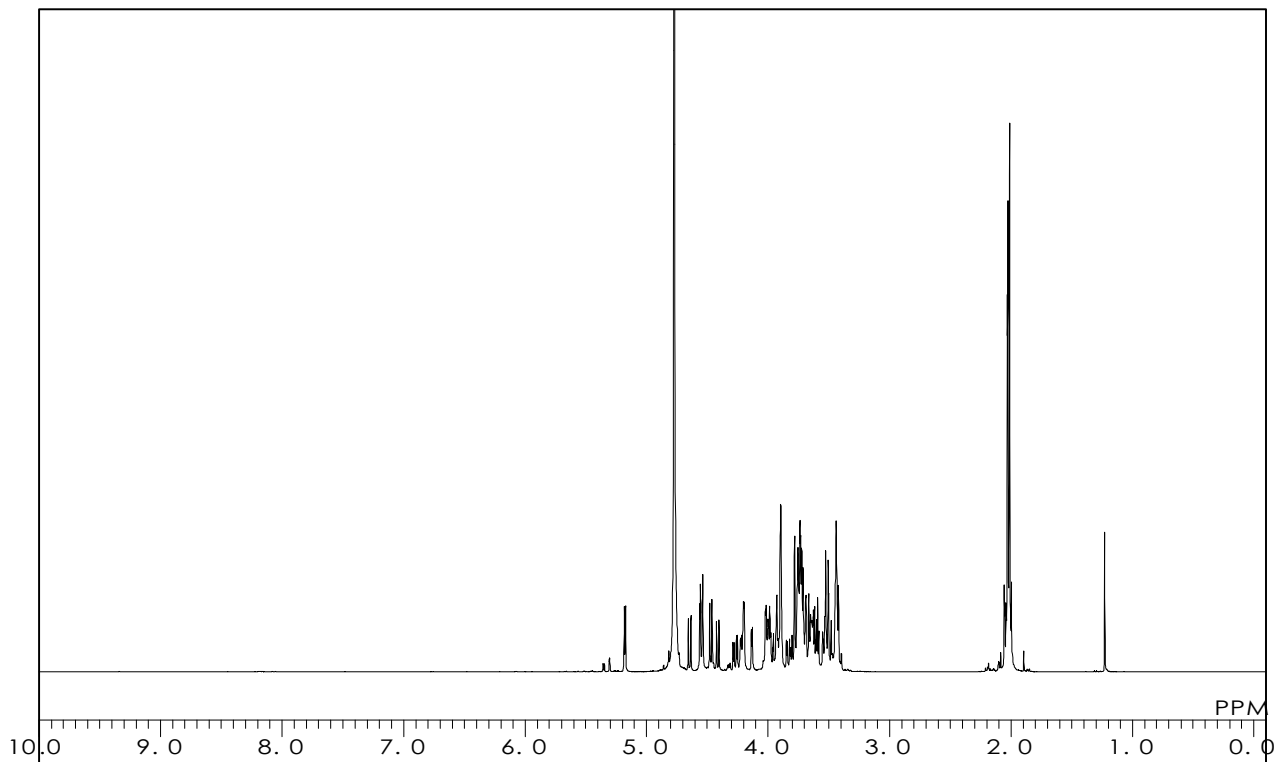
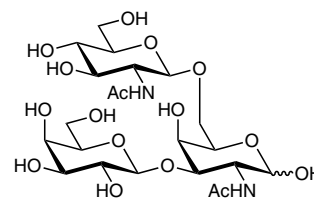
**Gal  $\beta$  (1-3)[GlcNAc  $\beta$  (1-6)]GalNAc**

$C_{22}H_{38}N_2O_{16} = 586.54$  [73499-58-8]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 23.7 °C



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**G0343**

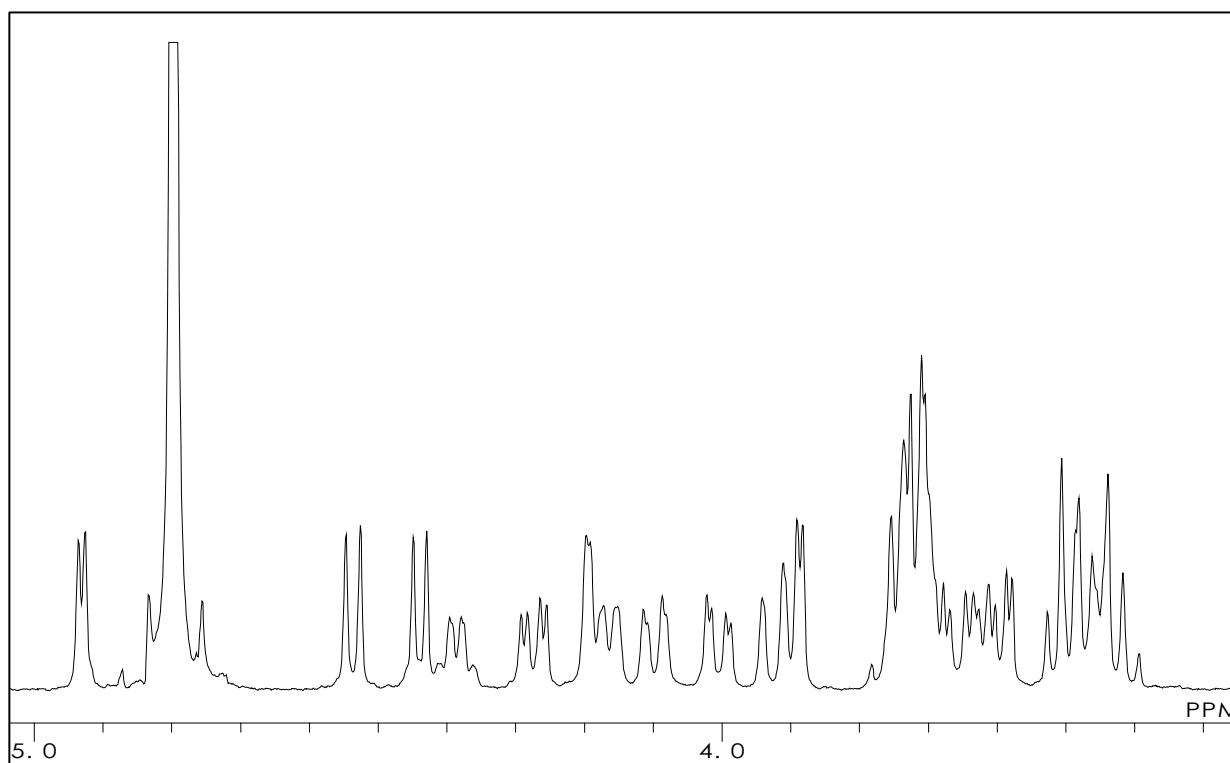
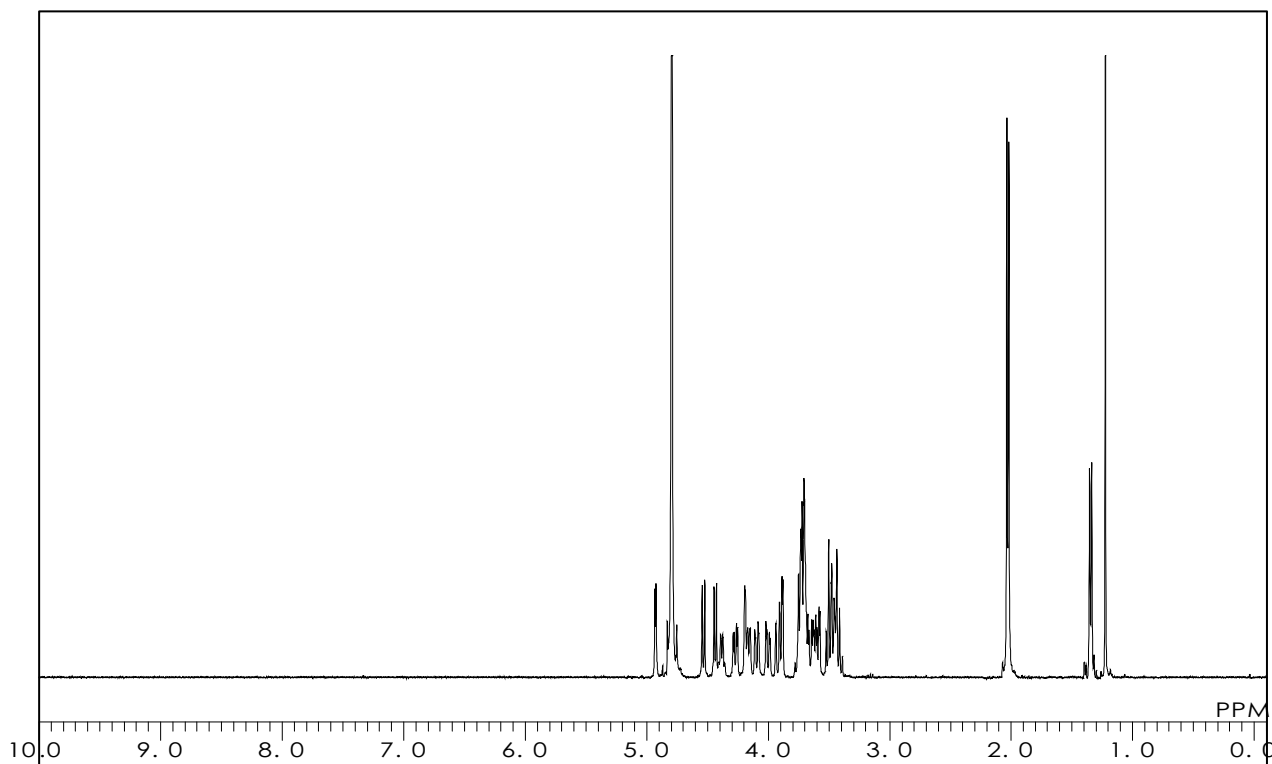
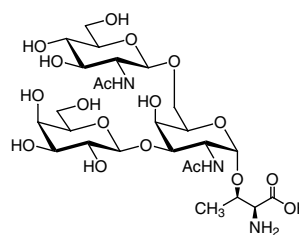
**Gal $\beta$ (1-3)[GlcNAc $\beta$ (1-6)]GalNAc- $\alpha$ -Thr**

C<sub>26</sub>H<sub>45</sub>N<sub>3</sub>O<sub>18</sub> = 687.65 [186600-27-1]

Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 22.0 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**G0377**

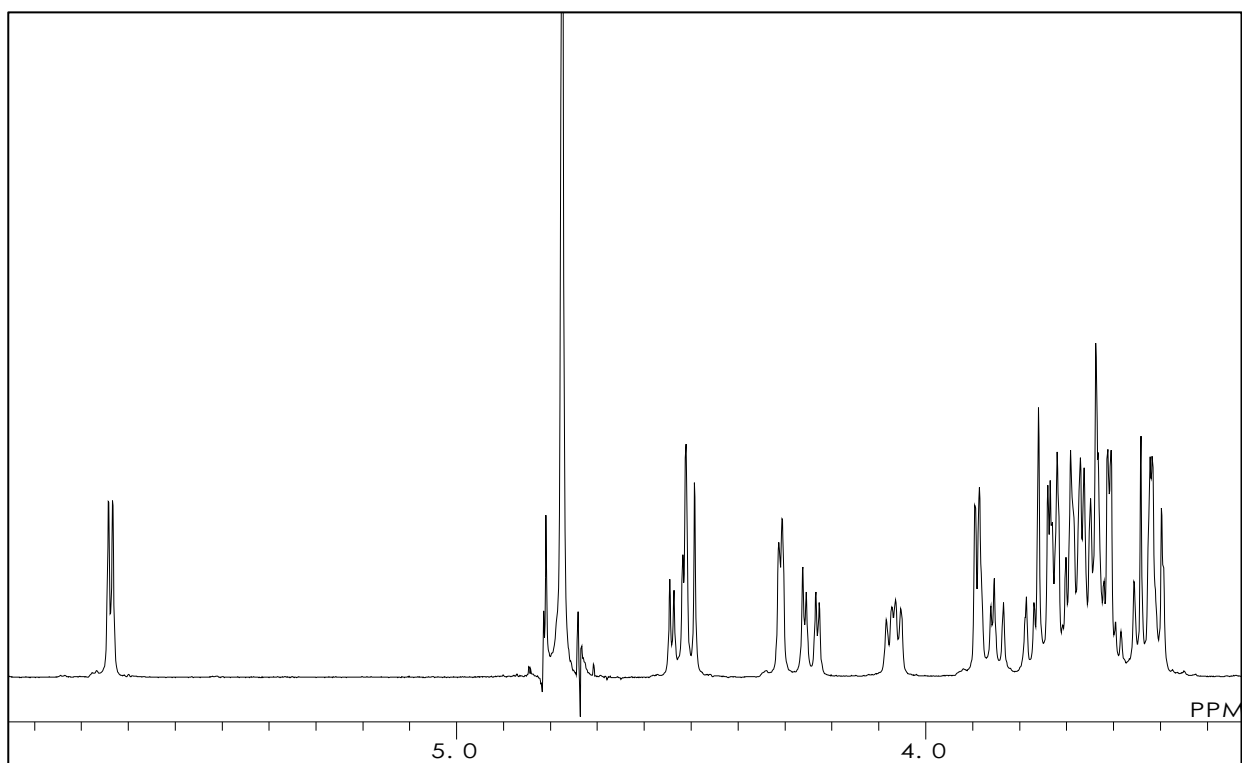
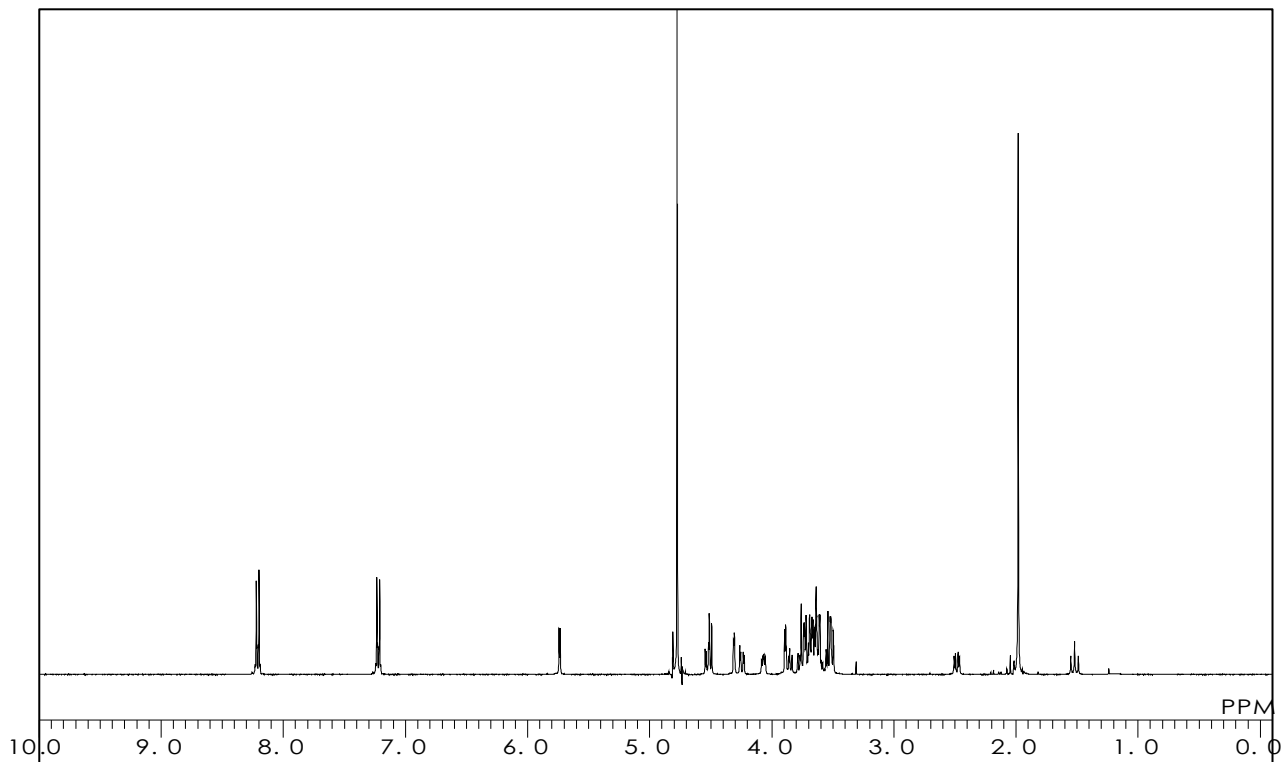
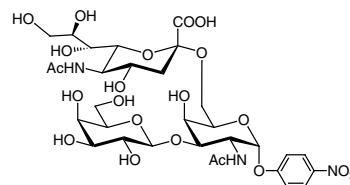
**Gal $\beta$ (1-3)[Neu5Ac $\alpha$ (2-6)]GalNAc- $\alpha$ -pNP**

C<sub>31</sub>H<sub>45</sub>N<sub>3</sub>O<sub>21</sub> = 795.70 [1316822-90-8]

Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 22.1 °C



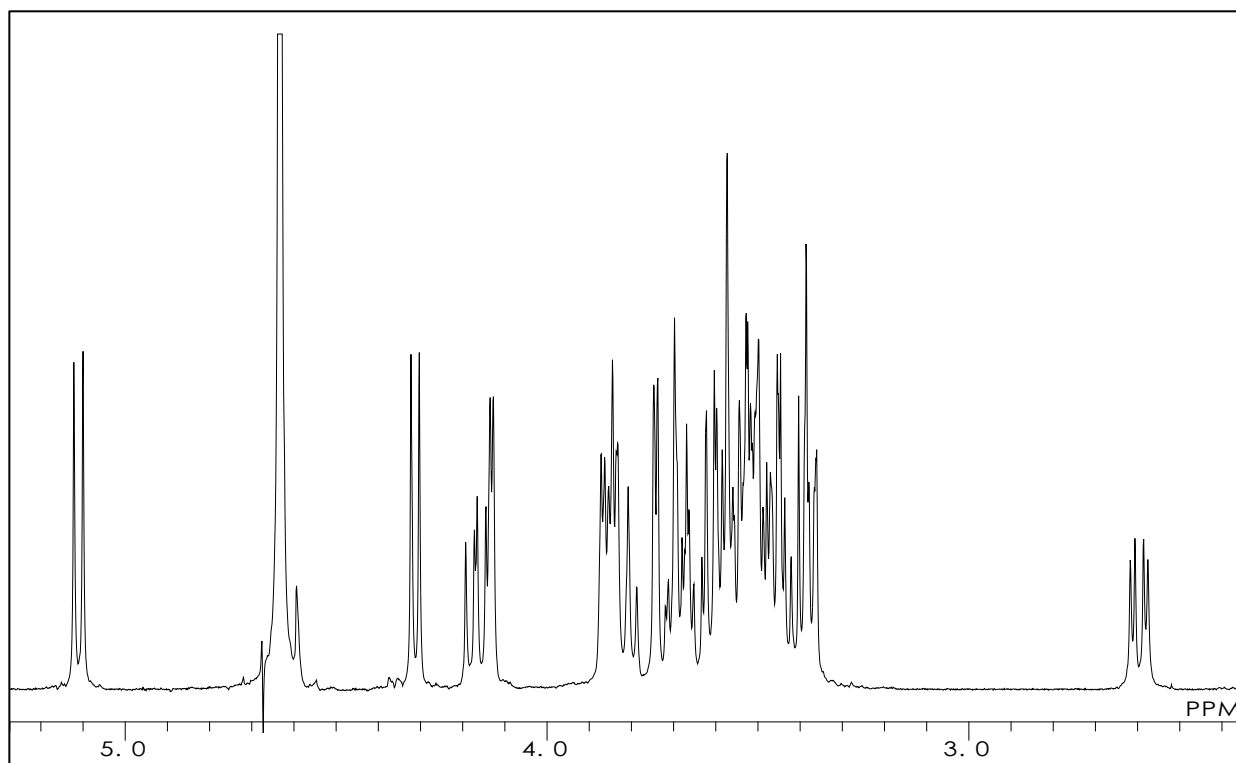
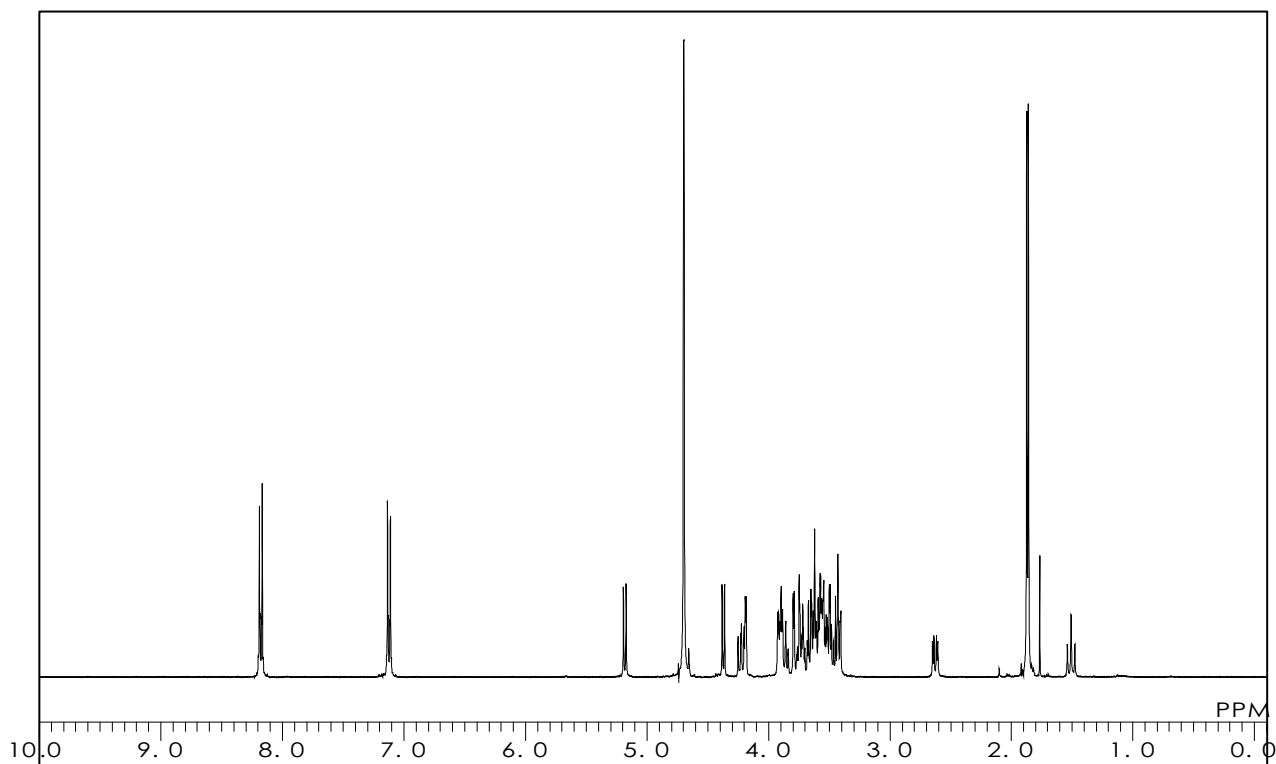
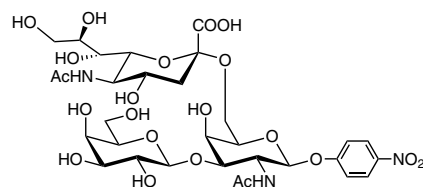
**G0345**

**Gal $\beta$ (1-3)[Neu5Ac $\alpha$ (2-6)]GalNAc- $\beta$ -pNP**

C<sub>31</sub>H<sub>45</sub>N<sub>3</sub>O<sub>21</sub> = 795.70

Solvent : D<sub>2</sub>O

Measured Temperature : 21.8 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。



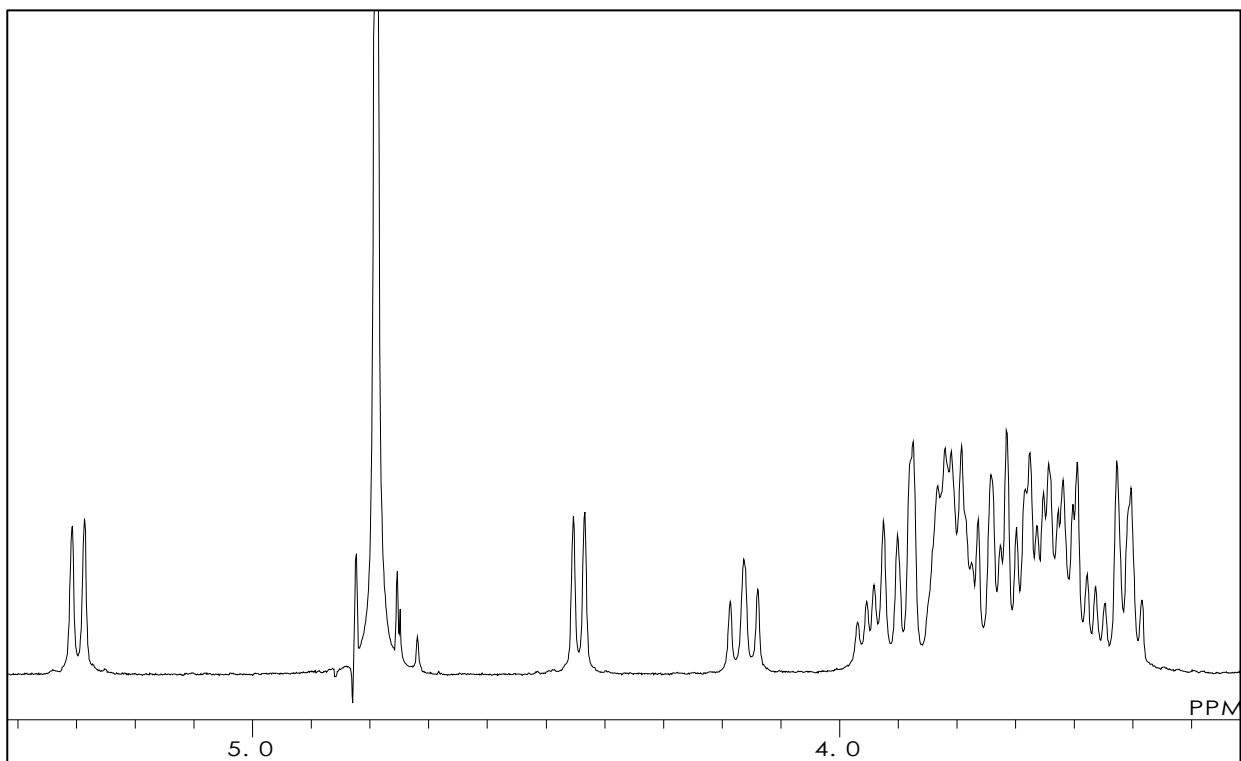
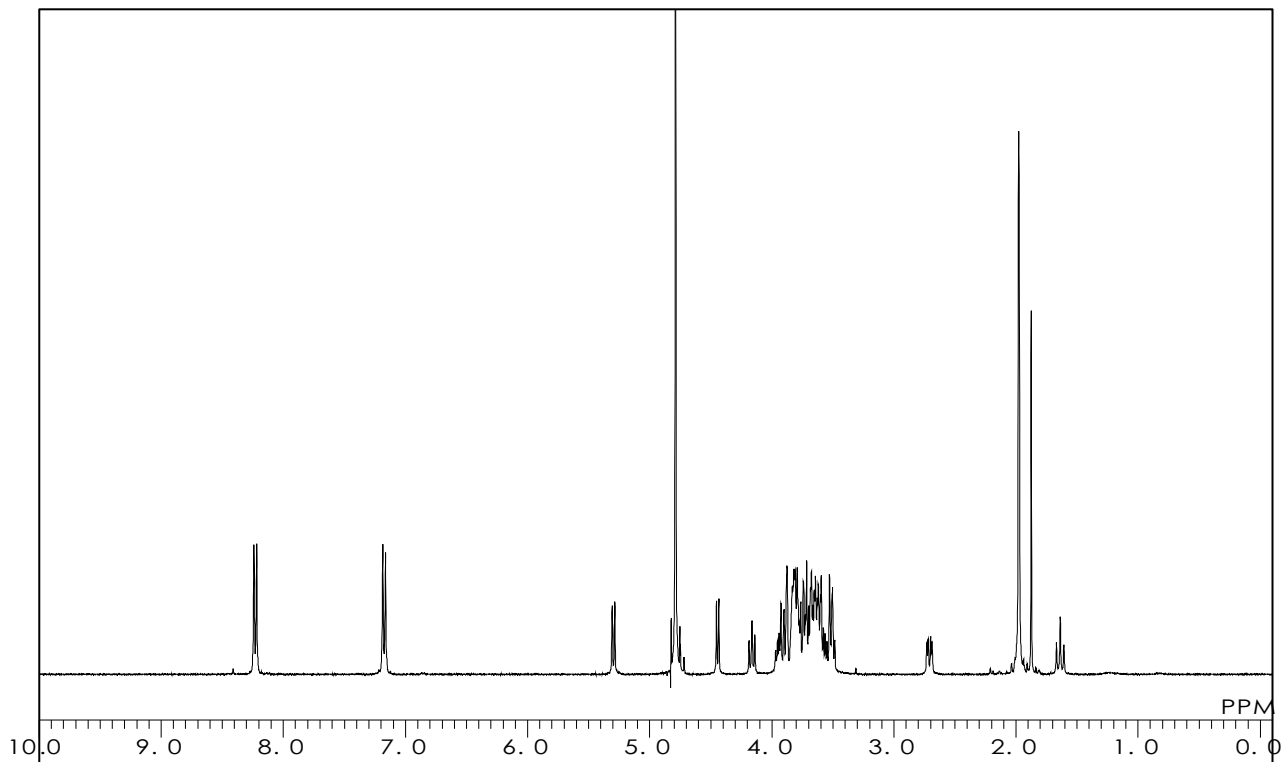
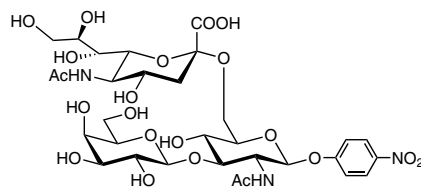
**G0347**

**Gal $\beta$ (1-3)[Neu5Ac $\alpha$ (2-6)]GlcNAc- $\beta$ -pNP**

C<sub>31</sub>H<sub>45</sub>N<sub>3</sub>O<sub>21</sub> = 795.70 [754954-71-7]

Solvent : D<sub>2</sub>O

Measured Temperature : 20.1 °C



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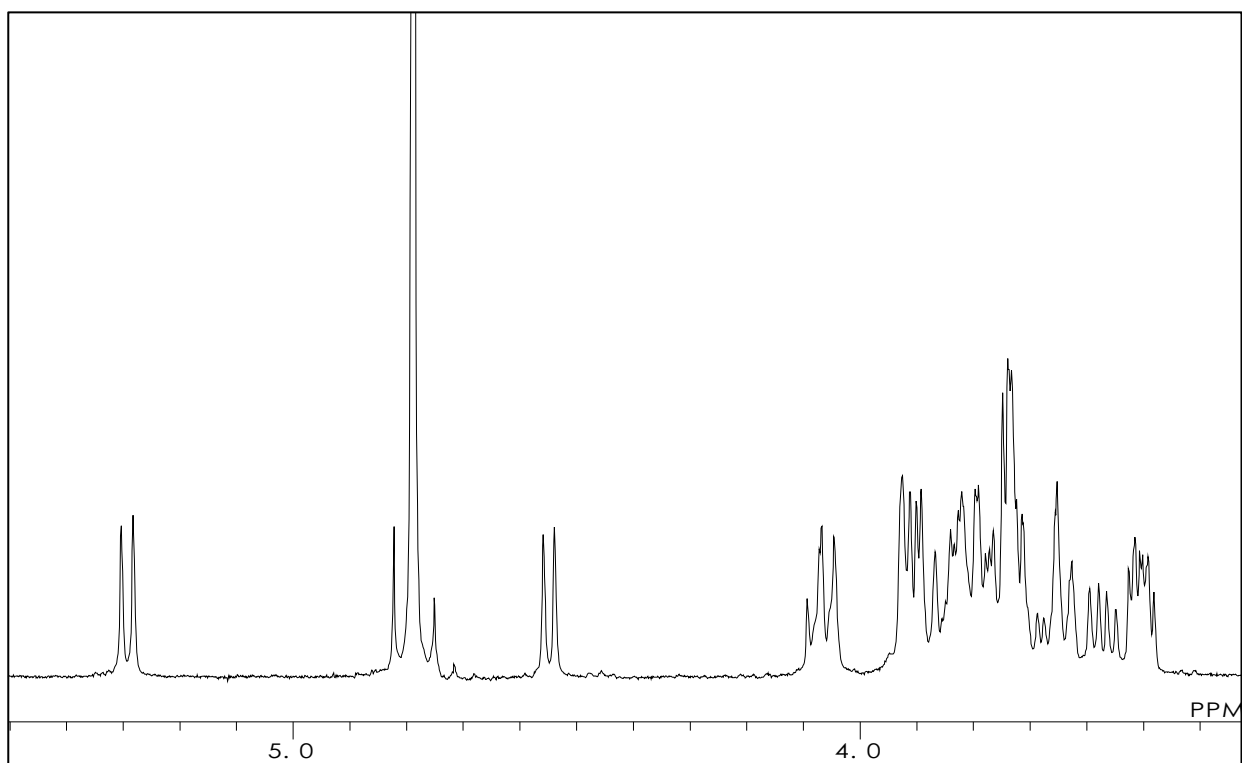
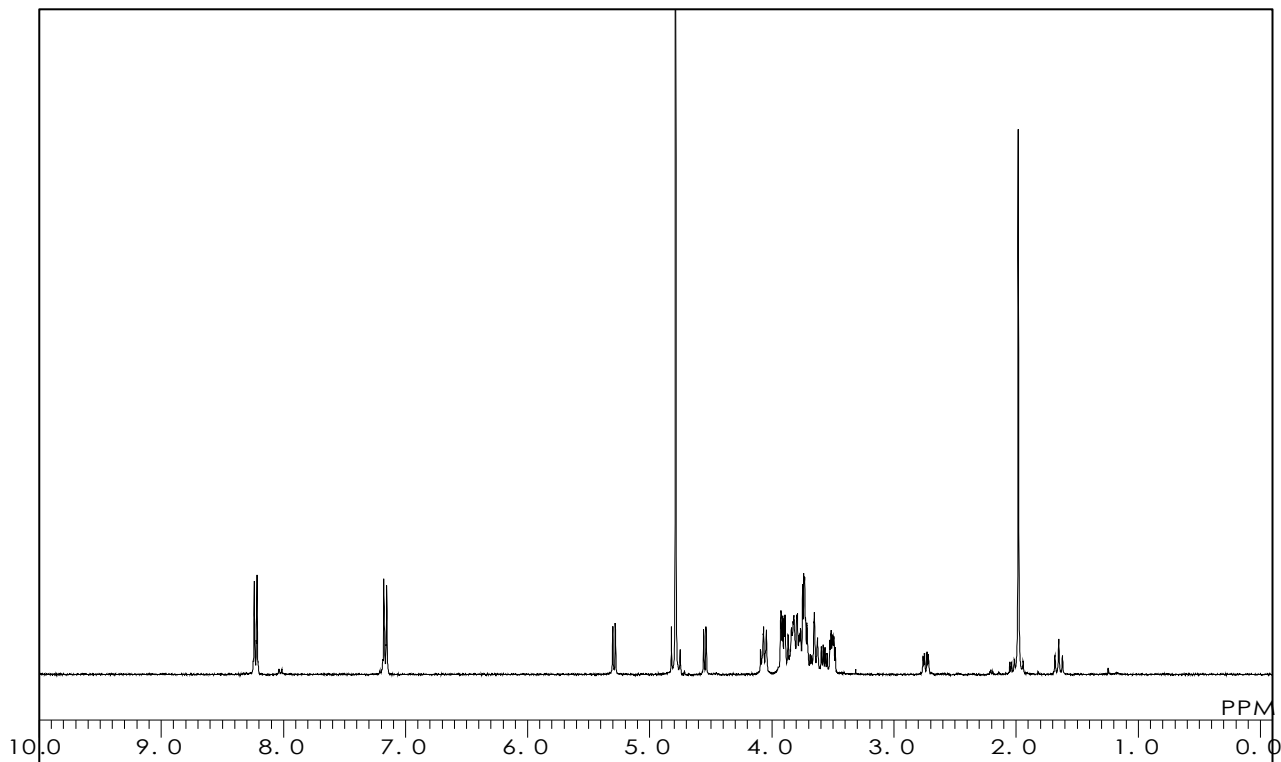
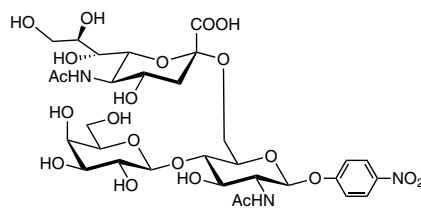
**G0353**

**Gal $\beta$ (1-4)[Neu5Ac $\alpha$ (2-6)]GlcNAc- $\beta$ -pNP**

C<sub>31</sub>H<sub>45</sub>N<sub>3</sub>O<sub>21</sub> = 795.70

Solvent : D<sub>2</sub>O

Measured Temperature : 20.7 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**G0422**

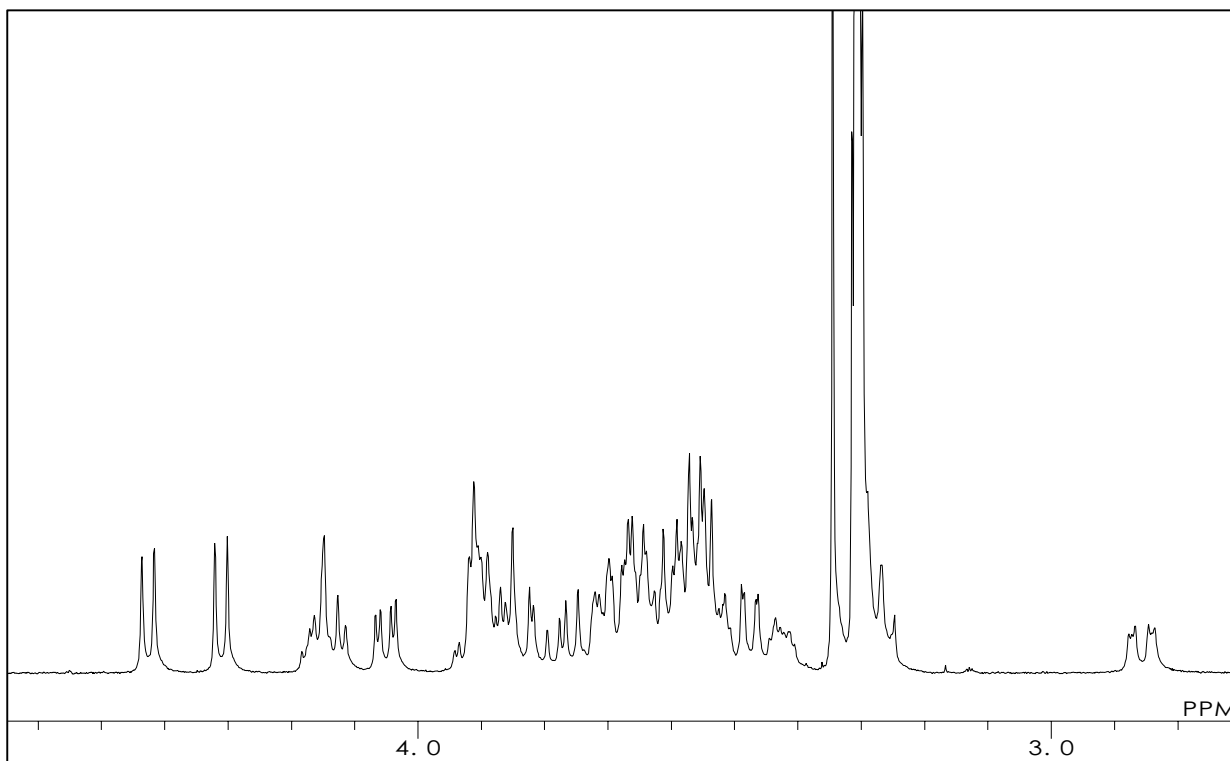
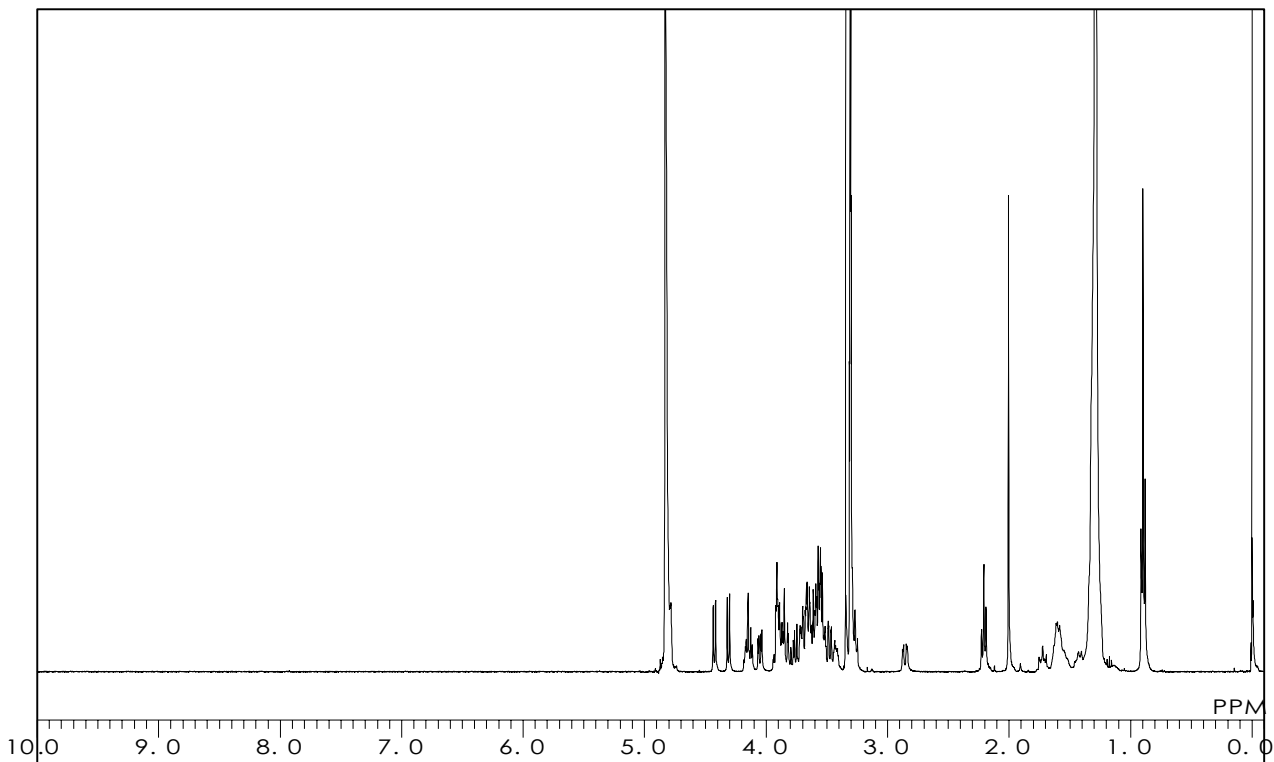
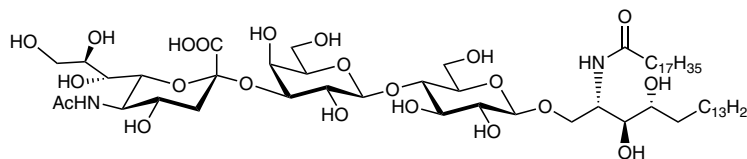
**Ganglioside GM<sub>3</sub>** (phyto-type)

C<sub>59</sub>H<sub>110</sub>N<sub>2</sub>O<sub>22</sub> = 1199.52 [1046791-63-2]

Solvent : CD<sub>3</sub>OD

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 27.2 °C



**G0489**

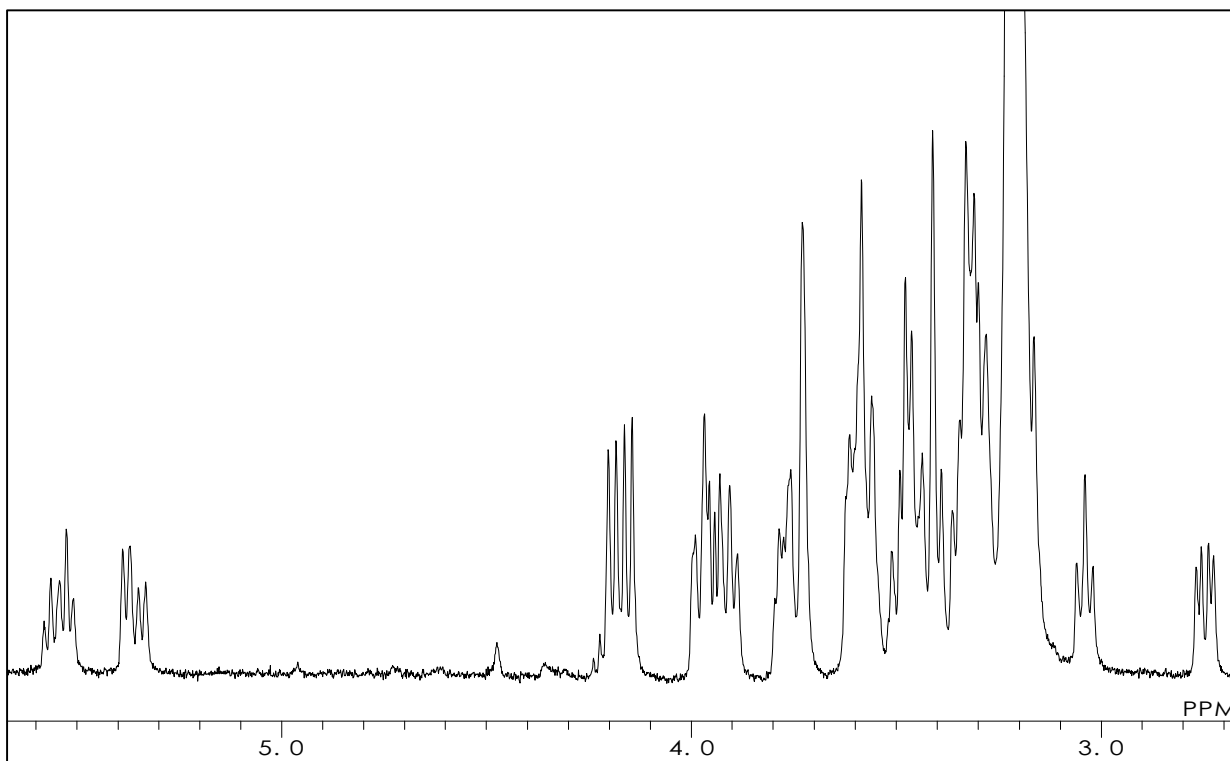
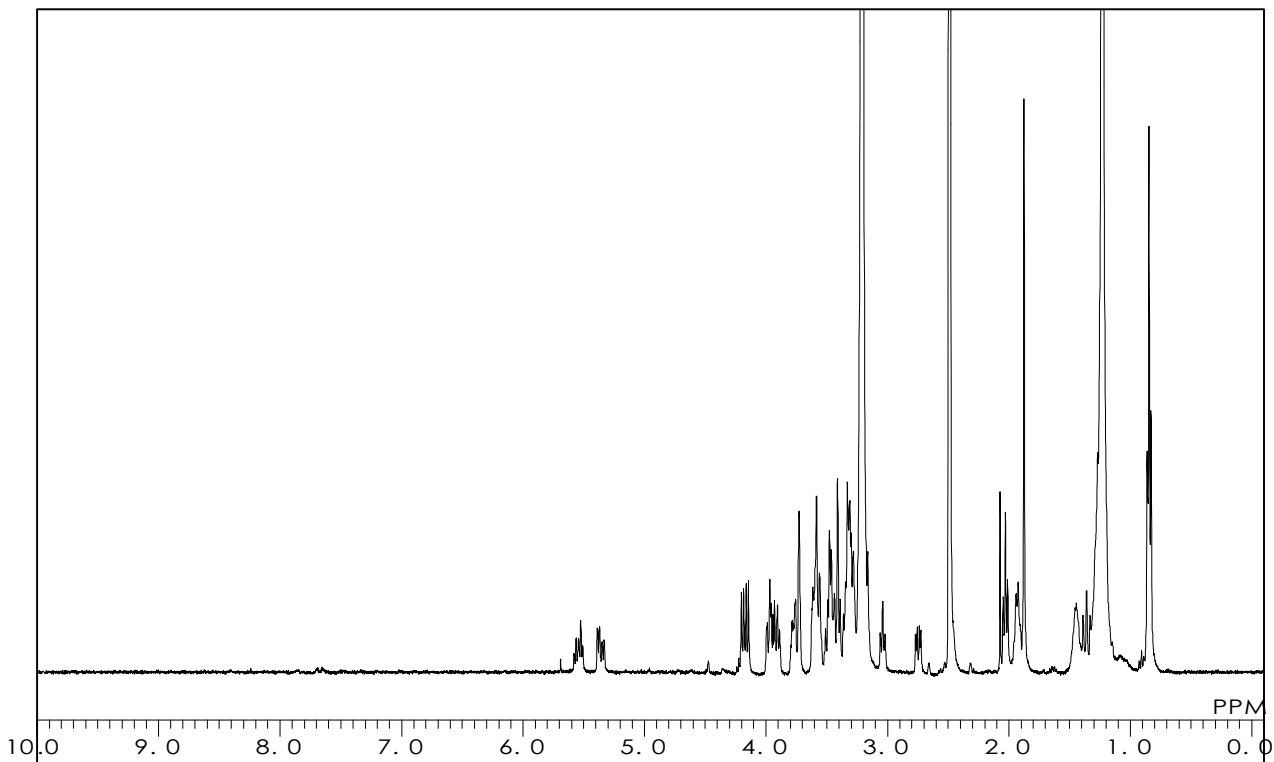
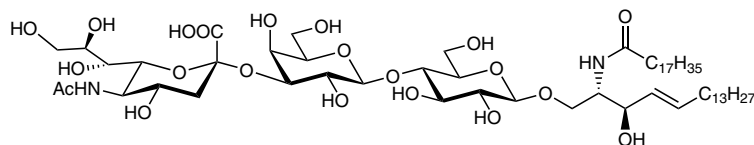
**Ganglioside GM<sub>3</sub>**

C<sub>59</sub>H<sub>108</sub>N<sub>2</sub>O<sub>21</sub> = 1181.51 [124579-05-1]

Solvent : DMSO-d<sub>6</sub>

Internal Standard : DMSO (δ 2.49)

Measured Temperature : 60.0 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**G0419**

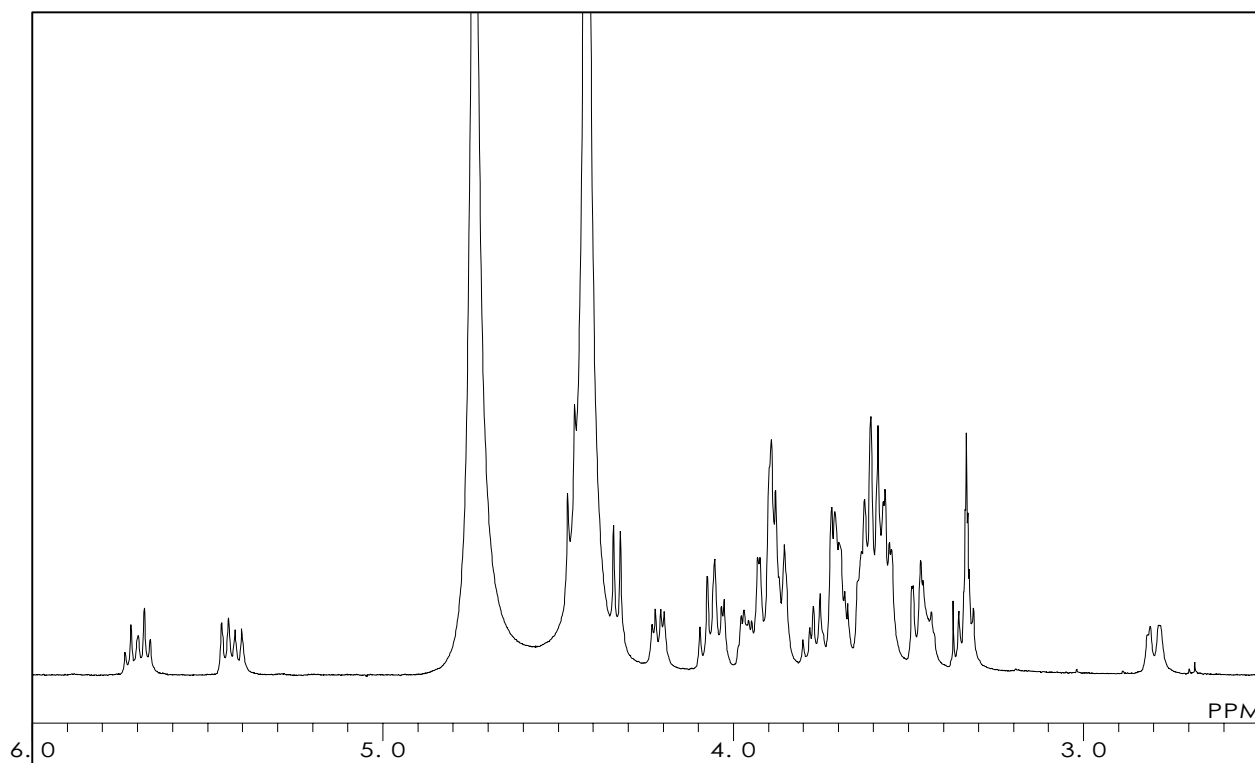
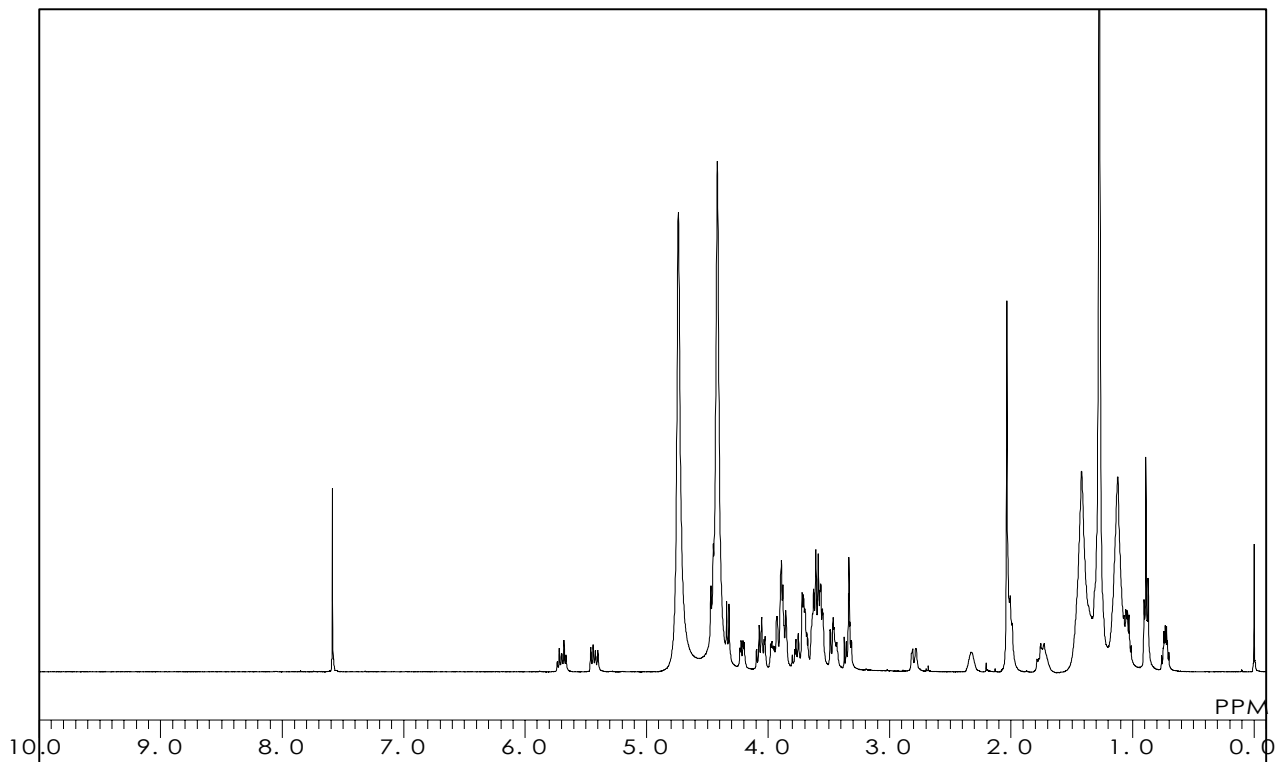
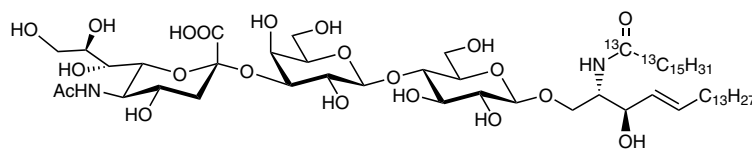
**Ganglioside GM<sub>3</sub>[d18:1, (Carbon-13)C16:0]**

$^{13}\text{C}_{16}\text{C}_{41}\text{H}_{104}\text{N}_2\text{O}_{21} = 1169.33$

Solvent :  $\text{CDCl}_3/\text{CD}_3\text{OD}/\text{D}_2\text{O} = 5/5/1$

Internal Standard :  $\text{Si}(\text{CH}_3)_4$

Measured Temperature : 23.9 °C



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**G0510**

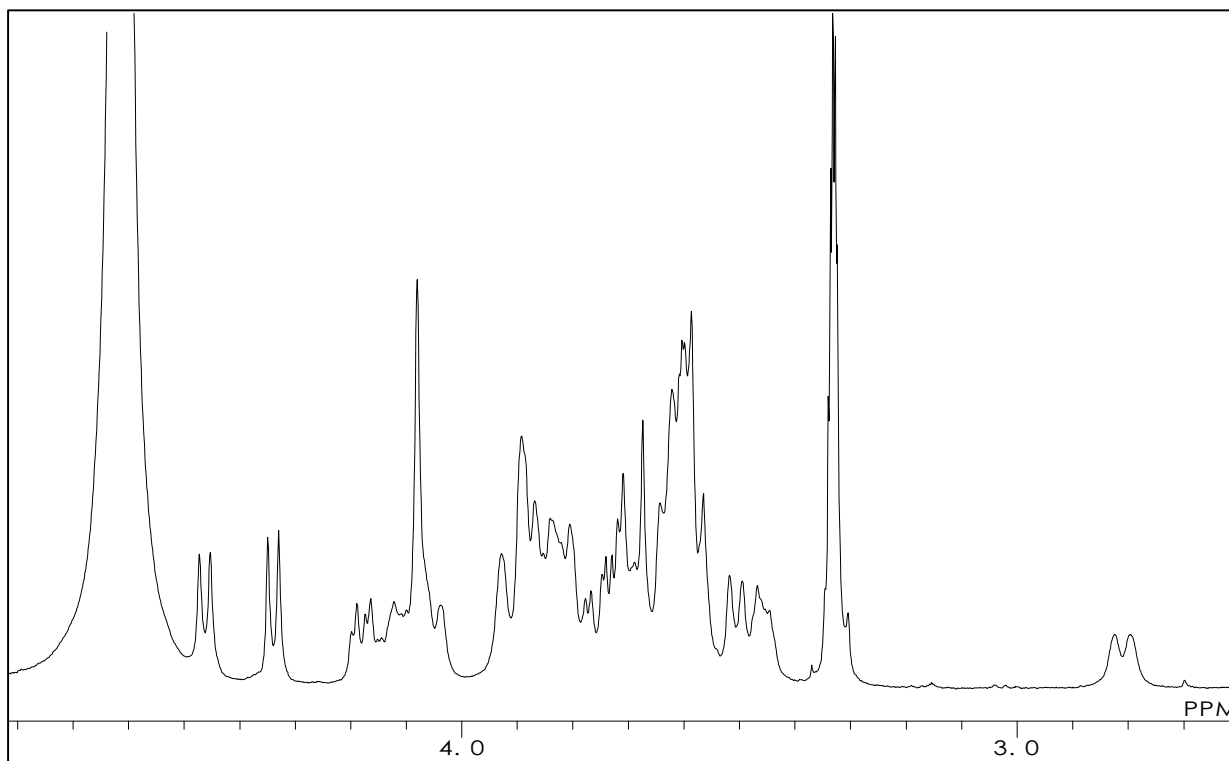
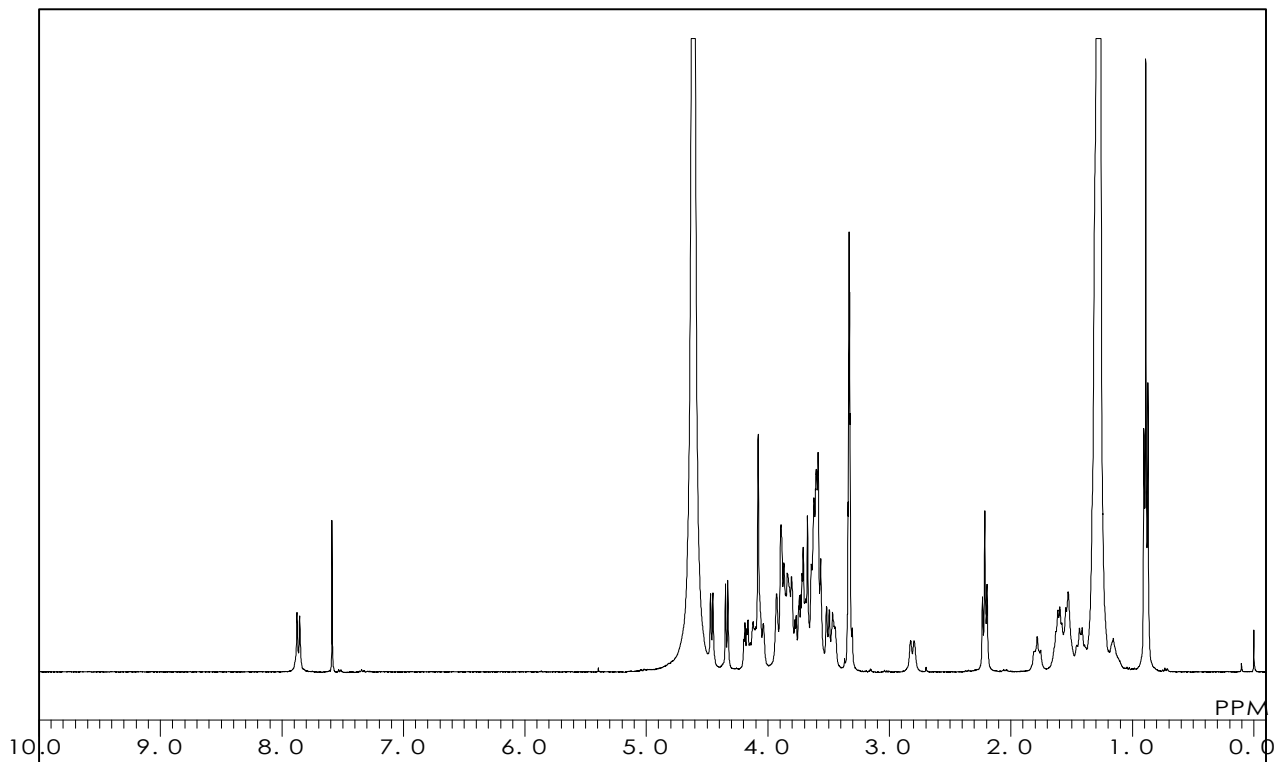
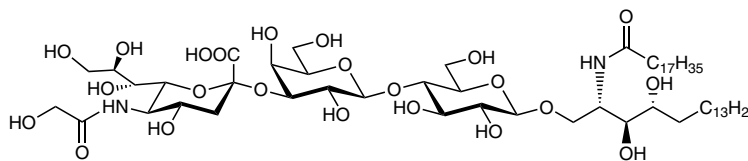
**Ganglioside GM<sub>3</sub>(Neu5Gc) (phyto-type)**

C<sub>59</sub>H<sub>110</sub>N<sub>2</sub>O<sub>23</sub> = 1215.52

Solvent : CD<sub>3</sub>OD

Internal Standard : Si(CH<sub>3</sub>)<sub>4</sub>

Measured Temperature : 22.0 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

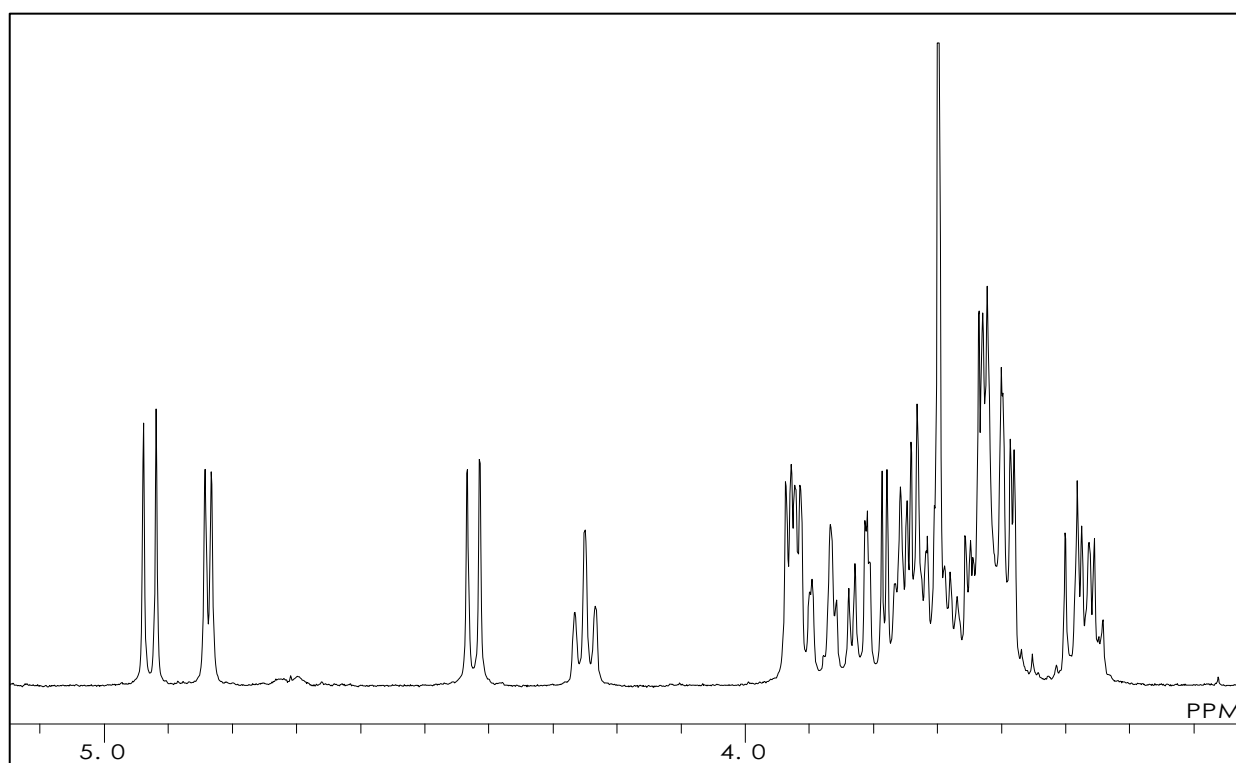
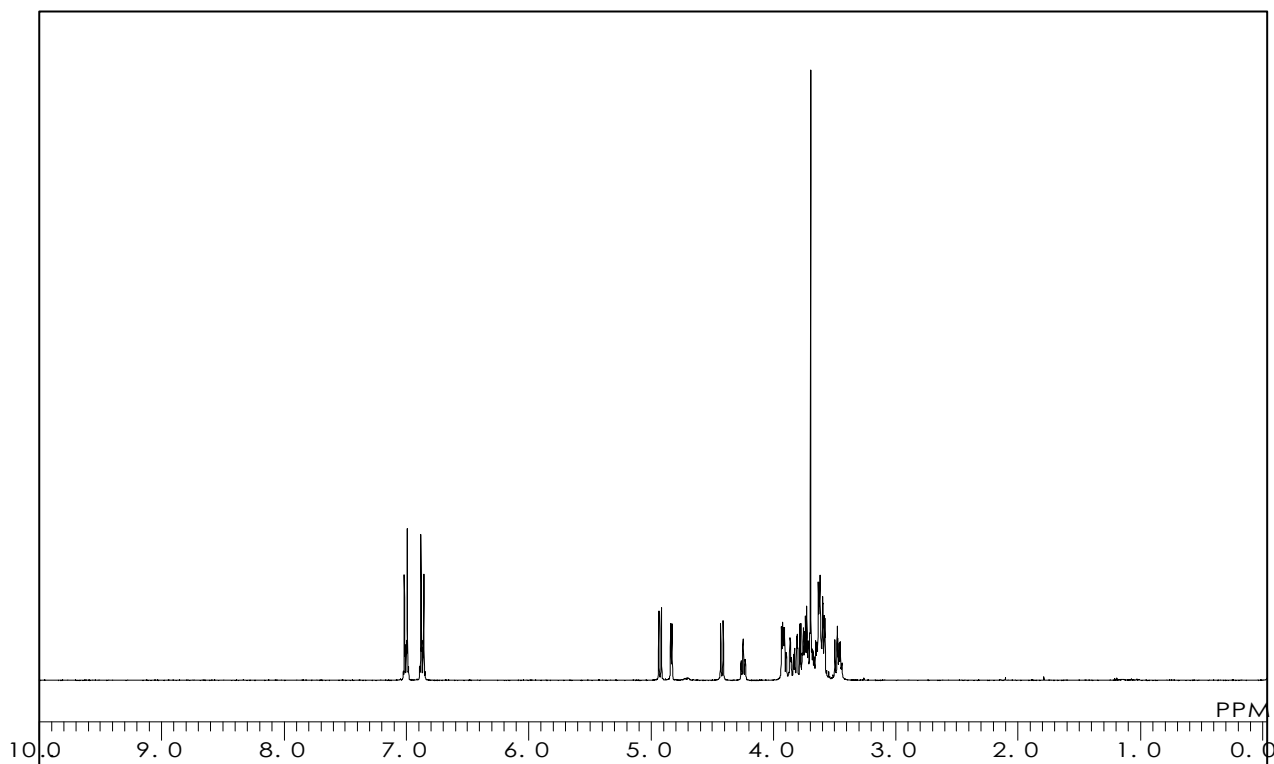
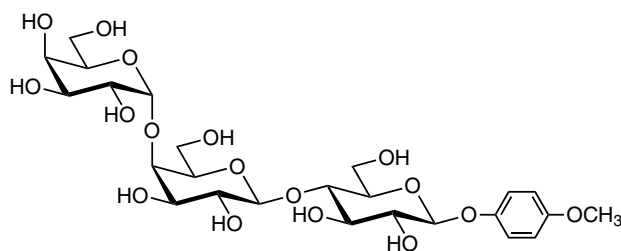
**M1767**

**Gb<sub>3</sub>-β-MP**

C<sub>25</sub>H<sub>38</sub>O<sub>17</sub> = 610.56 [898826-64-7]

Solvent : D<sub>2</sub>O

Measured Temperature : 20.6 °C



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**G0465**

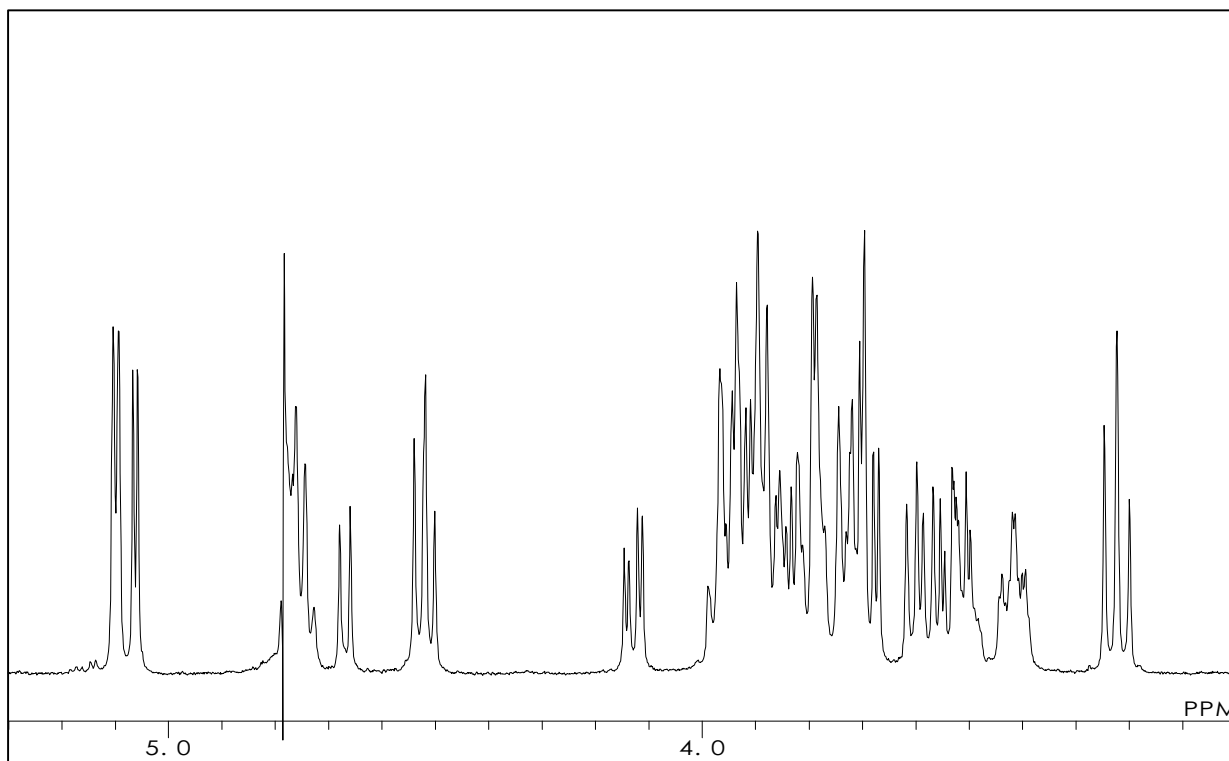
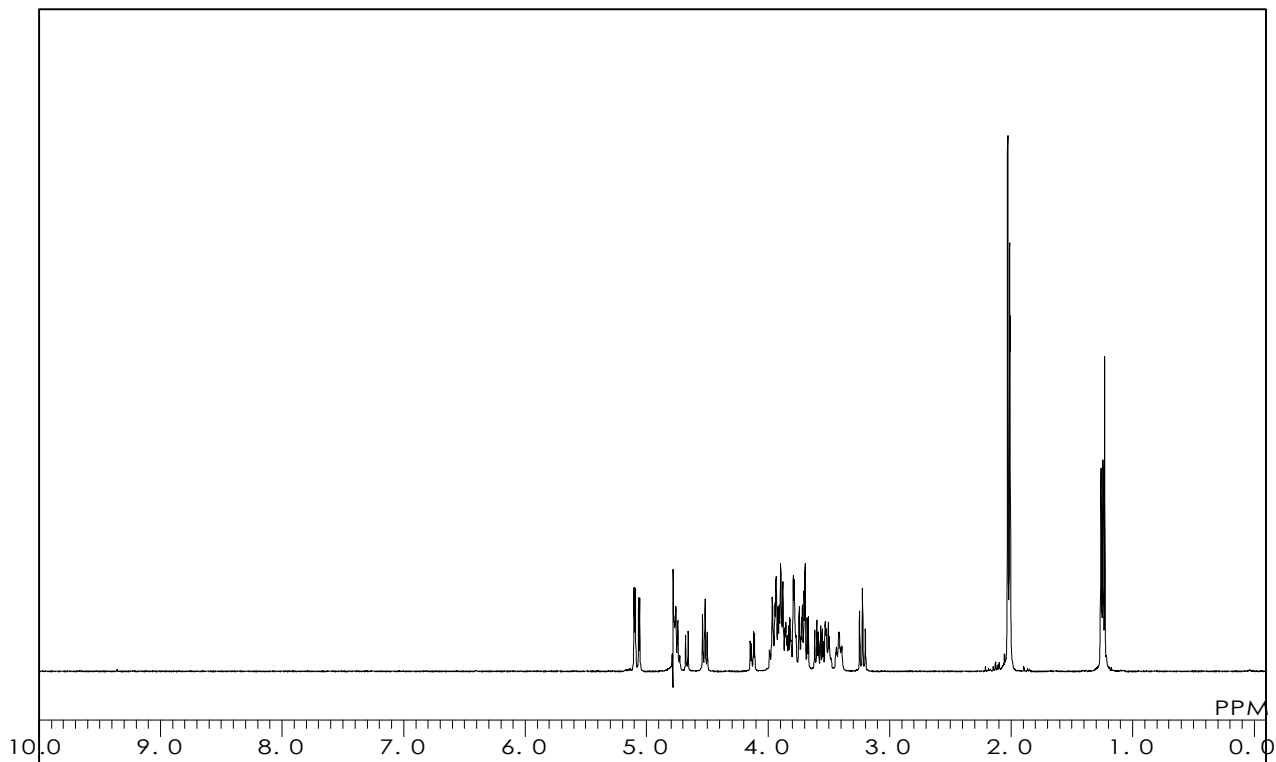
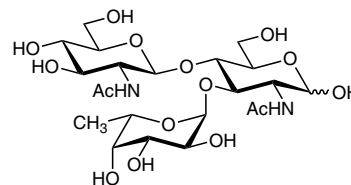
**GlcNAc  $\beta$  (1-4)[Fuc  $\alpha$  (1-3)]GlcNAc**

$C_{22}H_{38}N_2O_{15} = 570.55$  [77735-22-9]

Solvent :  $D_2O$

Internal Standard : t-BuOH ( $\delta$  1.23)

Measured Temperature : 22.2 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。



**G0423**

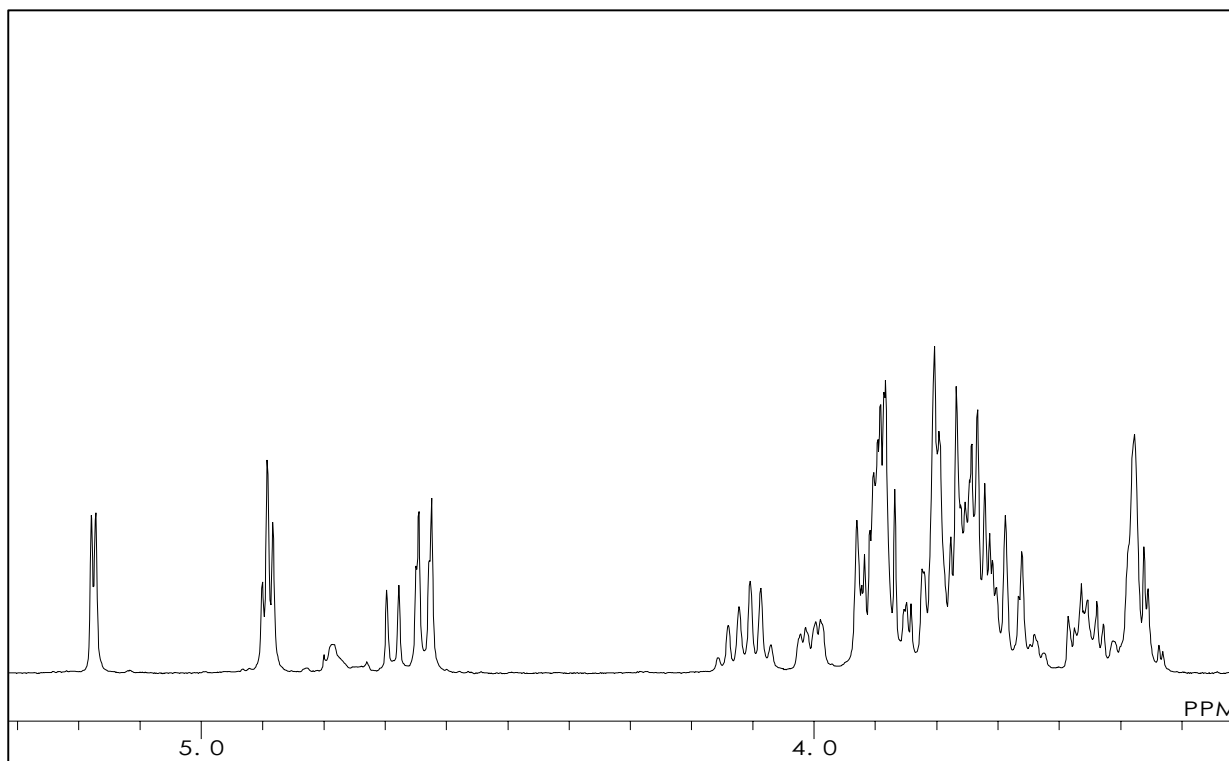
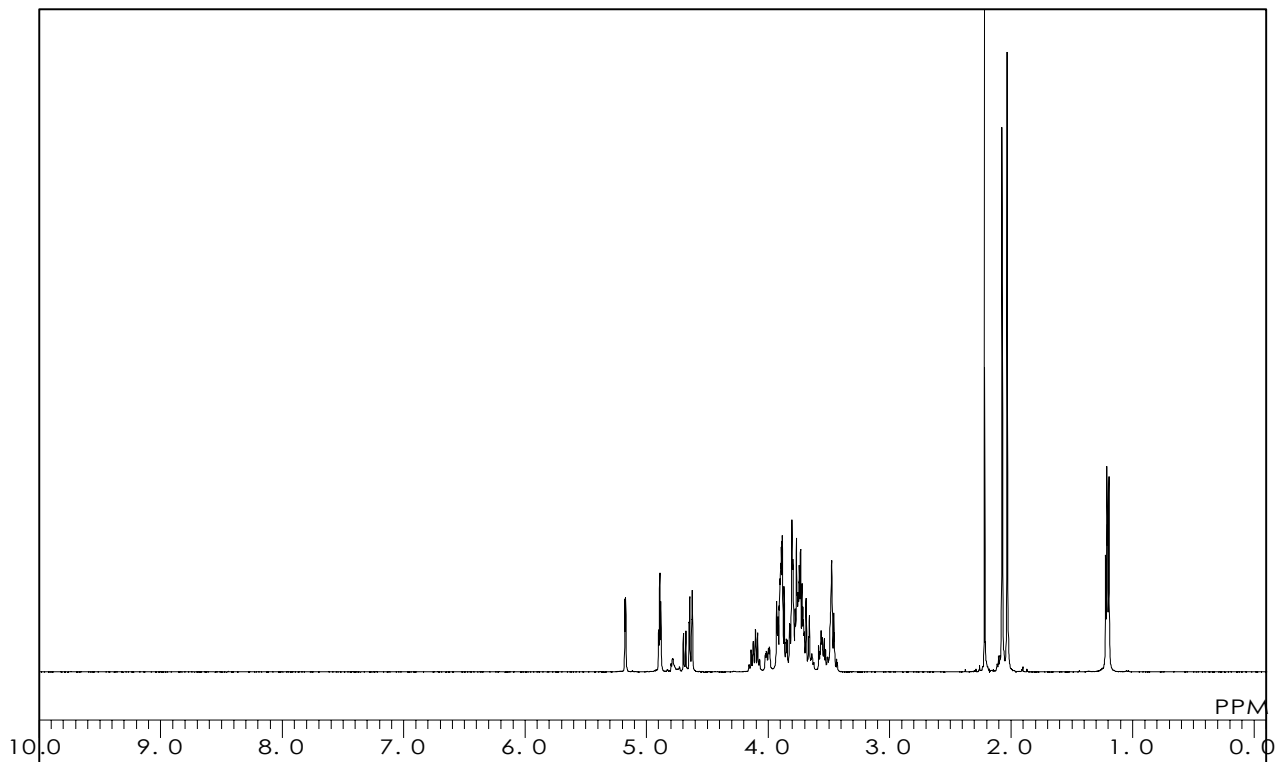
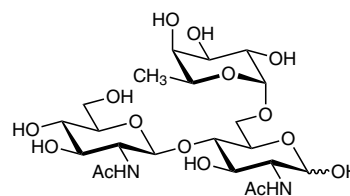
**GlcNAc  $\beta$  (1-4)[Fuc  $\alpha$  (1-6)]GlcNAc**

$C_{22}H_{38}N_2O_{15} = 570.55$  [108964-40-5]

Solvent :  $D_2O$

Internal Standard : Acetone ( $\delta$  2.22)

Measured Temperature : 22.6 °C



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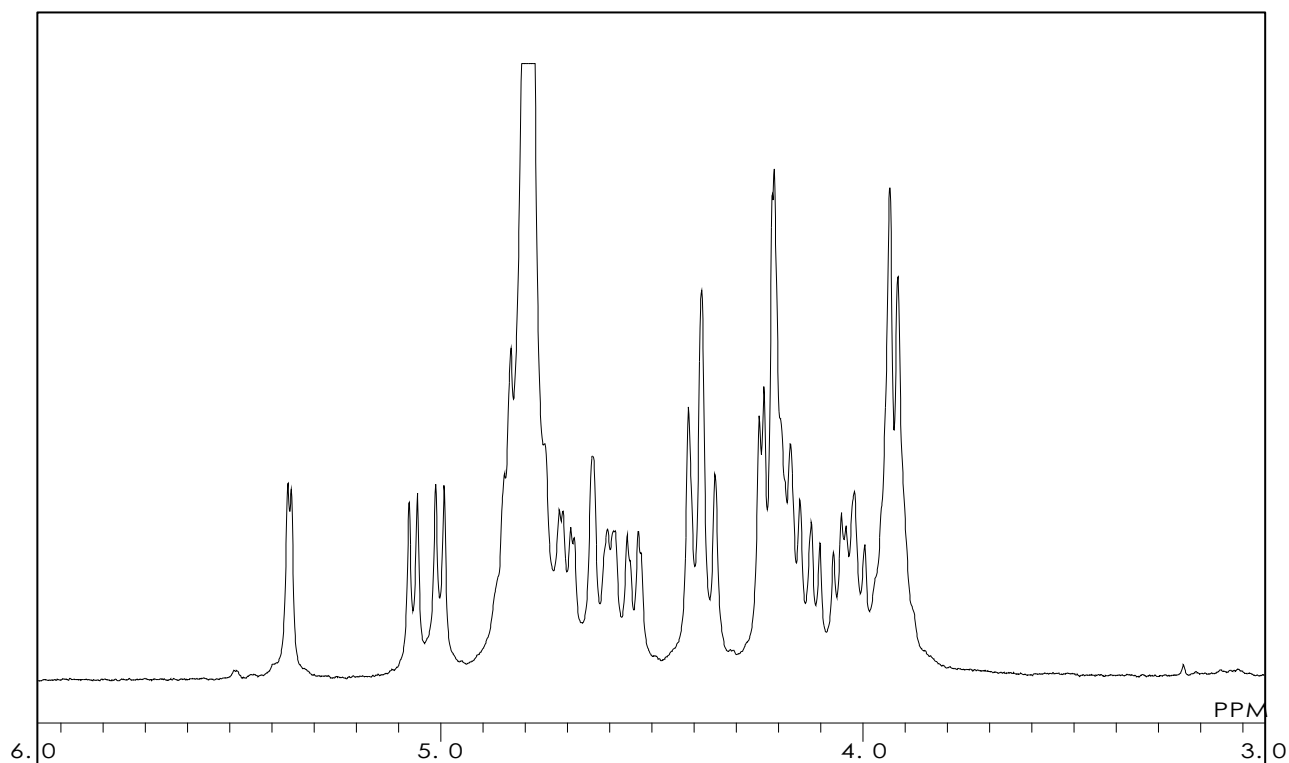
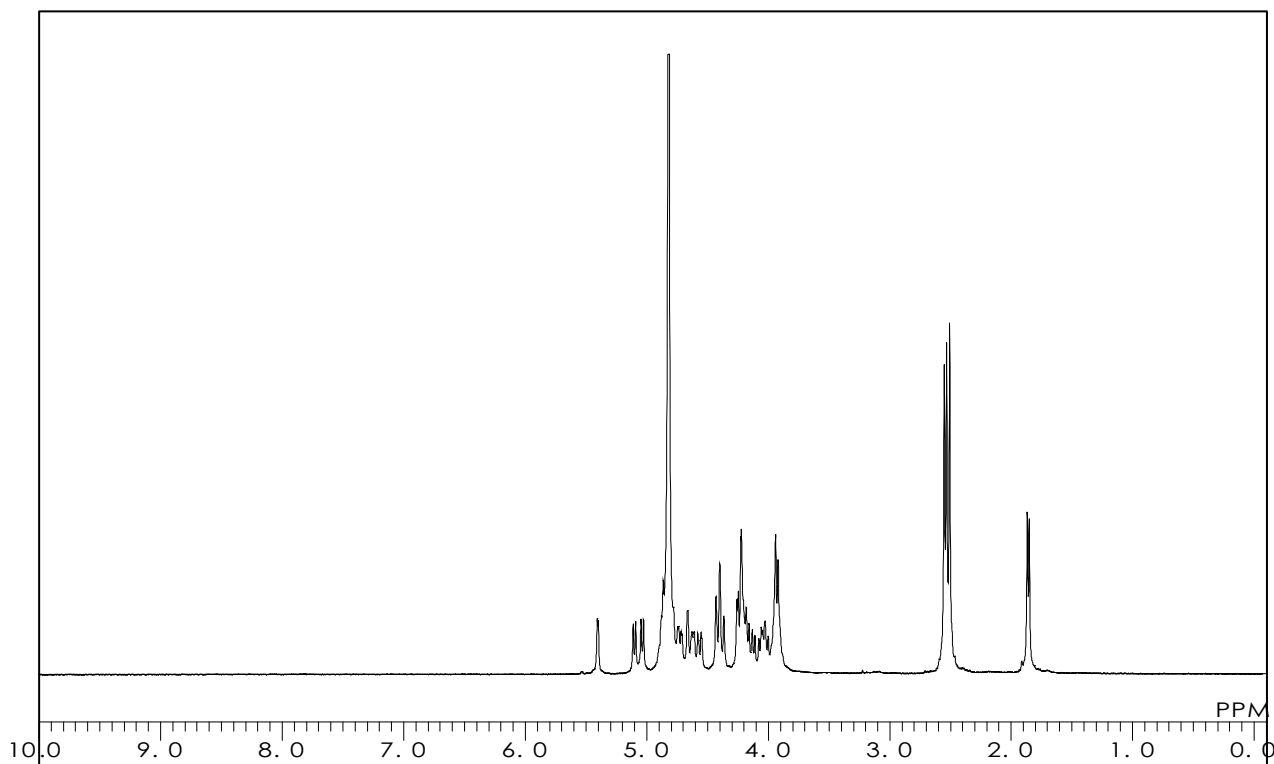
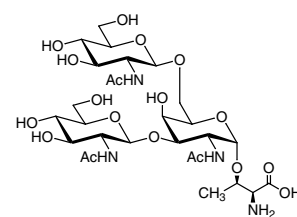
**G0342**

**GlcNAc $\beta$ (1-3)[GlcNAc $\beta$ (1-6)]GalNAc- $\alpha$ -Thr**

C<sub>28</sub>H<sub>48</sub>N<sub>4</sub>O<sub>18</sub> = 728.70 [1304646-03-4]

Solvent : D<sub>2</sub>O

Measured Temperature : 70.0 °C



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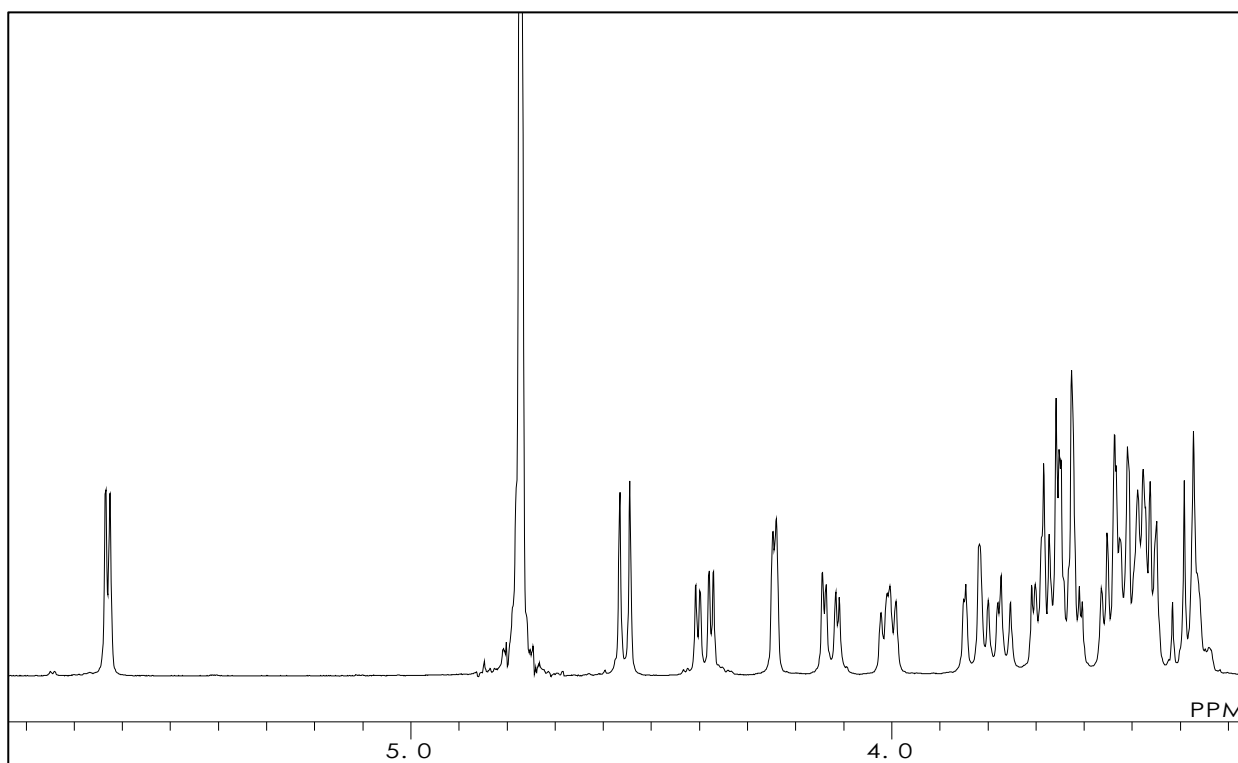
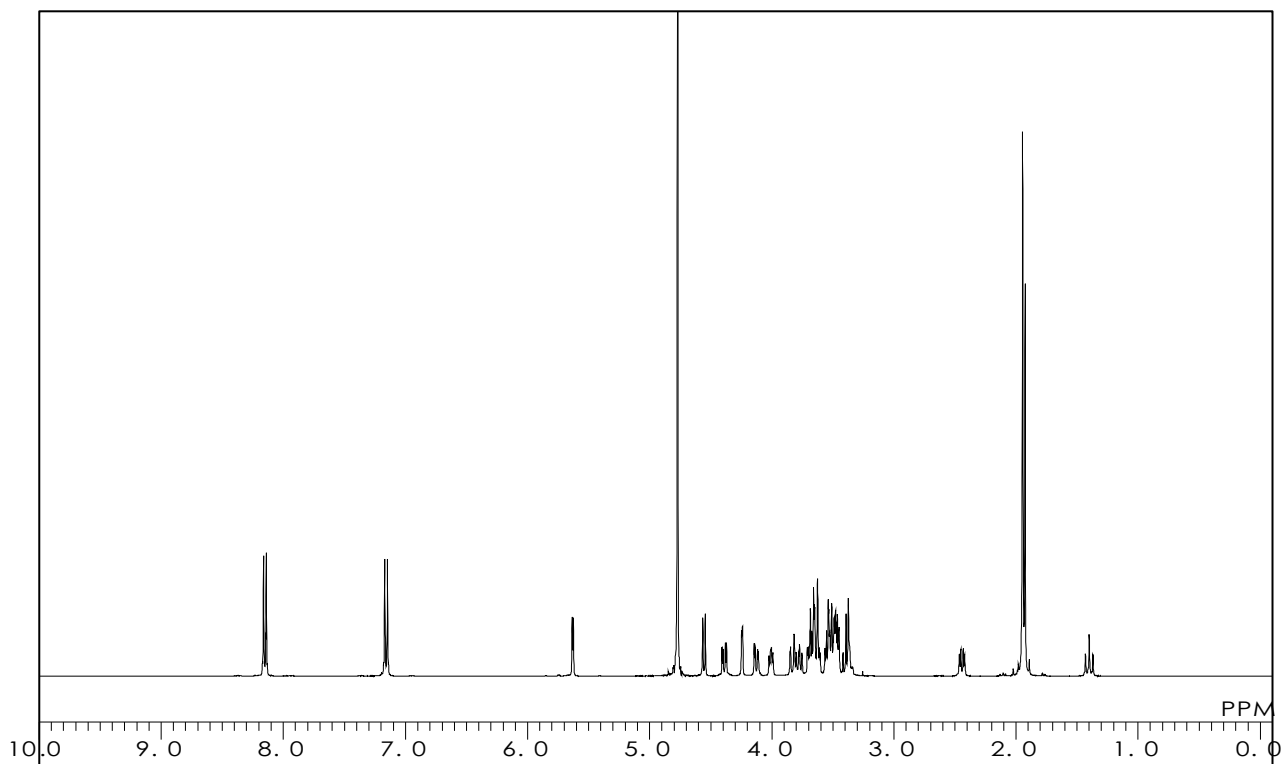
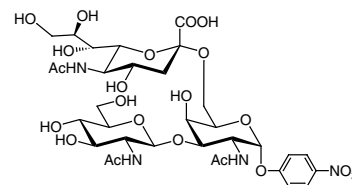
**G0378**

**GlcNAc $\beta$ (1-3)[Neu5Ac $\alpha$ (2-6)]GalNAc- $\alpha$ -pNP**

$C_{33}H_{48}N_4O_{21} = 836.75$

Solvent :  $D_2O$

Measured Temperature : 16.8 °C



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**N0949**

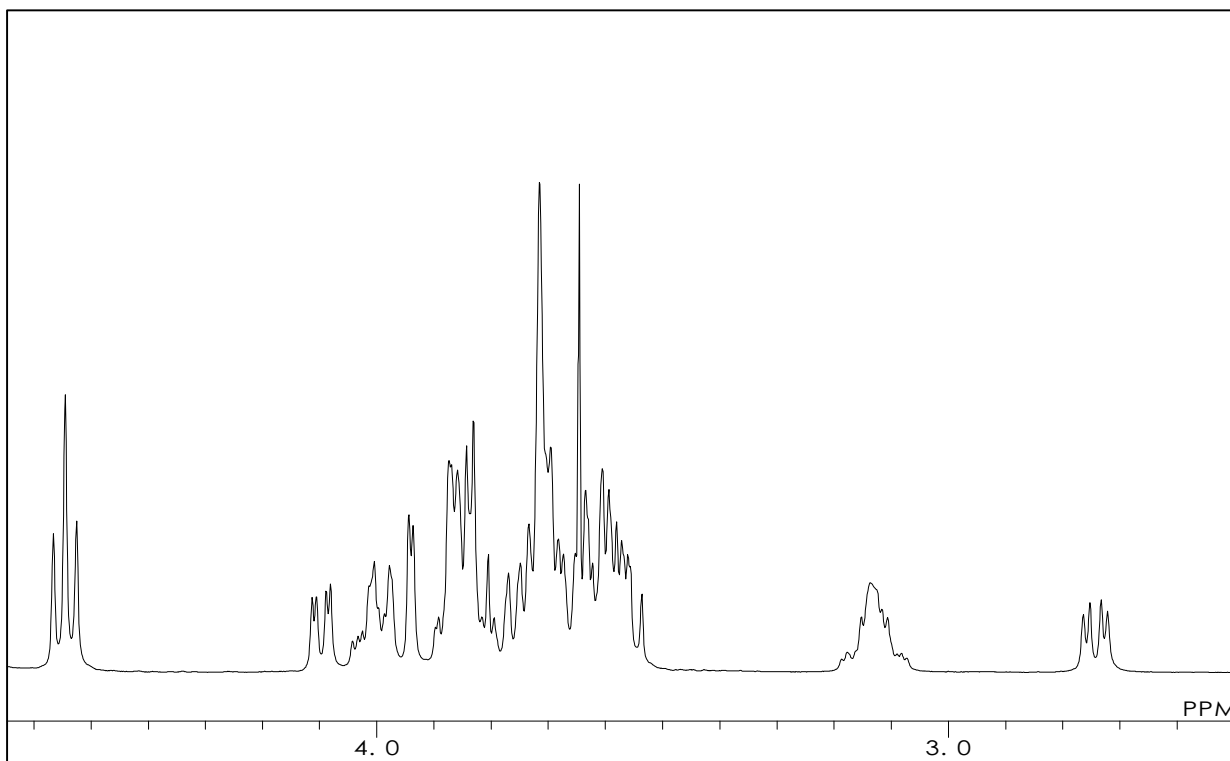
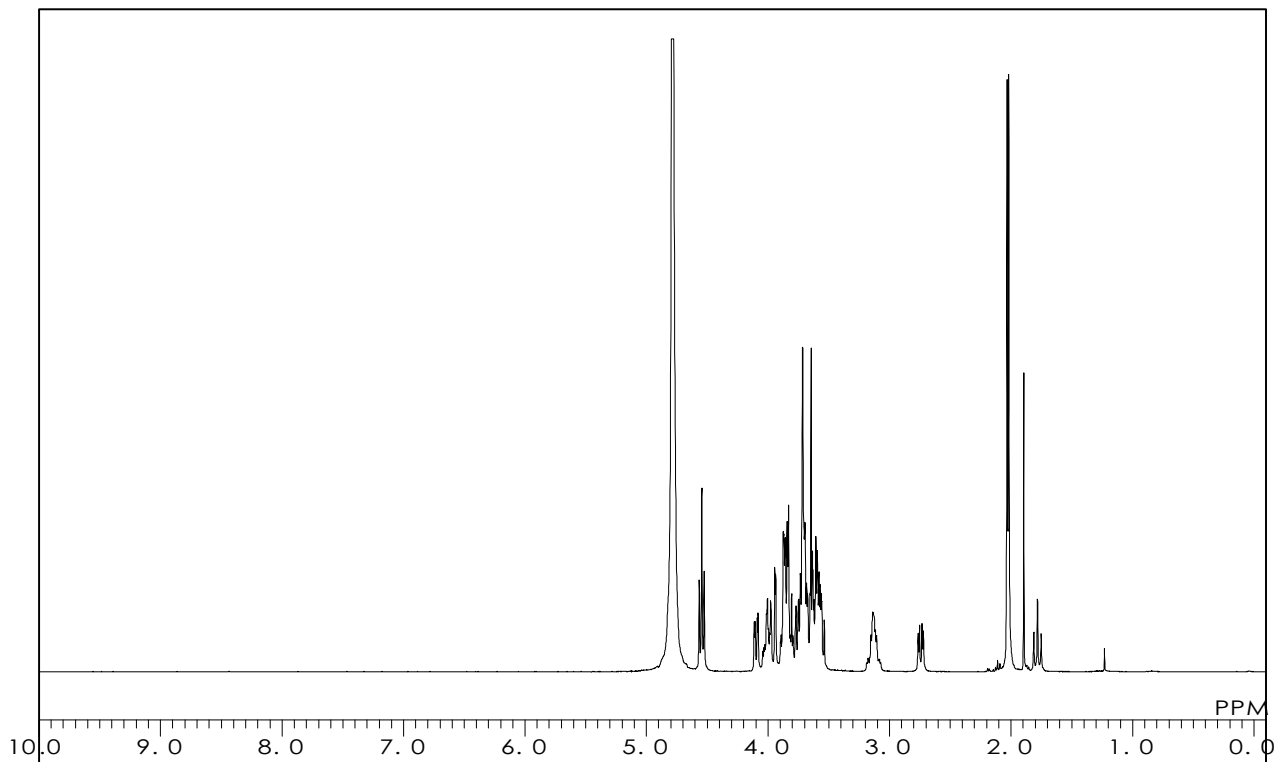
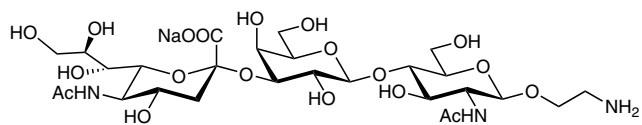
**Neu5Ac  $\alpha$  (2-3)Gal  $\beta$  (1-4)GlcNAc- $\beta$ -ethylamine**

$C_{27}H_{46}N_3NaO_{19} = 739.66$

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 24.4 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**N0950**

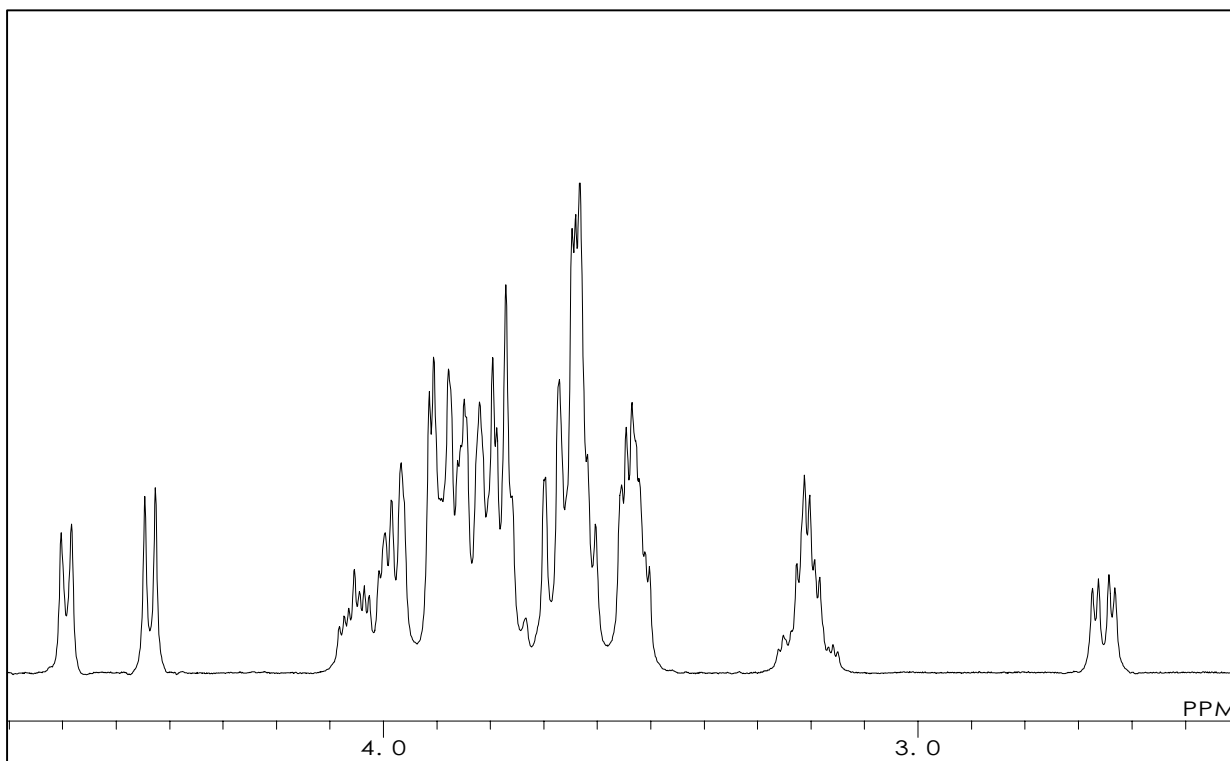
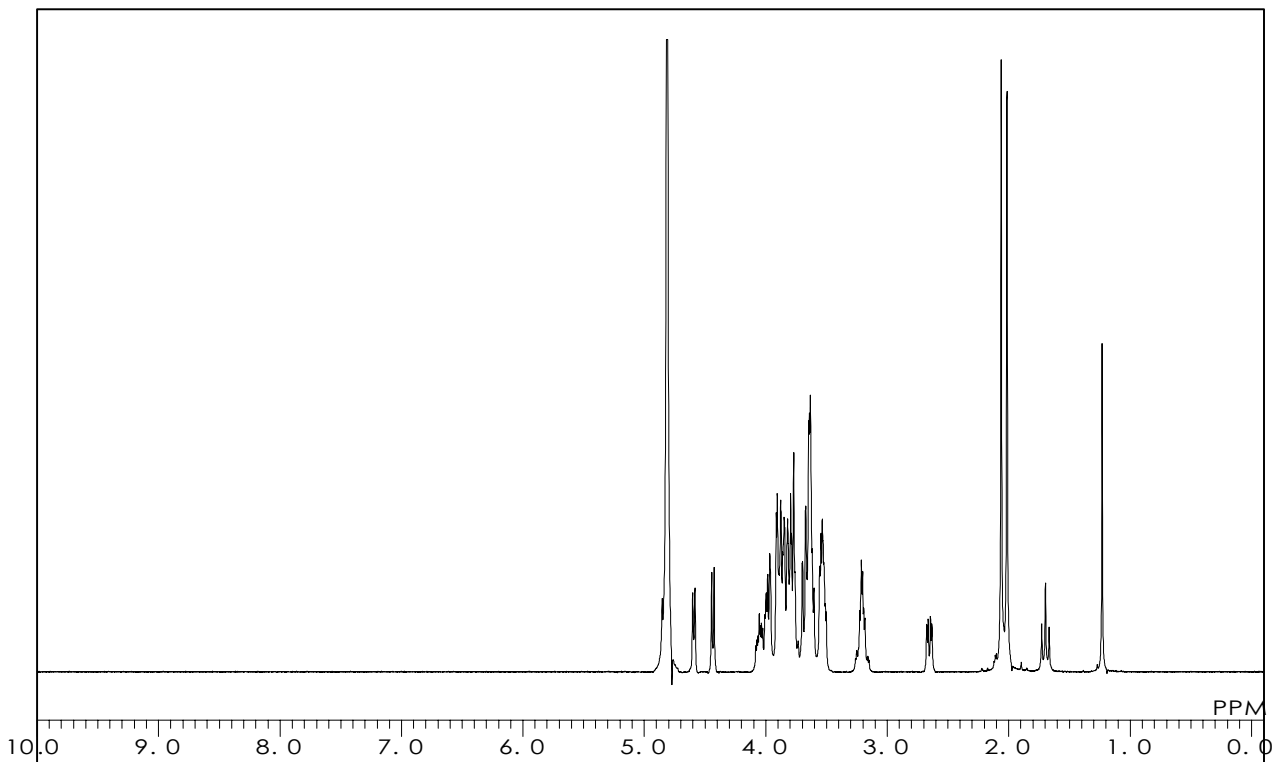
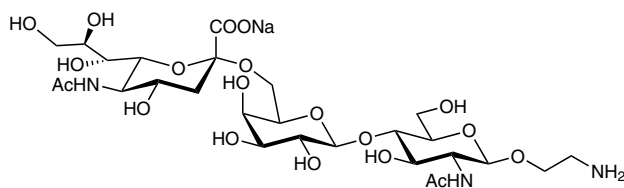
**Neu5Ac  $\alpha$  (2-6)Gal  $\beta$  (1-4)GlcNAc- $\beta$ -ethylamine**

$C_{27}H_{46}N_3NaO_{19} = 739.66$

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 20.6 °C

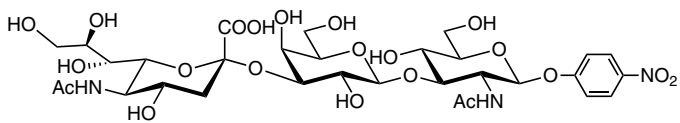


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**N0853**

**Neu5Ac $\alpha$ (2-3)Gal $\beta$ (1-3)GlcNAc- $\beta$ -pNP**

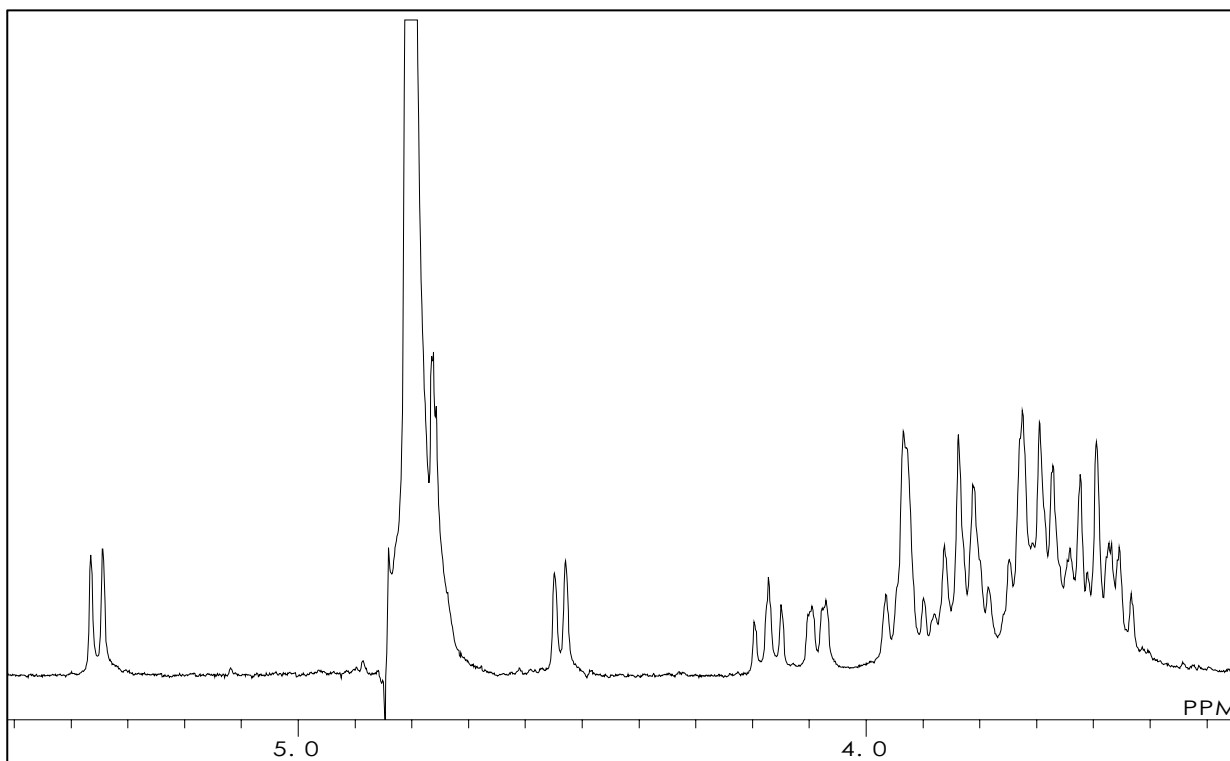
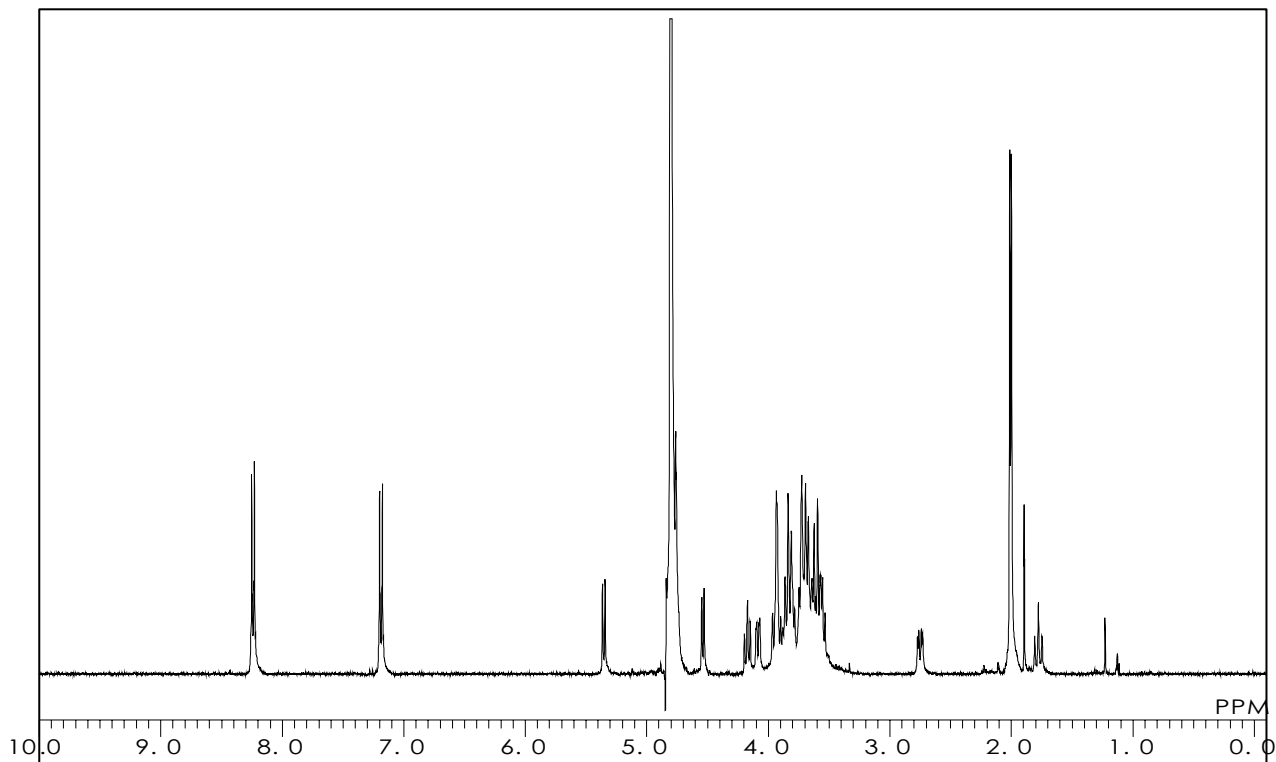
C<sub>31</sub>H<sub>45</sub>N<sub>3</sub>O<sub>21</sub> = 795.70 [1363424-95-6]



Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 21.0 °C



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**N0854**

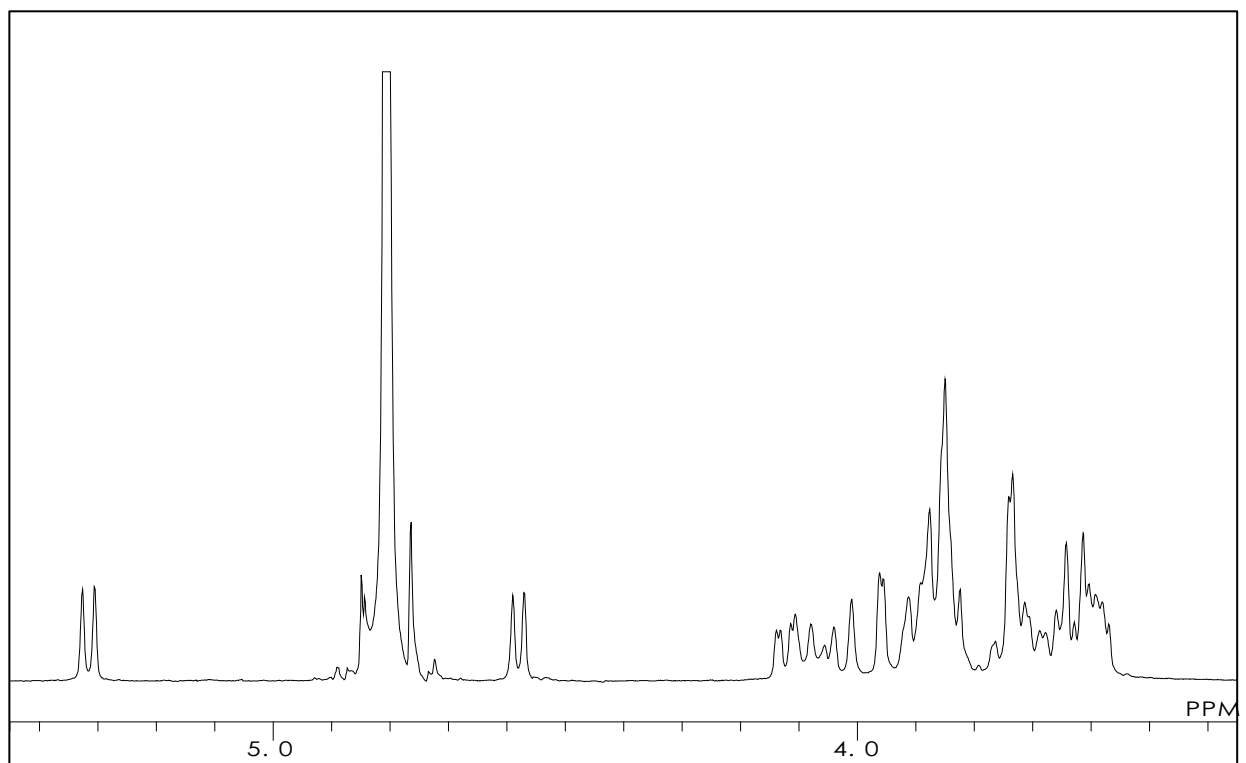
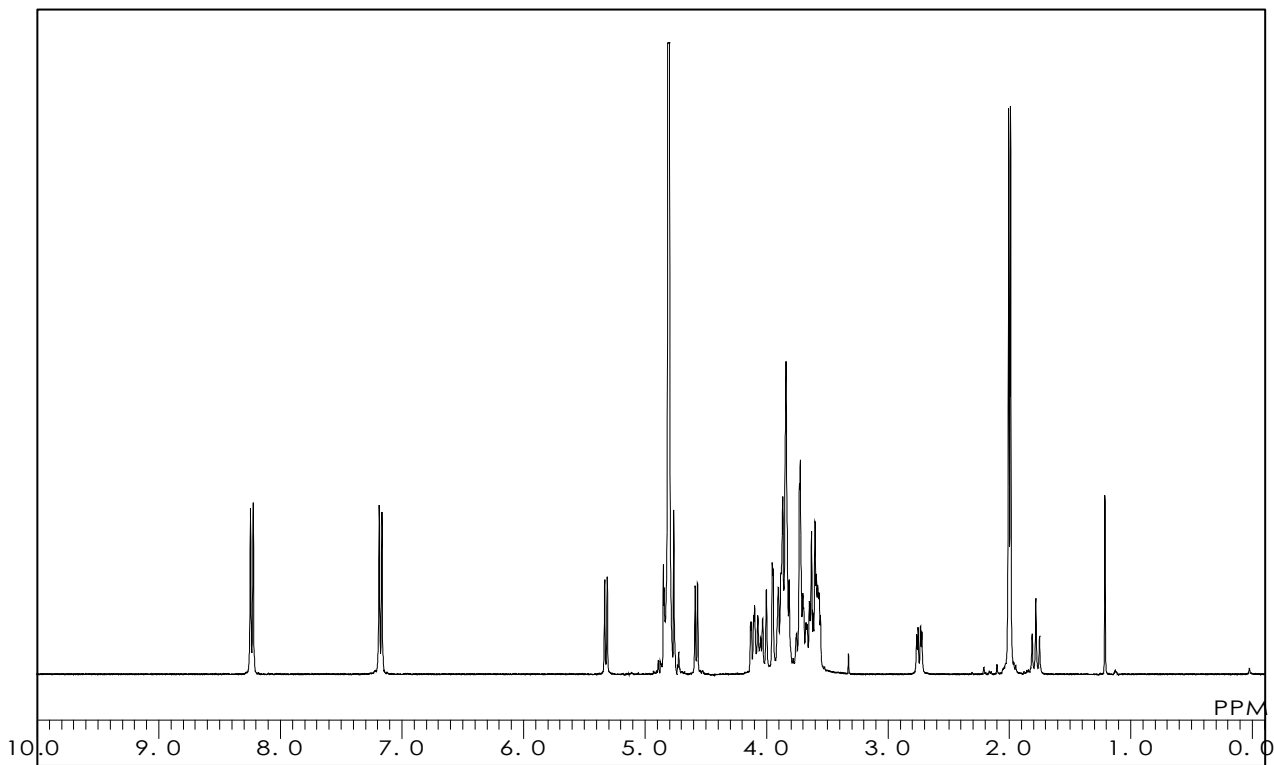
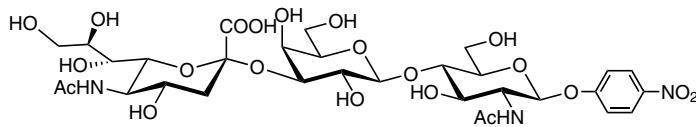
**Neu5Aca(2-3)Galβ(1-4)GlcNAc-β-pNP**

C<sub>31</sub>H<sub>45</sub>N<sub>3</sub>O<sub>21</sub> = 795.70 [501427-92-5]

Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH (δ 1.23)

Measured Temperature : 20.3 °C



**N0855**

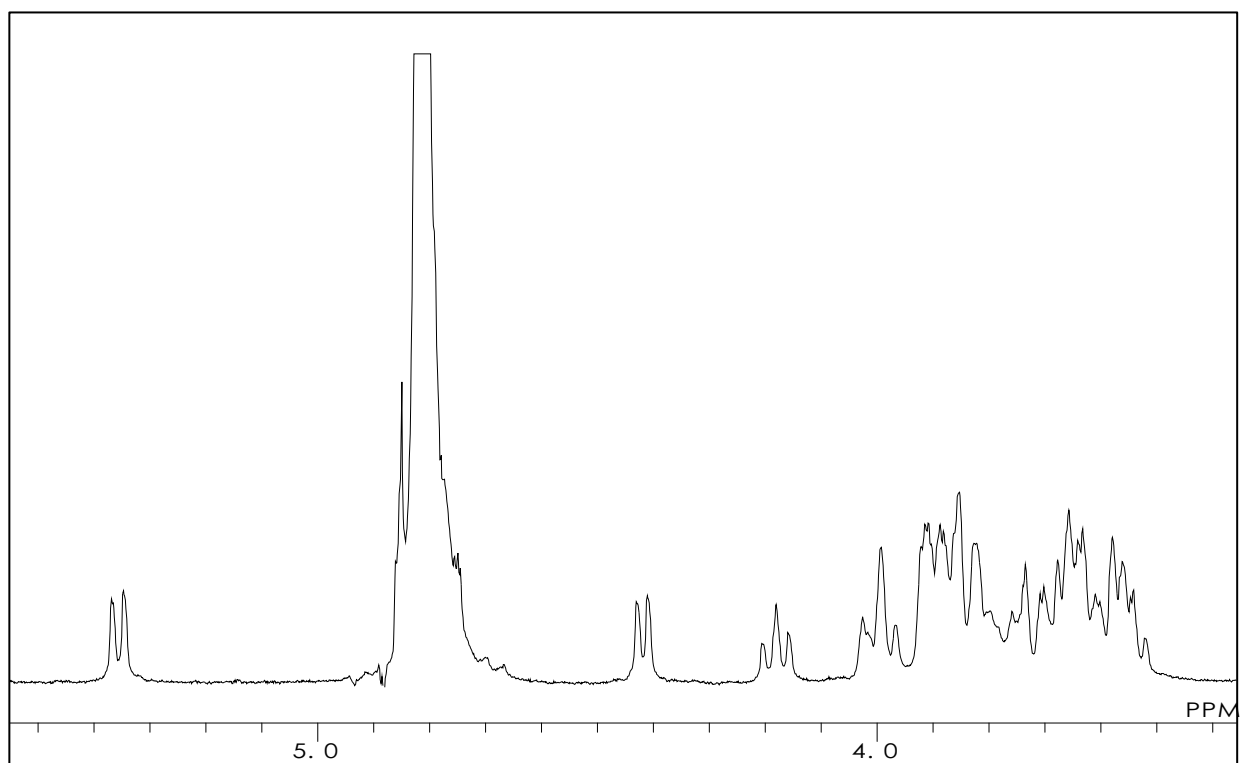
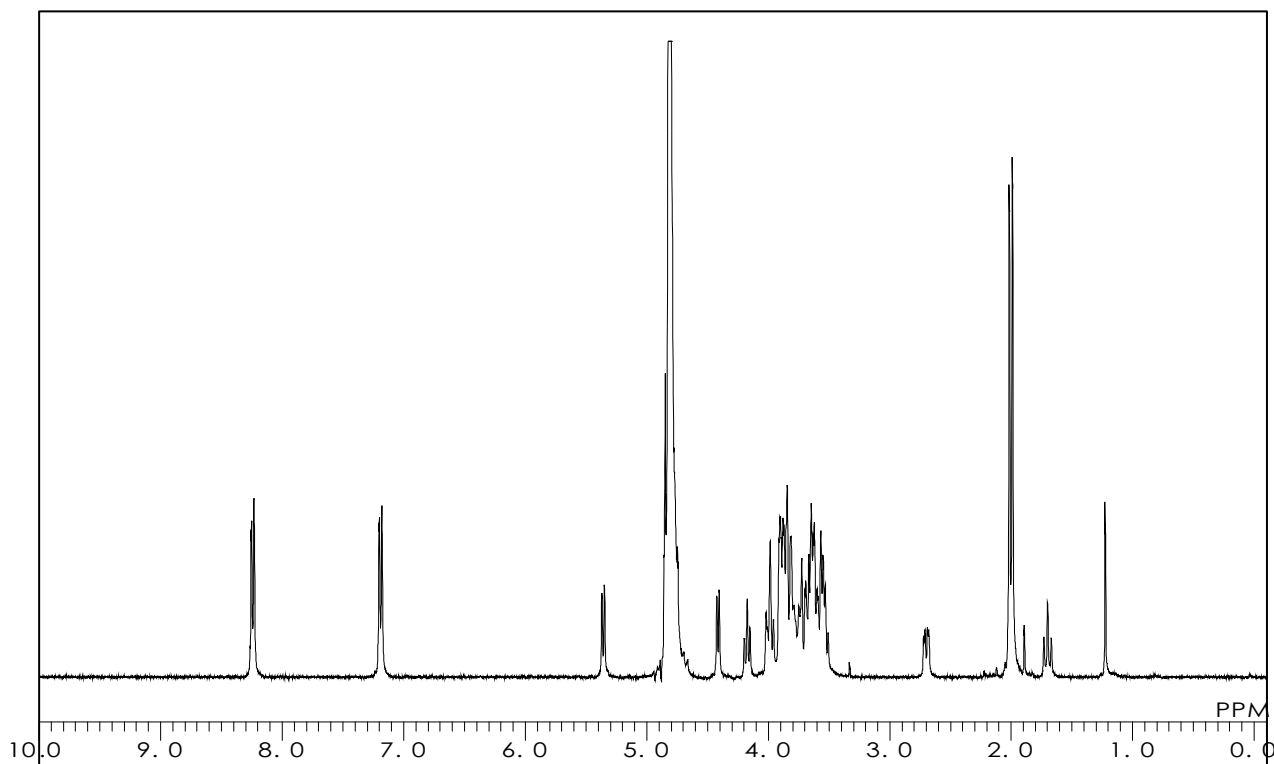
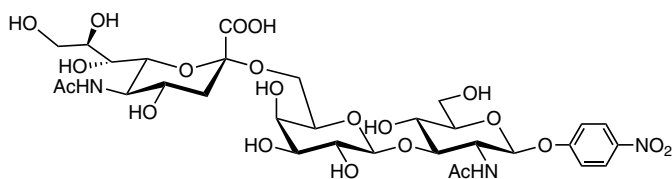
**Neu5Ac $\alpha$ (2-6)Gal $\beta$ (1-3)GlcNAc- $\beta$ -pNP**

C<sub>31</sub>H<sub>45</sub>N<sub>3</sub>O<sub>21</sub> = 795.70

Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 19.9 °C



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**N0856**

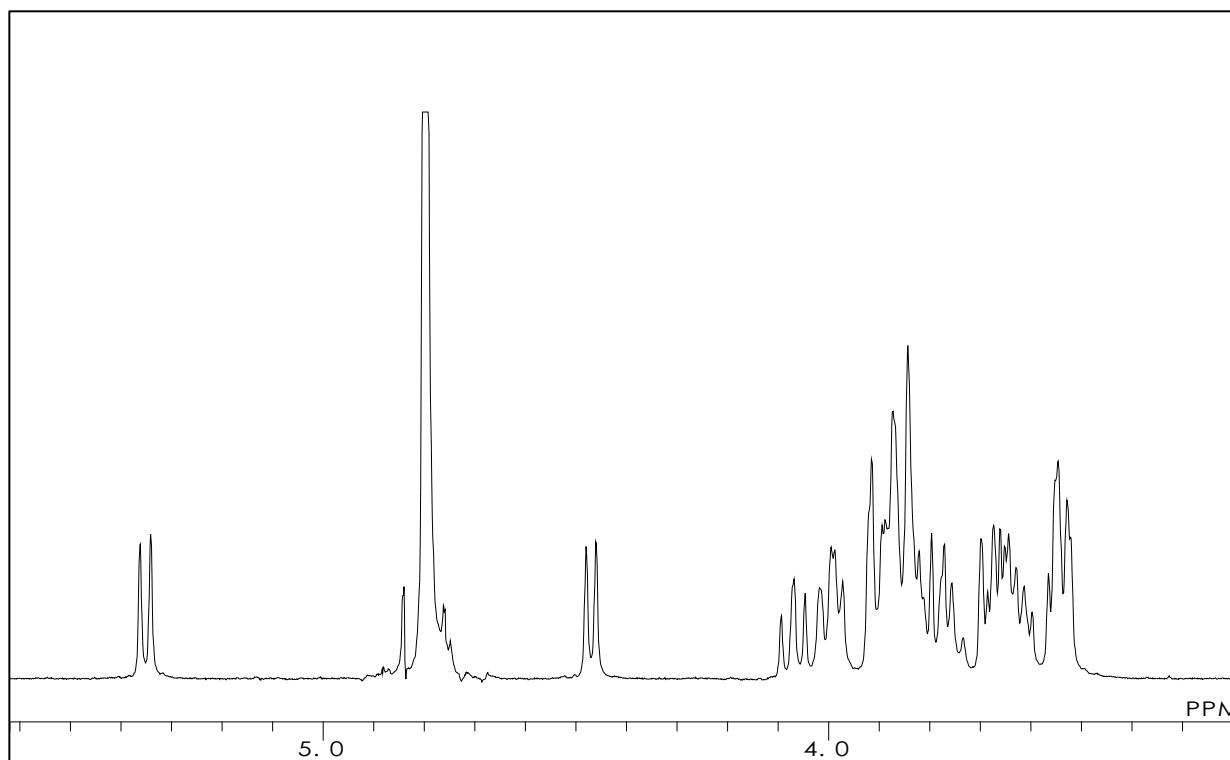
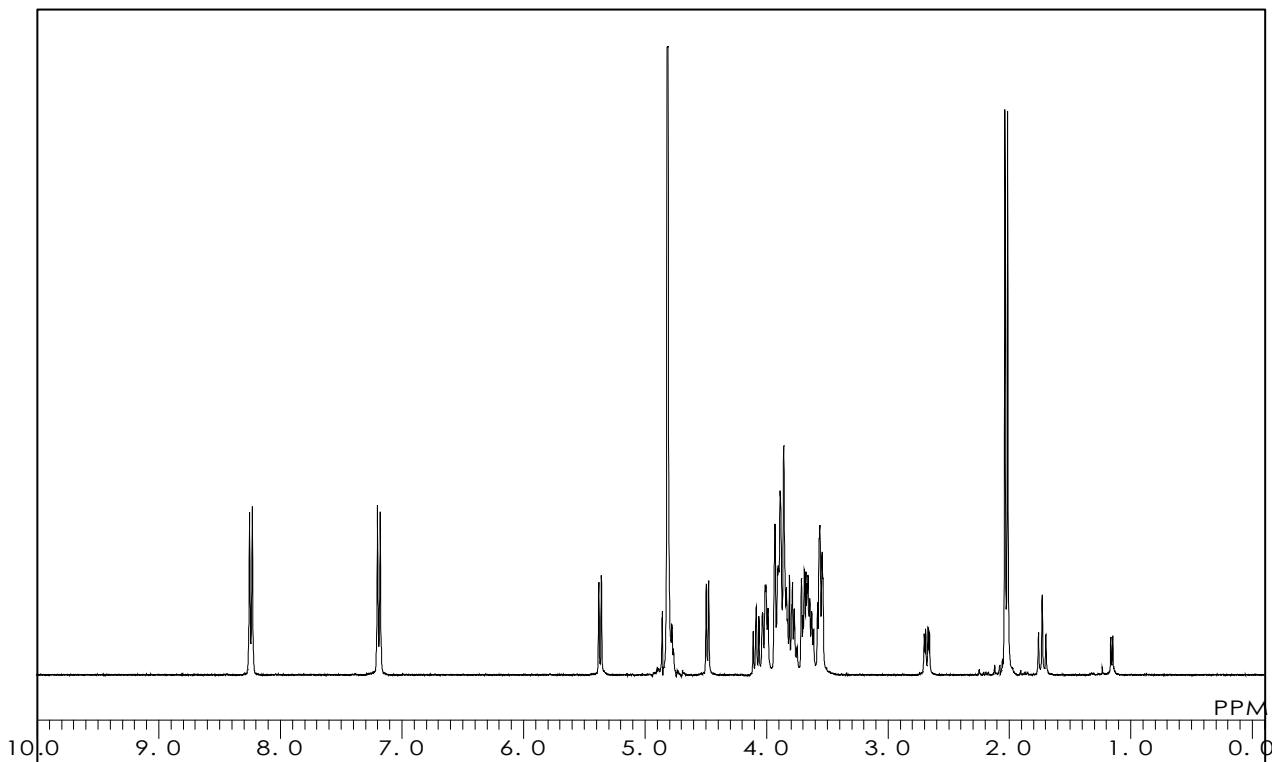
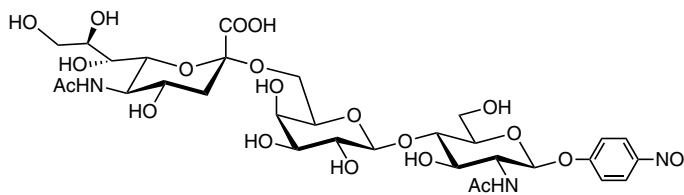
**Neu5Ac $\alpha$ (2-6)Gal $\beta$ (1-4)GlcNAc- $\beta$ -pNP**

C<sub>31</sub>H<sub>45</sub>N<sub>3</sub>O<sub>21</sub> = 795.70 [501427-93-6]

Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 23.2 °C



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**N0860**

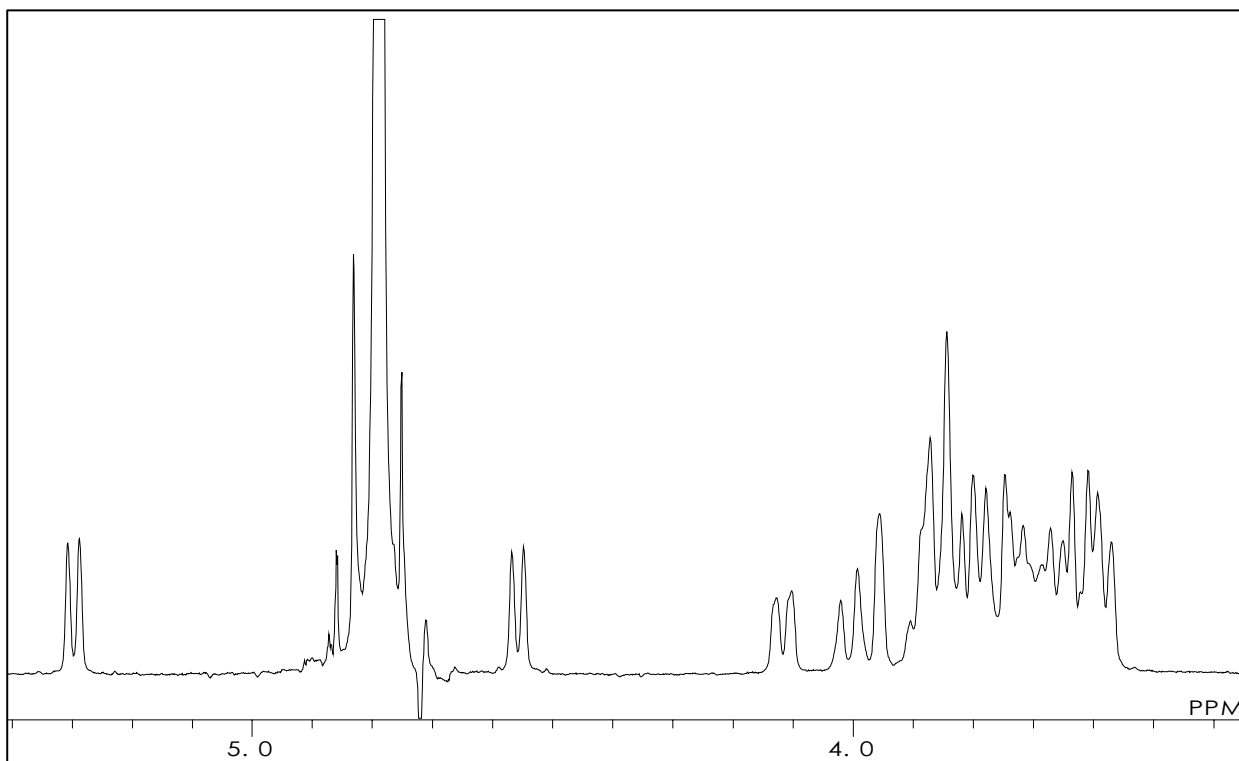
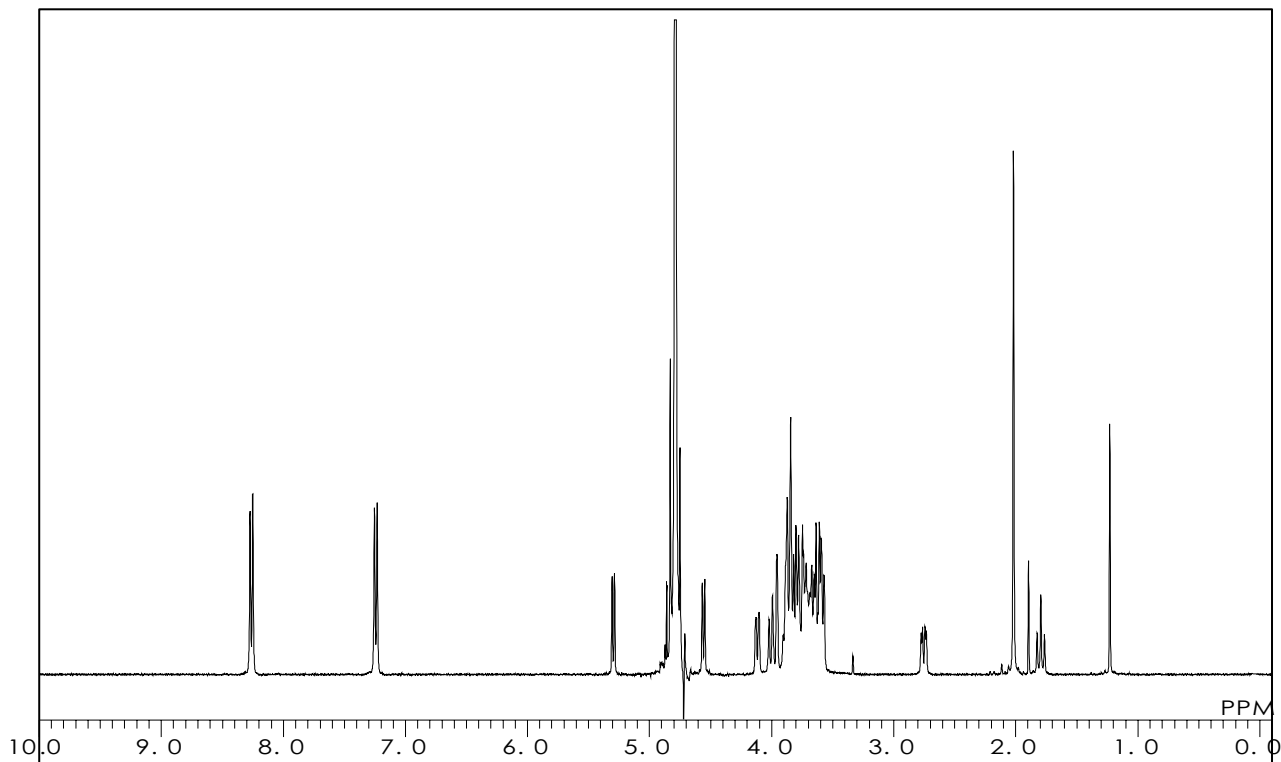
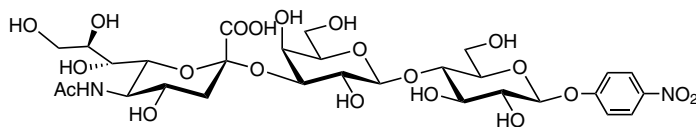
**Neu5Ac $\alpha$ (2-3)Gal $\beta$ (1-4)Glc- $\beta$ -pNP**

$C_{29}H_{42}N_2O_{21} = 754.65$

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 21.9 °C



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T2912

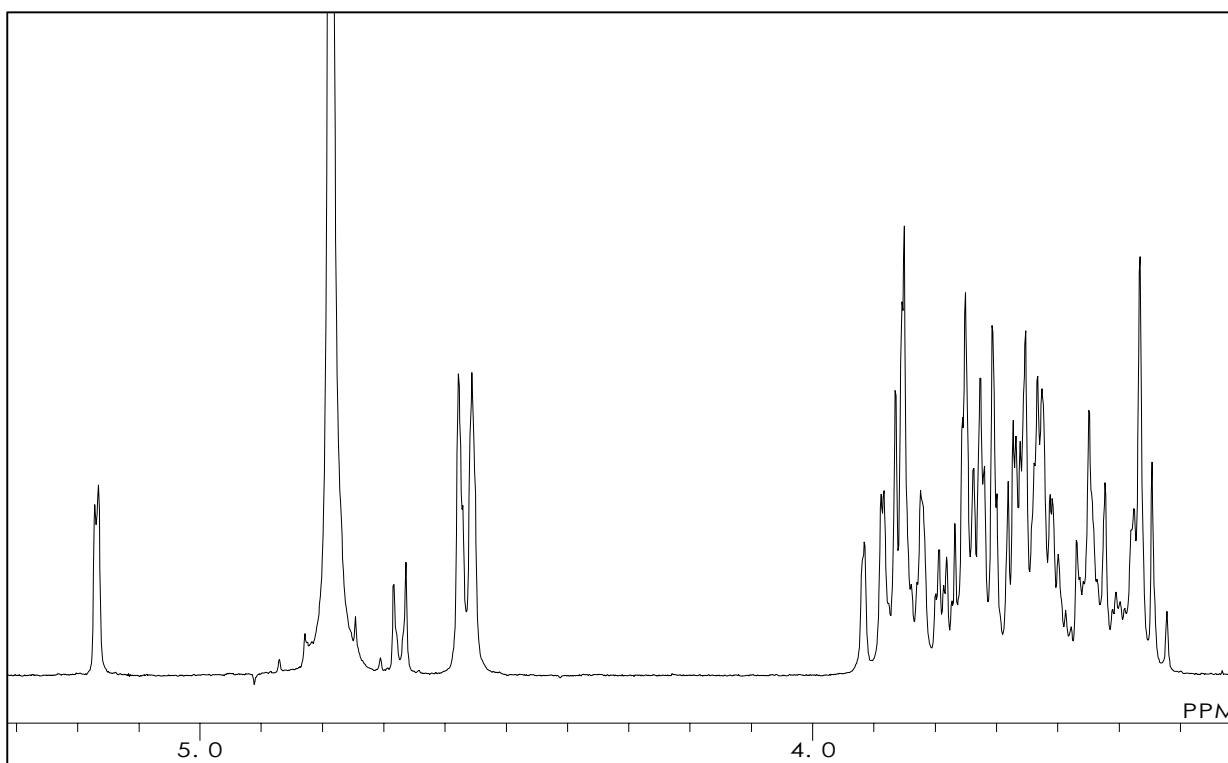
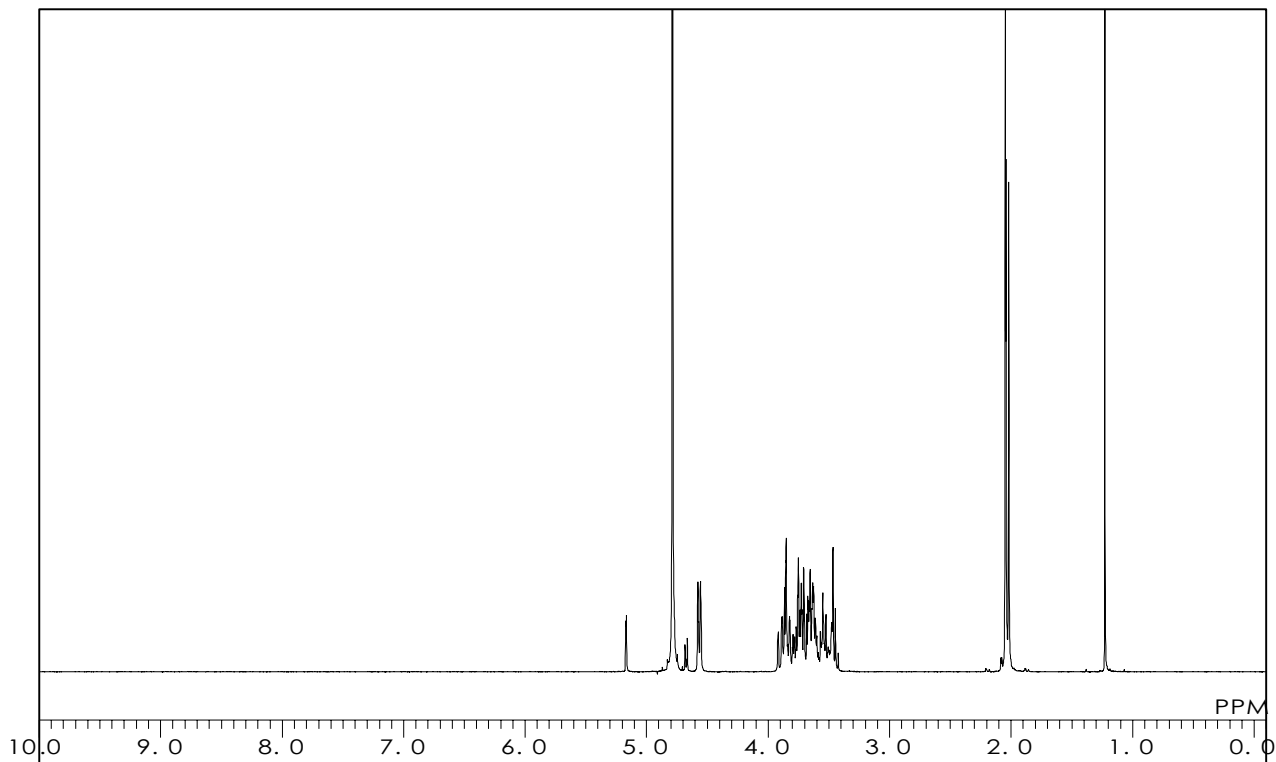
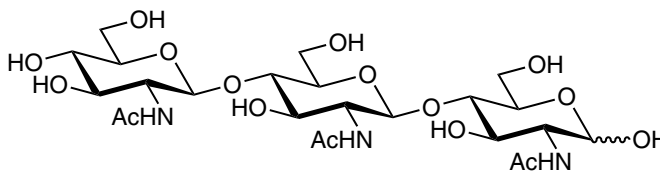
## N,N',N''-Triacetylchitotriose

$C_{24}H_{41}N_3O_{16} = 627.60$  [38864-21-0]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 22.4 °C



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C2796

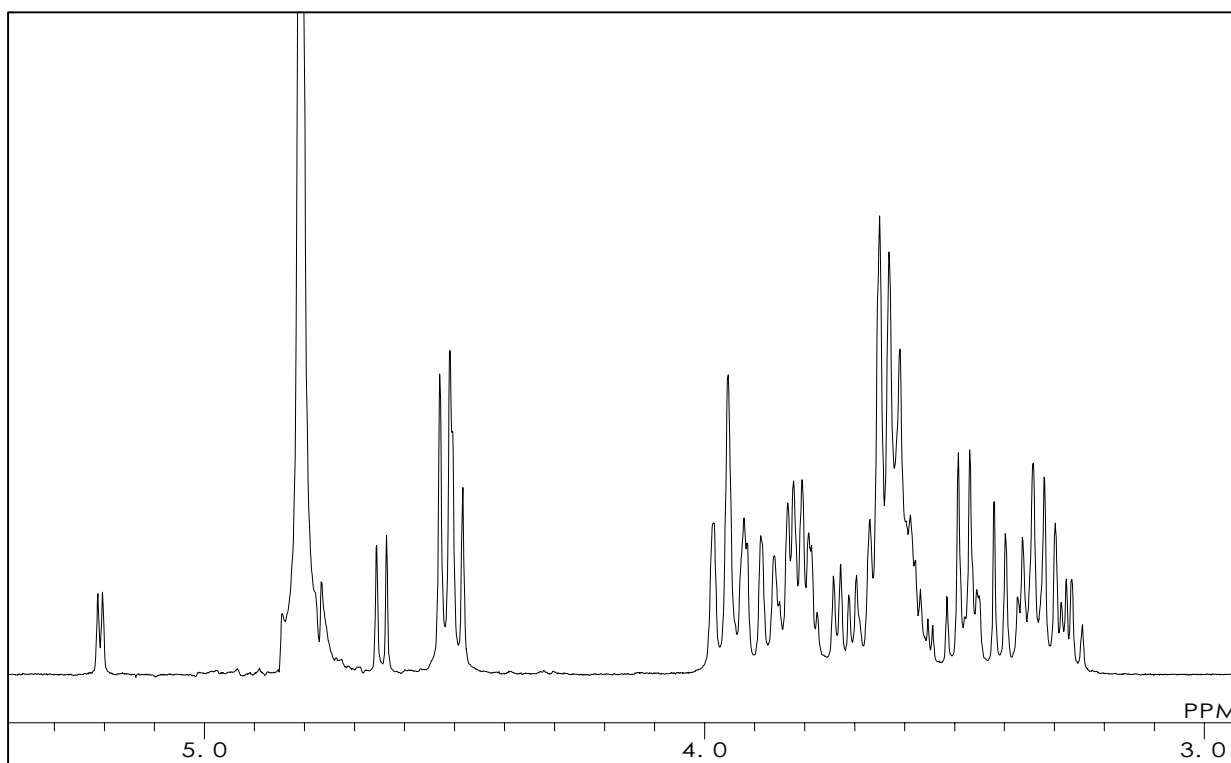
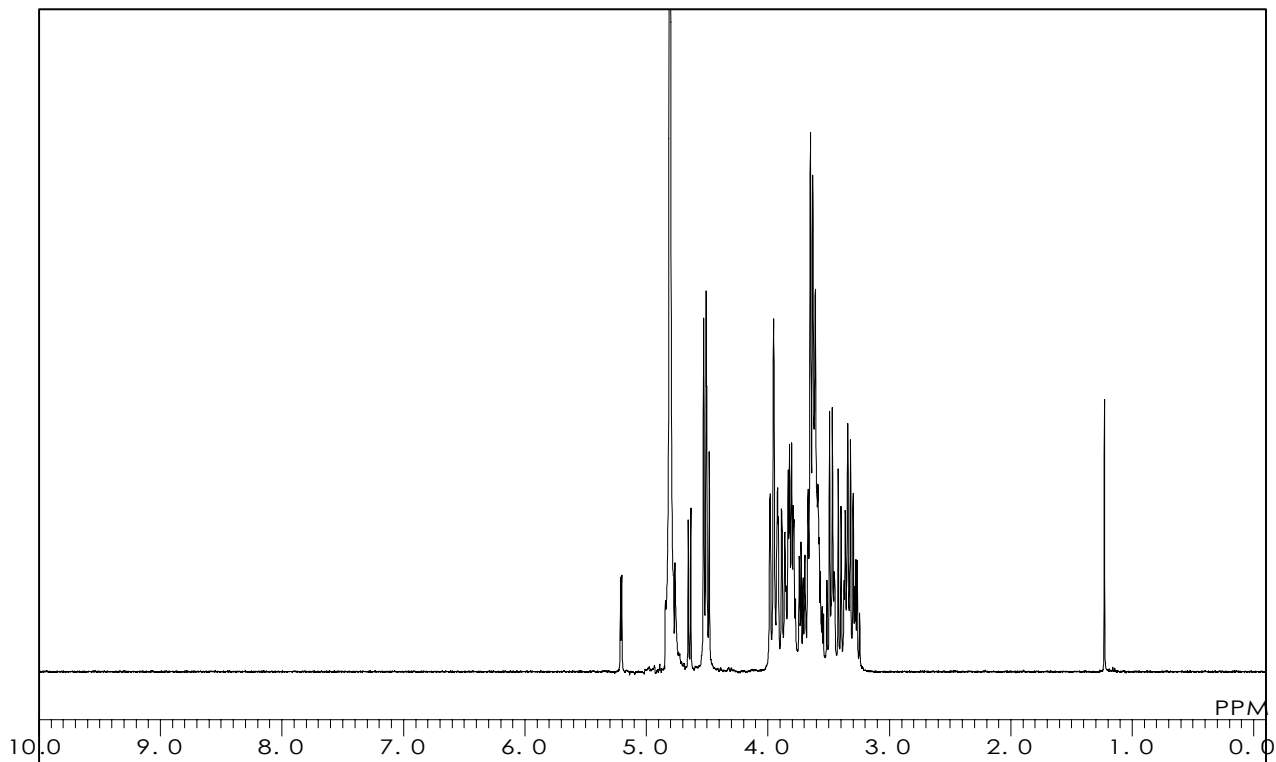
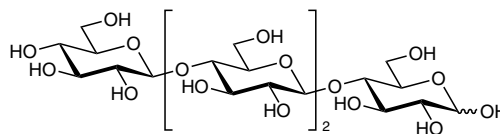
## Cellotetraose

$C_{24}H_{42}O_{21} = 666.58$  [38819-01-1]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 21.0 °C

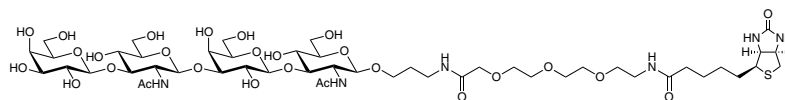


本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**G0511**

**Gal  $\beta$  (1-3)GlcNAc  $\beta$  (1-3)Gal  $\beta$  (1-3)GlcNAc-  $\beta$  -PEG<sub>3</sub>-biotin**

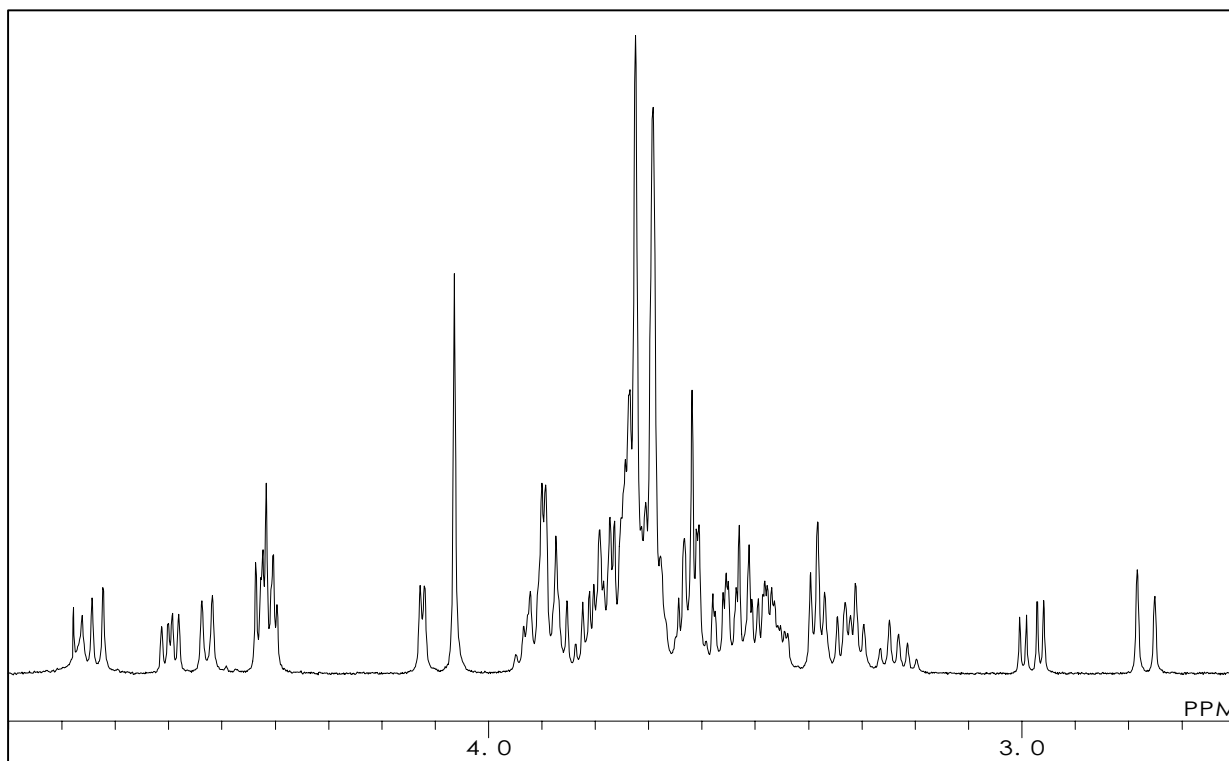
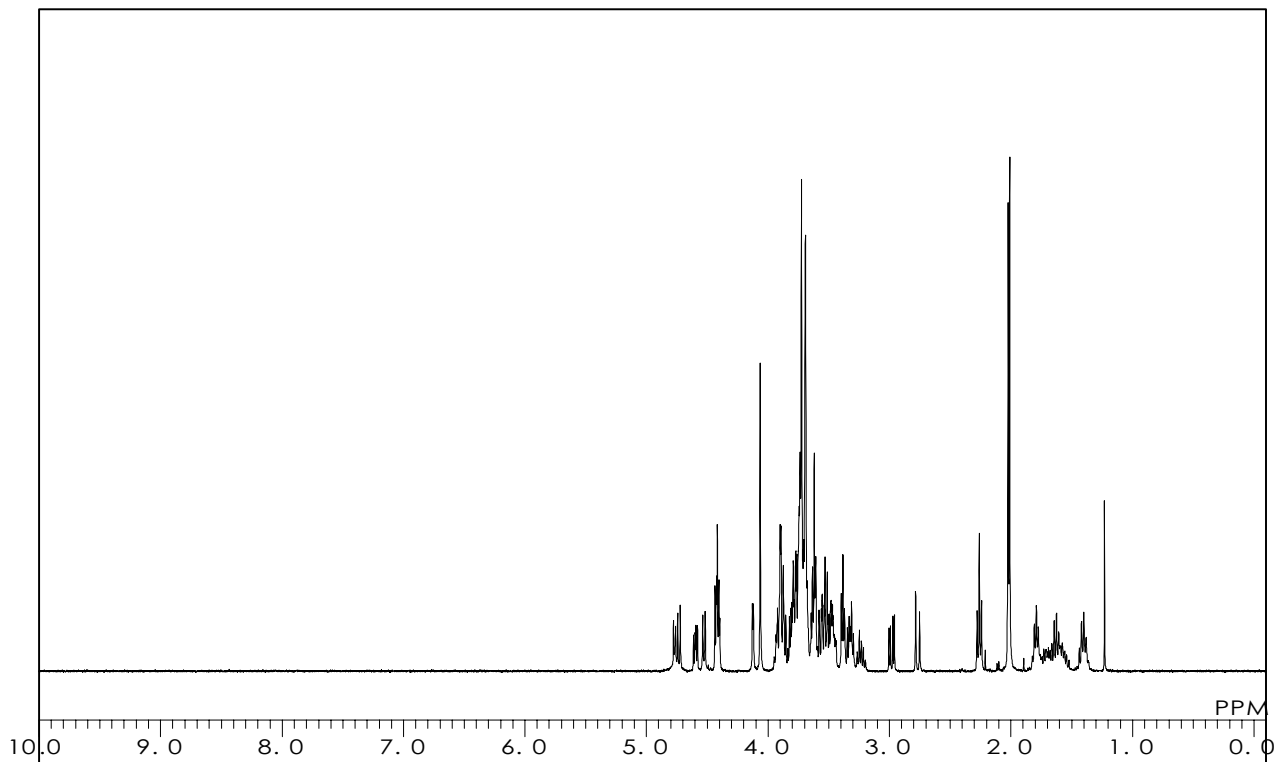
$C_{49}H_{84}N_6O_{27}S = 1221.29$



Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH ( $\delta$  1.23)

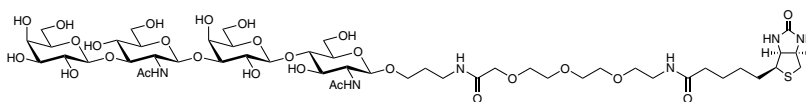
Measured Temperature : 23.7 °C



**G0513**

**Gal  $\beta$  (1-3)GlcNAc  $\beta$  (1-3)Gal  $\beta$  (1-4)GlcNAc-  $\beta$  -PEG<sub>3</sub>-biotin**

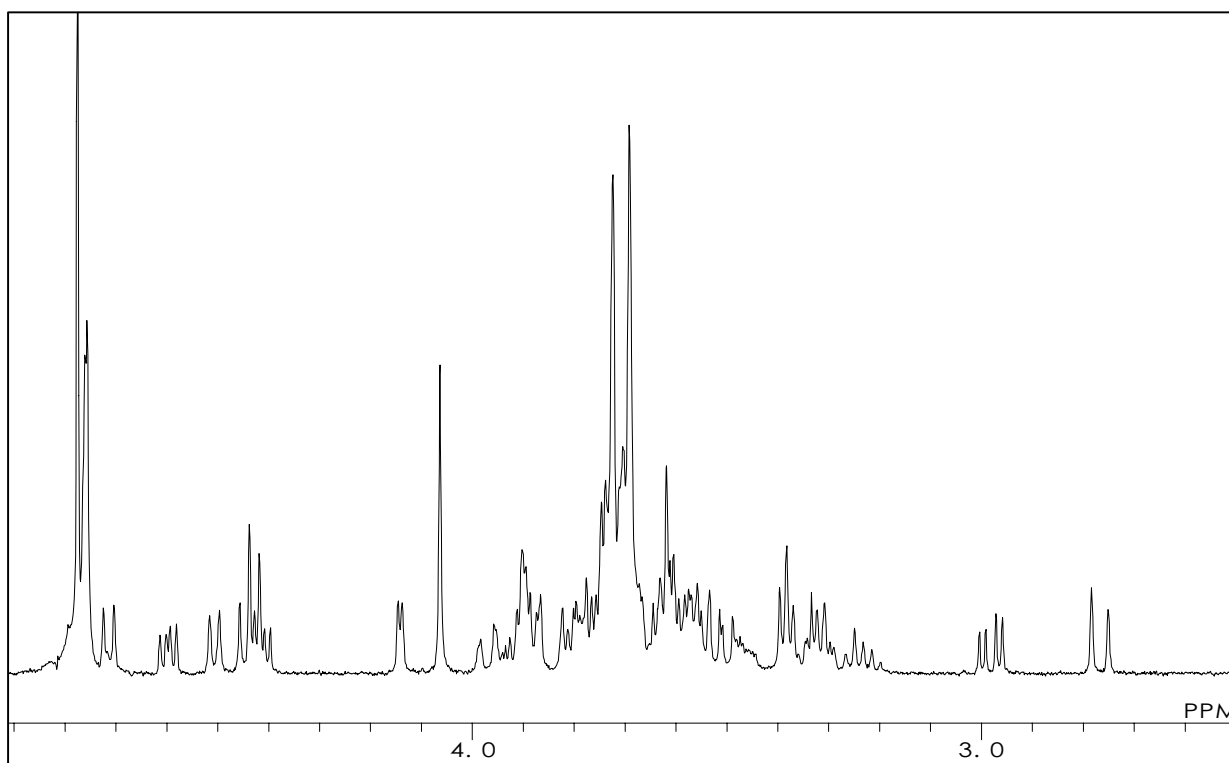
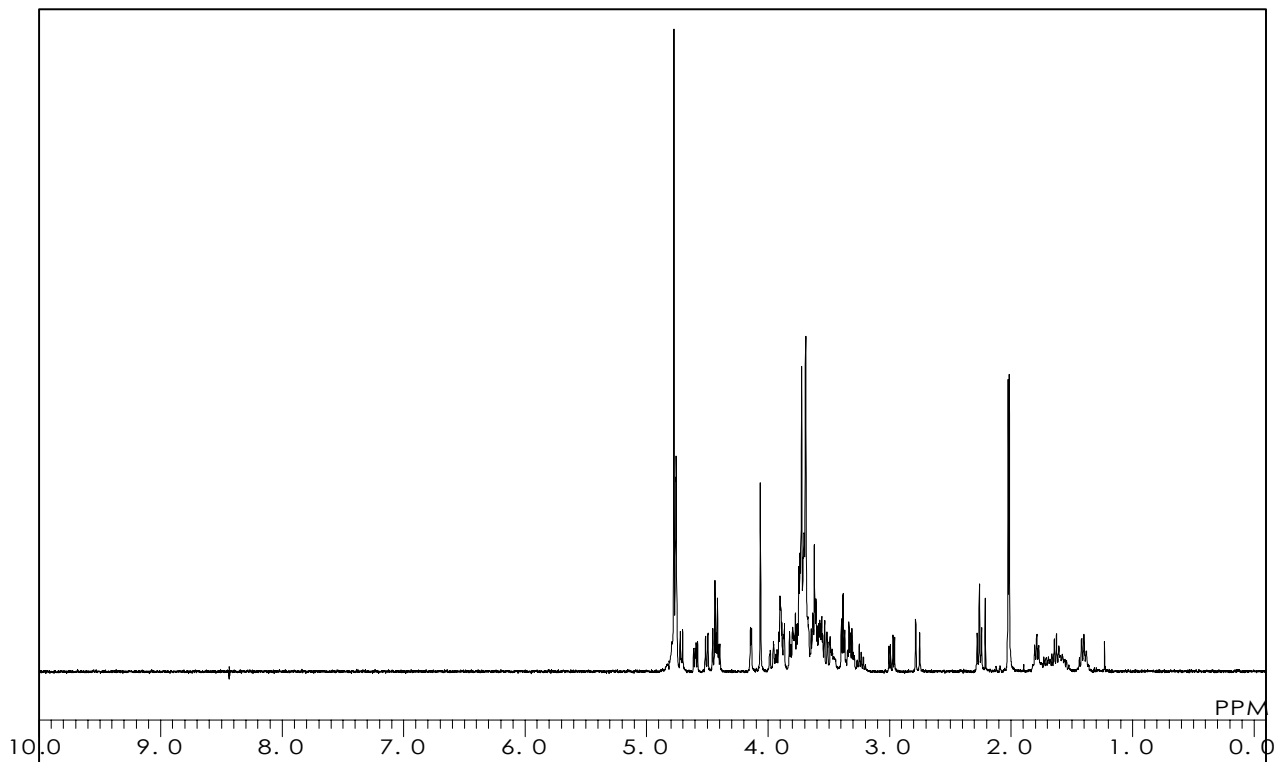
C<sub>49</sub>H<sub>84</sub>N<sub>6</sub>O<sub>27</sub>S = 1221.29



Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 24.1 °C

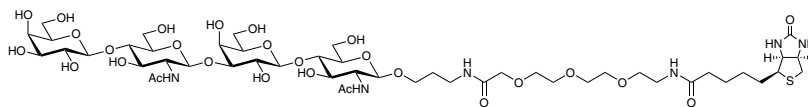


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**G0515**

**Gal  $\beta$  (1-4)GlcNAc  $\beta$  (1-3)Gal  $\beta$  (1-4)GlcNAc-  $\beta$  -PEG<sub>3</sub>-biotin**

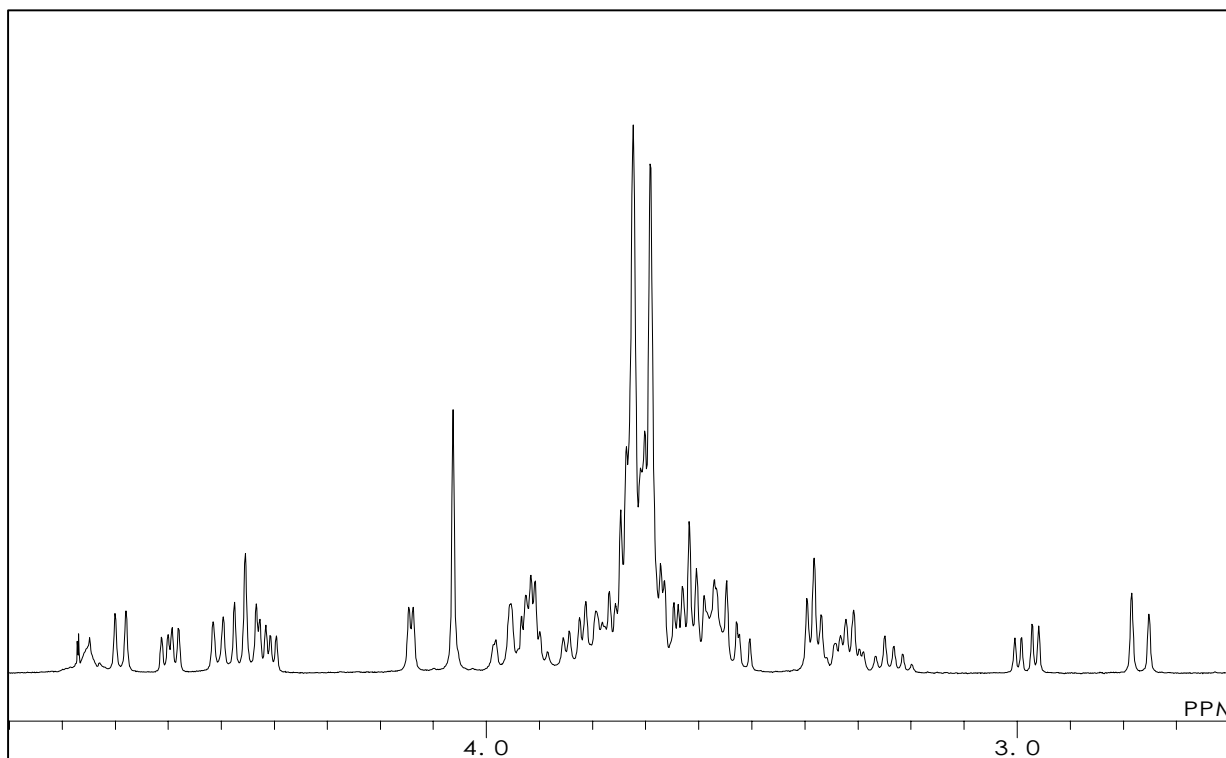
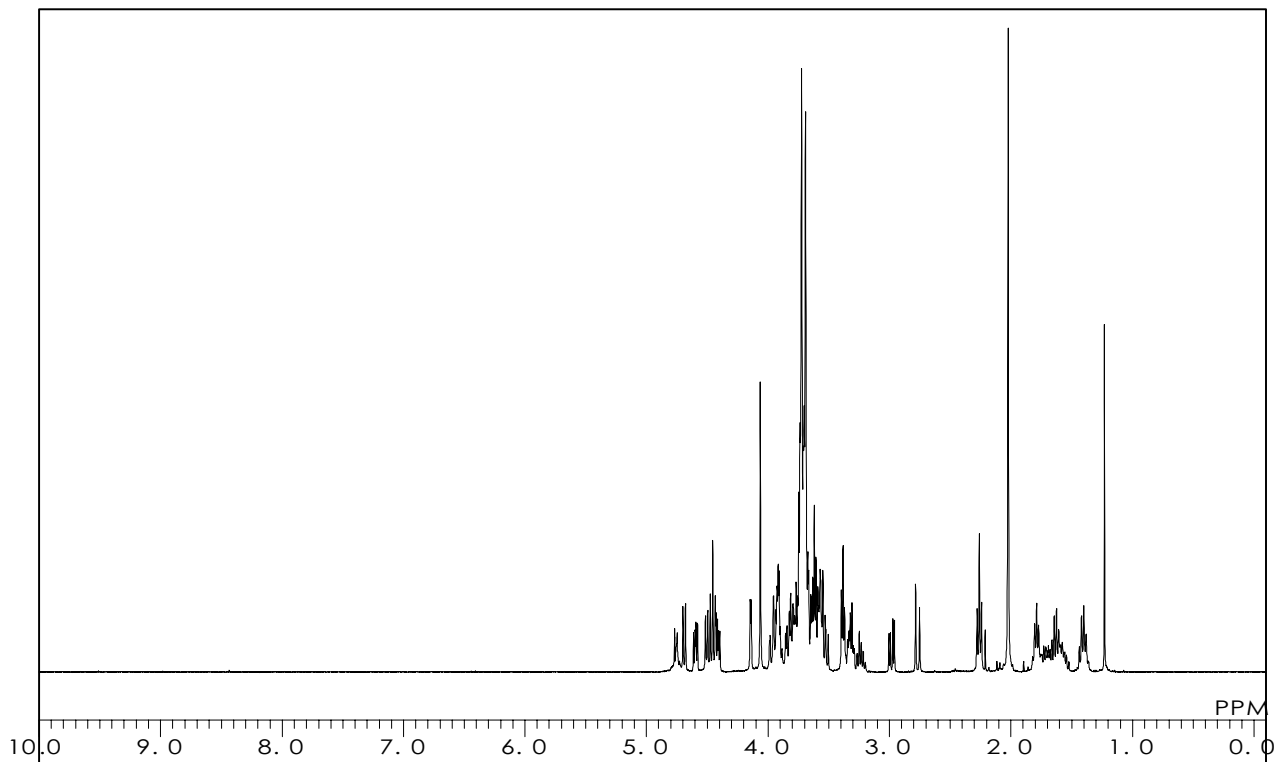
$C_{49}H_{84}N_6O_{27}S = 1221.29$



Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 24.5 °C

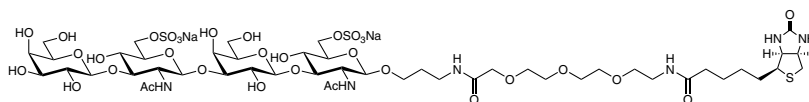


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**G0512**

**Gal  $\beta$  (1-3)GlcNAc[6S]  $\beta$  (1-3)Gal  $\beta$  (1-3)GlcNAc[6S]-  $\beta$ -PEG<sub>3</sub>-biotin**

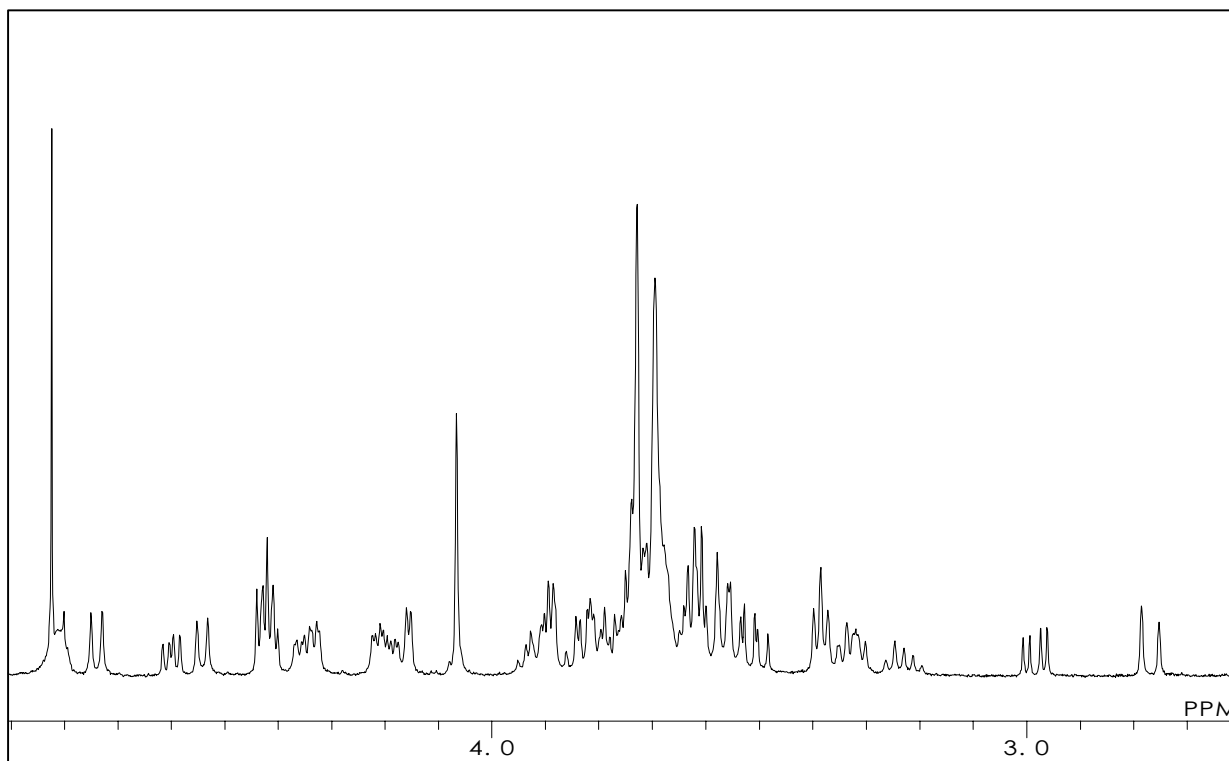
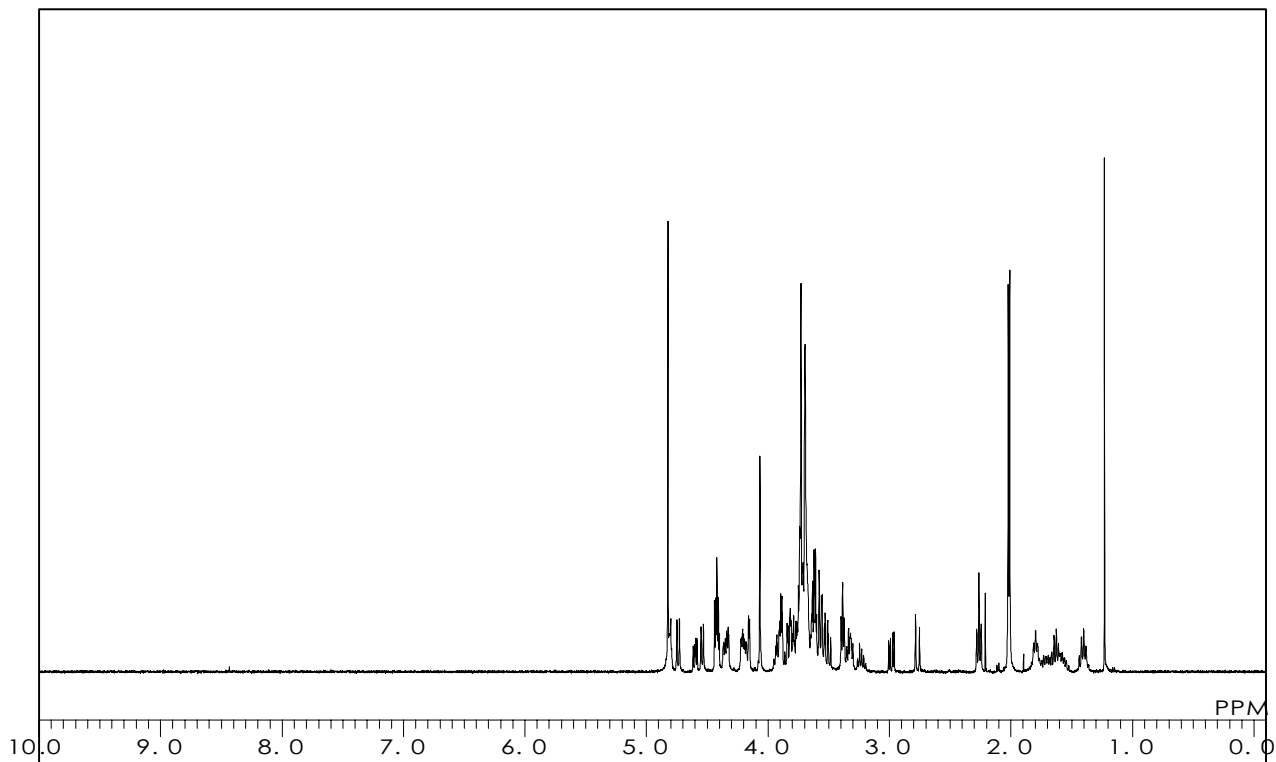
$C_{49}H_{82}N_6Na_2O_{33}S_3 = 1425.36$



Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 19.9 °C



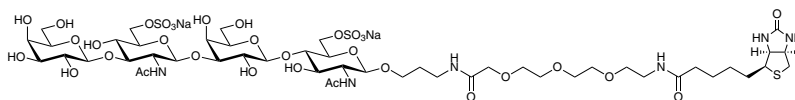
本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。



**G0514**

**Gal  $\beta$  (1-3)GlcNAc[6S]  $\beta$  (1-3)Gal  $\beta$  (1-4)GlcNAc[6S]-  $\beta$ -PEG<sub>3</sub>-biotin**

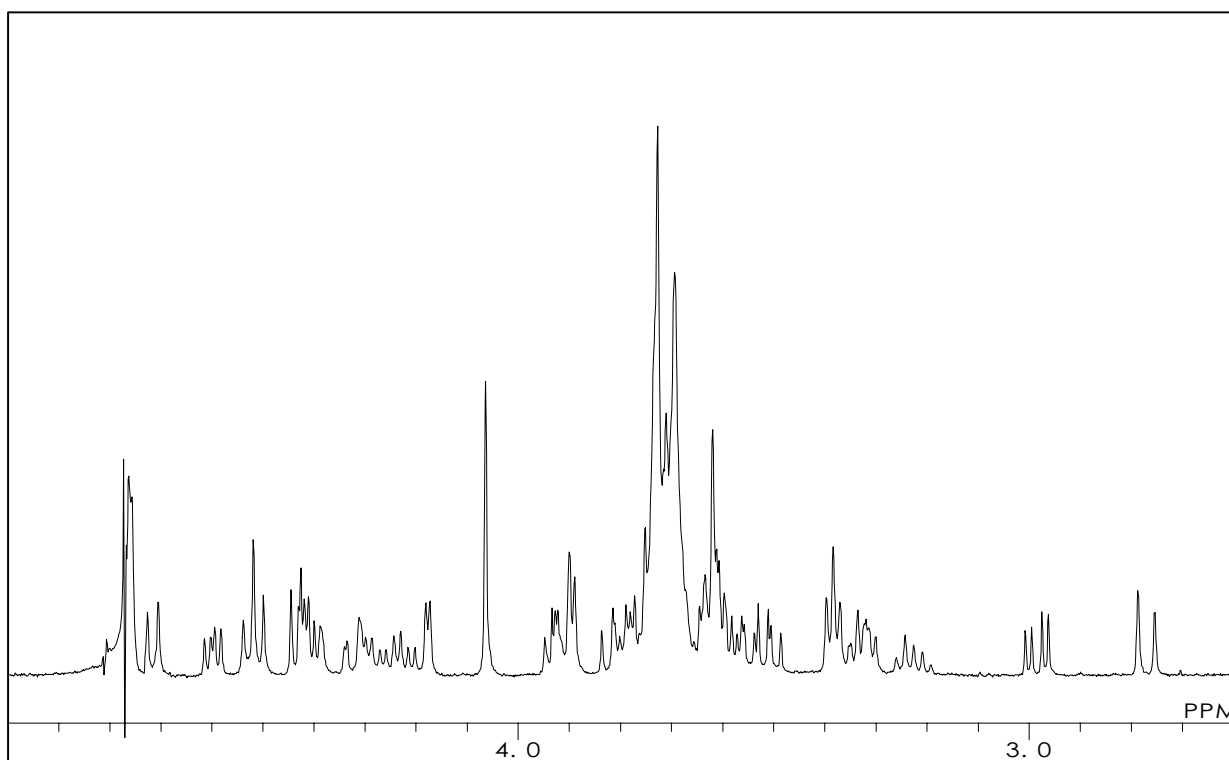
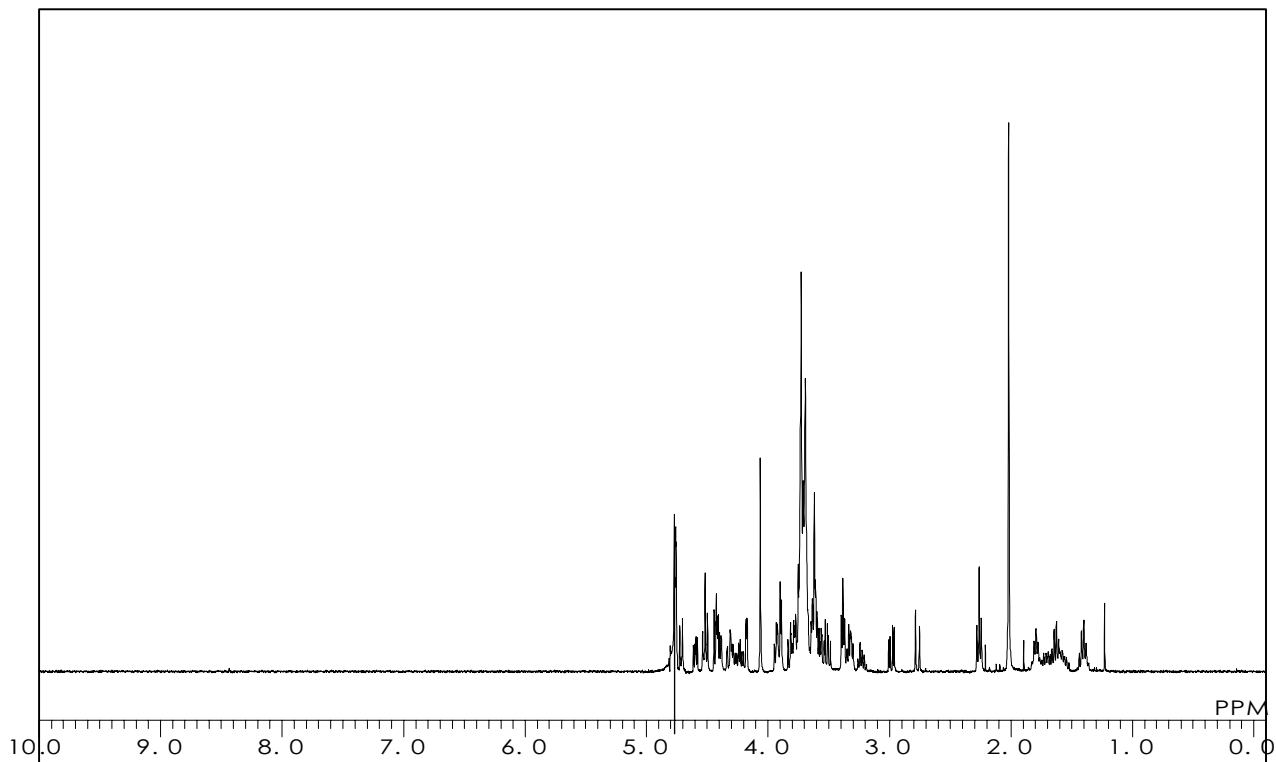
$C_{49}H_{82}N_6Na_2O_{33}S_3 = 1425.36$



Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 24.2 °C



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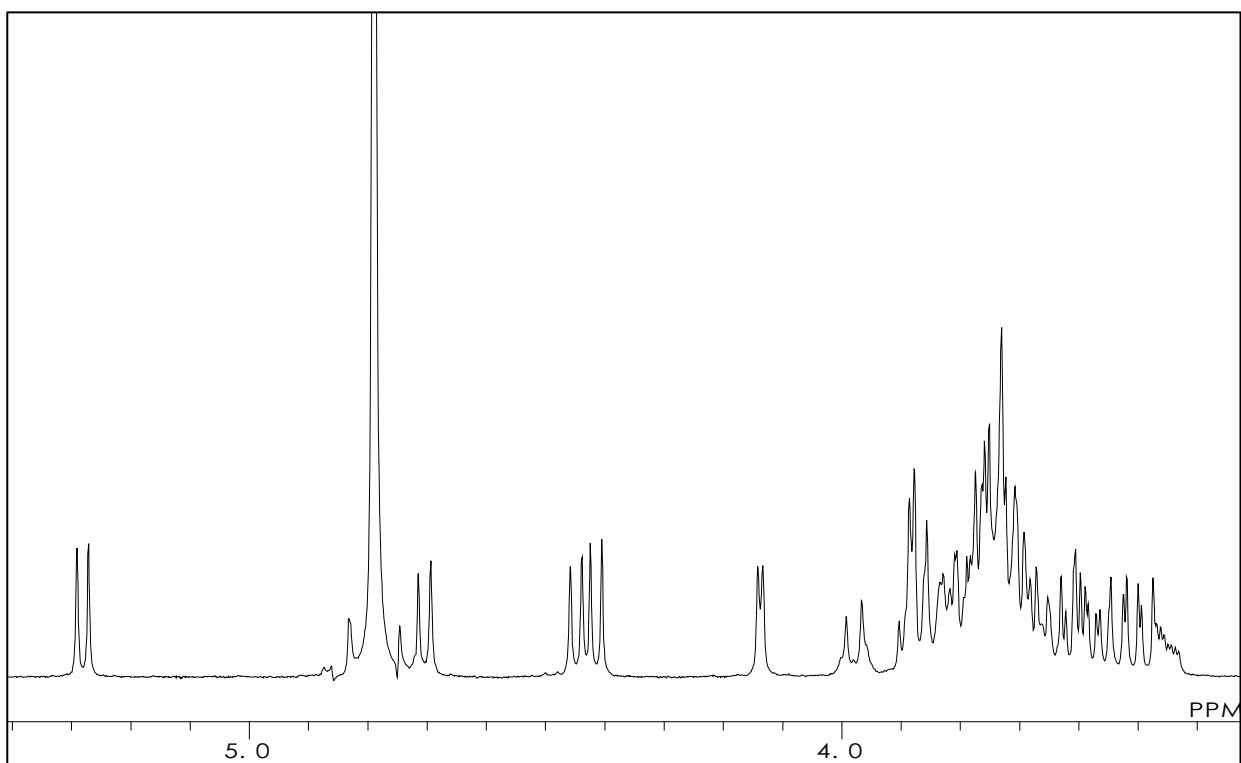
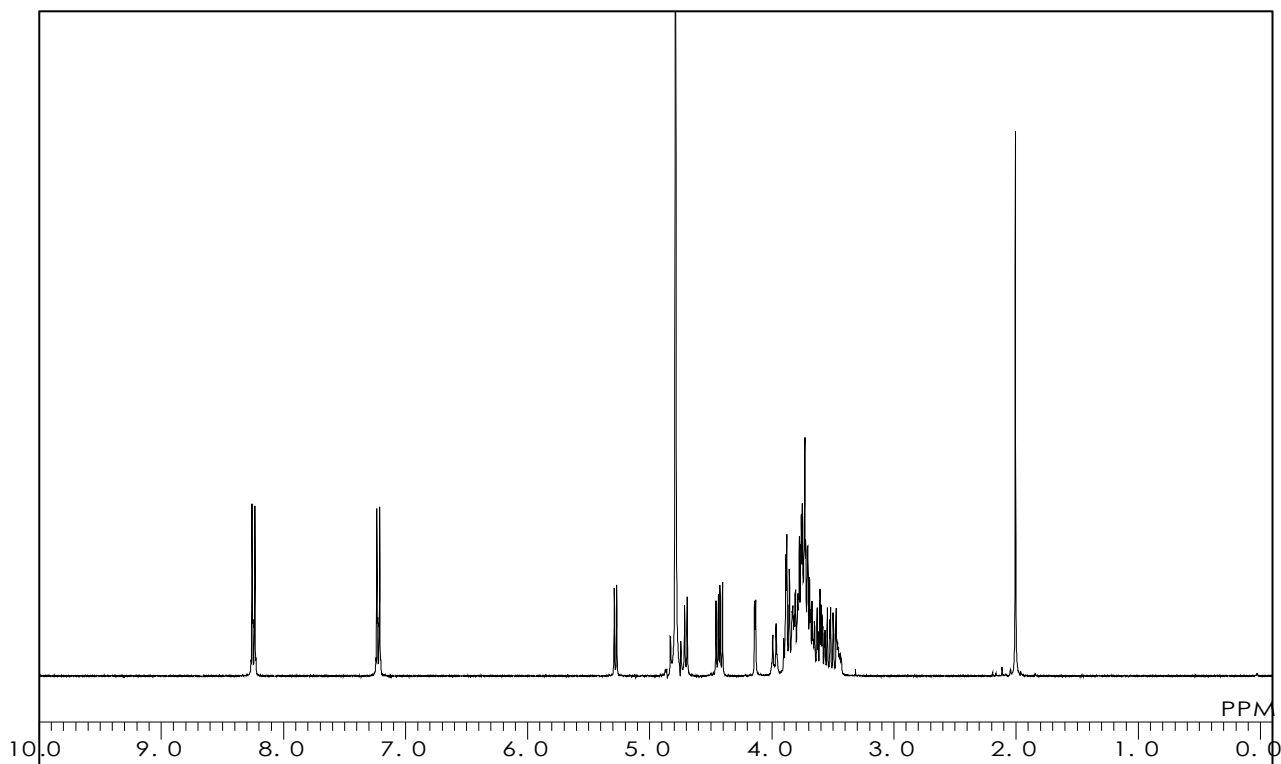
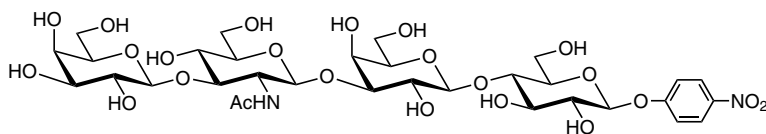
**G0348**

**Gal $\beta$ (1-3)GlcNAc $\beta$ (1-3)Gal $\beta$ (1-4)Glc- $\beta$ -pNP**

C<sub>32</sub>H<sub>48</sub>N<sub>2</sub>O<sub>23</sub> = 828.73 [148705-09-3]

Solvent : D<sub>2</sub>O

Measured Temperature : 20.8 °C



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**G0351**

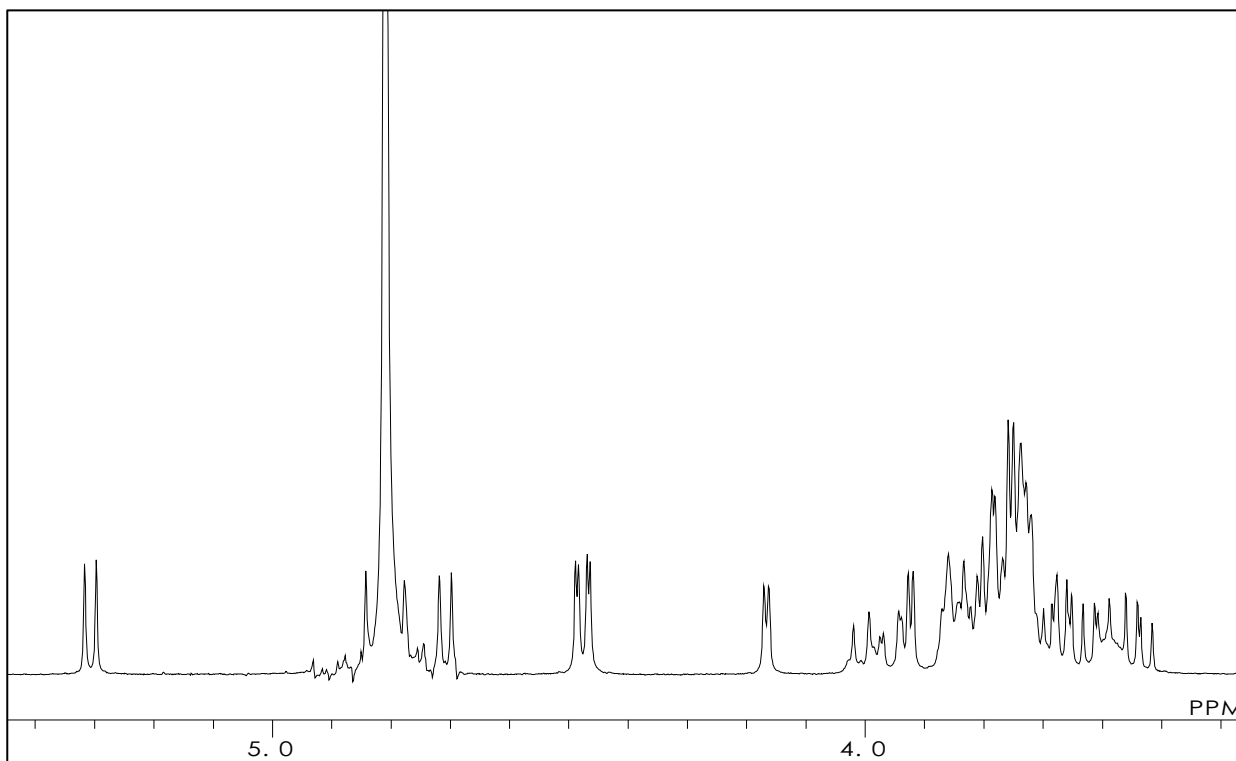
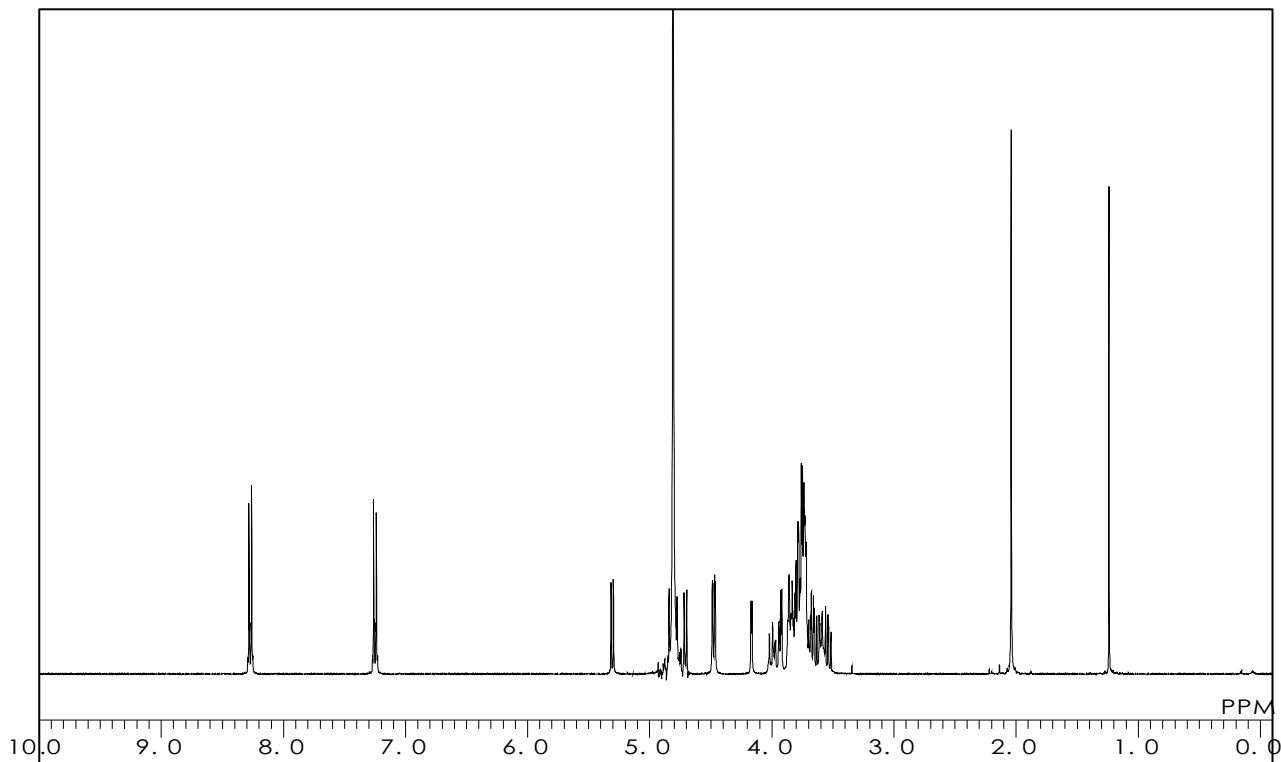
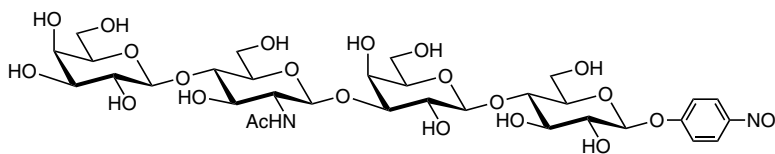
**Gal $\beta$ (1-4)GlcNAc $\beta$ (1-3)Gal $\beta$ (1-4)Glc- $\beta$ -pNP**

C<sub>32</sub>H<sub>48</sub>N<sub>2</sub>O<sub>23</sub> = 828.73 [197526-33-3]

Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 21.6 °C



**G0380**

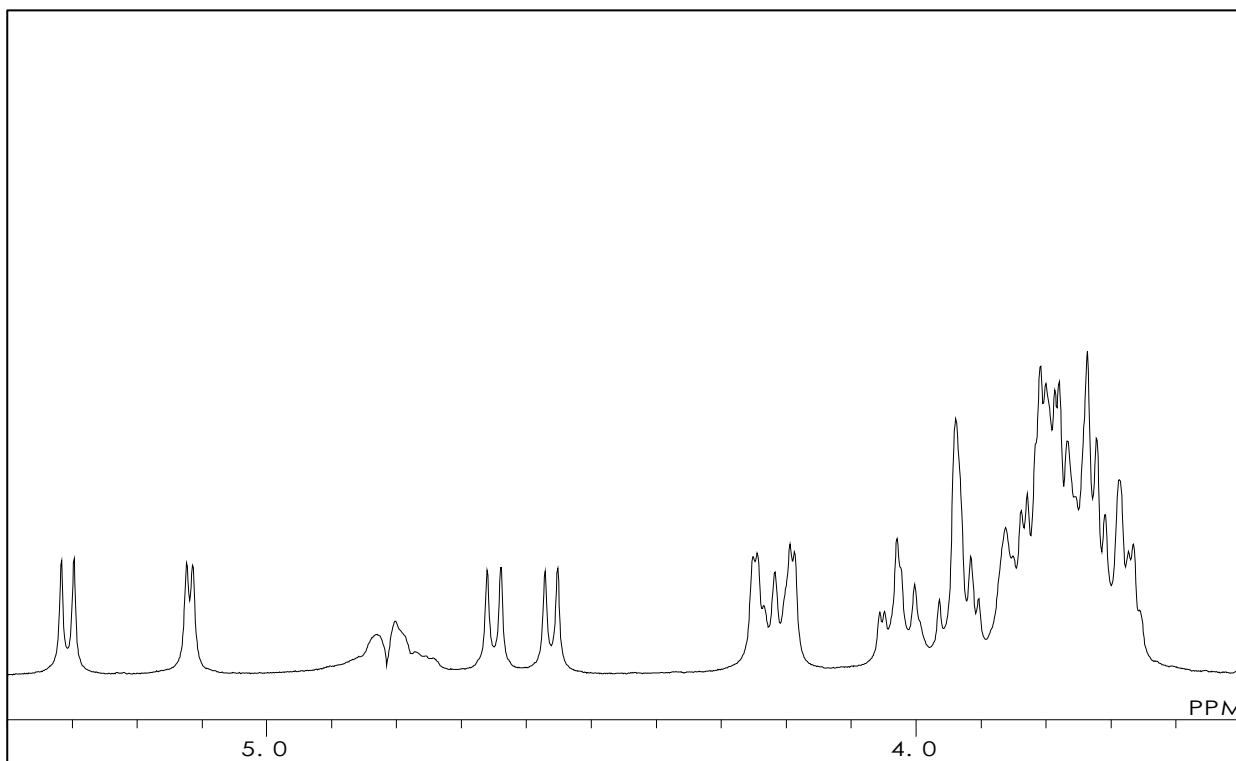
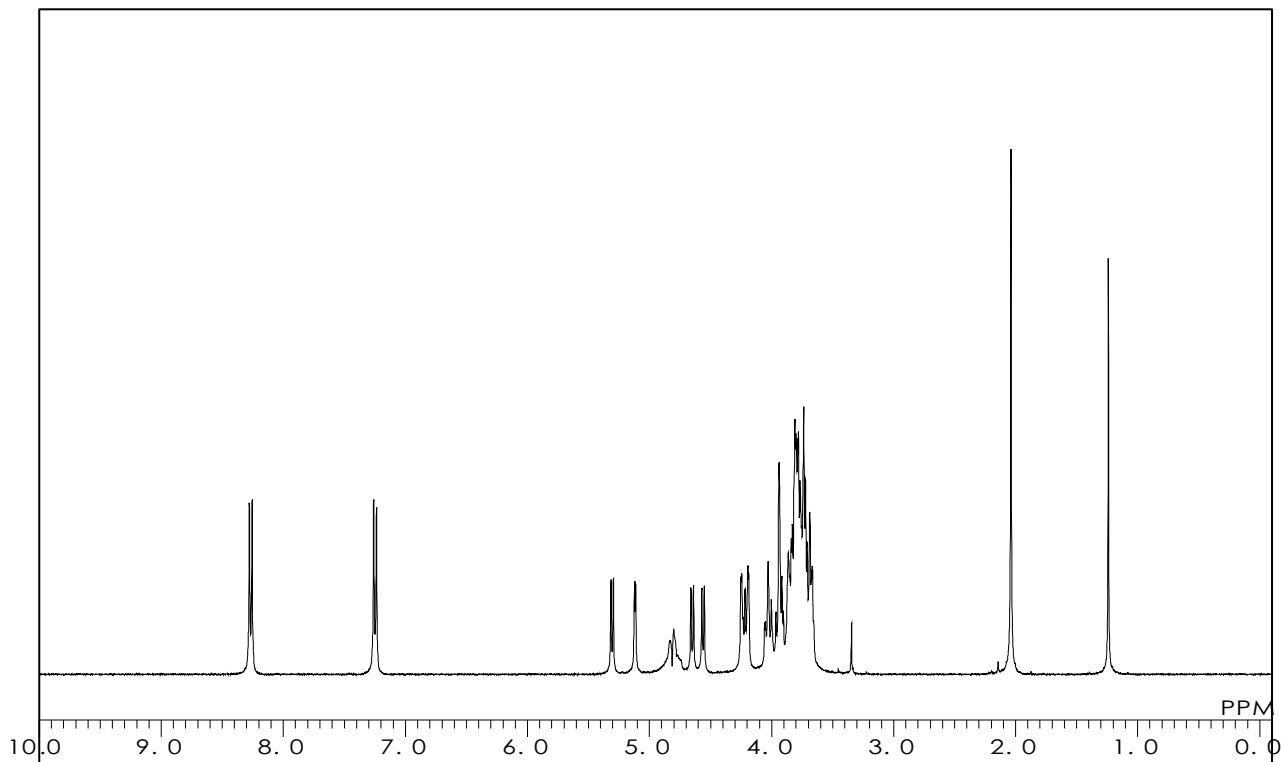
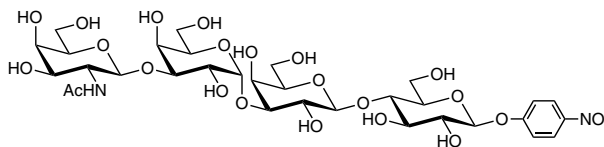
**GalNAc $\beta$ (1-3)Gal $\alpha$ (1-3)Gal $\beta$ (1-4)Glc- $\beta$ -pNP**

C<sub>32</sub>H<sub>48</sub>N<sub>2</sub>O<sub>23</sub> = 828.73

Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 21.2 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

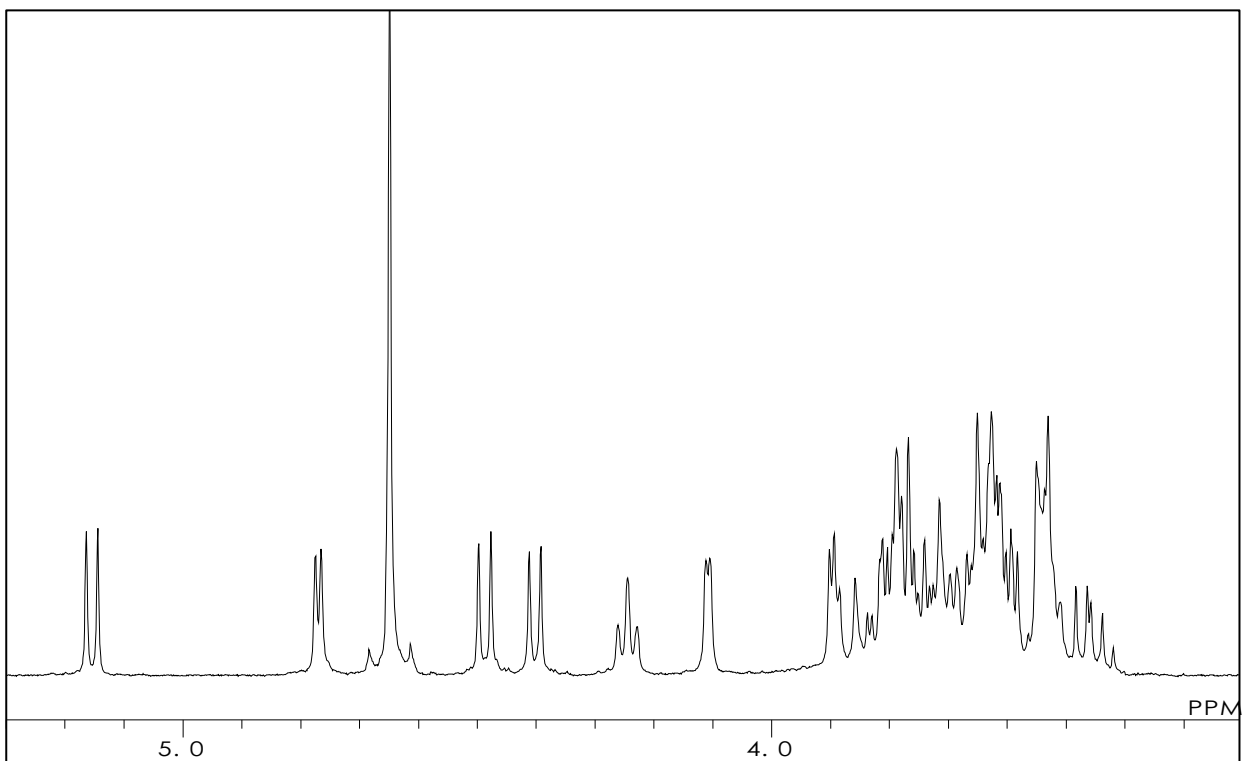
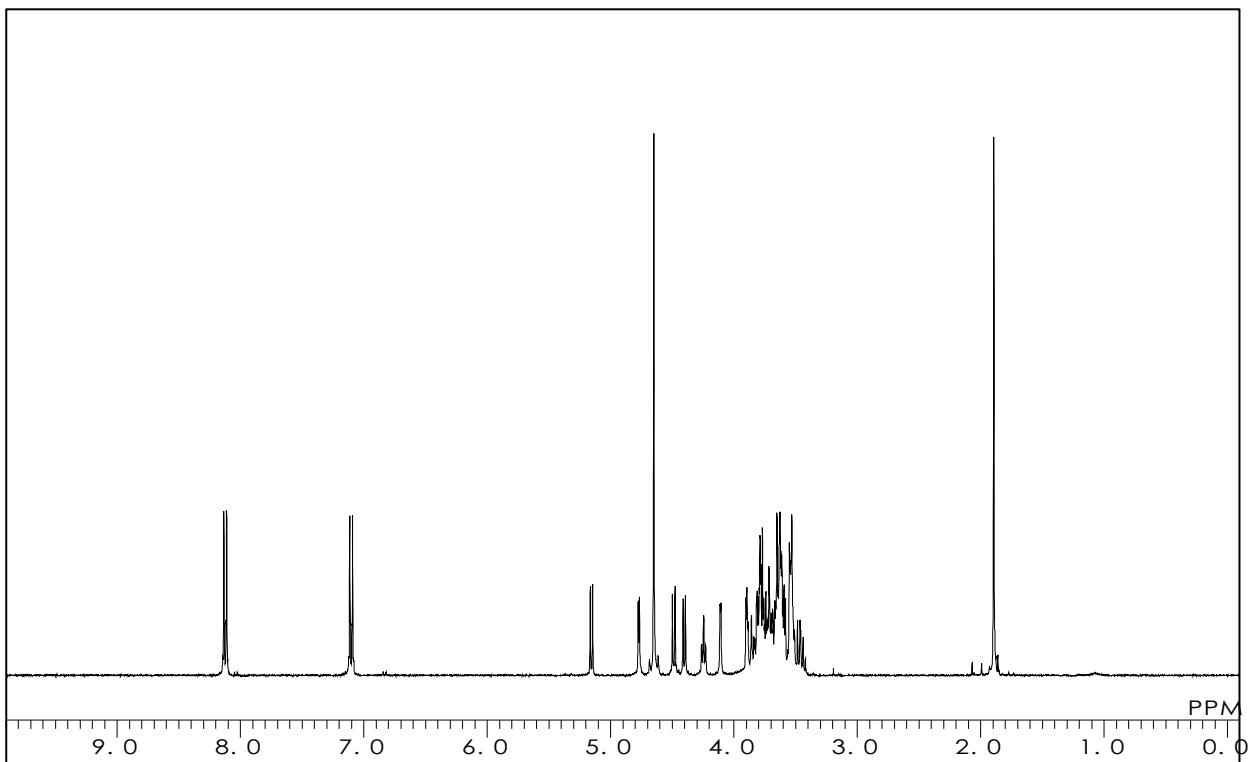
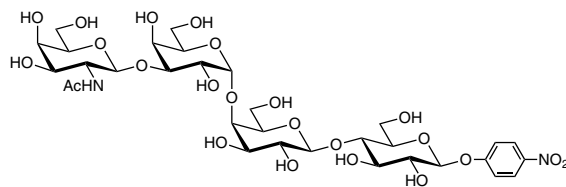
**G0354**

**GalNAc $\beta$ (1-3)Gal $\alpha$ (1-4)Gal $\beta$ (1-4)Glc- $\beta$ -pNP**

$C_{32}H_{48}N_2O_{23} = 828.73$  [1134635-03-2]

Solvent :  $D_2O$

Measured Temperature : 22.1 °C



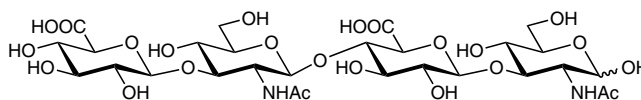
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**H1284**

## Hyaluronate Tetrasaccharide

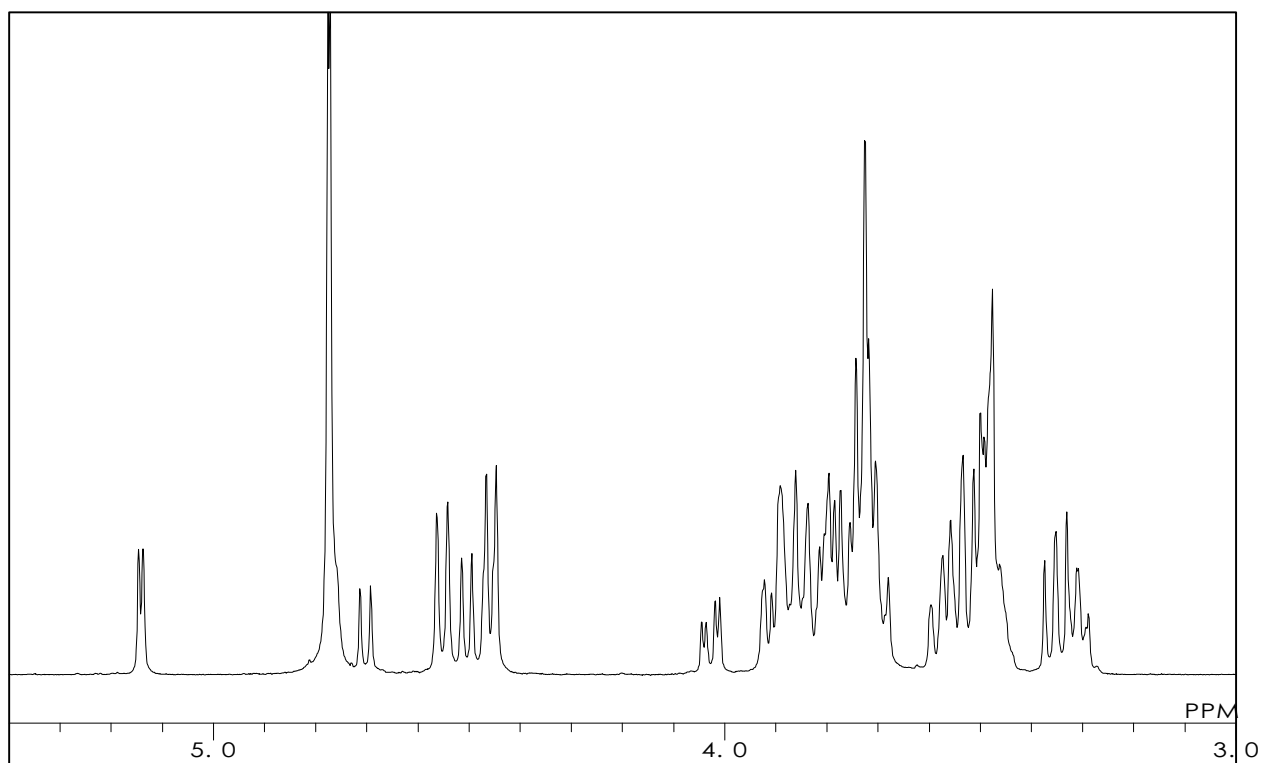
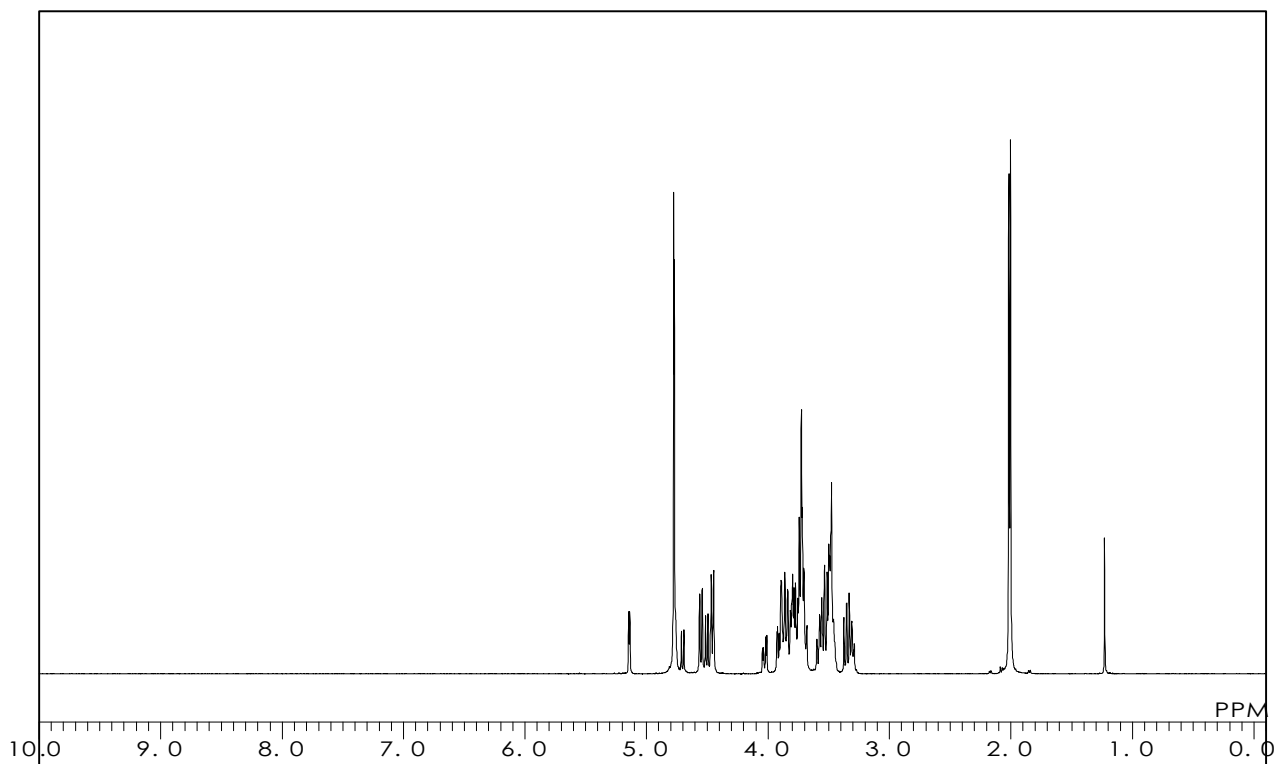
$C_{28}H_{44}N_2O_{23} = 776.65$  [57282-61-8]



Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 24.1°C



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L0237

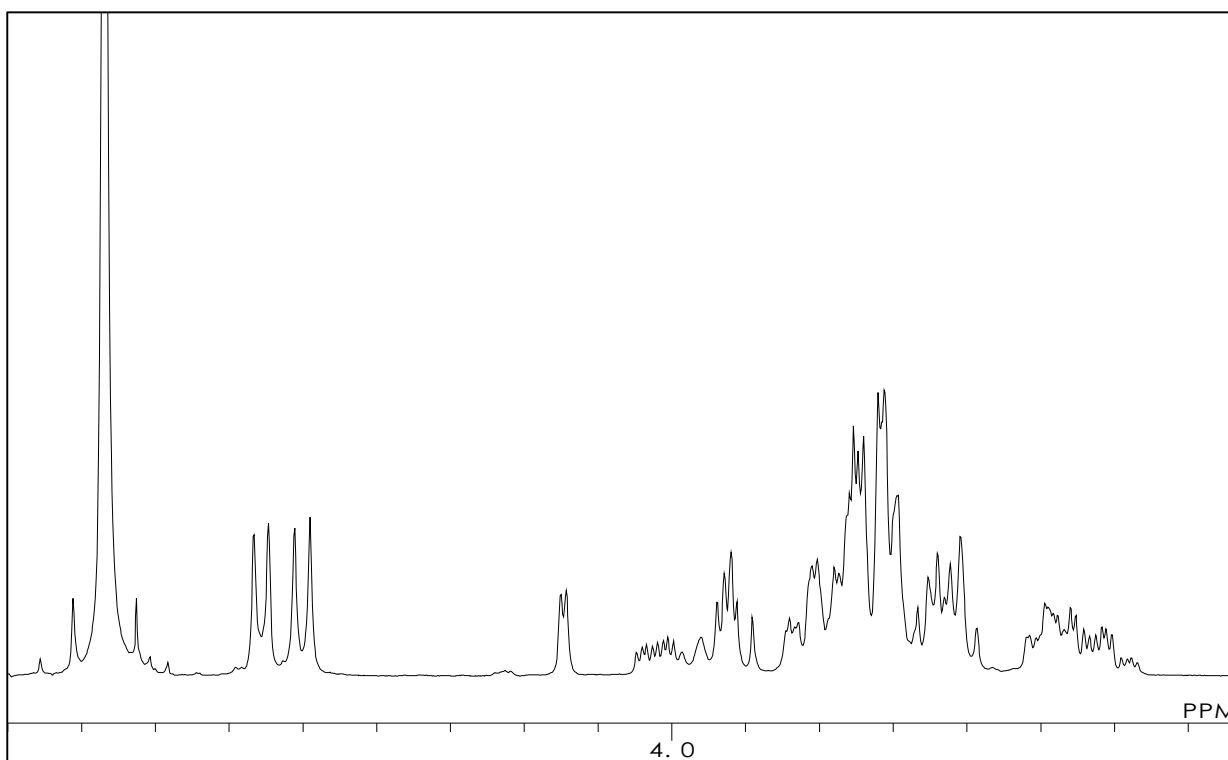
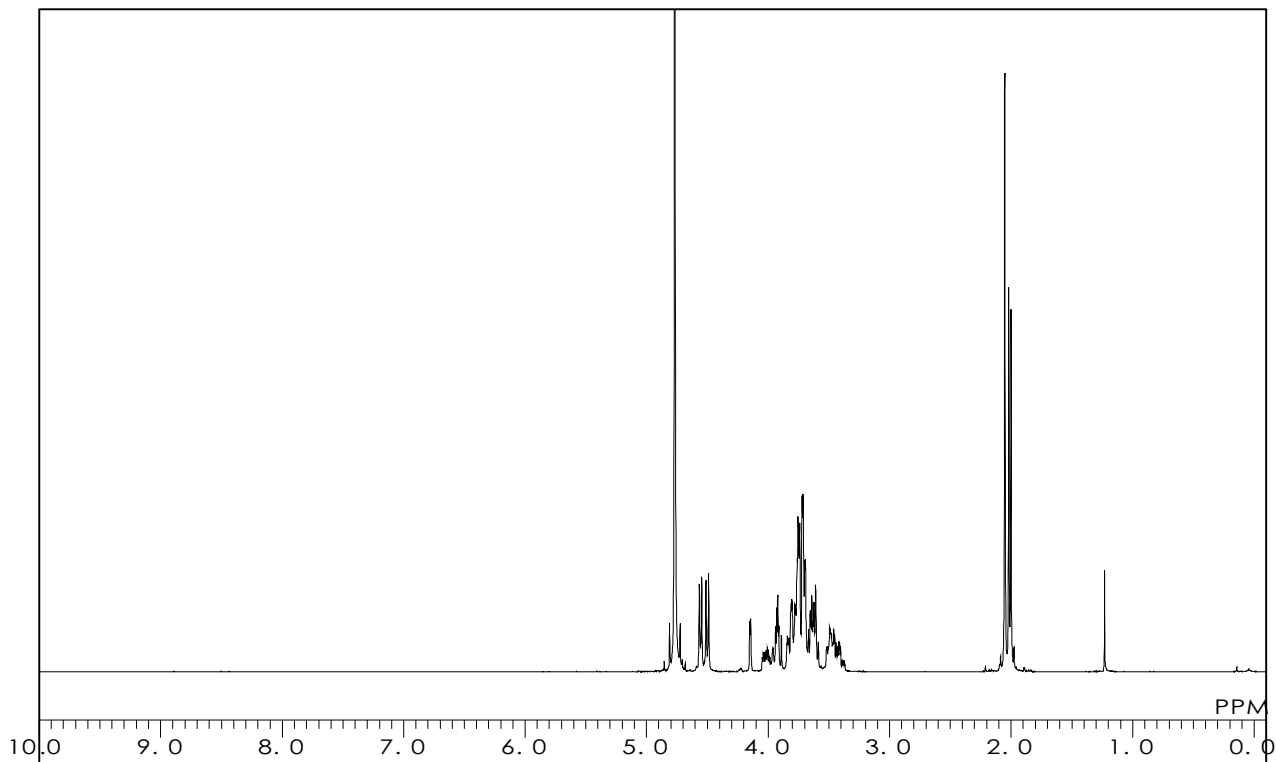
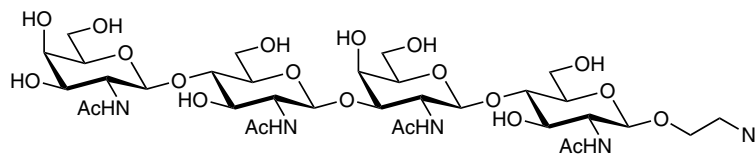
## LacDiNAc Dimer Ethylazide

$C_{34}H_{57}N_7O_{21} = 899.86$

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 24.4 °C



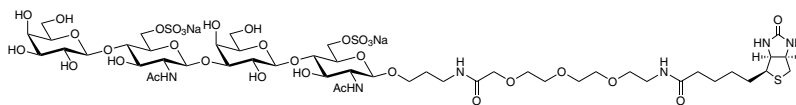
本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。



**G0516**

**L2-L2-β-PEG<sub>3</sub>-biotin**

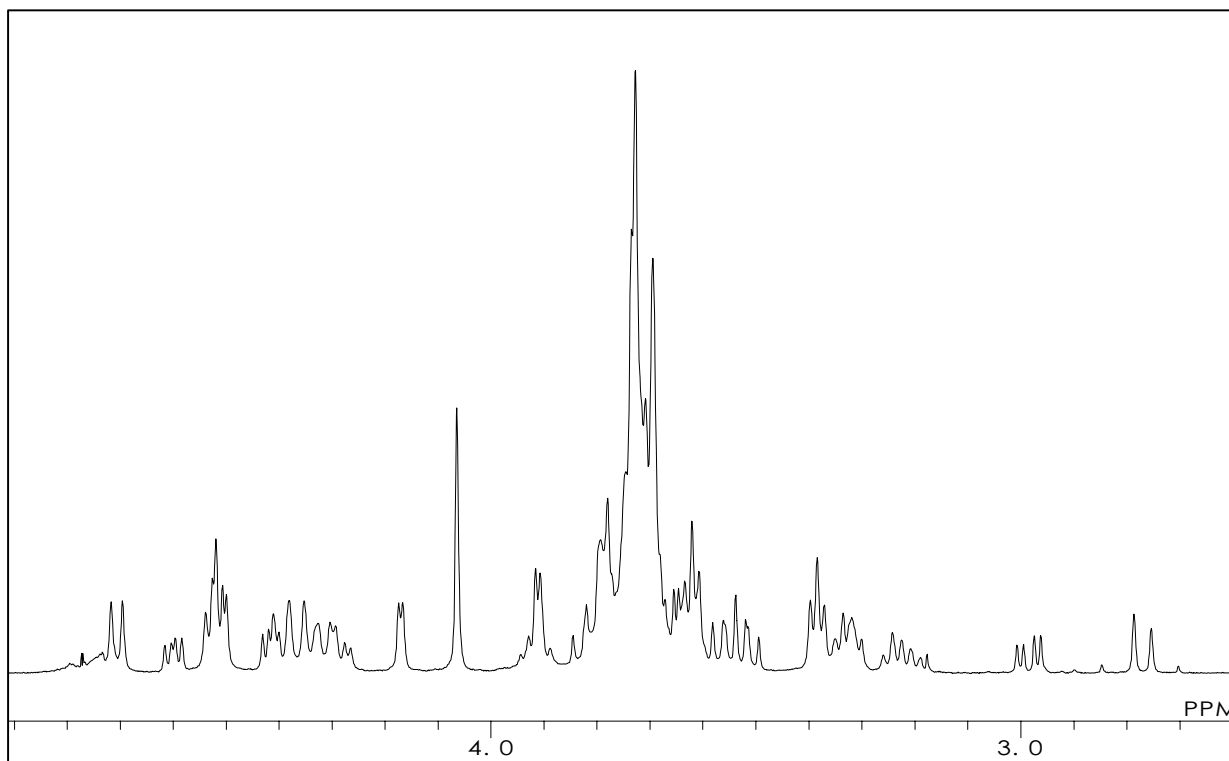
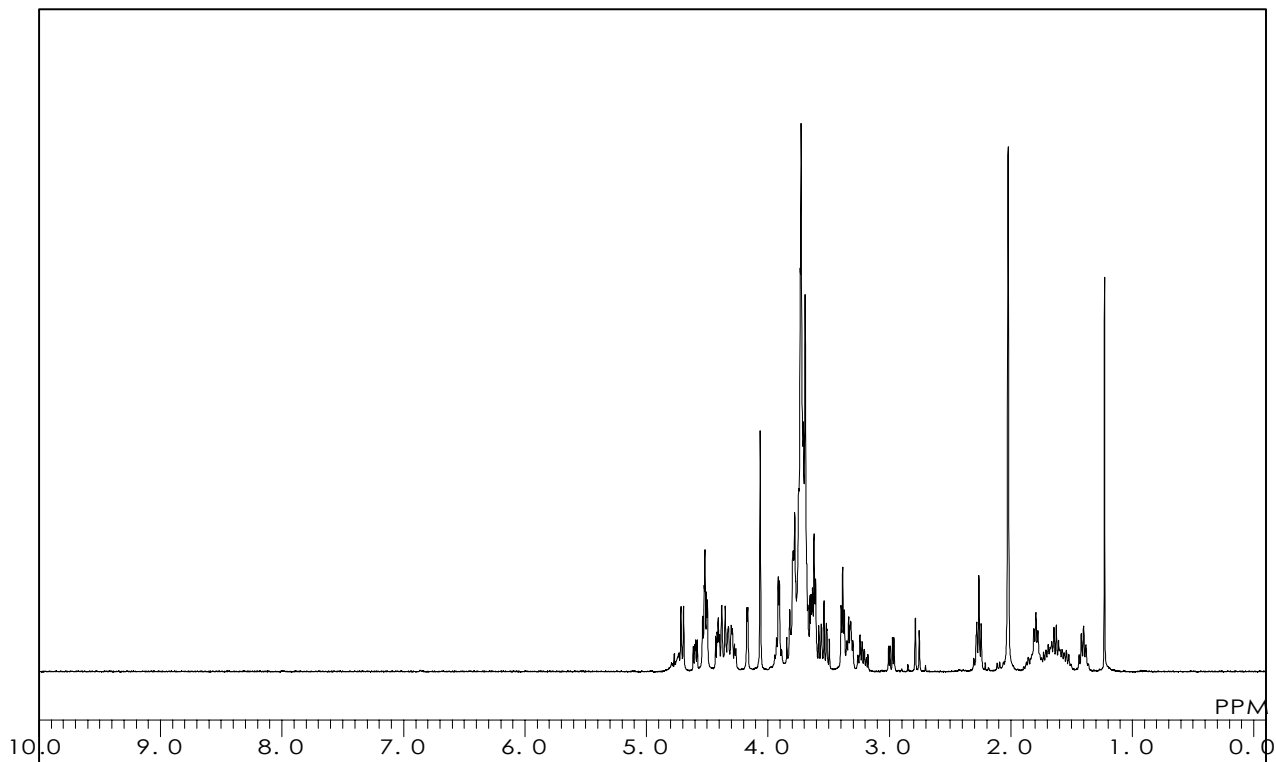
$C_{49}H_{82}N_6Na_2O_{33}S_3 = 1425.36$



Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH (δ 1.23)

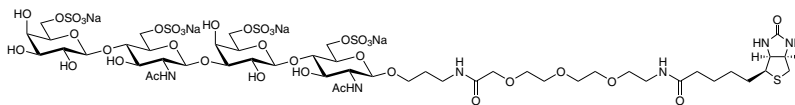
Measured Temperature : 24.3 °C



**G0517**

**L4-L4-β-PEG<sub>3</sub>-biotin**

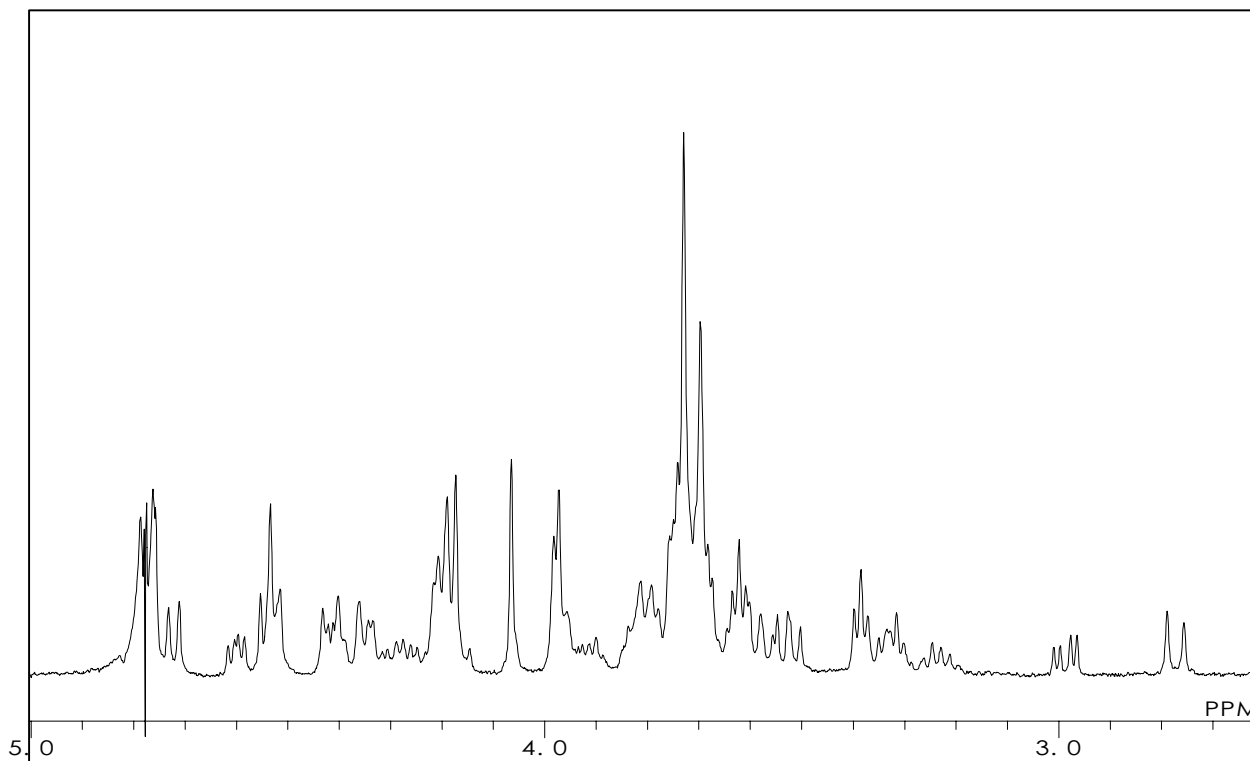
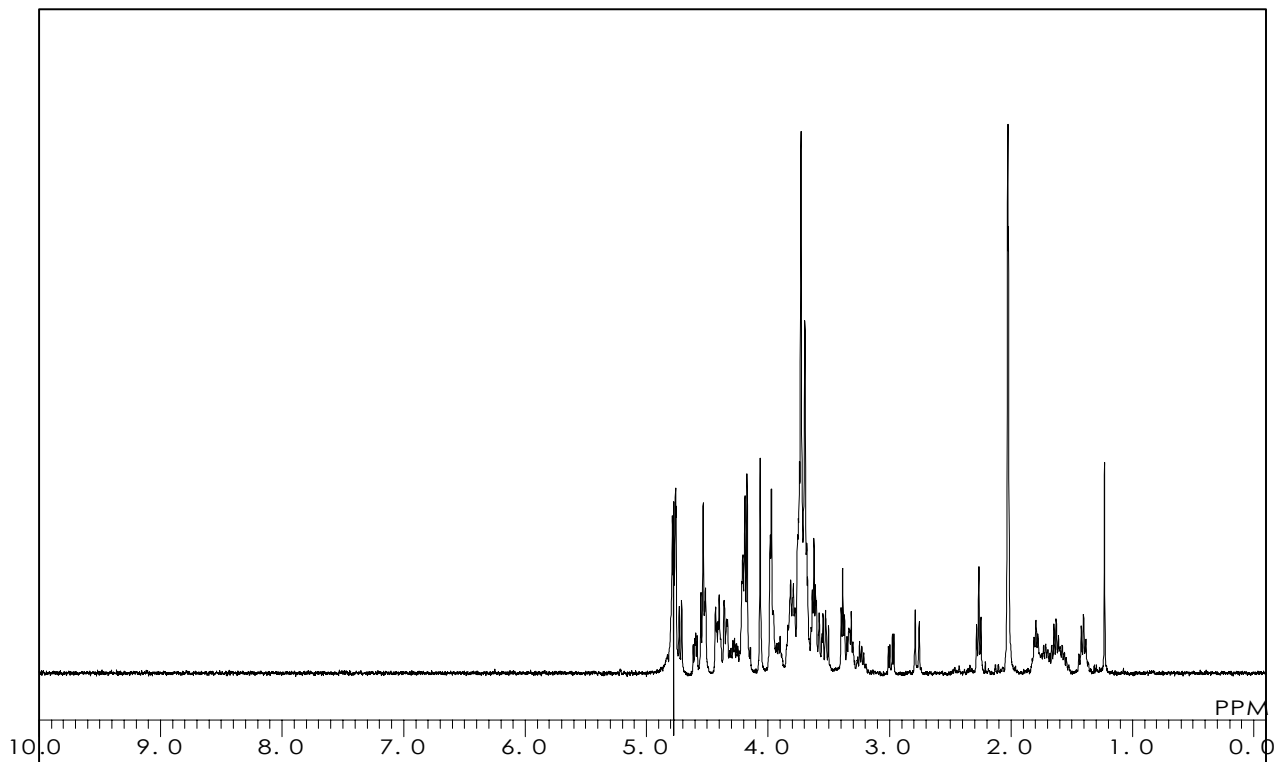
$C_{49}H_{80}N_6Na_4O_{39}S_5 = 1629.44$



Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH (δ 1.23)

Measured Temperature : 23.9 °C



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**N0971**

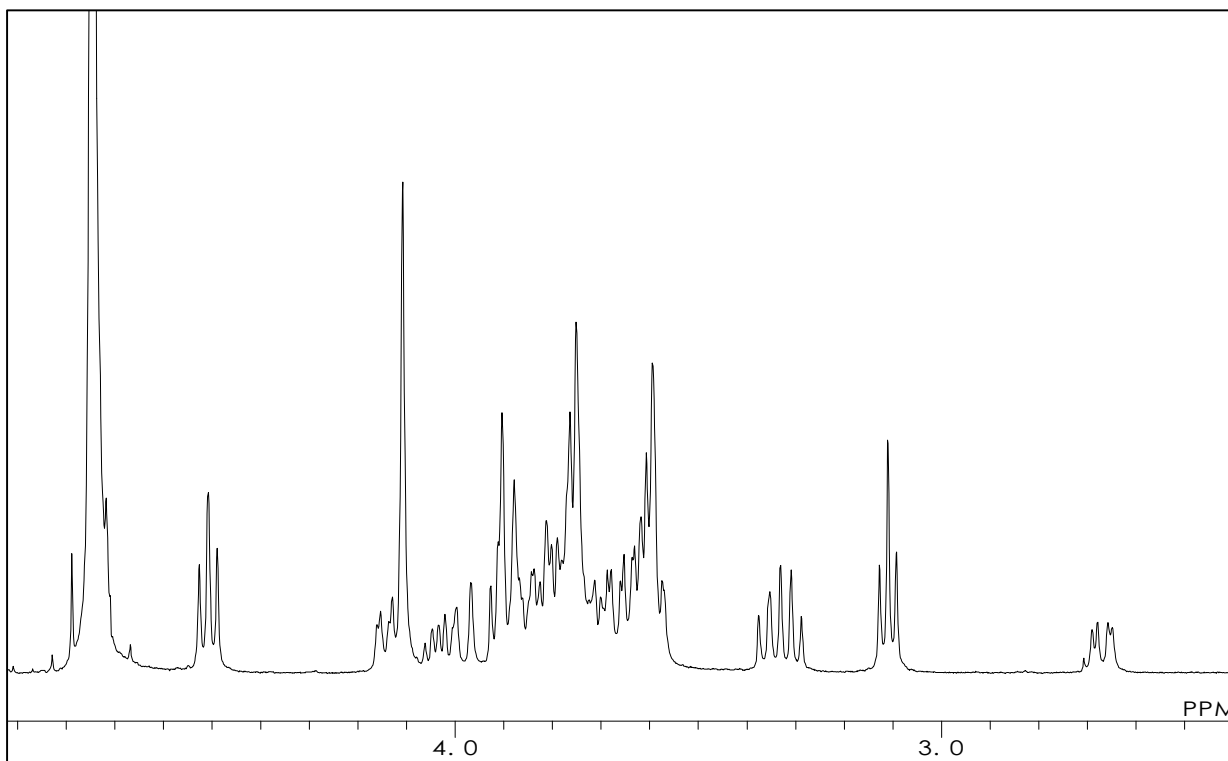
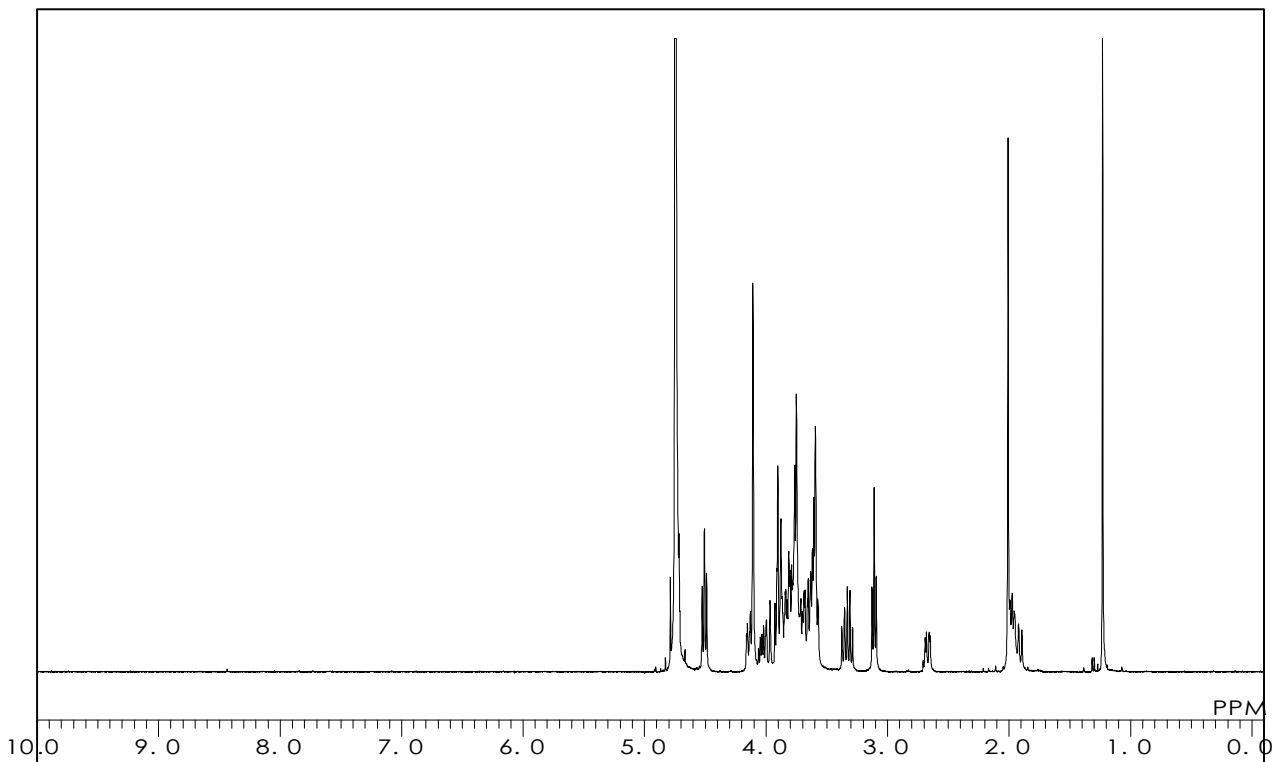
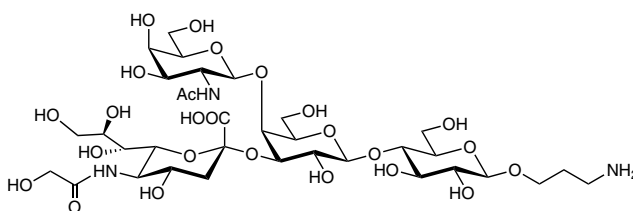
**Neu5Gc  $\alpha$  (2-3)[GalNAc  $\beta$  (1-4)]Gal  $\beta$  (1-4)Glc-  $\beta$  -propylamine**

$C_{34}H_{59}N_3O_{25} = 909.84$

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 26.7 °C



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T2910

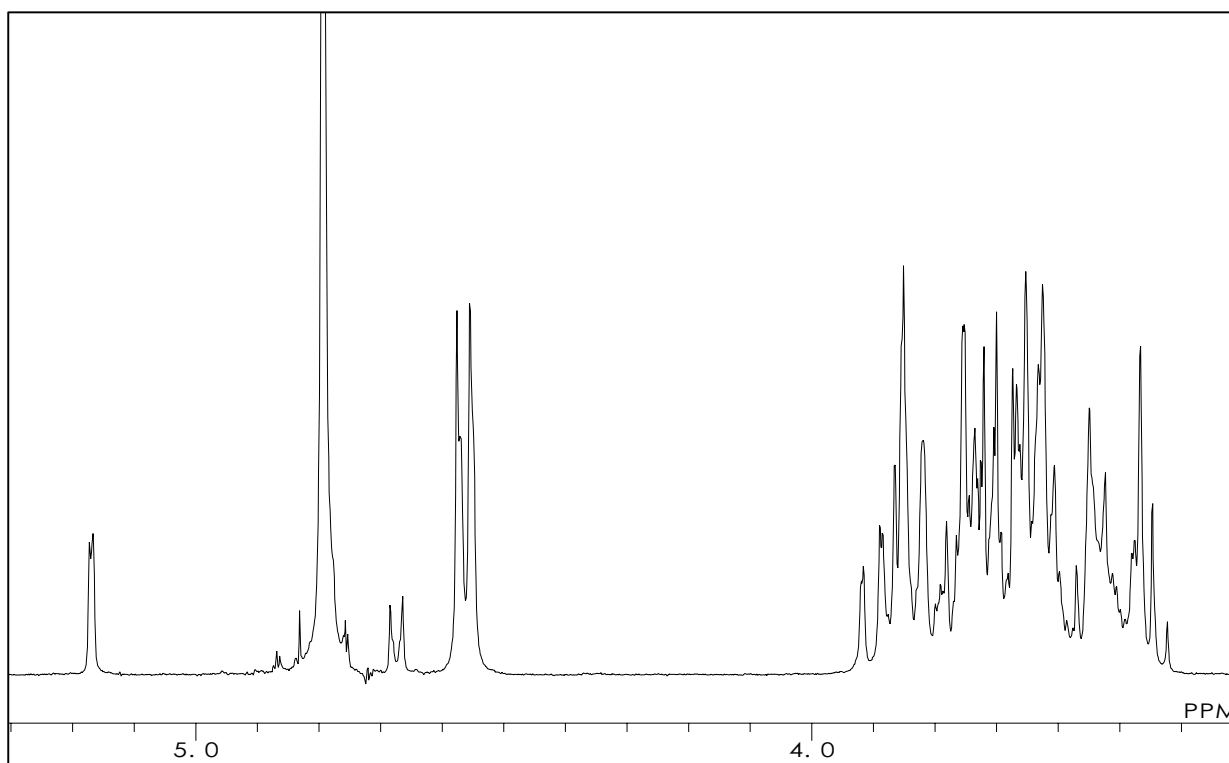
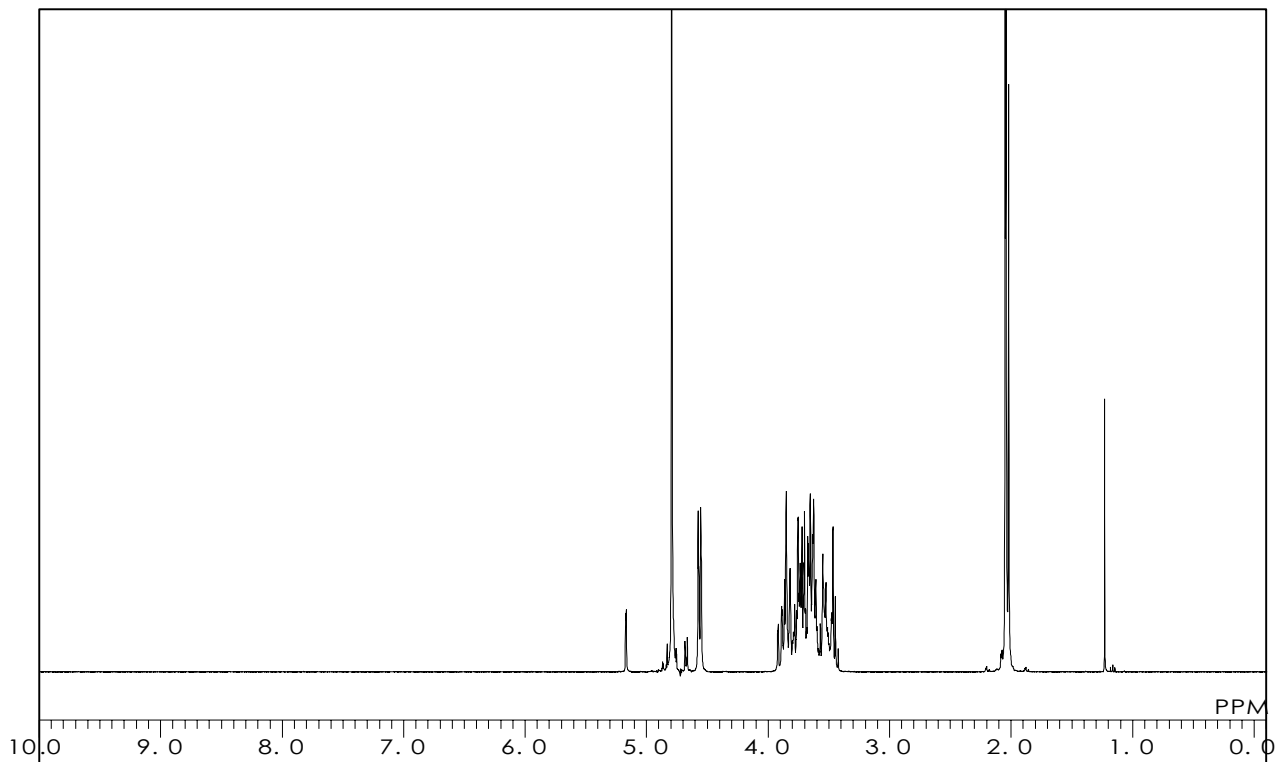
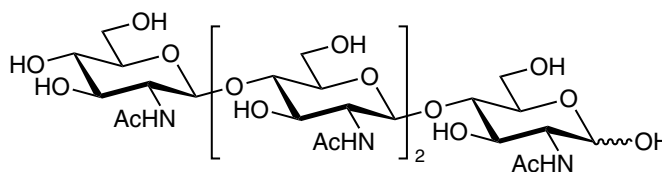
## N,N',N'',N'''-Tetraacetylchitotetraose

$C_{32}H_{54}N_4O_{21} = 830.79$  [2706-65-2]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 22.1 °C



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**C2644**

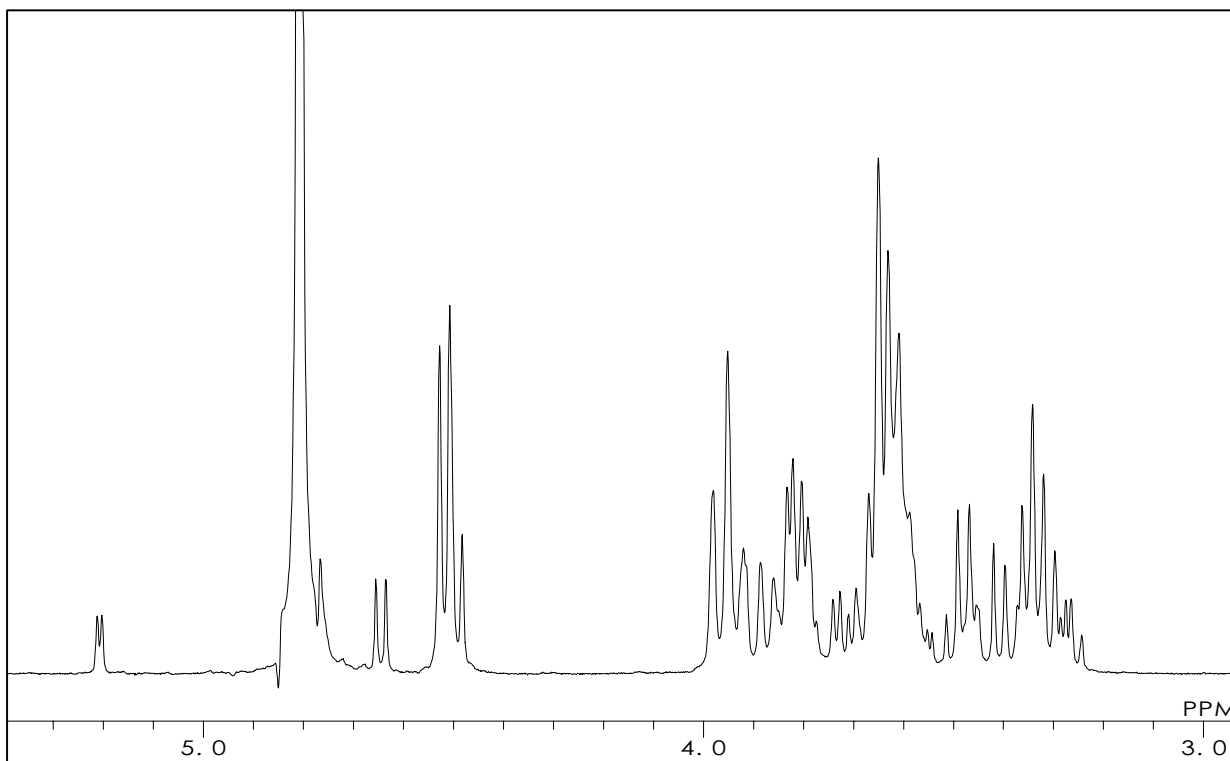
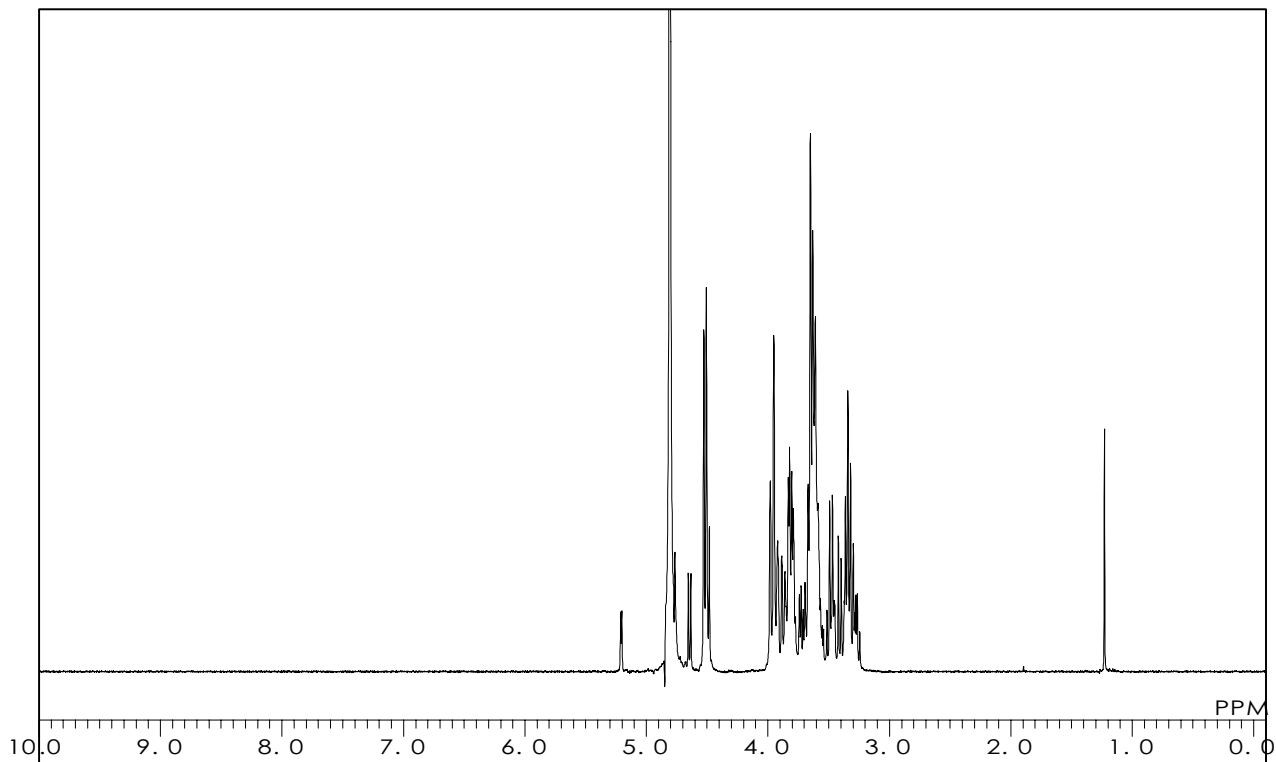
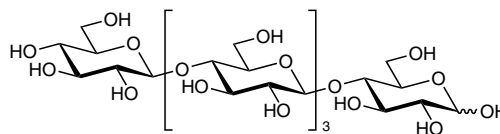
**Cellopentaose**

$C_{30}H_{52}O_{26} = 828.72$  [2240-27-9]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 20.9 °C



**D4217**

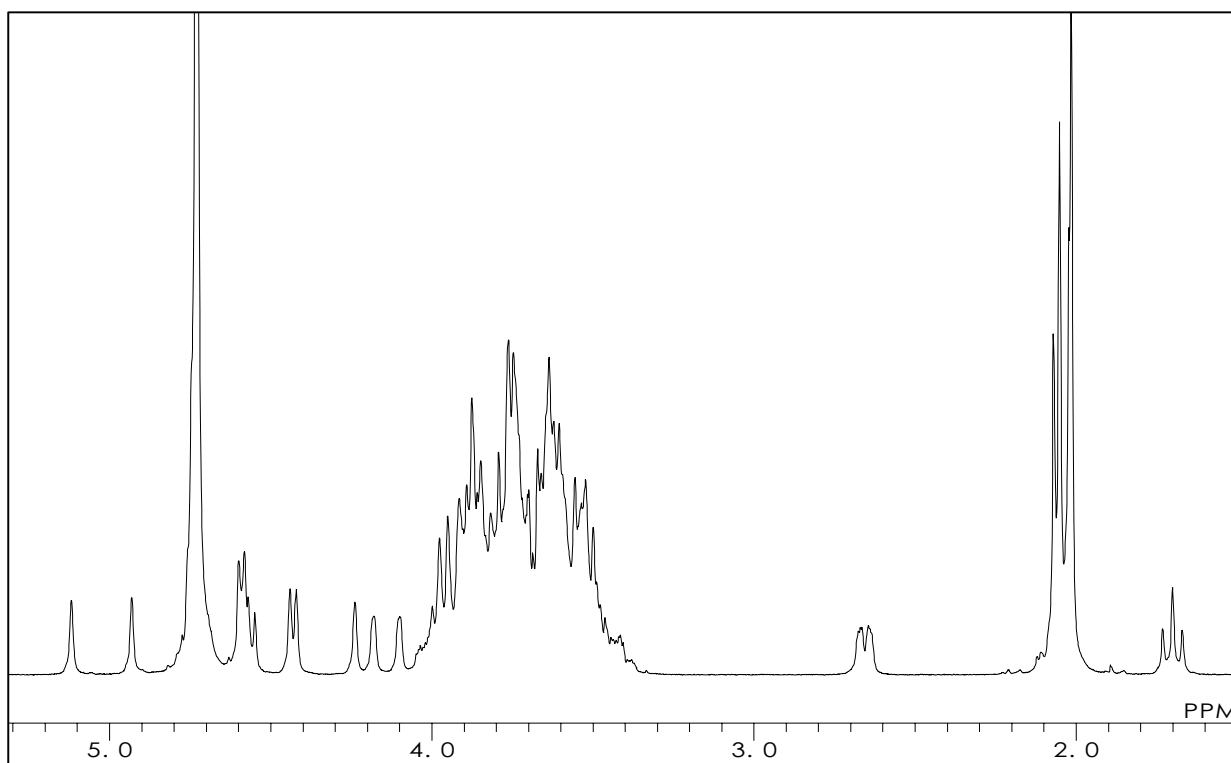
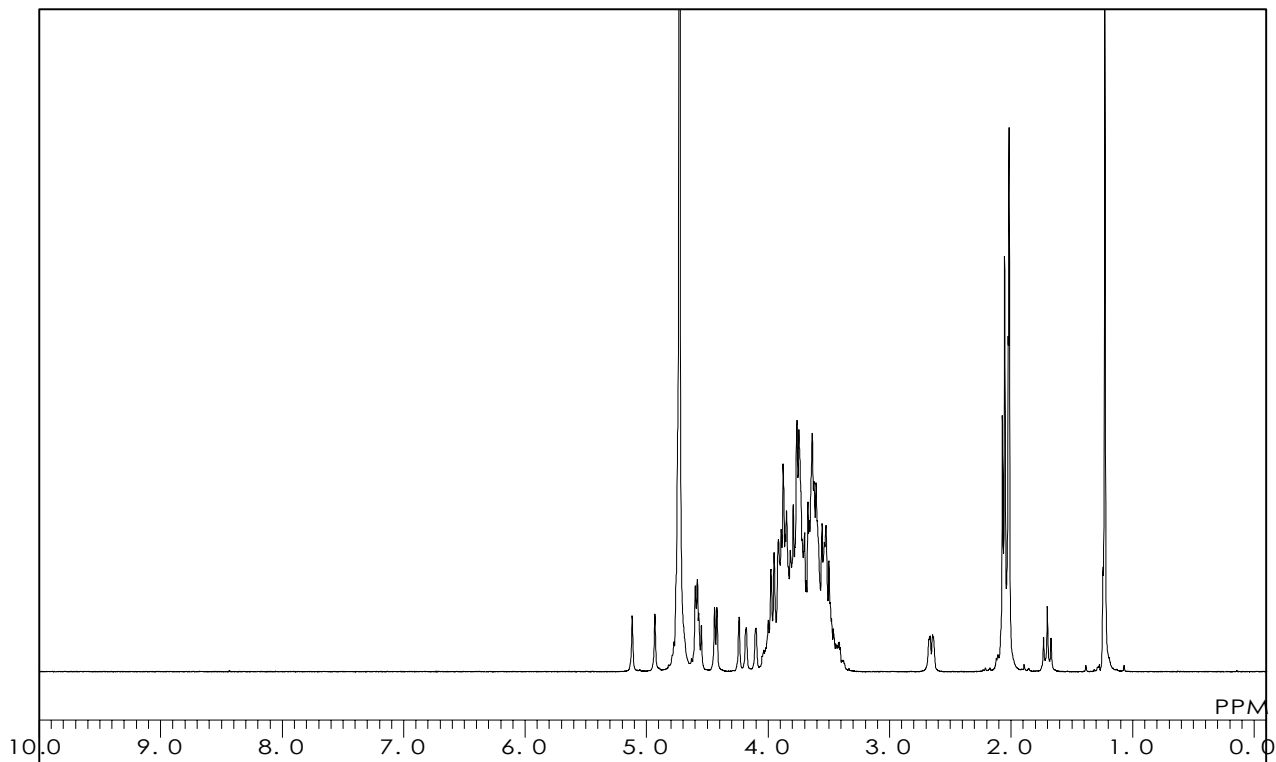
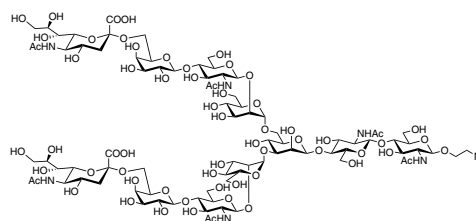
**Disialylnonasaccharide-β-ethylazide**

$C_{86}H_{141}N_9O_{62} = 2293.08$  [1621001-68-0]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 27.9 °C



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**N0913**

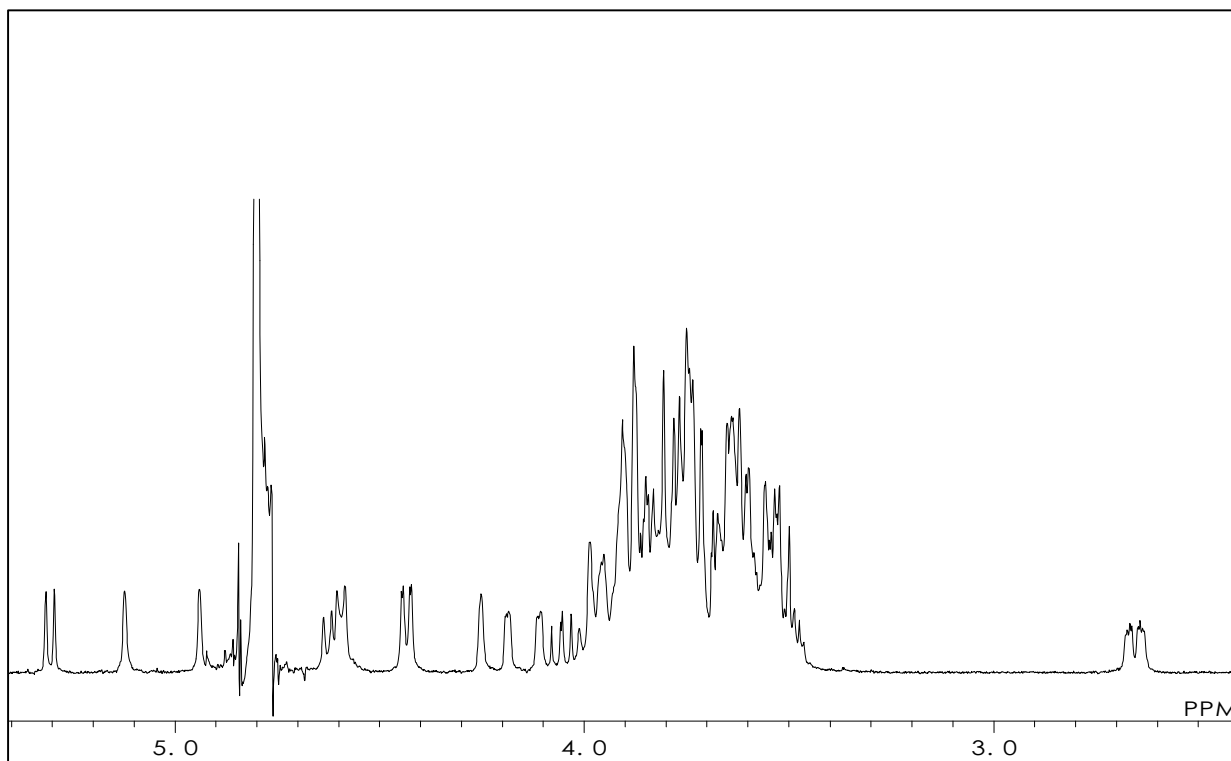
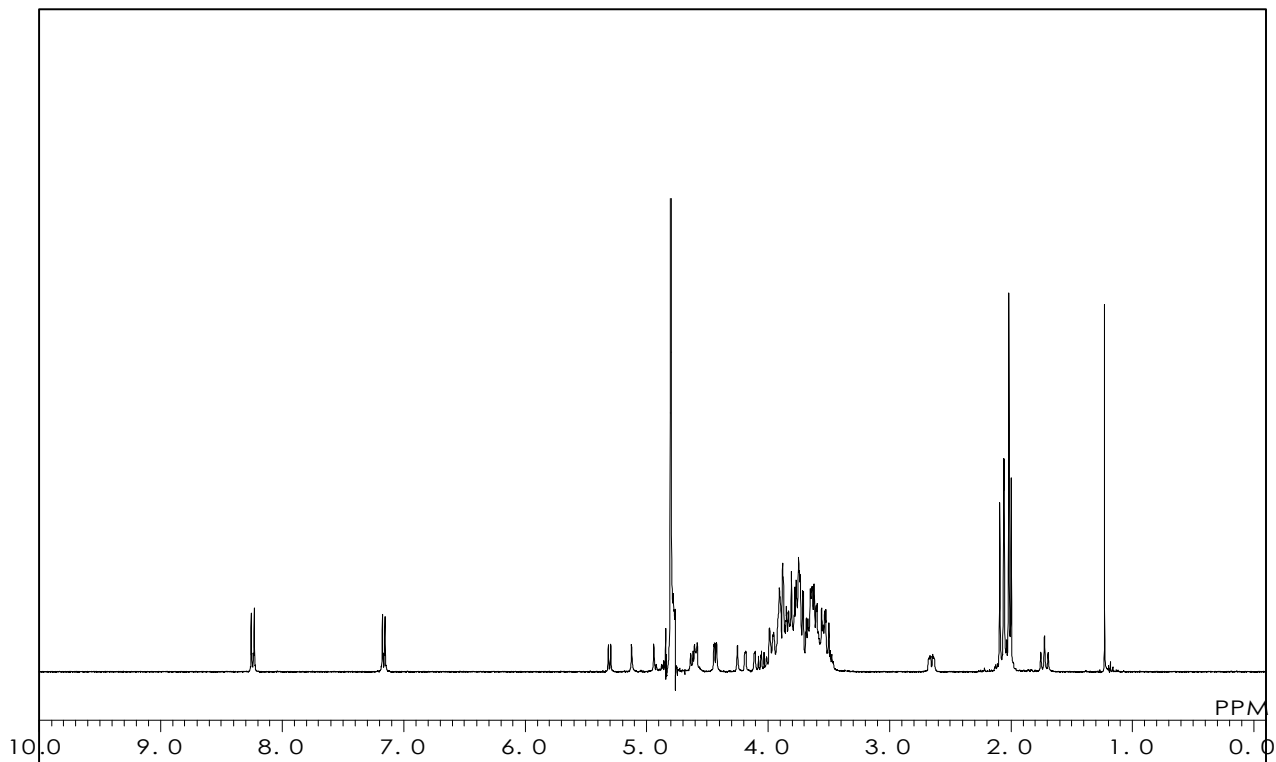
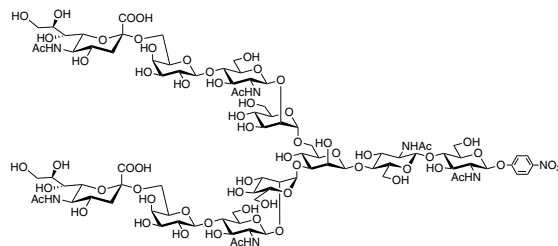
**DisialylInonasaccharide-β-pNP**

$C_{90}H_{141}N_7O_{64} = 2345.10$  [1408055-26-4]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 21.4 °C



**D4065**

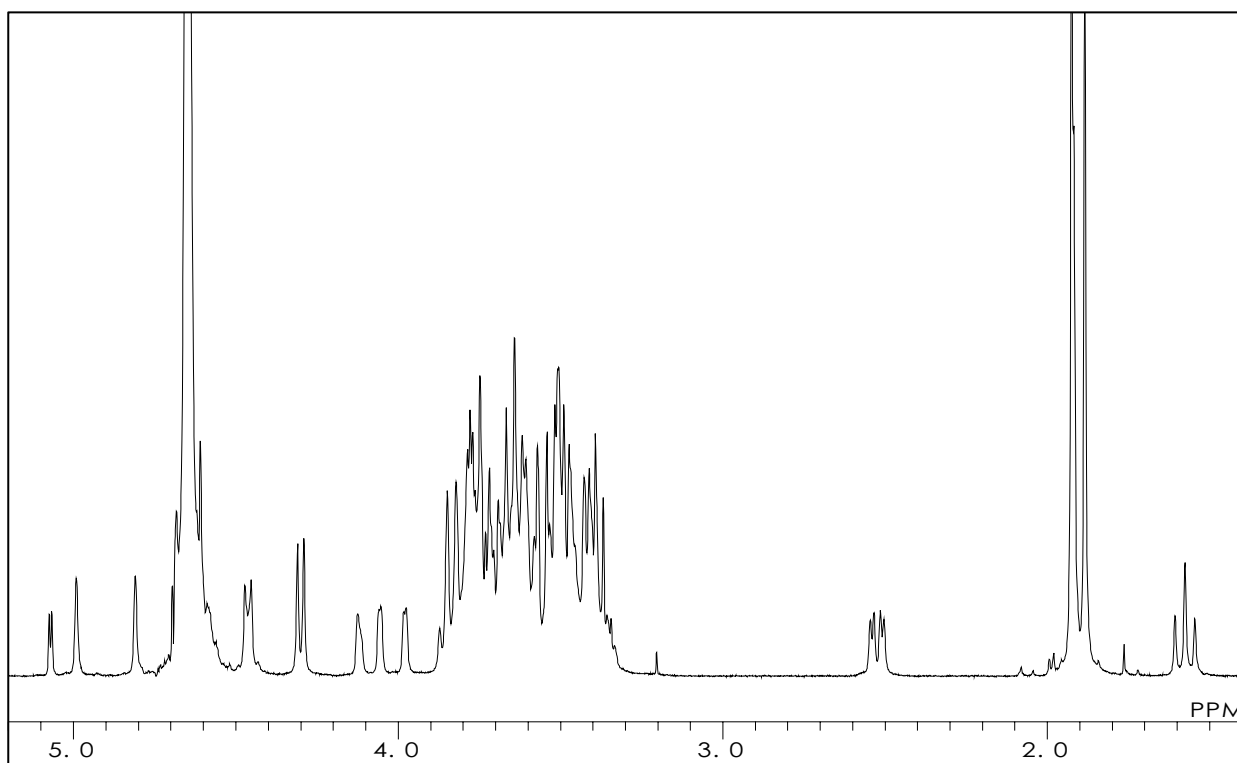
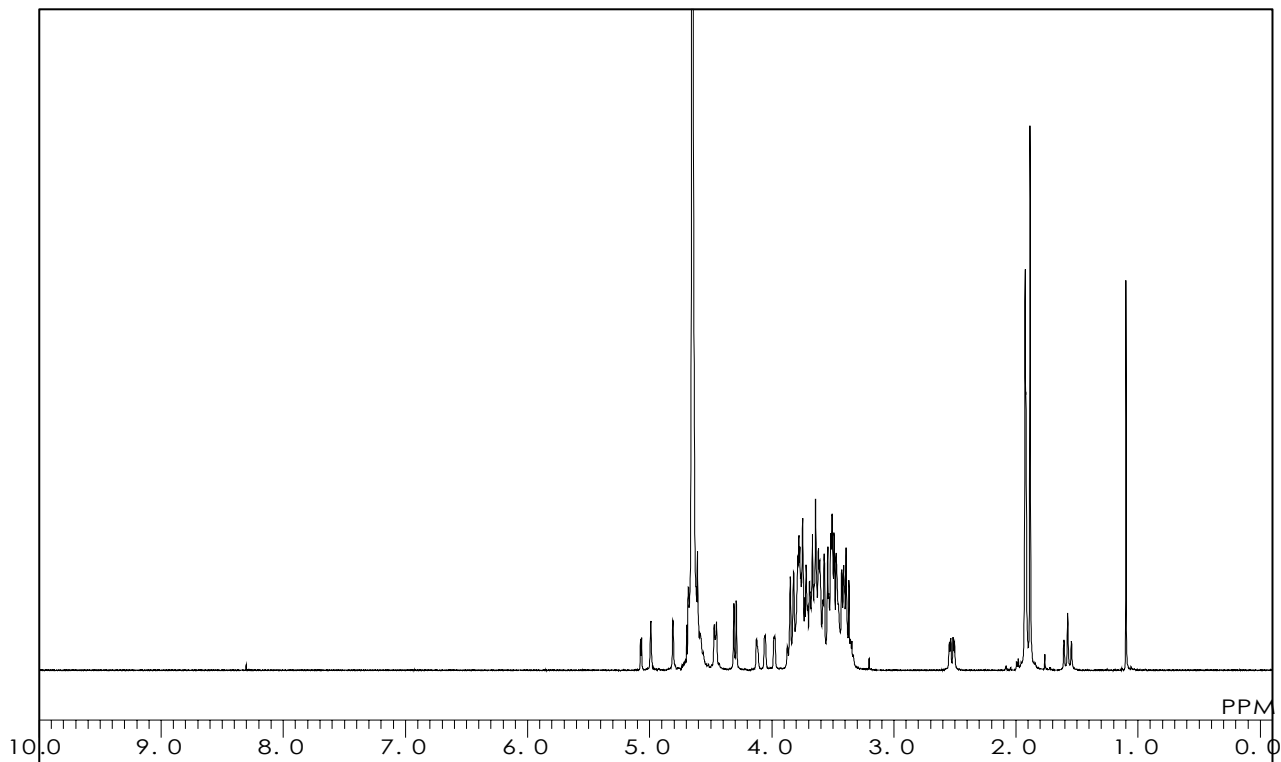
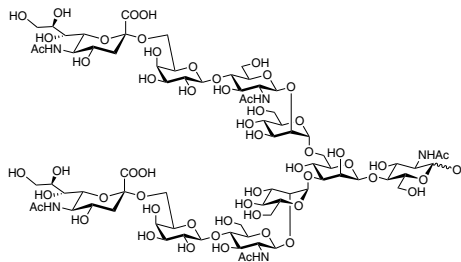
**Disialyloctasaccharide**

$C_{76}H_{125}N_5O_{57} = 2020.81$  [58902-60-6]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 23.0 °C



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**F0584**

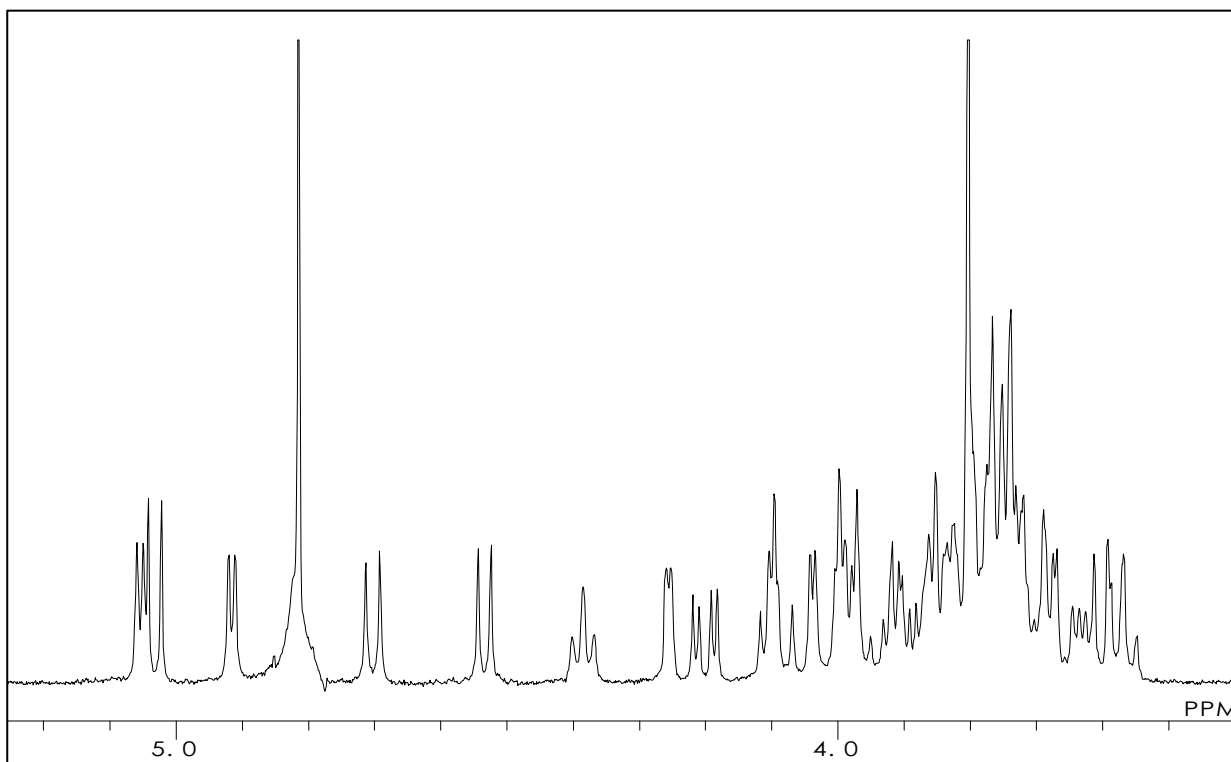
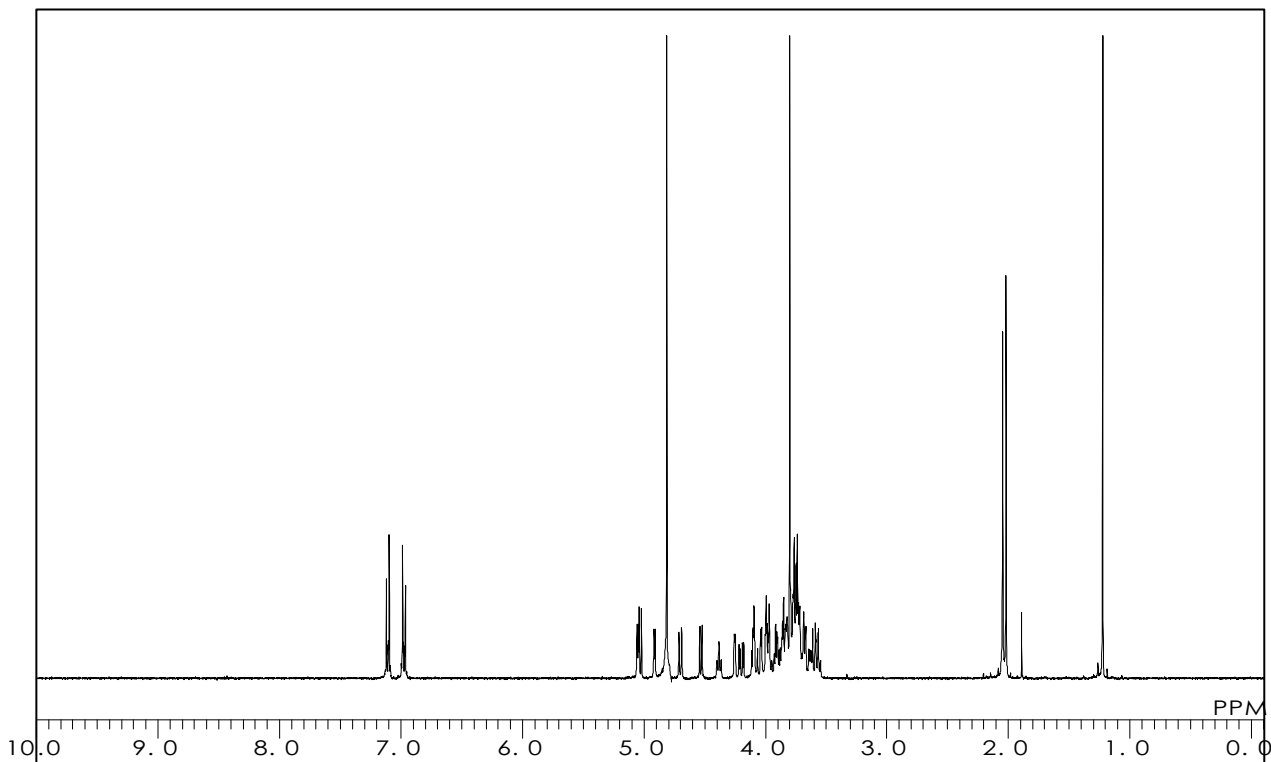
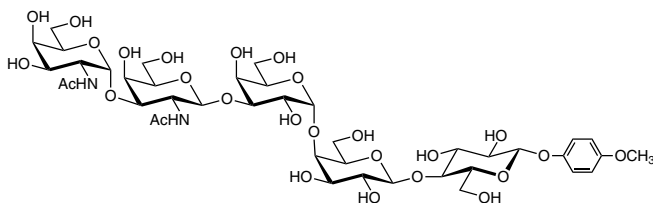
**Forssman Pentose MP Glycoside**

$C_{41}N_6N_2O_{27} = 1016.95$

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 20.1 °C



**G0490**

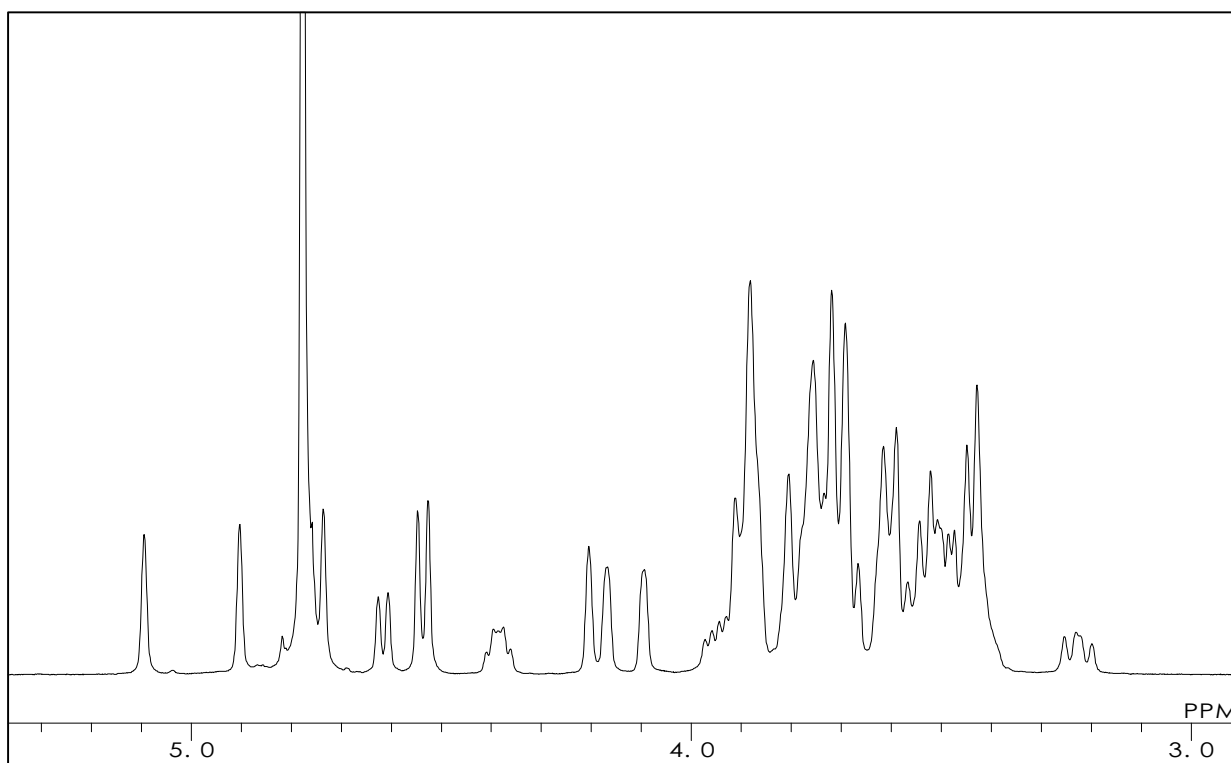
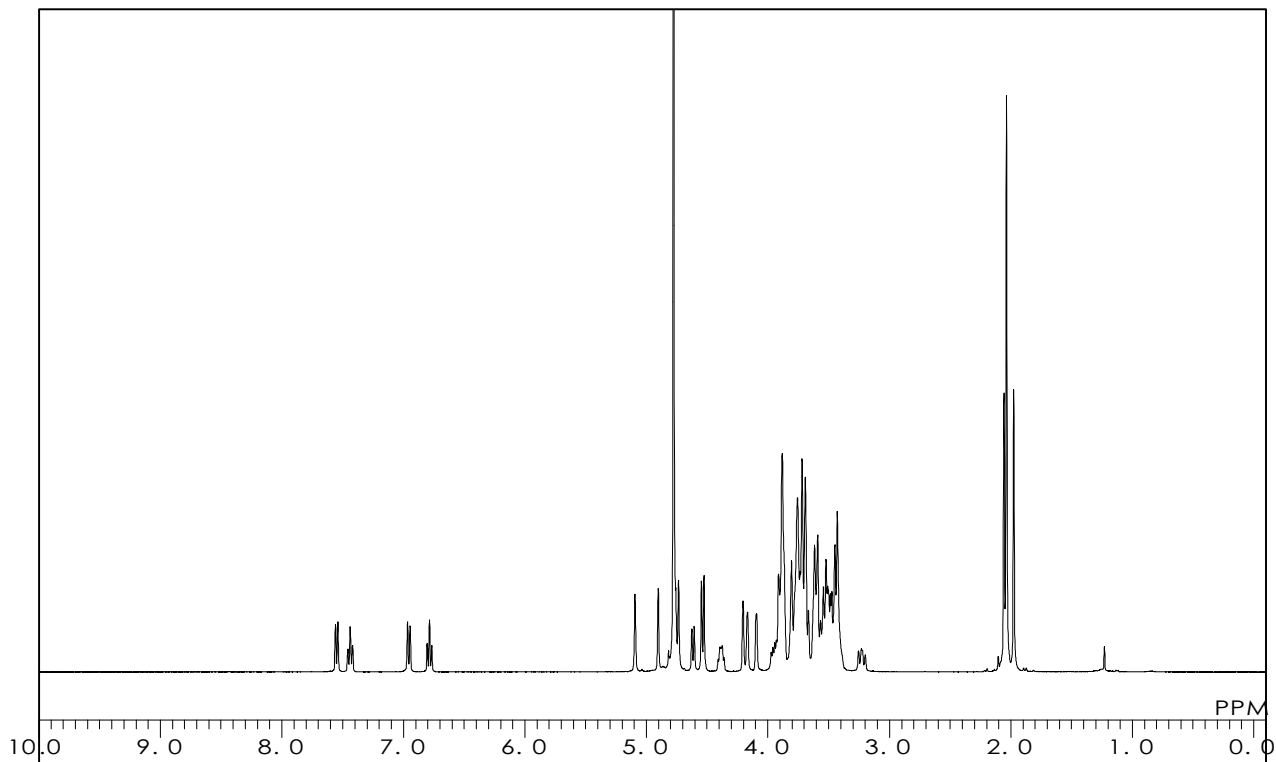
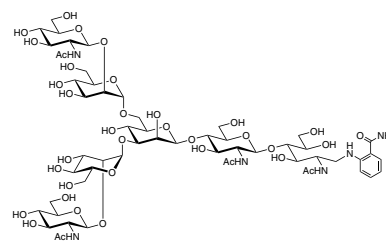
**GO 2AB**

$C_{57}H_{92}N_6O_{36} = 1437.37$  [959159-21-8]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 24.4 °C



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**G0484**

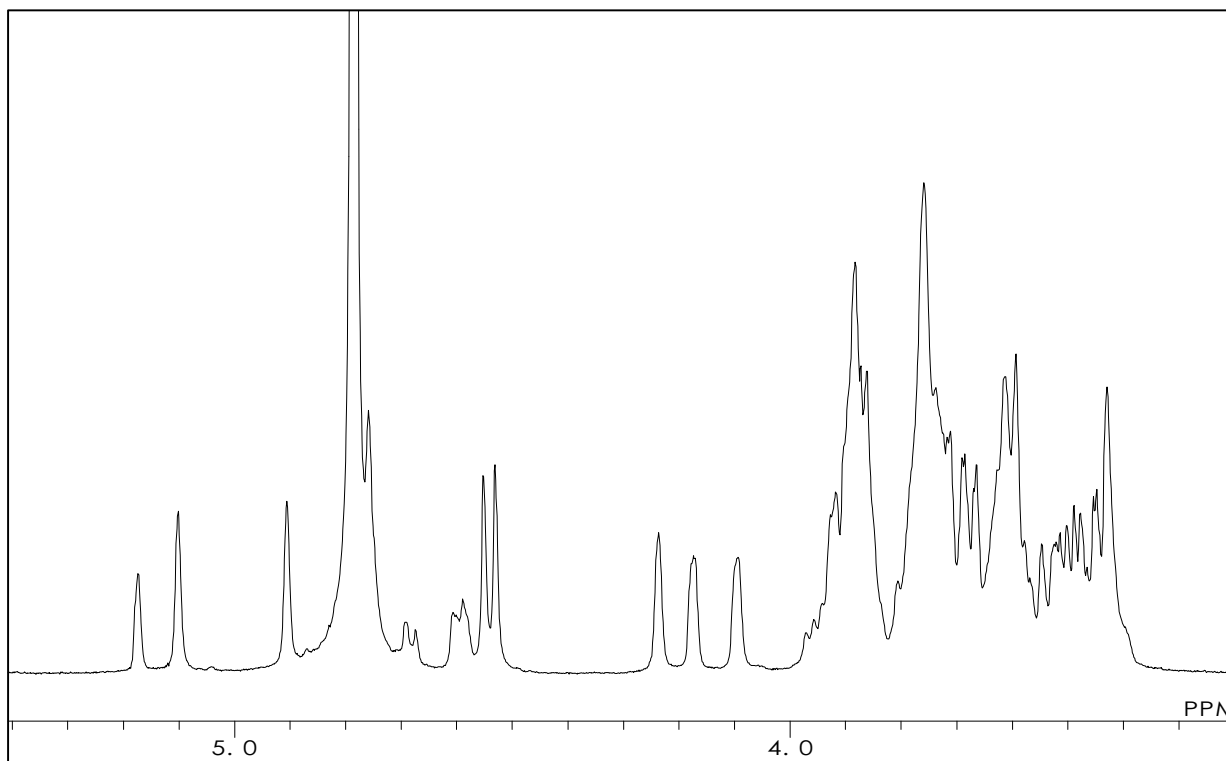
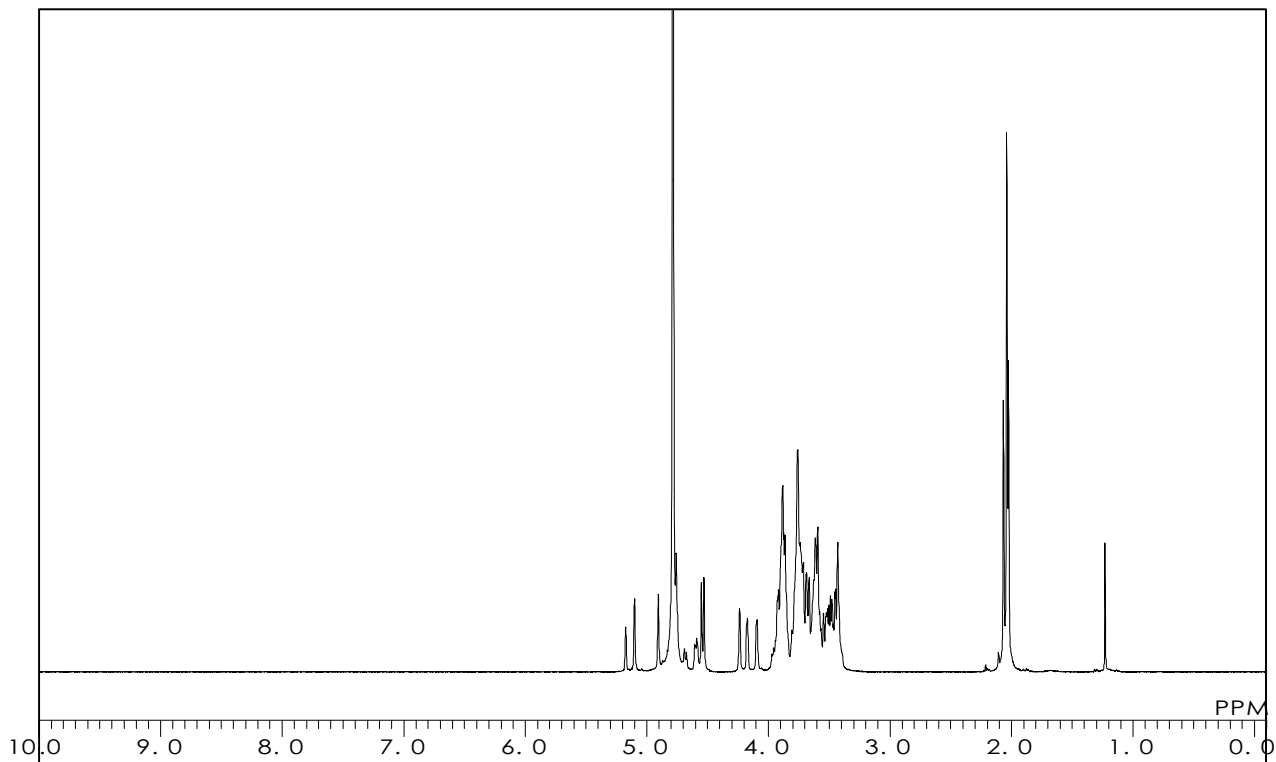
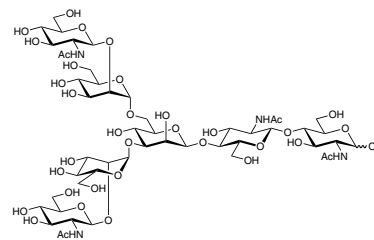
**G0 Glycan**

$C_{50}H_{84}N_4O_{36} = 1317.21$  [84808-02-6]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 22.9 °C



# G0530

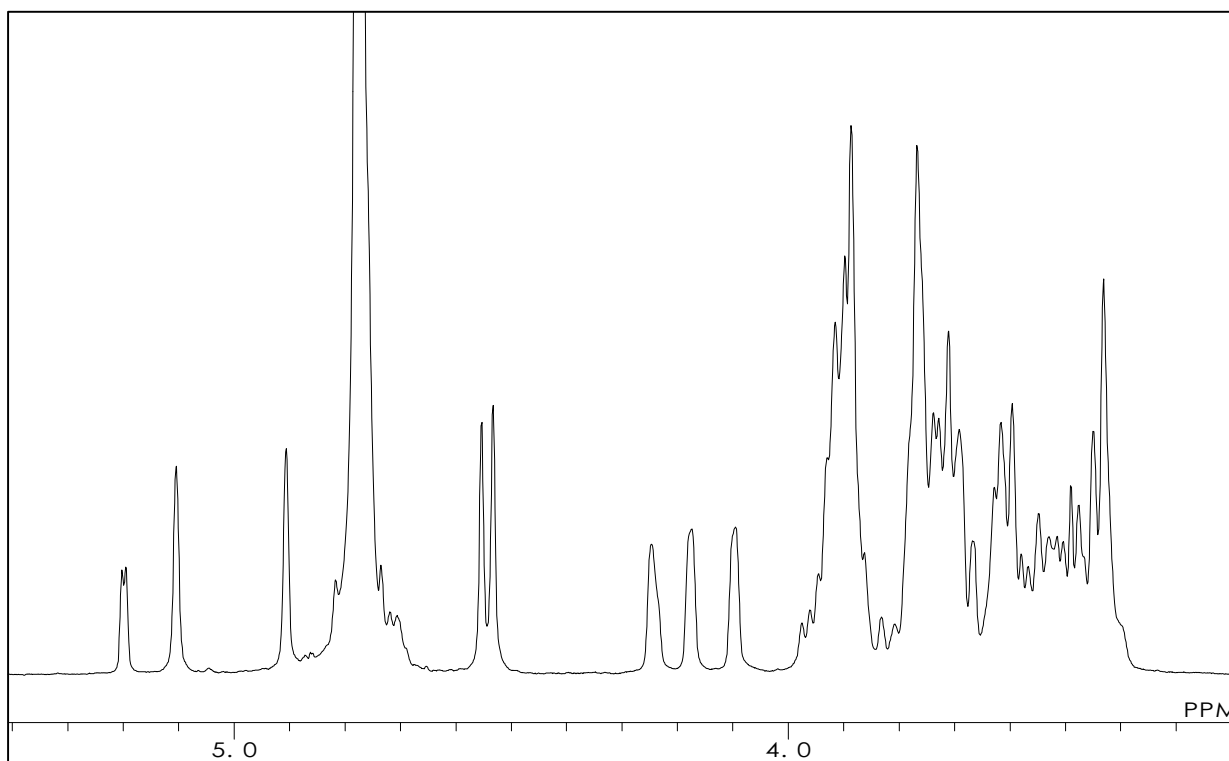
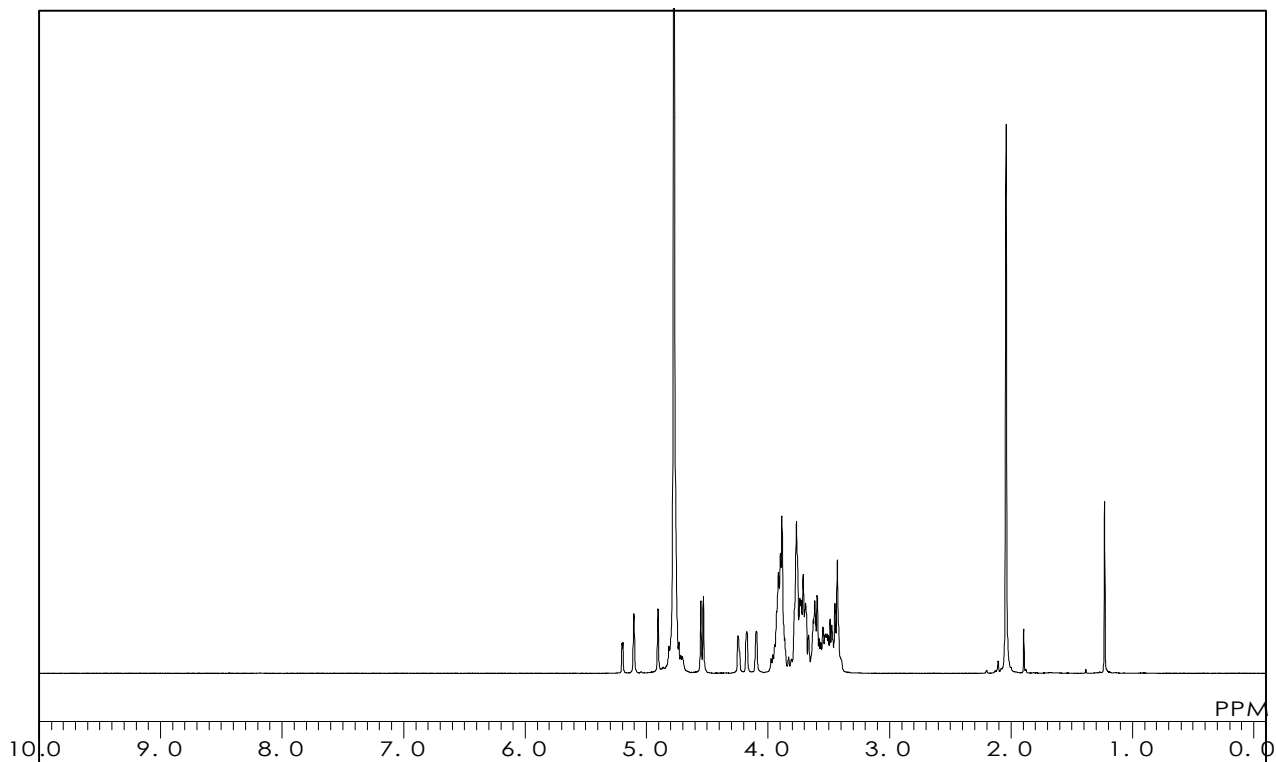
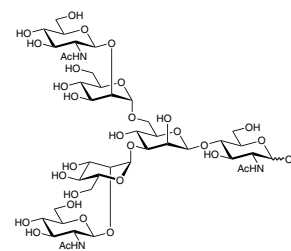
## G0 glycan (GN<sub>1</sub> type)

C<sub>42</sub>H<sub>71</sub>N<sub>3</sub>O<sub>31</sub> = 1114.02 [61687-27-2]

Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH (δ 1.23)

Measured Temperature : 23.7 °C



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**G0470**

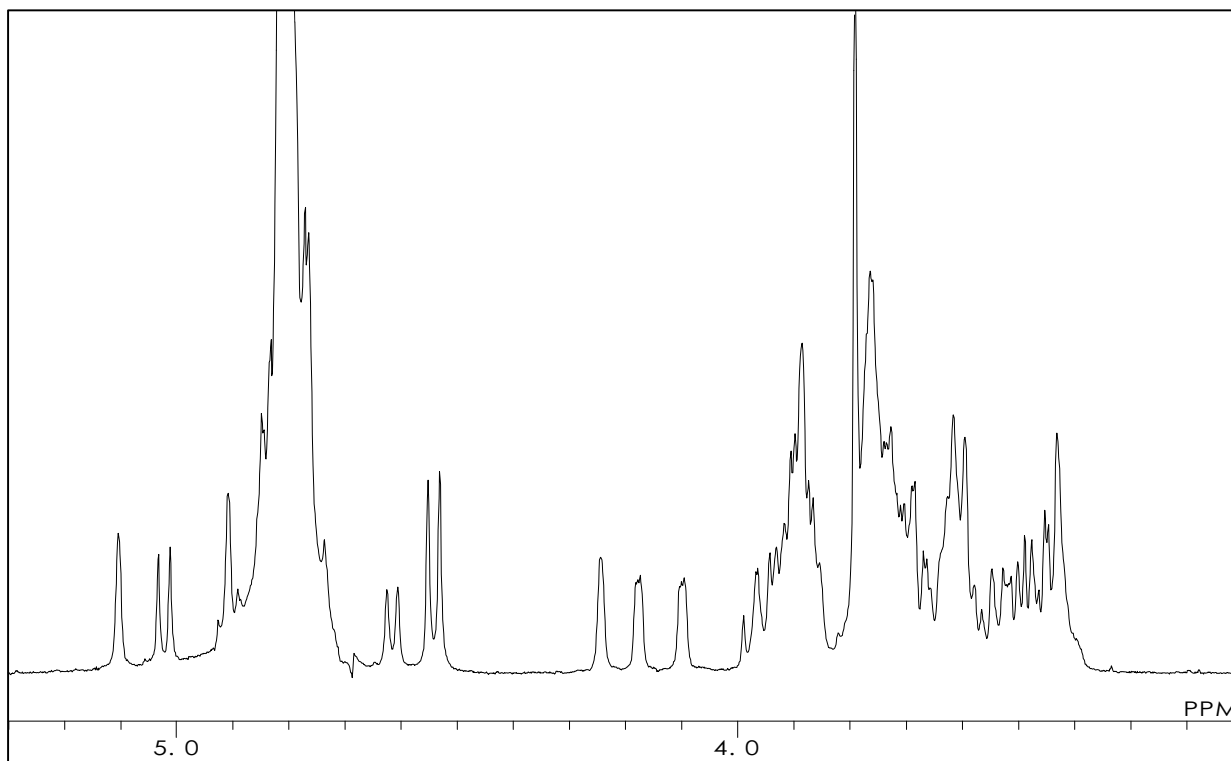
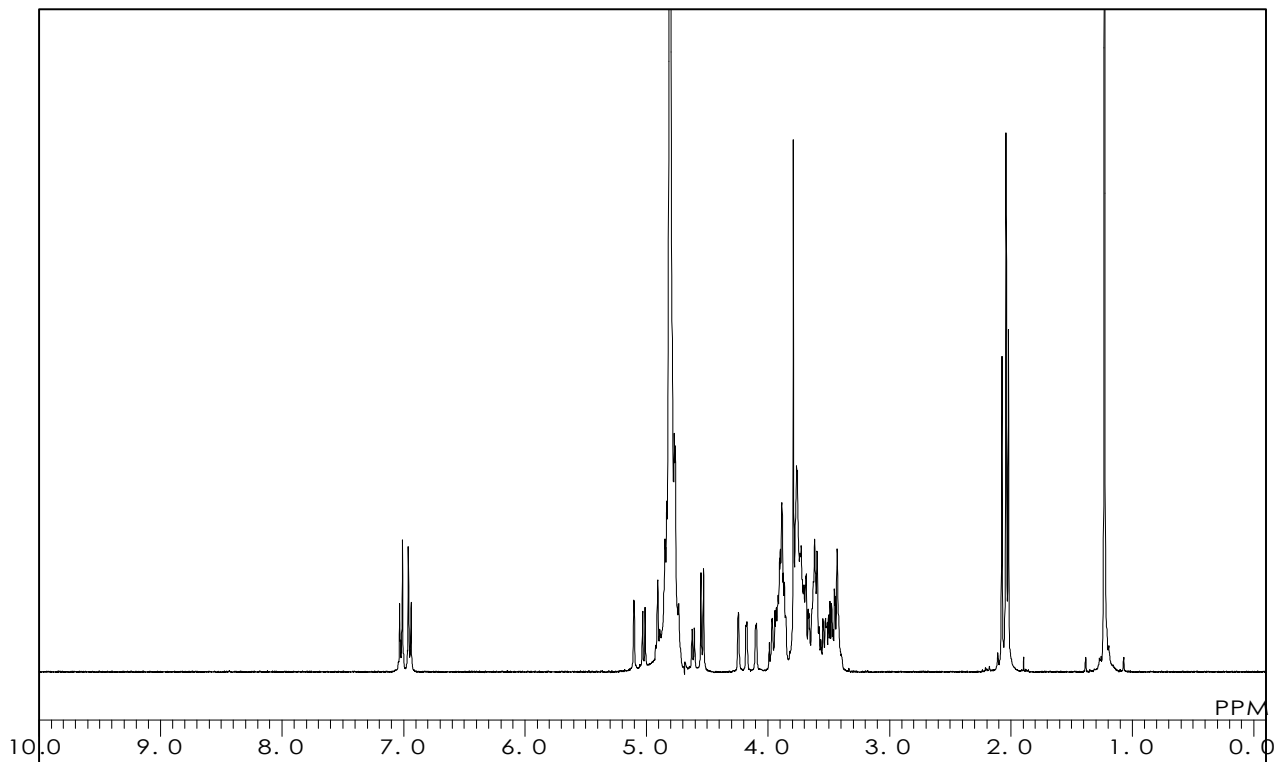
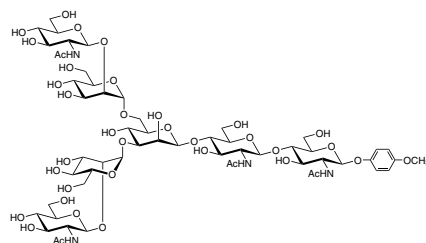
**G0 MP Glycoside**

$C_{57}H_{90}N_4O_{37} = 1423.34$

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 21.2 °C



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**G0491**

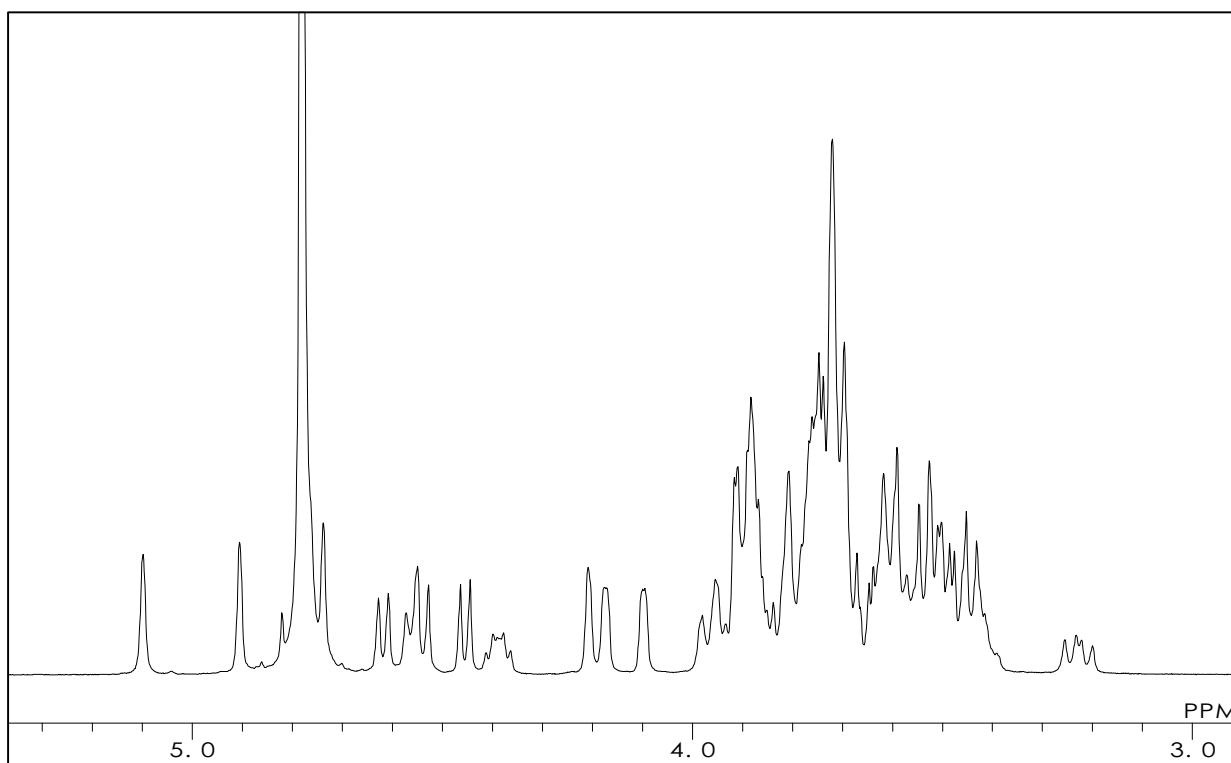
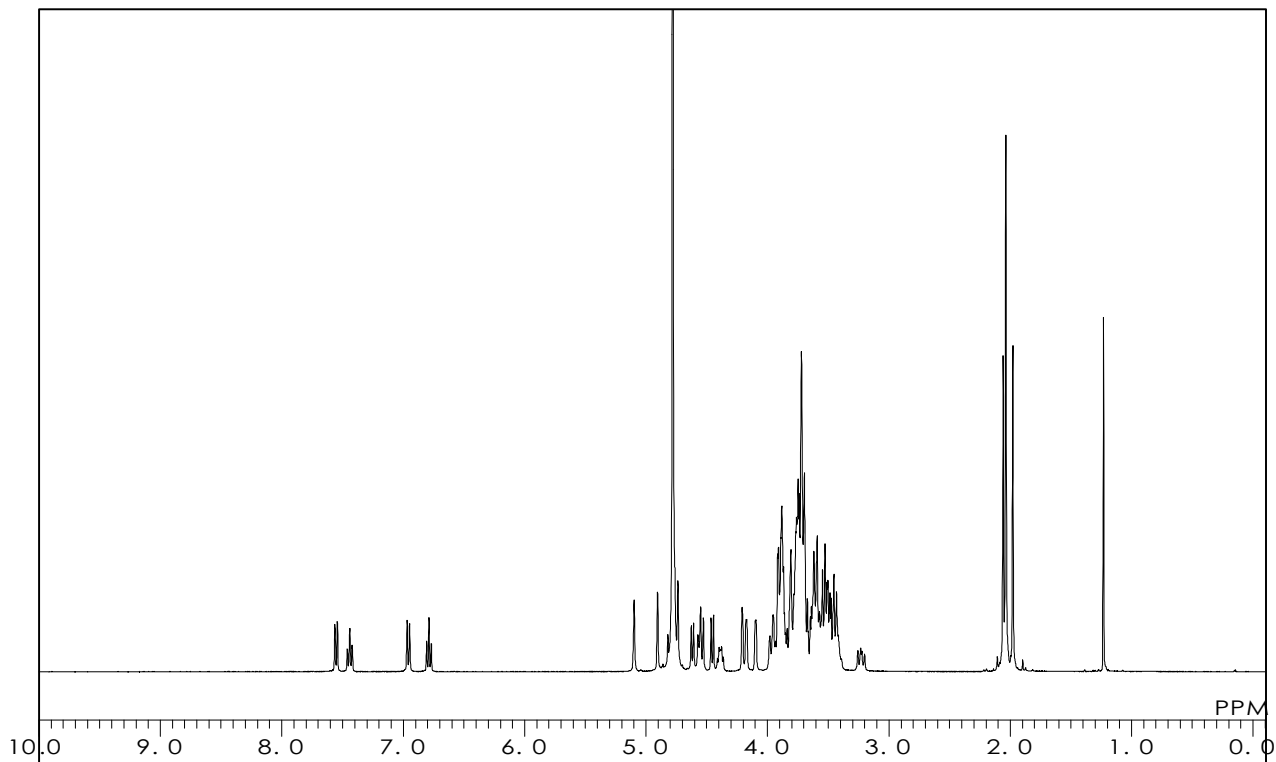
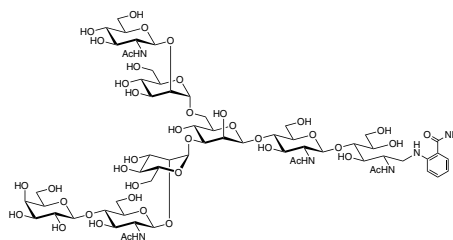
**3-G1 2AB**

$C_{63}H_{102}N_6O_{41} = 1599.51$

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 24.4 °C



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**G0485**

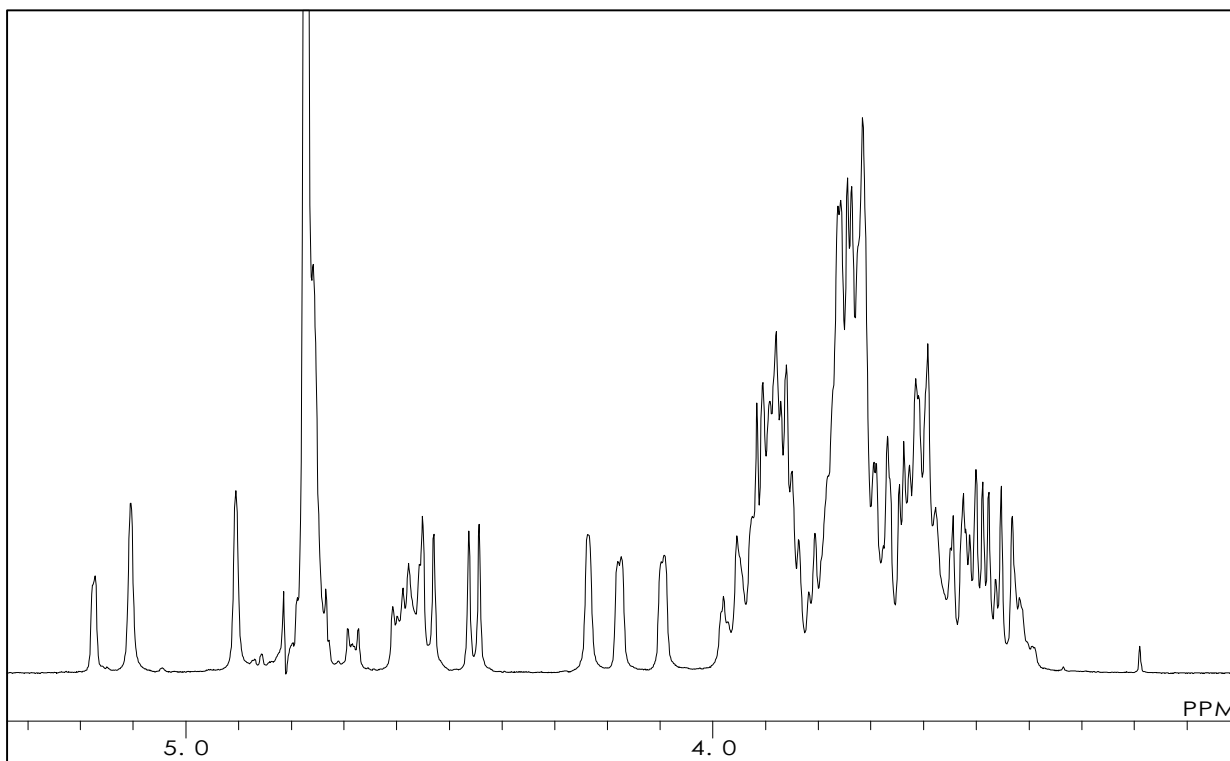
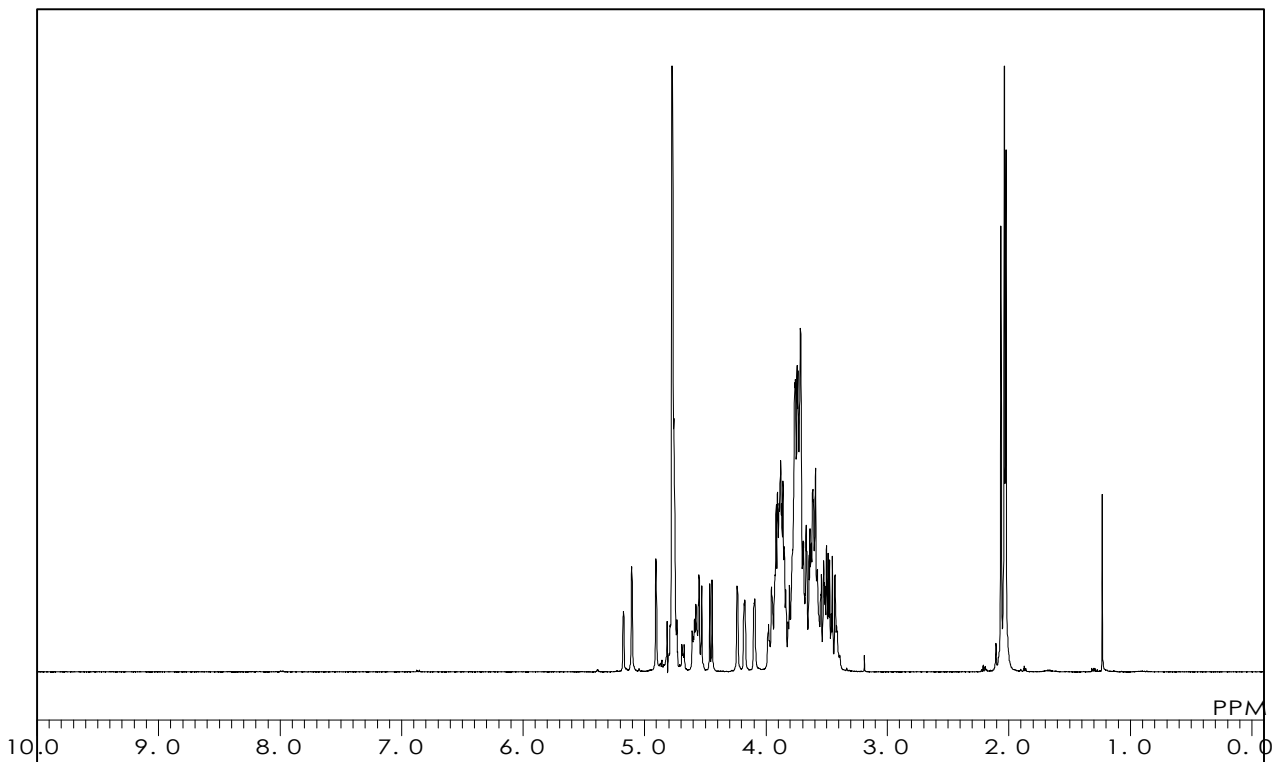
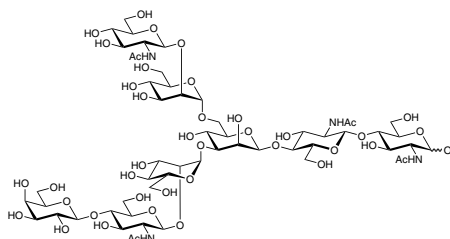
**3-G1 Glycan**

$C_{56}H_{94}N_4O_{41} = 1479.36$  [103584-68-5]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 24.0 °C



Please refrain from the conversion of these data without permission. These data have been released on our homepage.

**G0471**

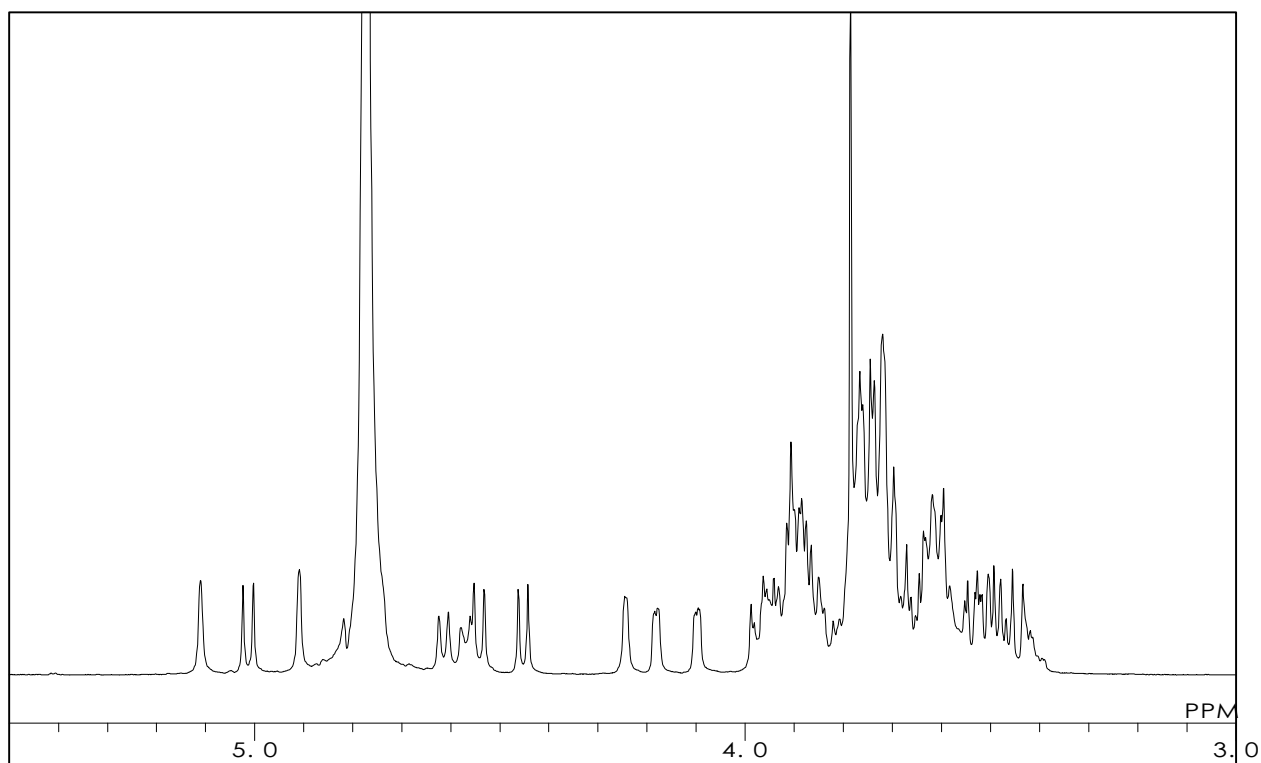
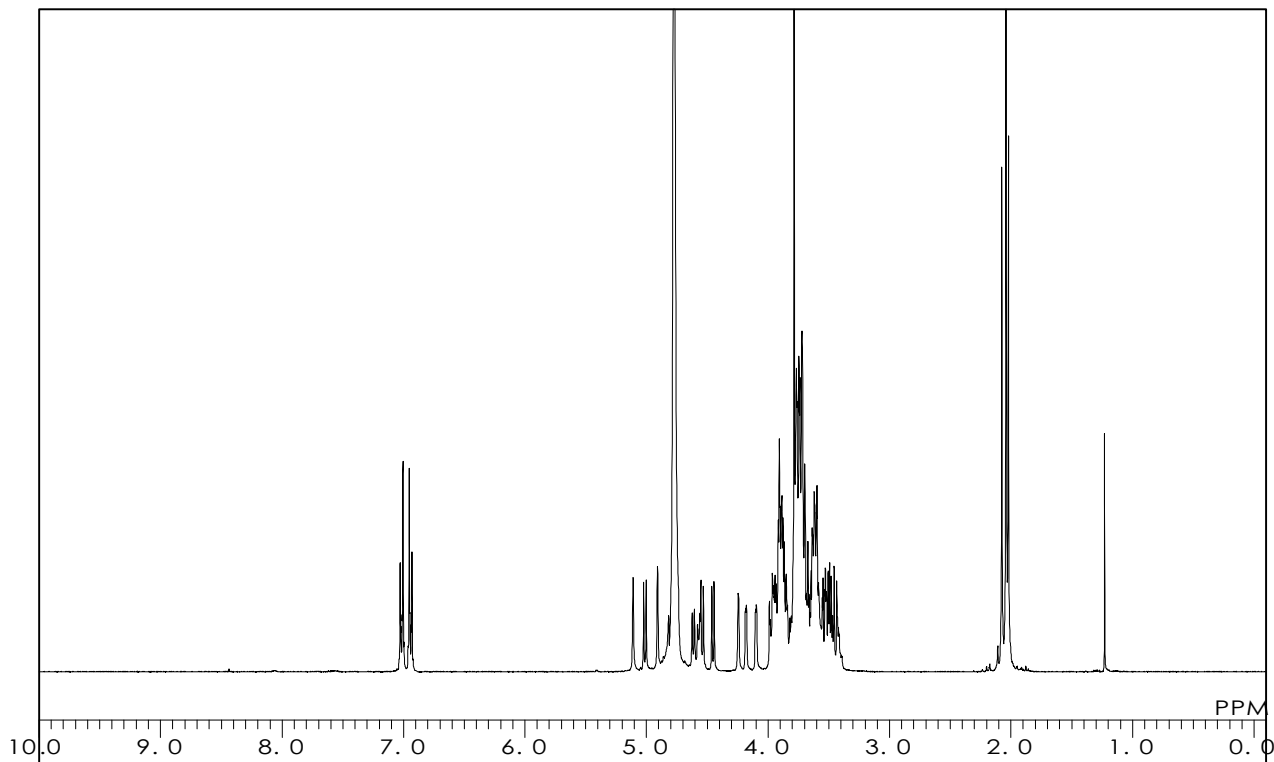
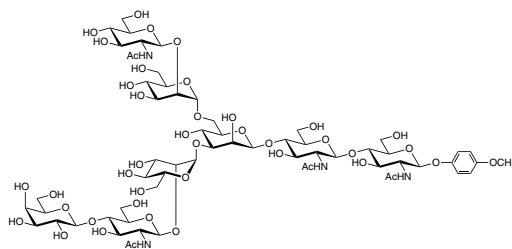
**3-G1 MP Glycoside**

$C_{63}H_{100}N_4O_{42} = 1585.48$

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 24.3 °C



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**G0492**

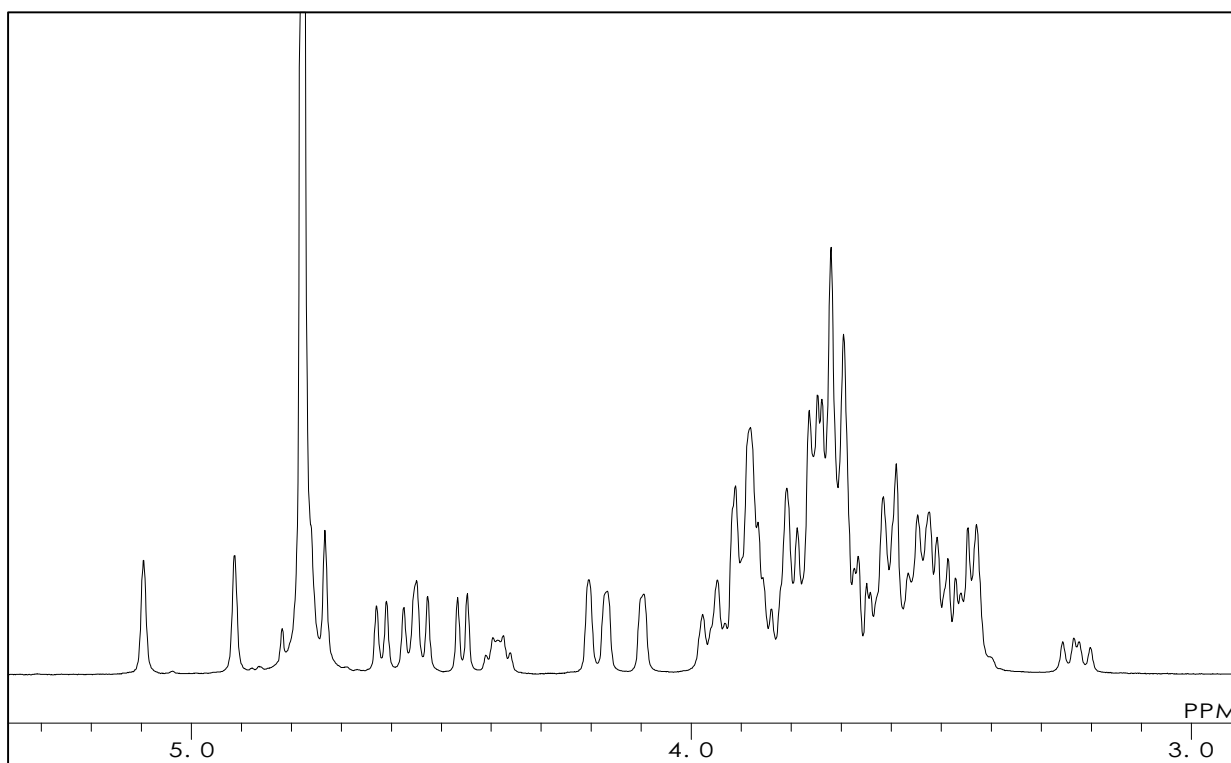
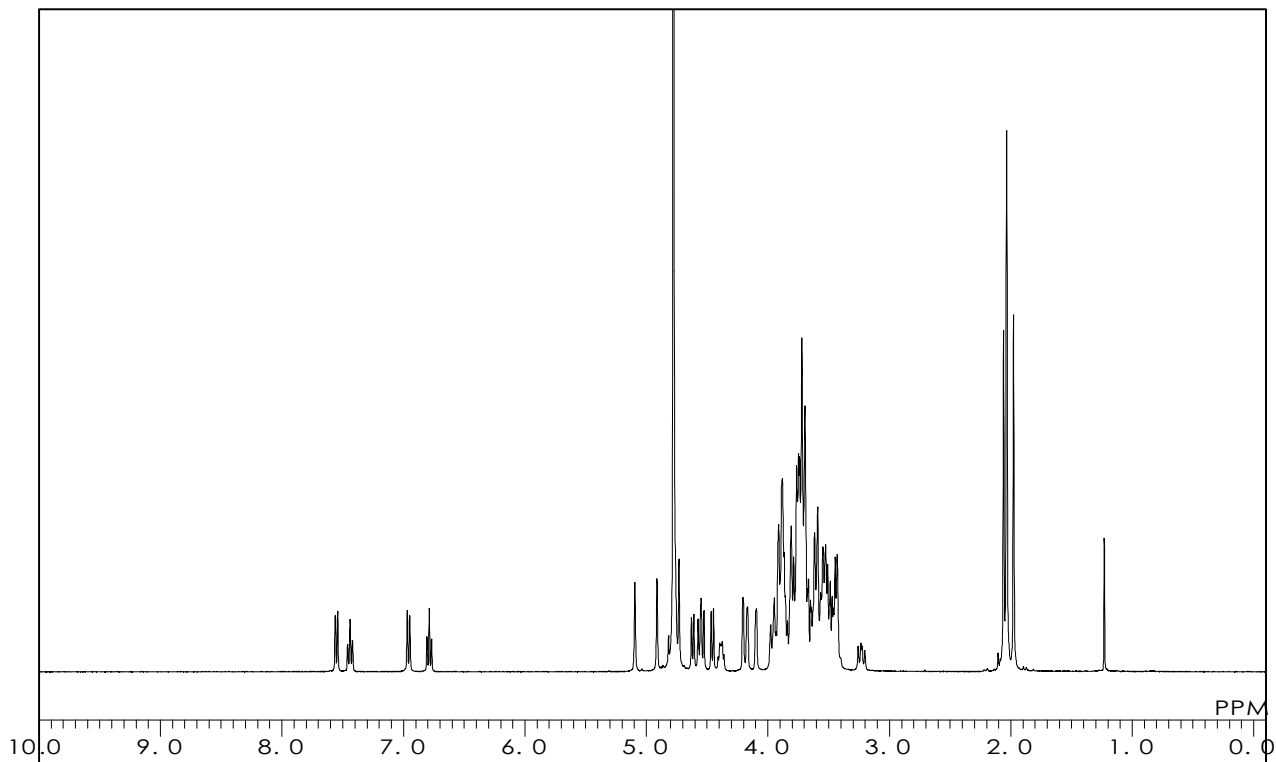
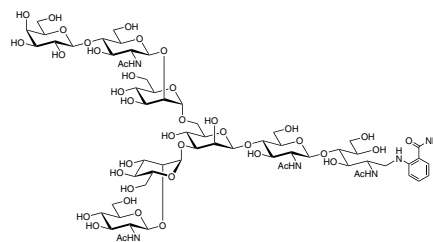
**6-G1 2AB**

$C_{63}H_{102}N_6O_{41} = 1599.51$

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 24.2 °C



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**G0486**

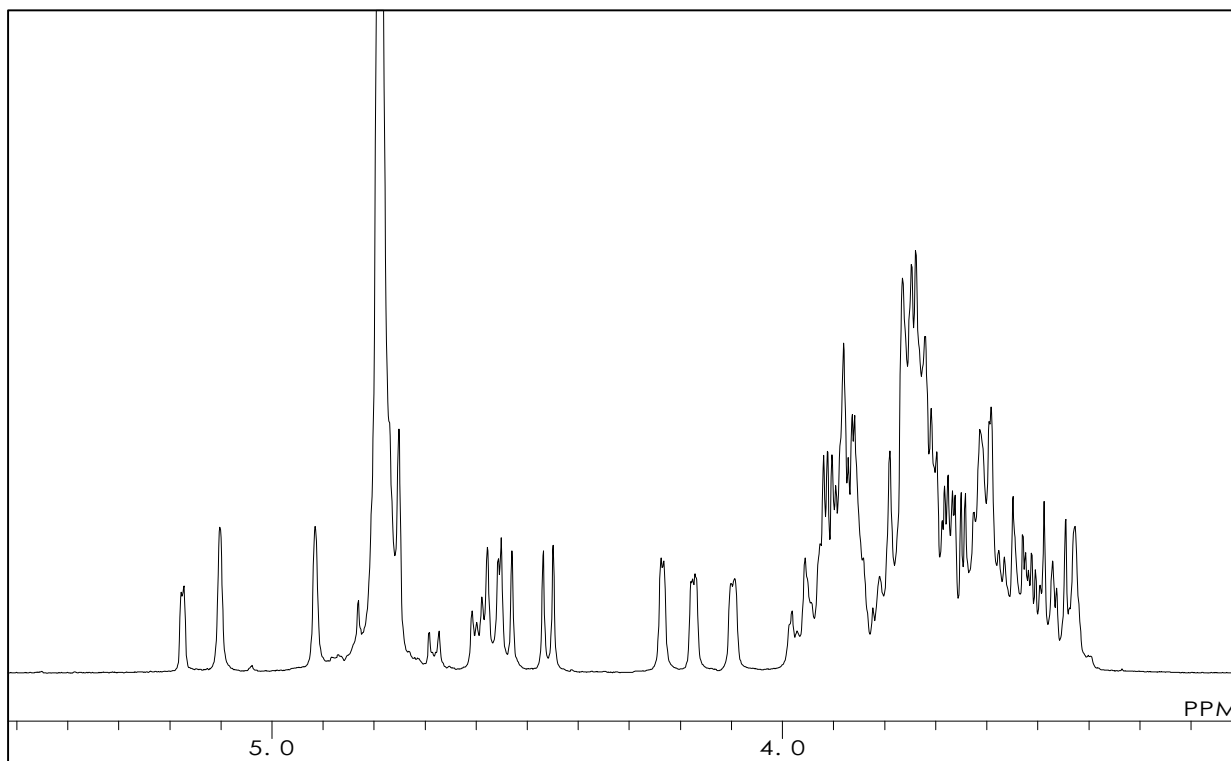
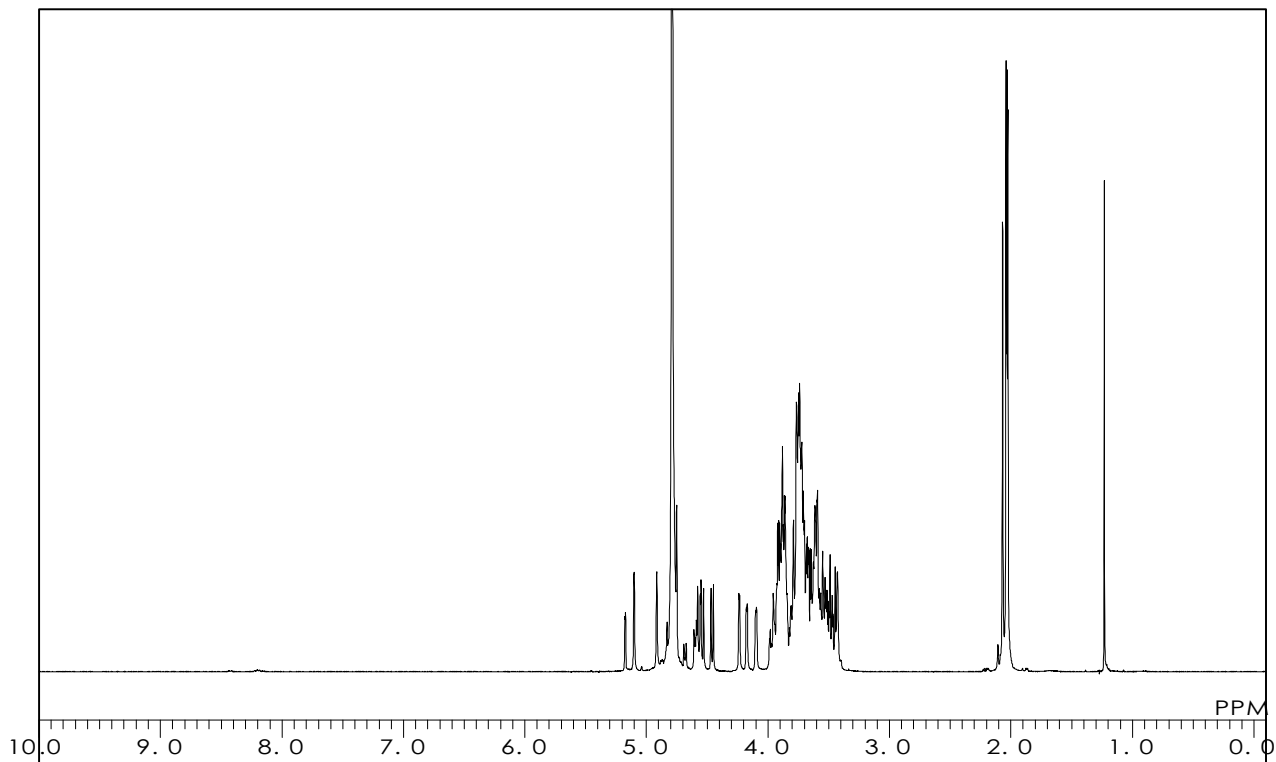
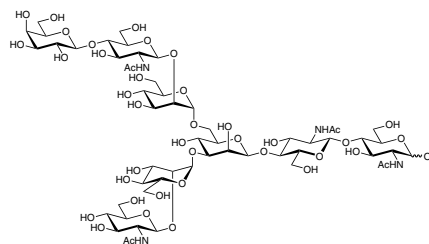
**6-G1 Glycan**

$C_{56}H_{94}N_4O_{41} = 1479.36$  [109050-95-5]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 23.8 °C



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**G0472**

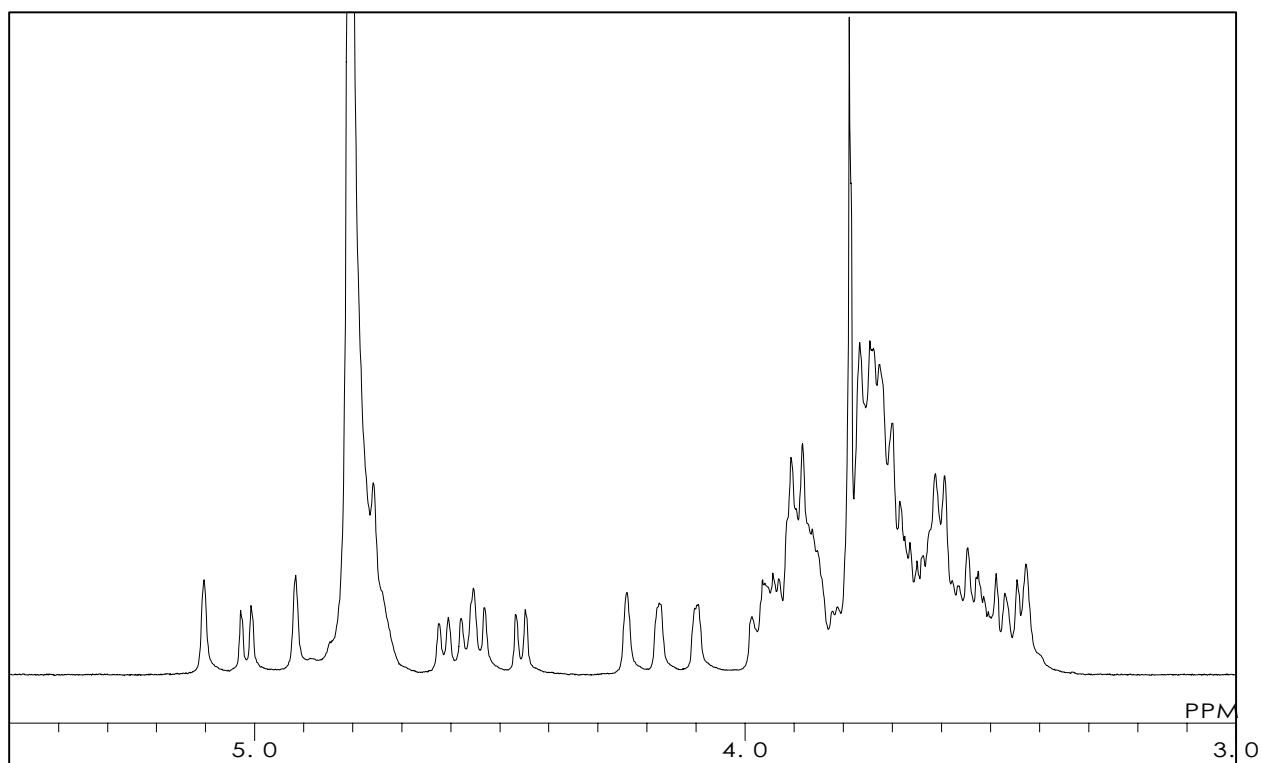
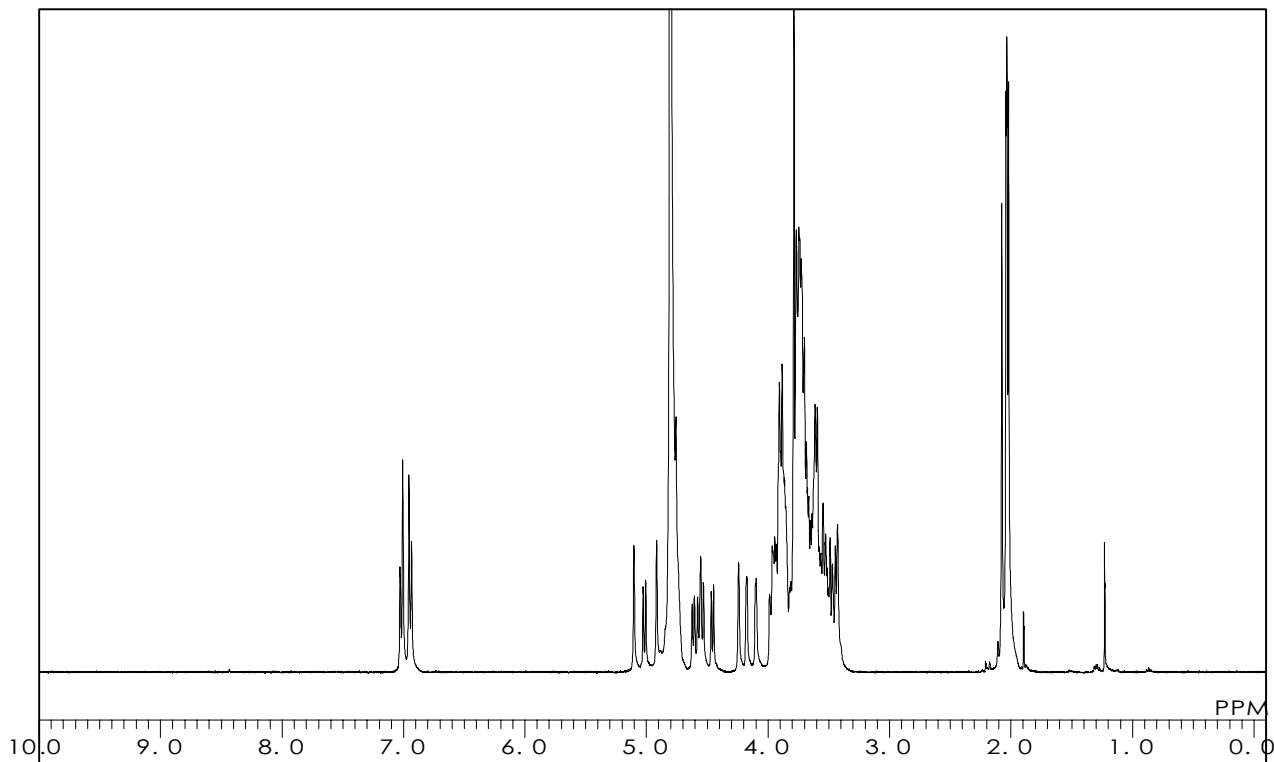
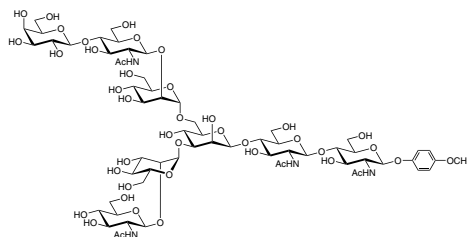
**6-G1 MP Glycoside**

$C_{63}H_{100}N_4O_{42} = 1585.48$

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 21.1 °C



**G0493**

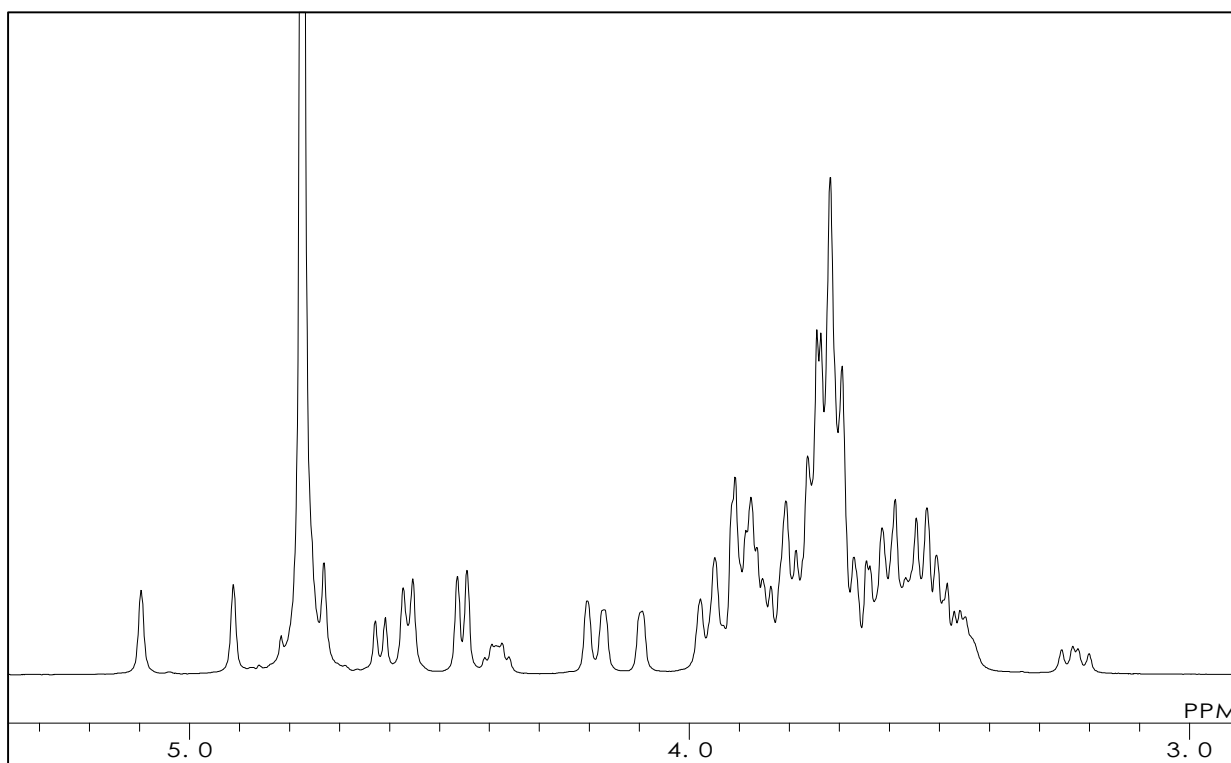
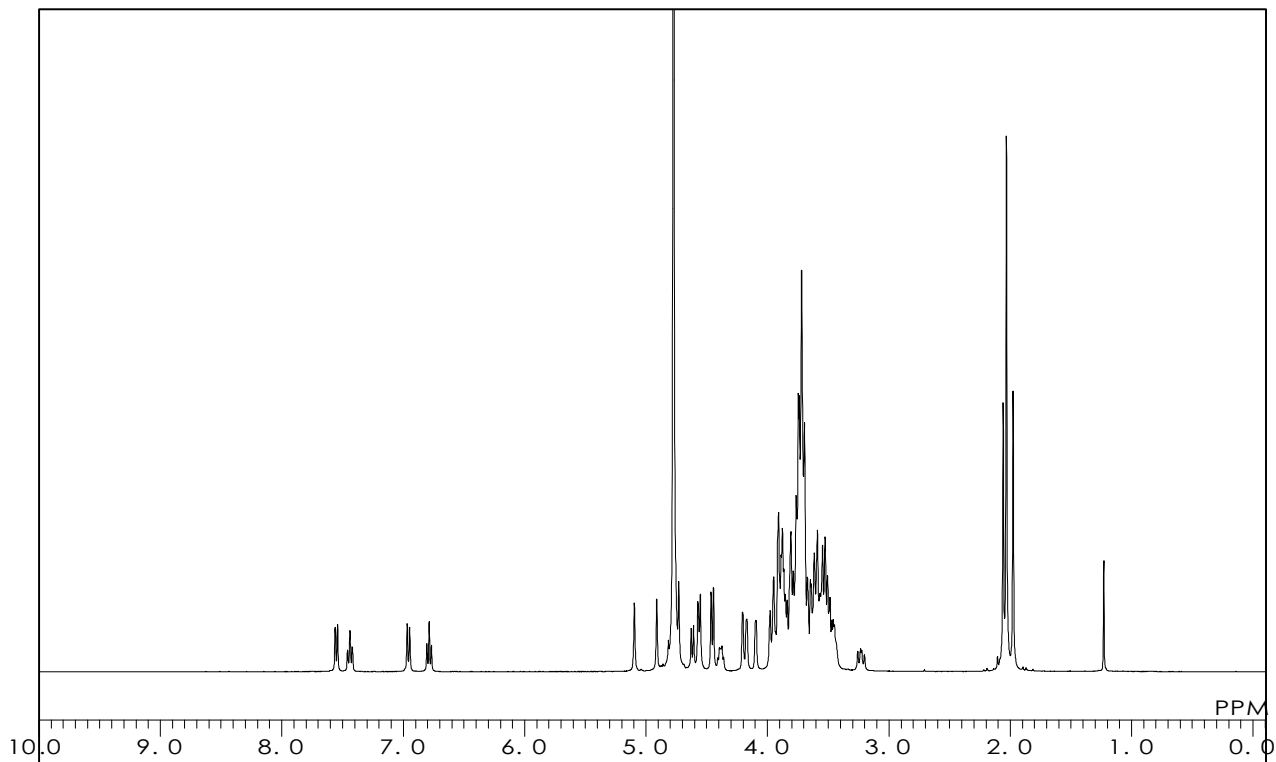
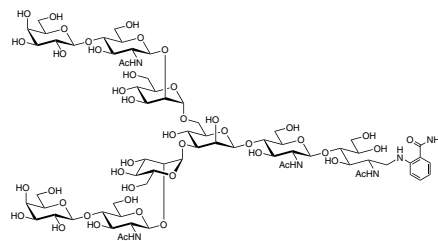
**G2 2AB**

$C_{69}H_{112}N_6O_{46} = 1761.65$  [263902-58-5]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 23.9 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**G0487**

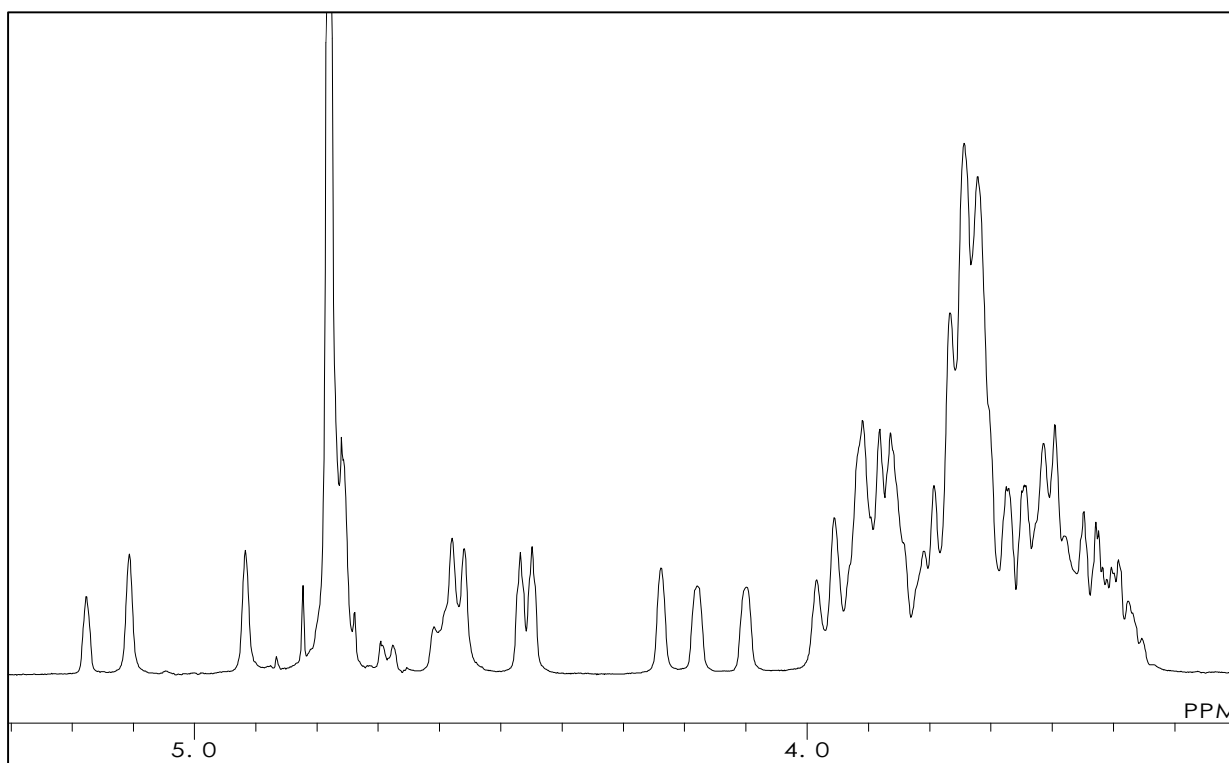
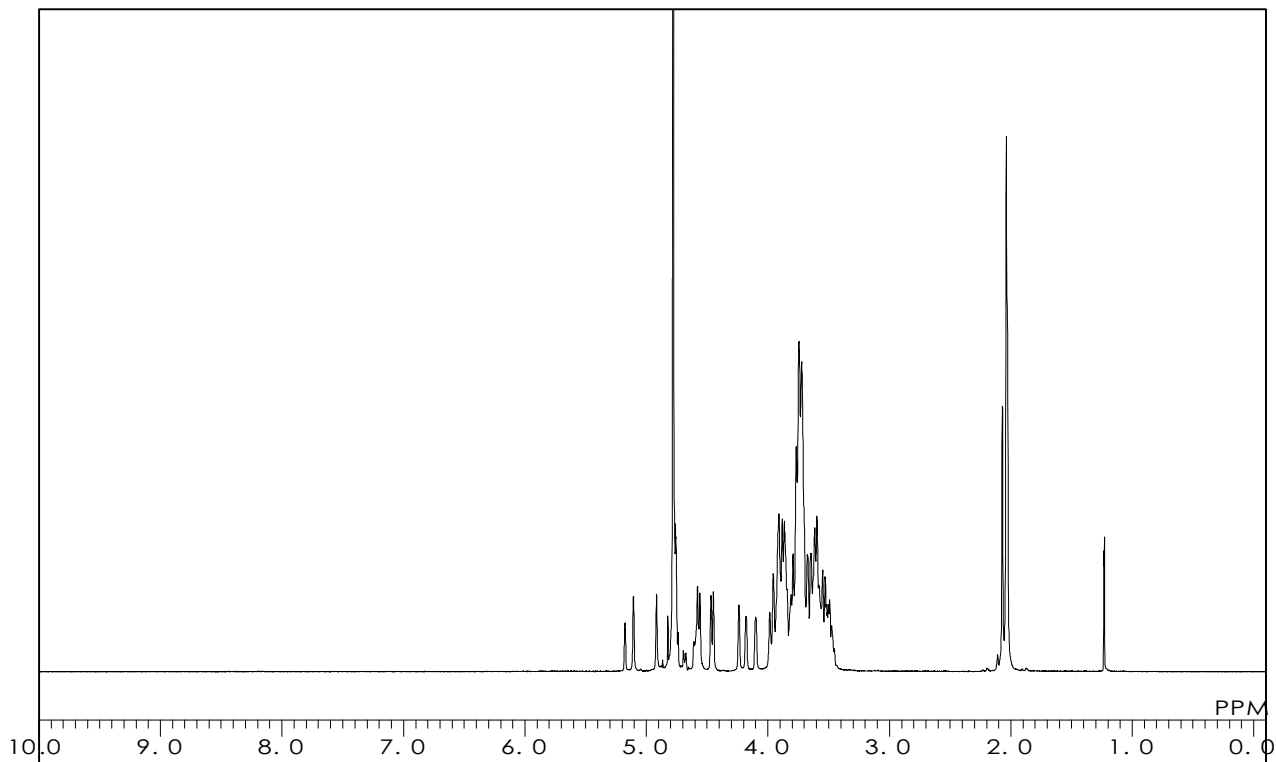
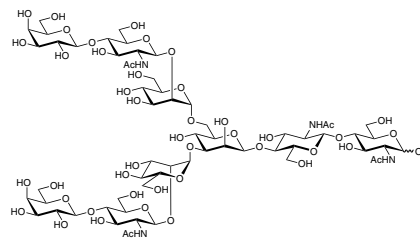
**G2 Glycan**

$C_{62}H_{104}N_4O_{46} = 1641.50$  [71496-53-2]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 23.9 °C



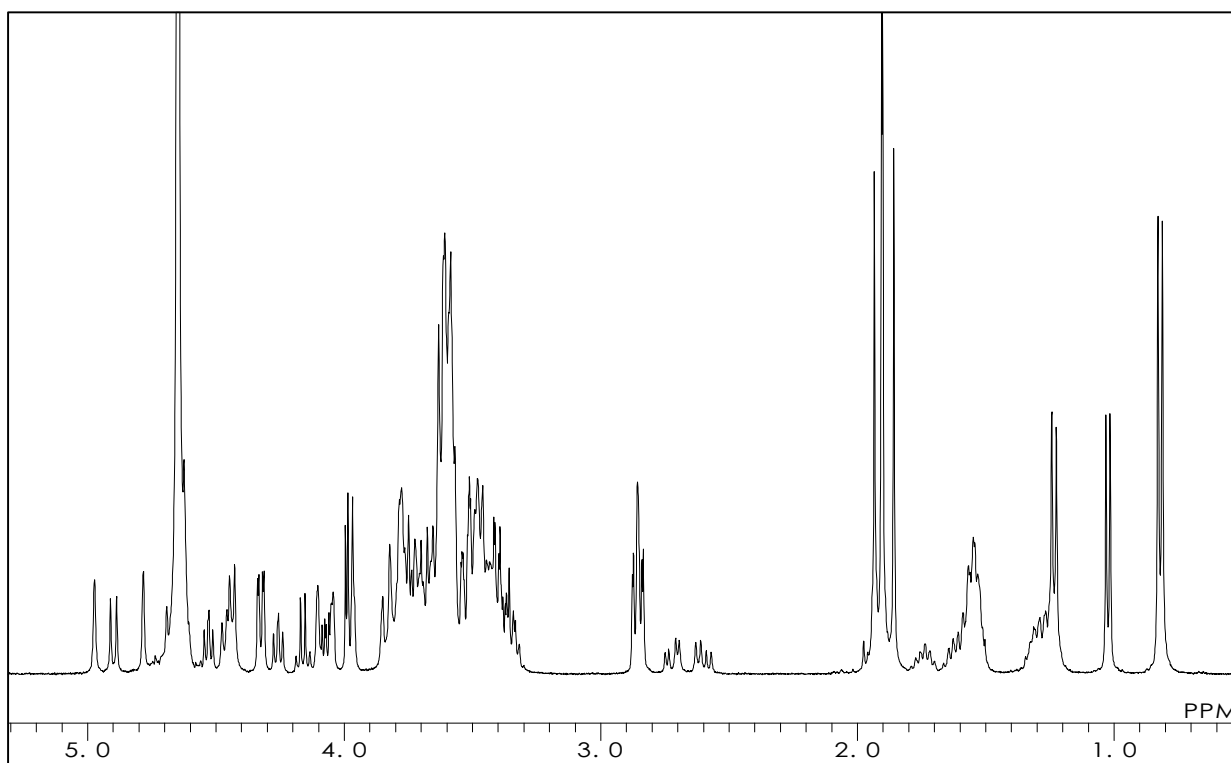
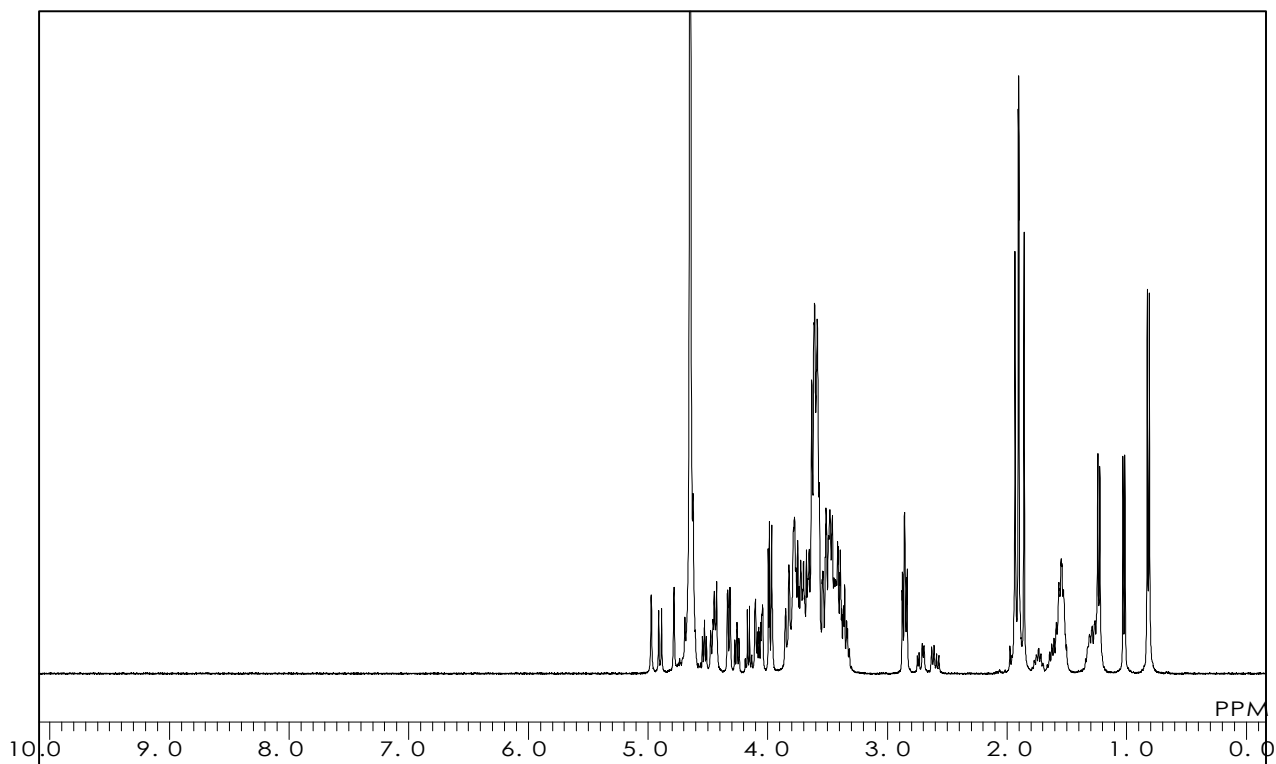
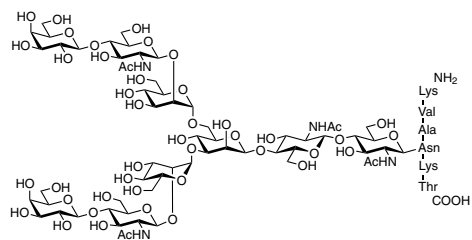
G0466

## G2-peptide

$C_{90}H_{155}N_{13}O_{54} = 2283.27$  [361443-81-4]

Solvent :  $D_2O$

Measured Temperature : 23.4 °C



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**G0488**

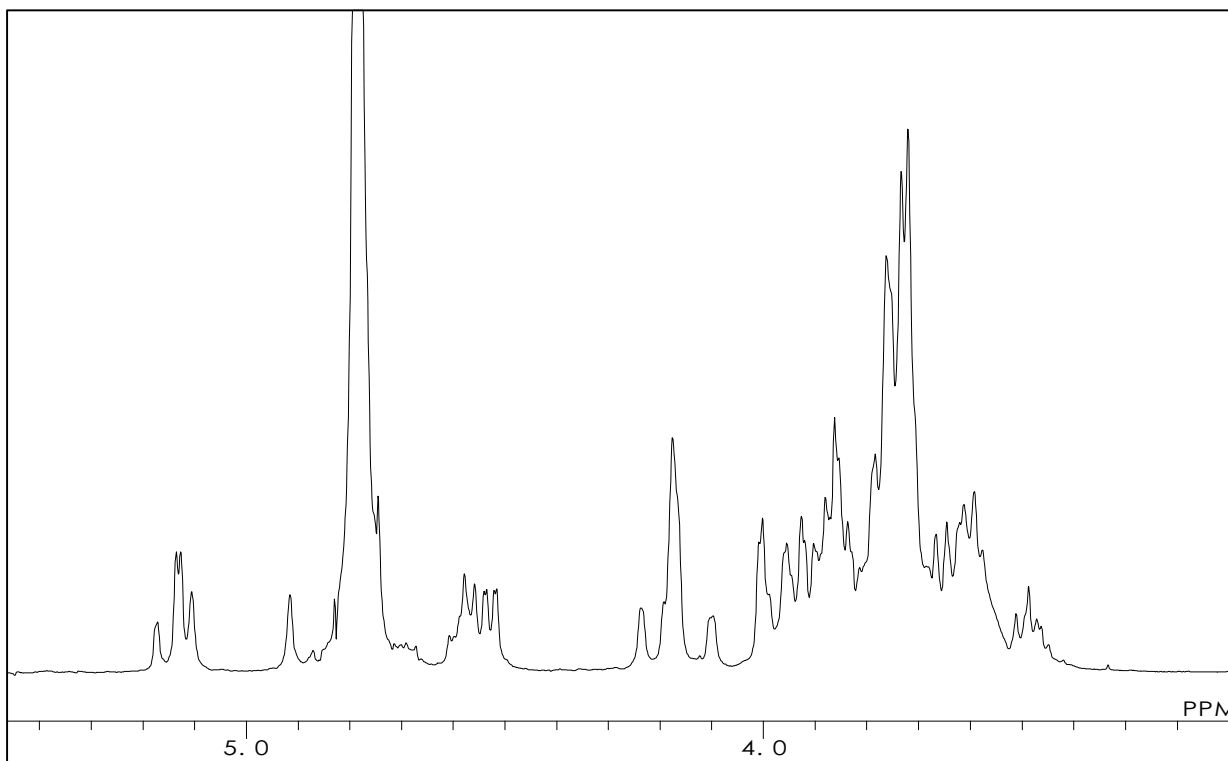
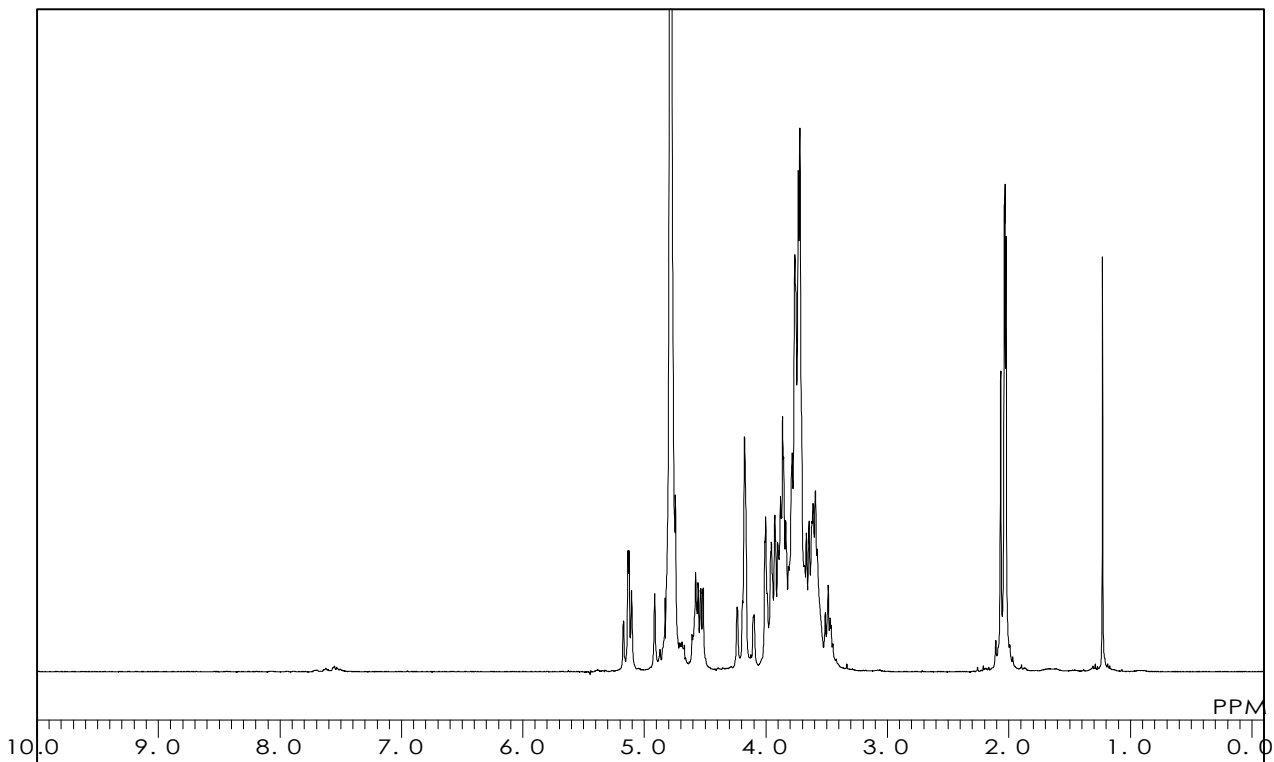
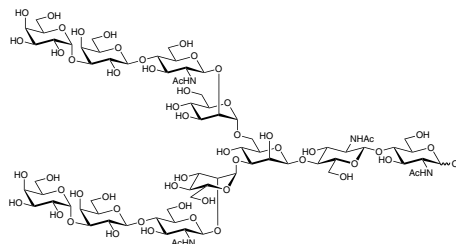
**Gal  $\alpha$  (1-3) N-Glycan**

$C_{74}H_{124}N_4O_{56} = 1965.78$  [115973-45-0]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 22.9 °C



**G0494**

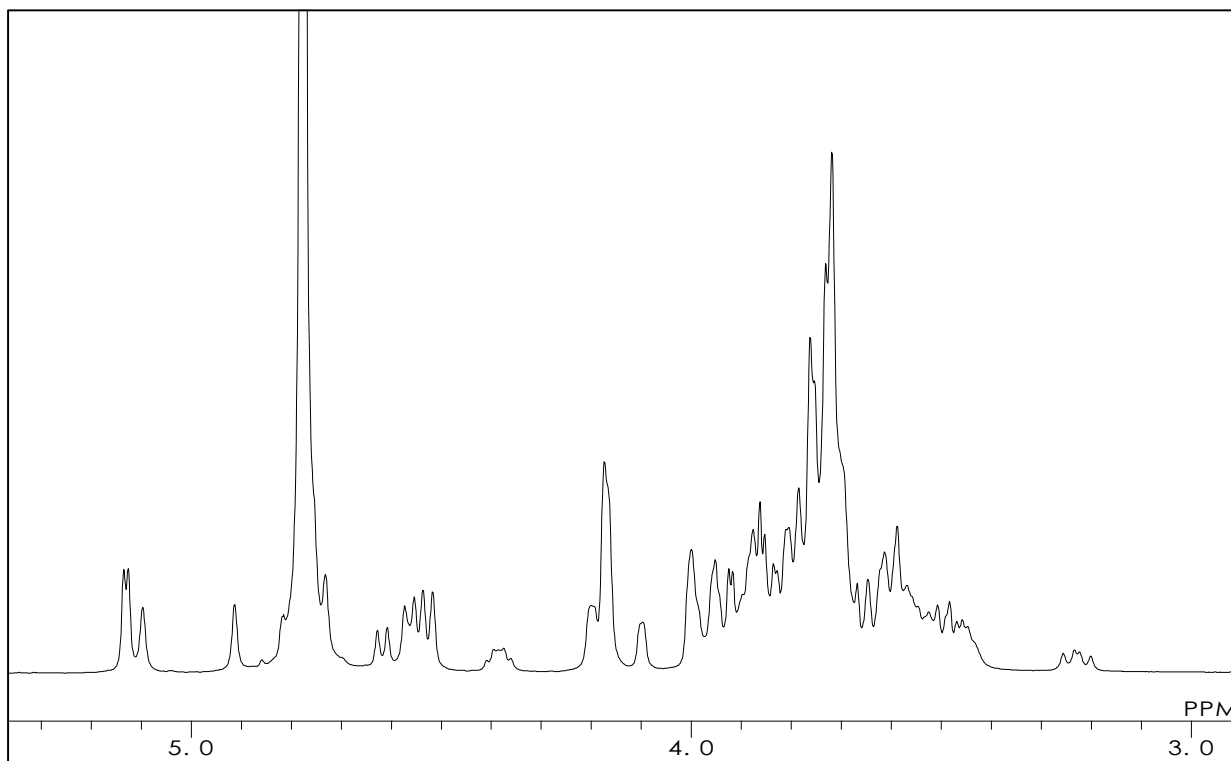
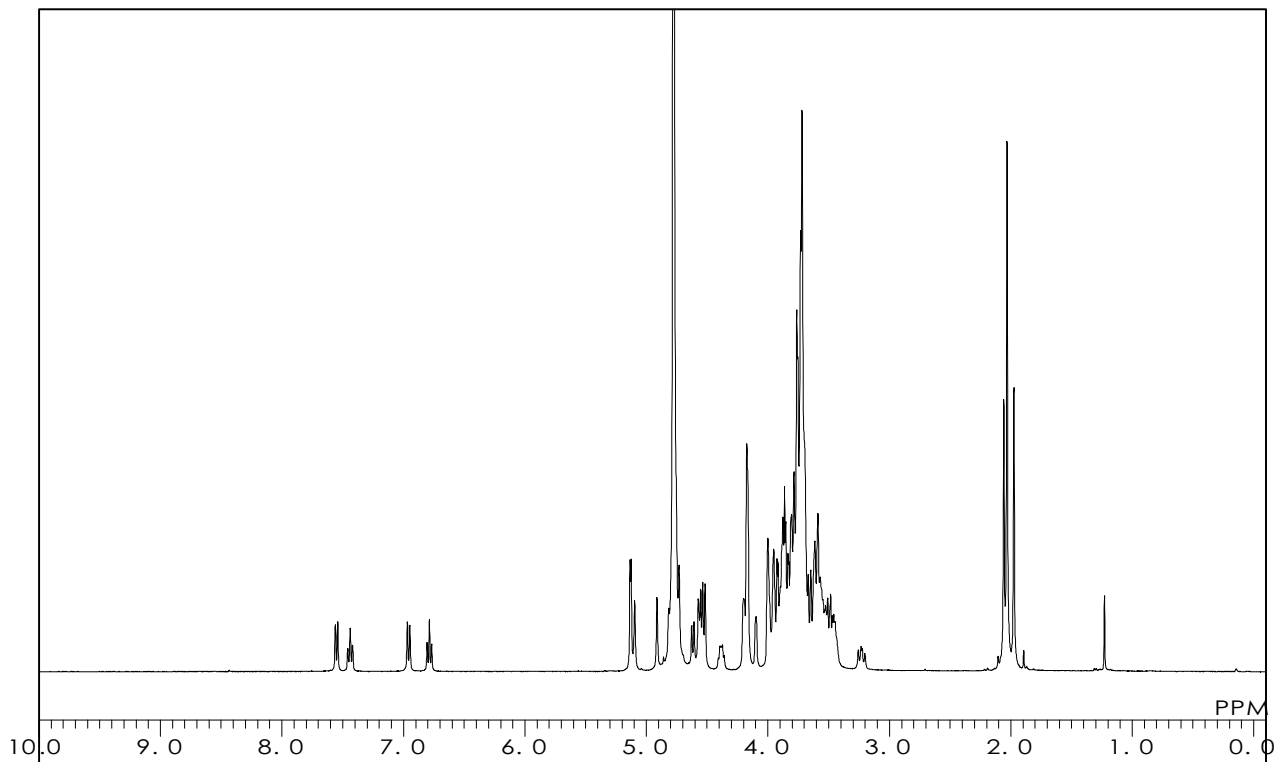
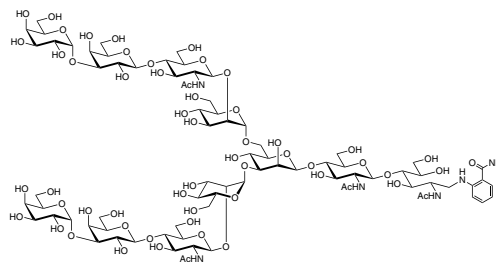
**Gal  $\alpha$  (1-3) N-Glycan 2AB**

$C_{81}H_{132}N_6O_{56} = 2085.93$

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 23.7 °C



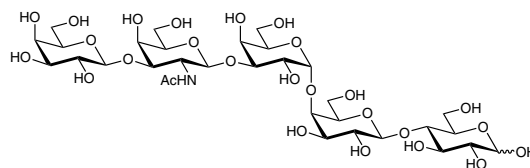
本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。



**G0434**

**Gal  $\beta$  (1-3)GalNAc  $\beta$  (1-3)Gal  $\alpha$  (1-4)Gal  $\beta$  (1-4)Glc**

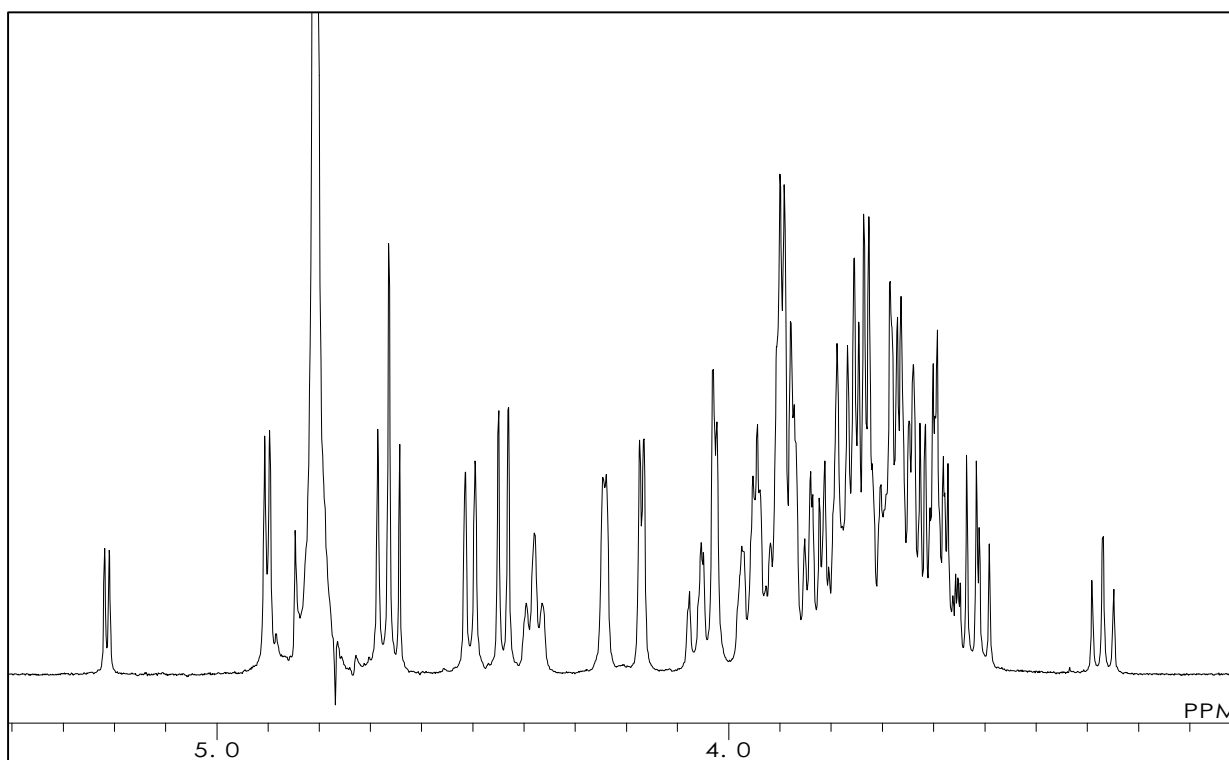
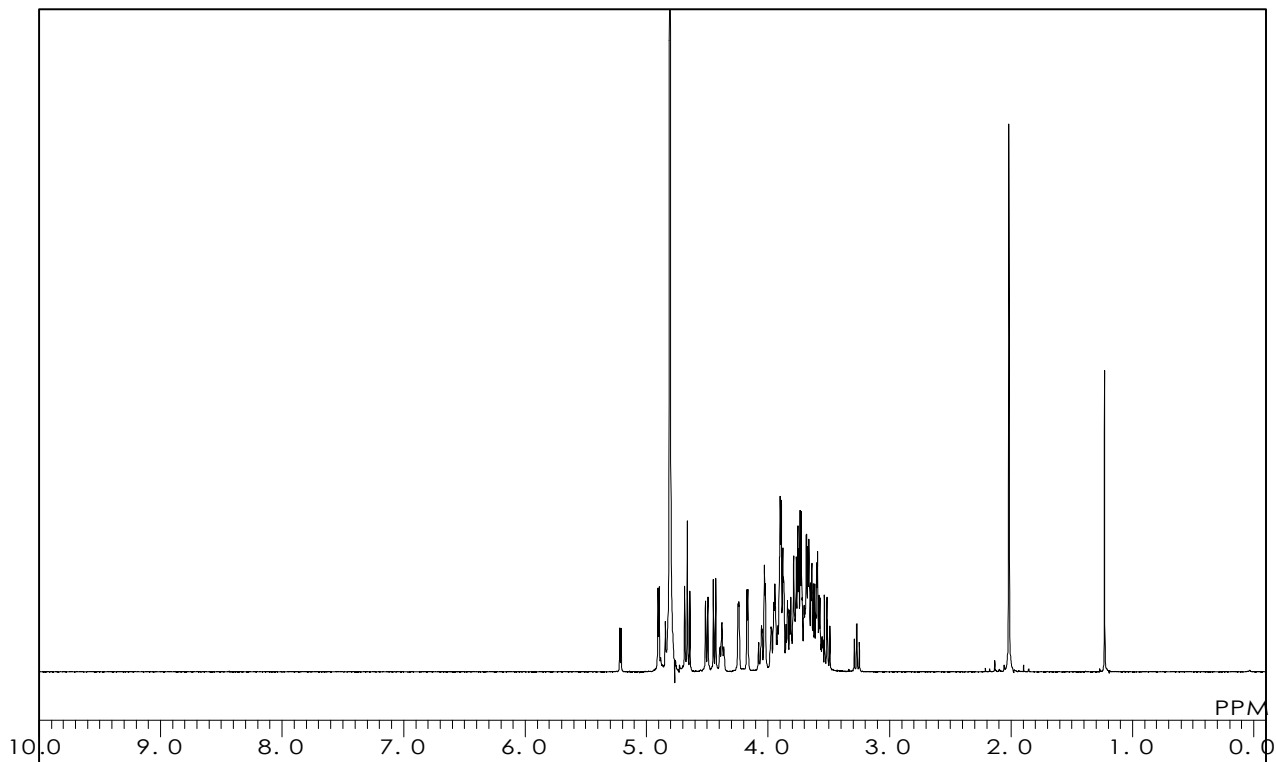
$C_{32}H_{55}NO_{26} = 869.77$  [145882-74-2]



Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 21.1  $^{\circ}C$



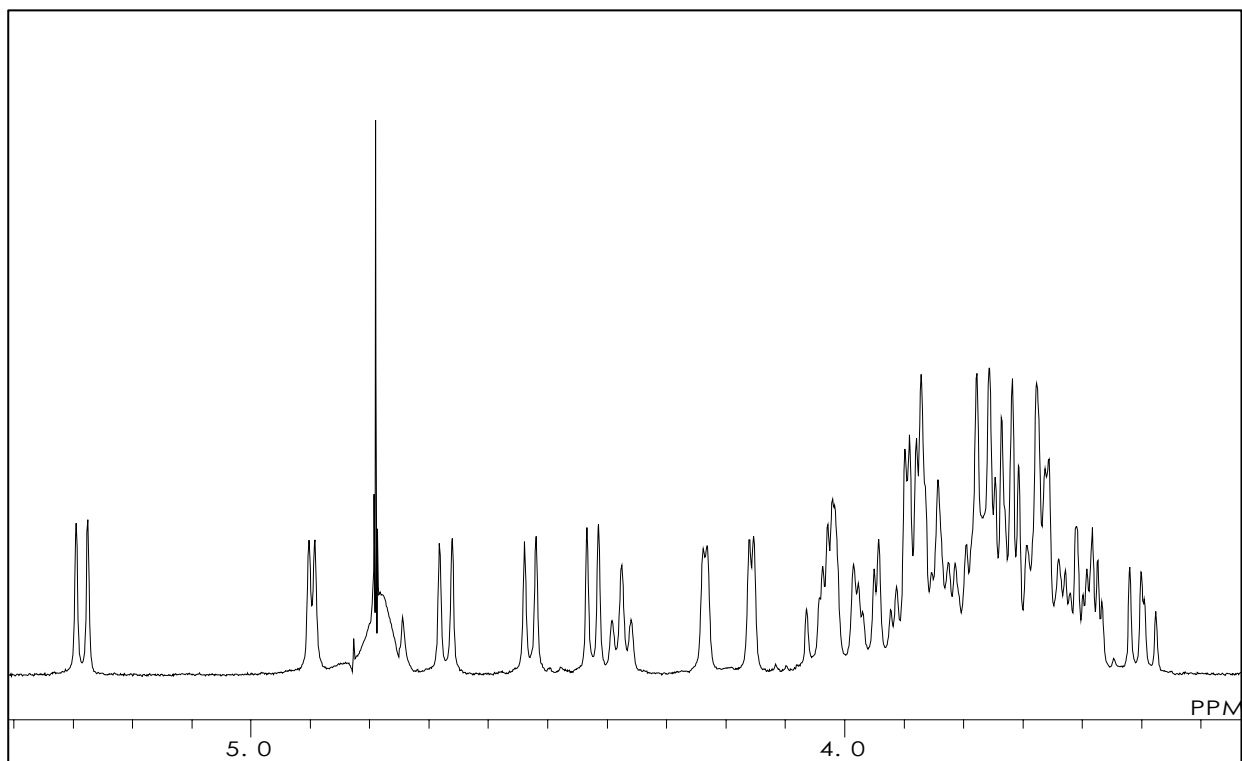
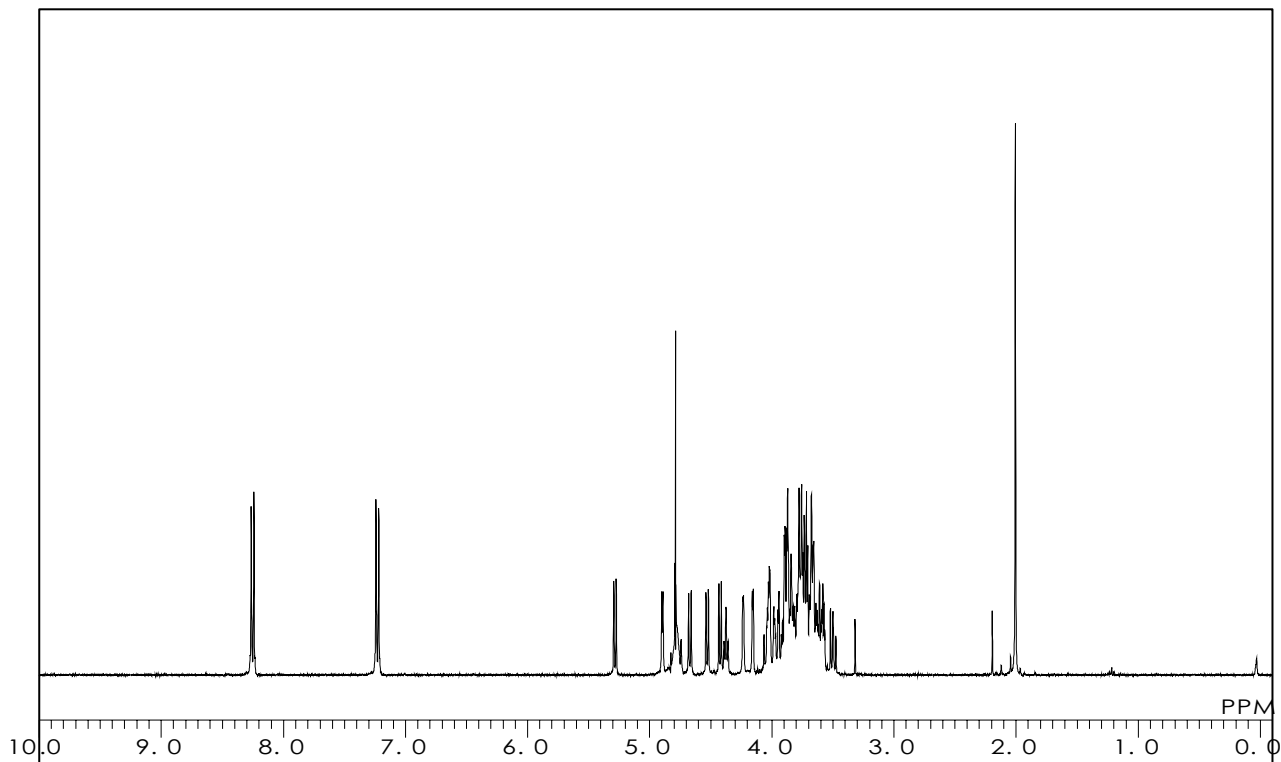
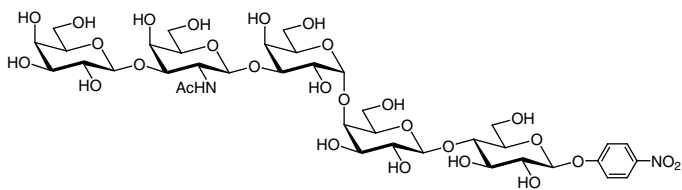
**G0355**

**Gal $\beta$ (1-3)GalNAc $\beta$ (1-3)Gal $\alpha$ (1-4)Gal $\beta$ (1-4)Glc- $\beta$ -pNP**

$C_{38}H_{58}N_2O_{28} = 990.87$

Solvent :  $D_2O$

Measured Temperature : 21.0 °C



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**G0483**

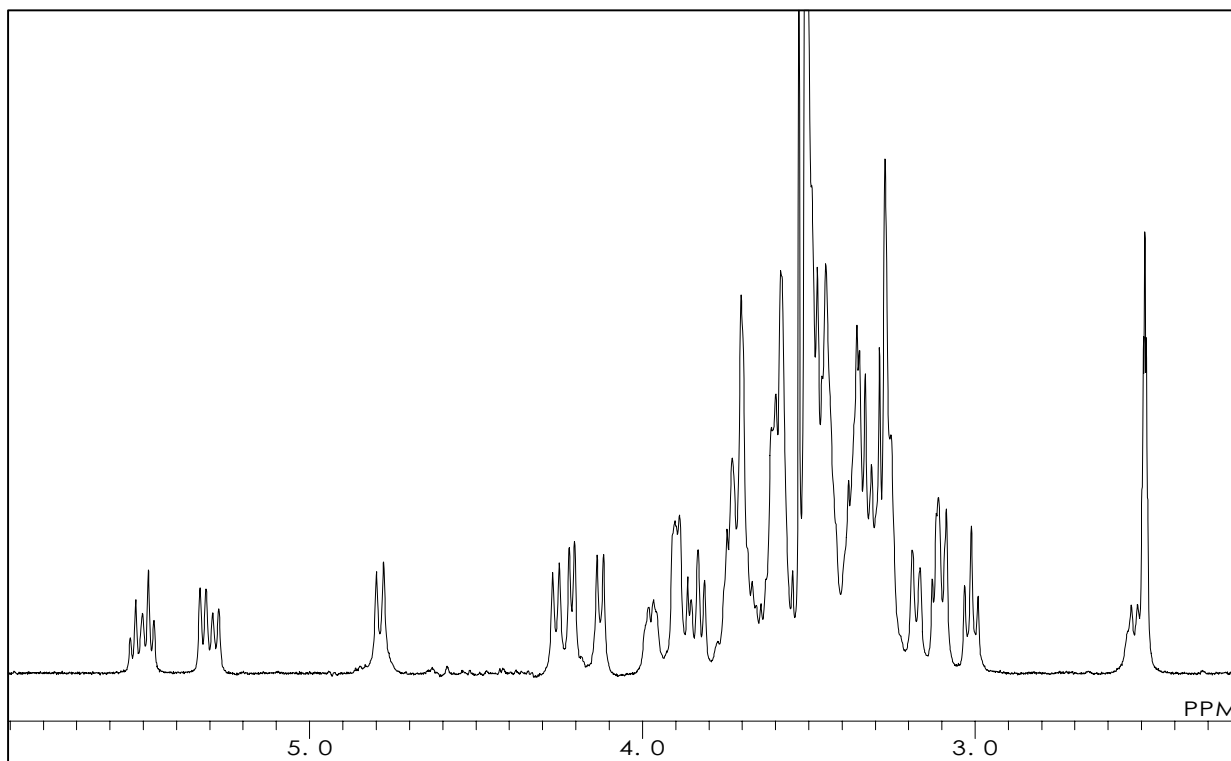
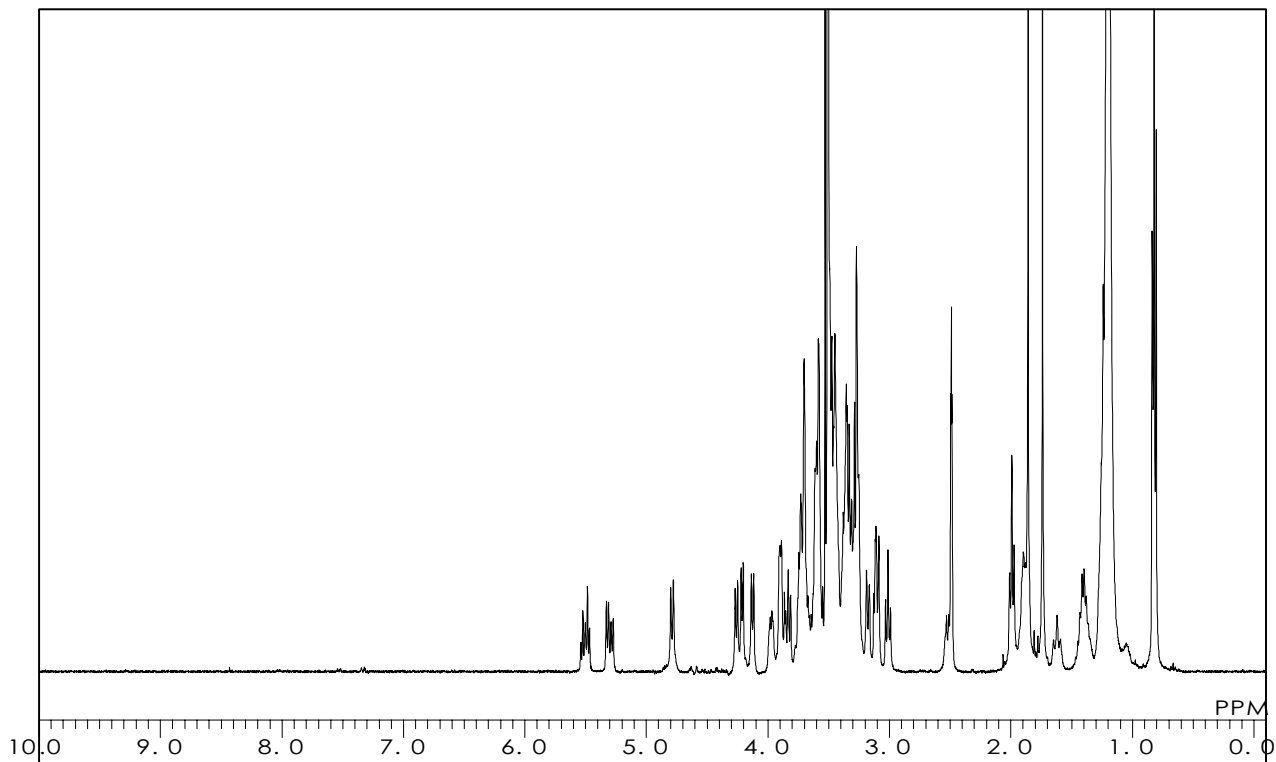
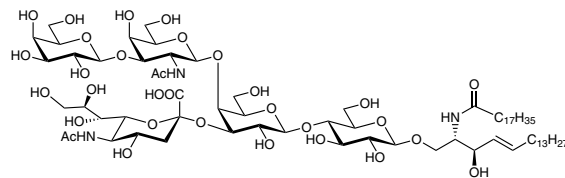
**Ganglioside GM<sub>1</sub>**

C<sub>73</sub>H<sub>131</sub>N<sub>3</sub>O<sub>31</sub> = 1546.84 [37758-47-7]

Solvent : DMSO-d<sub>6</sub>

Internal Standard : DMSO (δ 2.49)

Measured Temperature : 24.2 °C



**G0421**

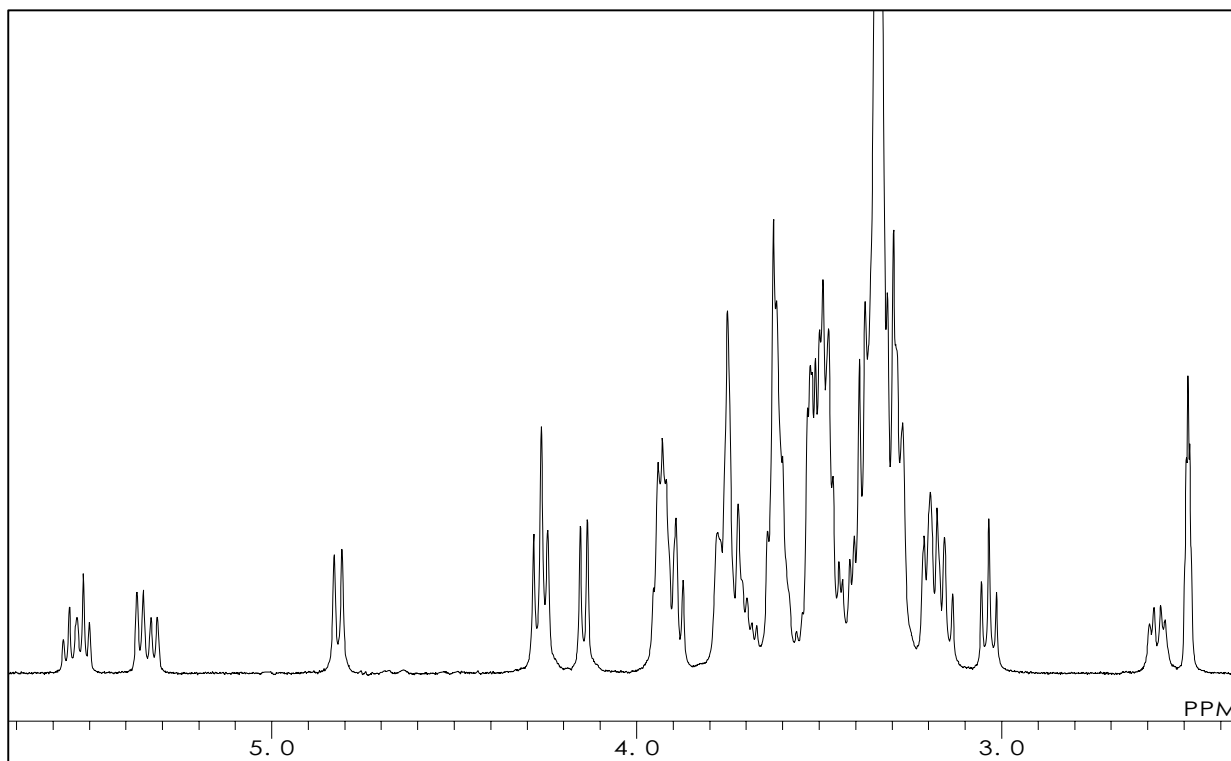
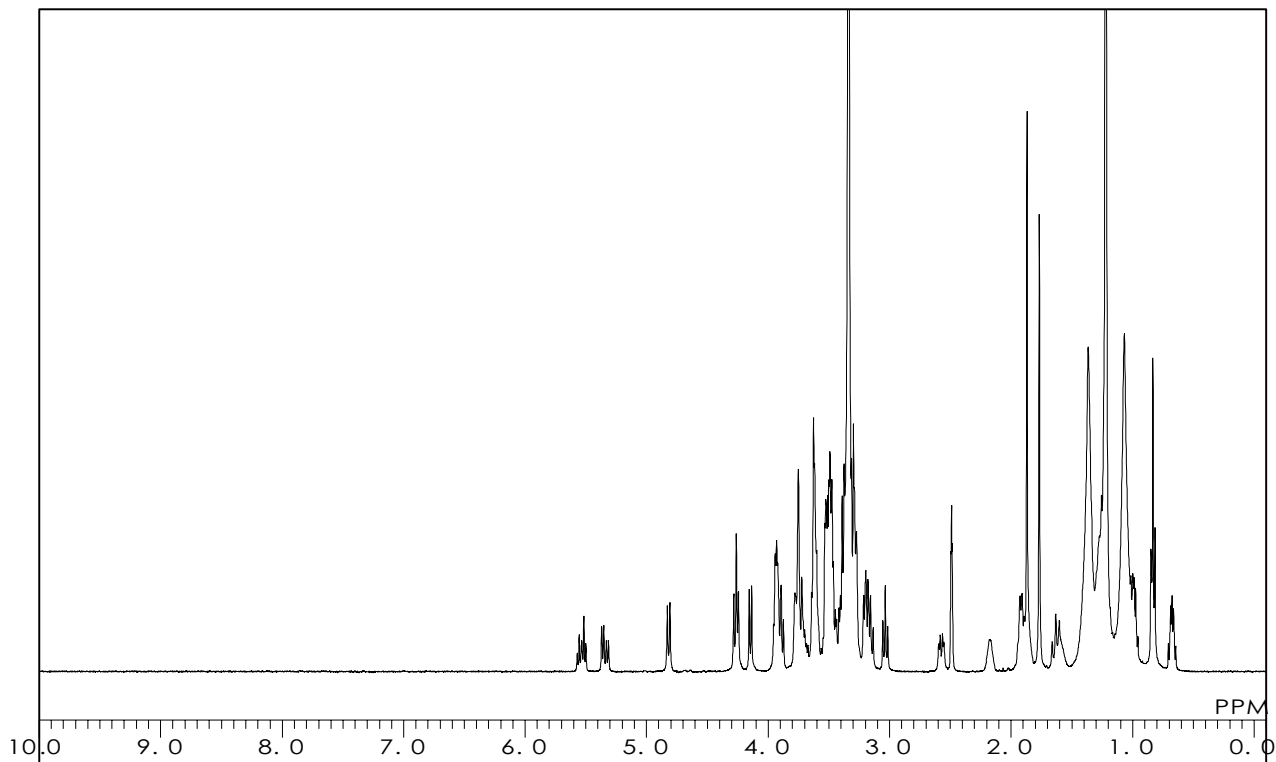
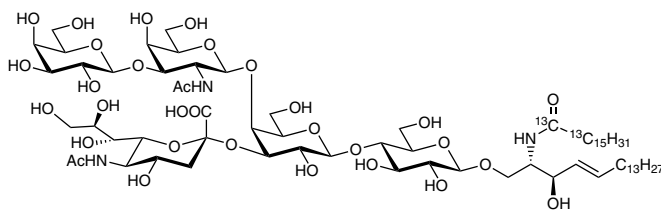
**Ganglioside GM<sub>1</sub>[d18:1, (Carbon-13)C16:0]**

$^{13}\text{C}_{16}\text{C}_{55}\text{H}_{127}\text{N}_3\text{O}_{31} = 1534.66$

Solvent : DMSO-d<sub>6</sub>/D<sub>2</sub>O = 49/1

Internal Standard : DMSO ( $\delta$  2.49)

Measured Temperature : 60.0 °C



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**G0531**

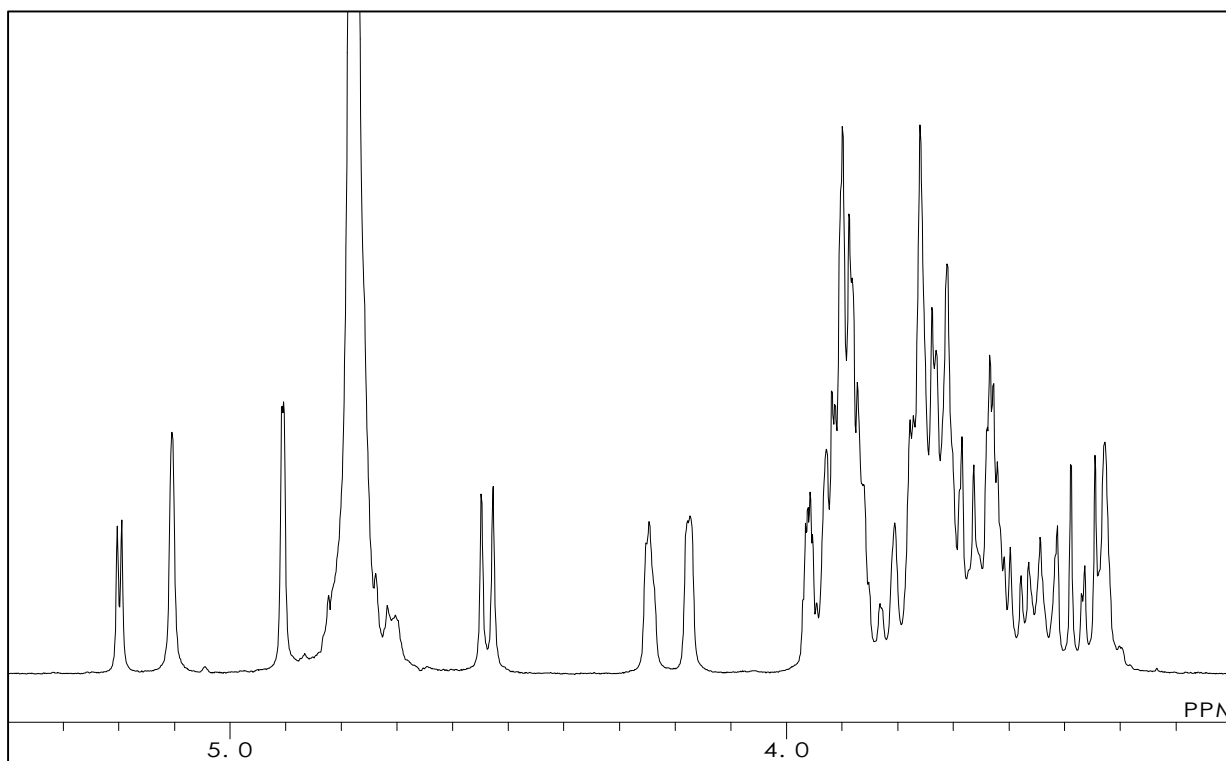
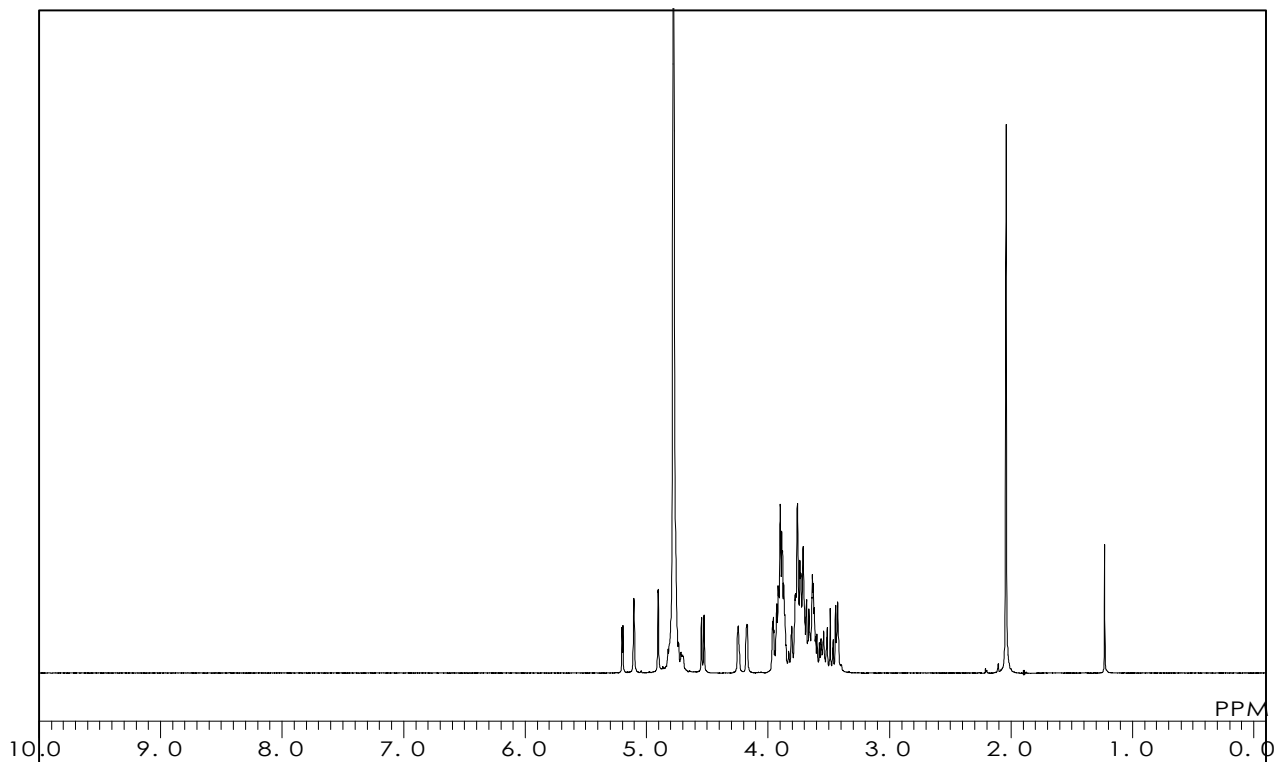
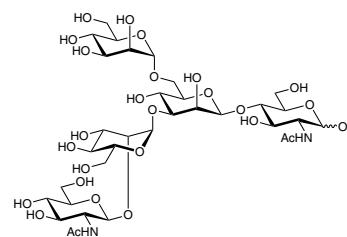
**GlcNAc  $\beta$  (1-2)Man  $\alpha$  (1-3)  
[Man  $\alpha$  (1-6)]Man  $\beta$  (1-4)GlcNAc**

$C_{34}H_{58}N_2O_{26} = 910.83$  [76786-13-5]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 23.9 °C



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H1487

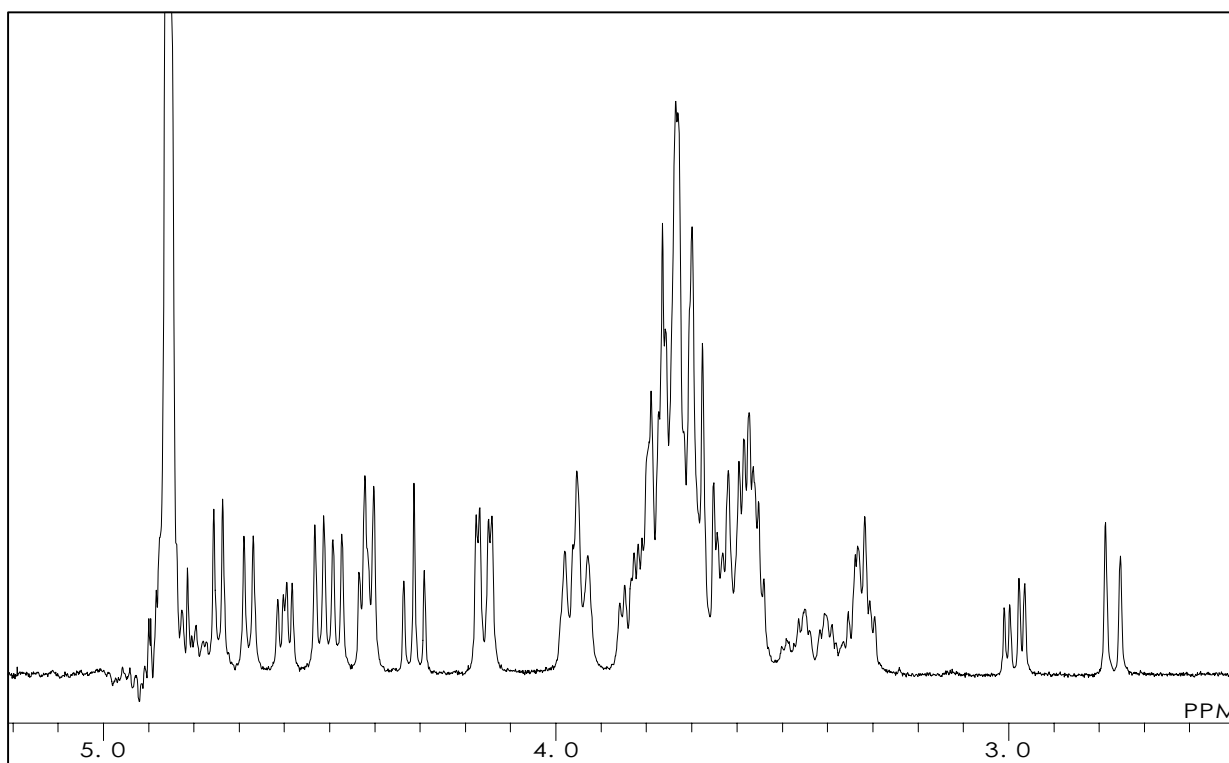
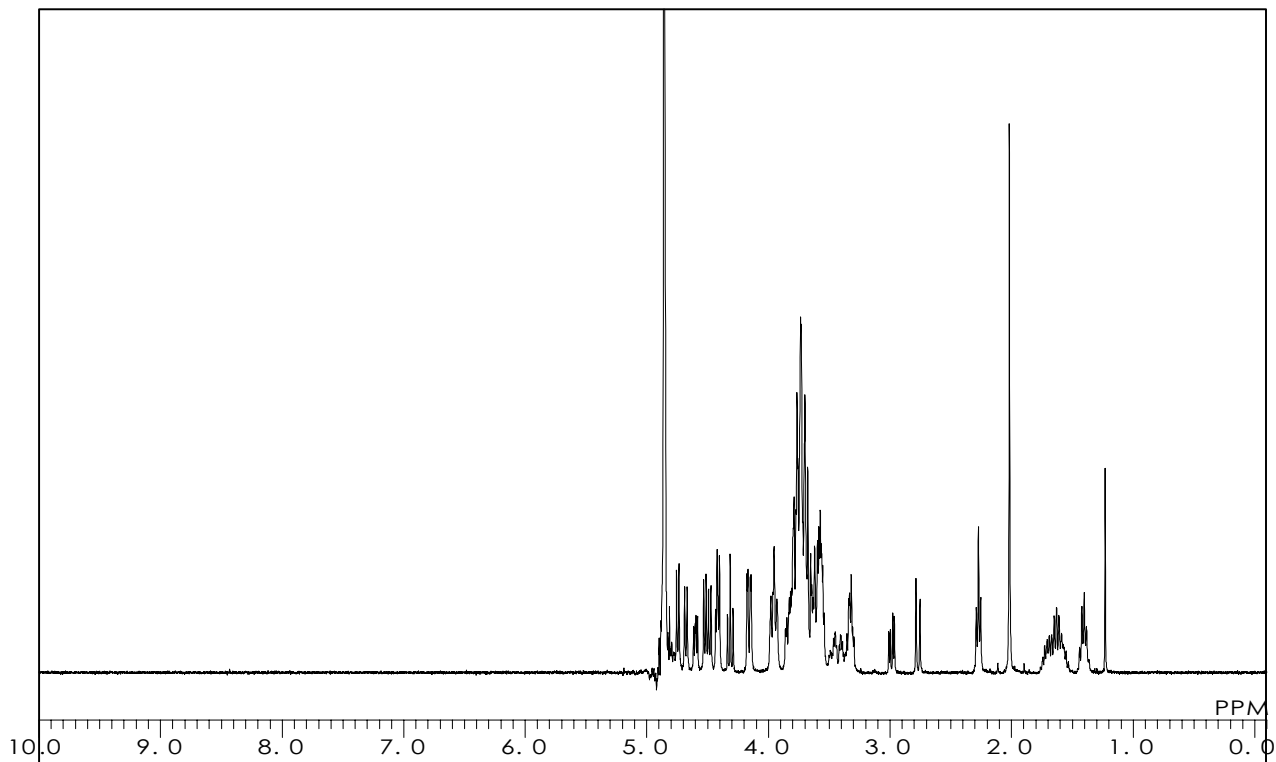
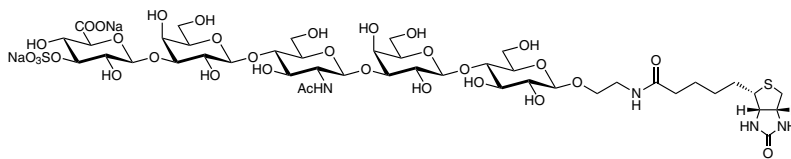
## HNK-1 Biotin

$C_{44}H_{70}N_4Na_2O_{32}S_2 = 1277.14$

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 16.7 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**H1333**

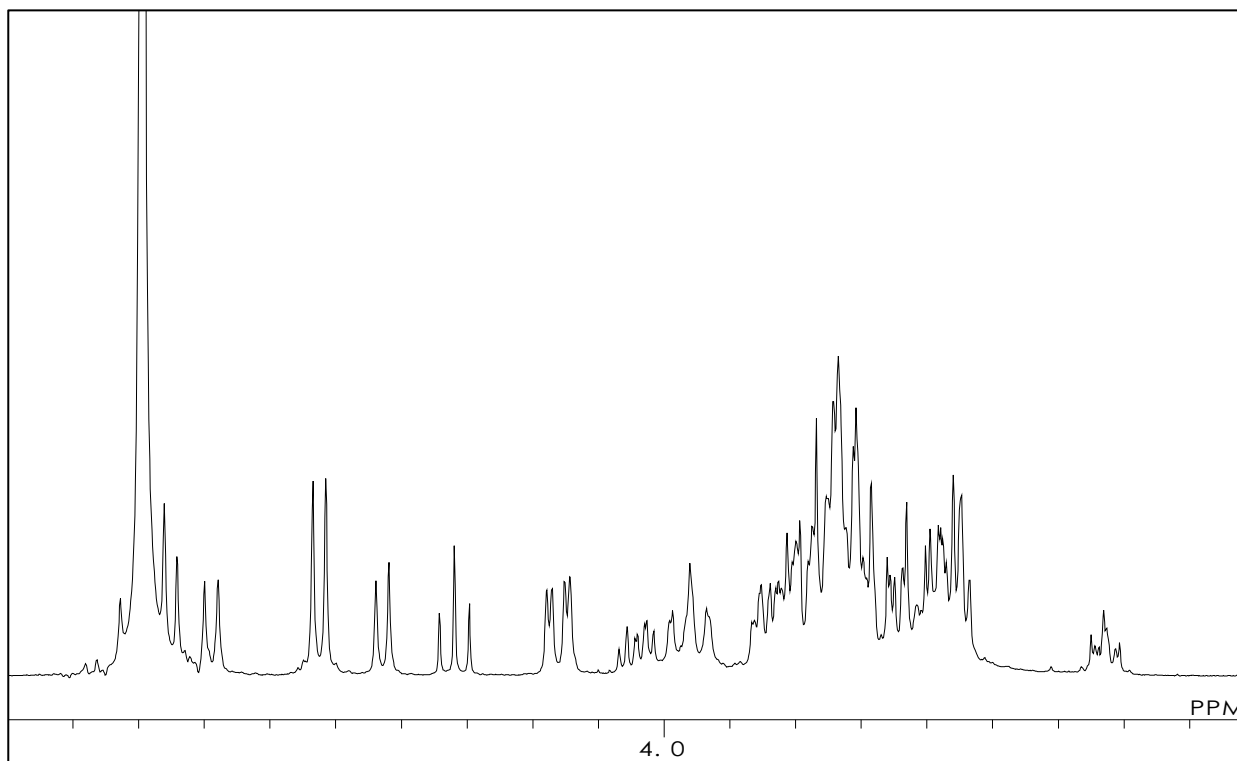
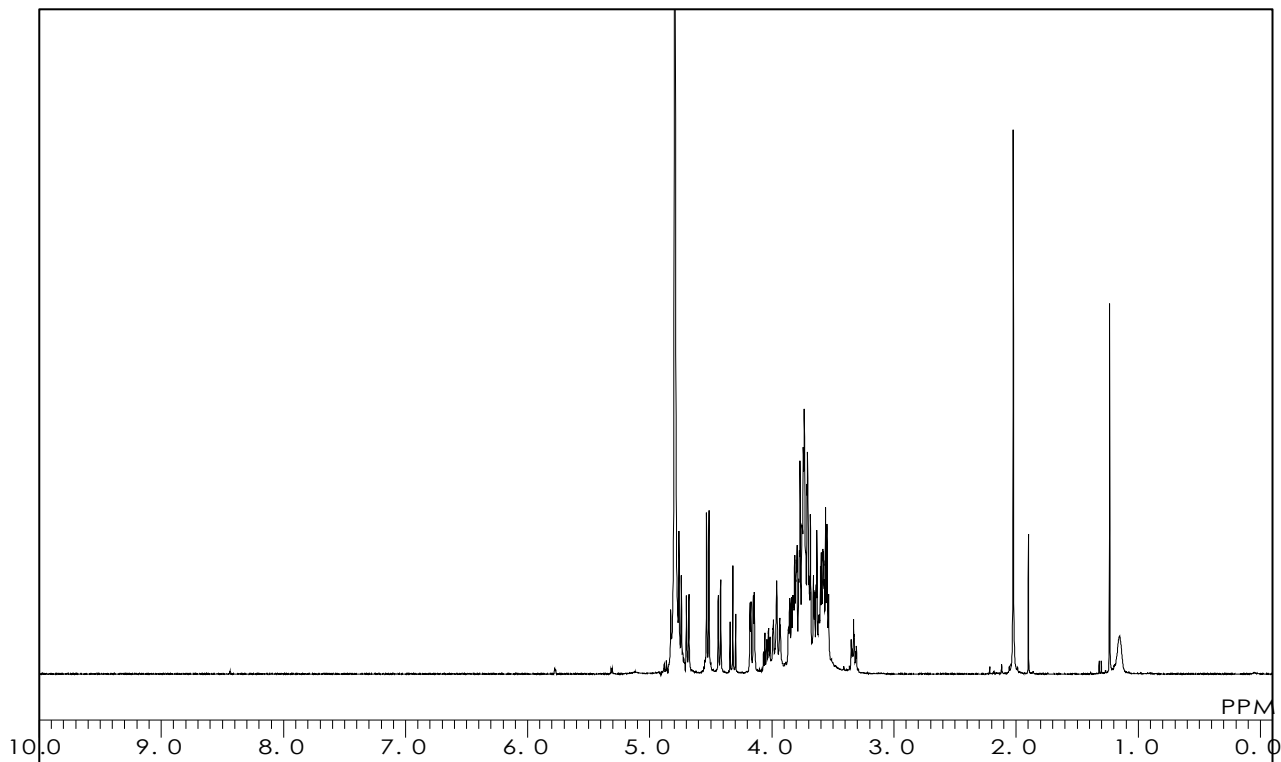
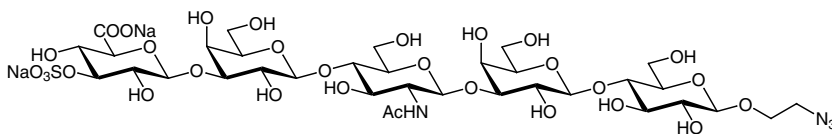
**HNK-1 Ethylazide**

$C_{34}H_{54}N_4Na_2O_{30}S = 1076.84$

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 22.2 °C

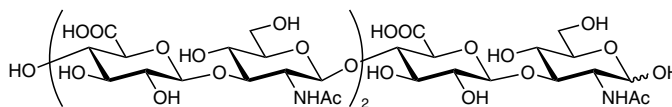


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H1285

## Hyaluronate Hexasaccharide

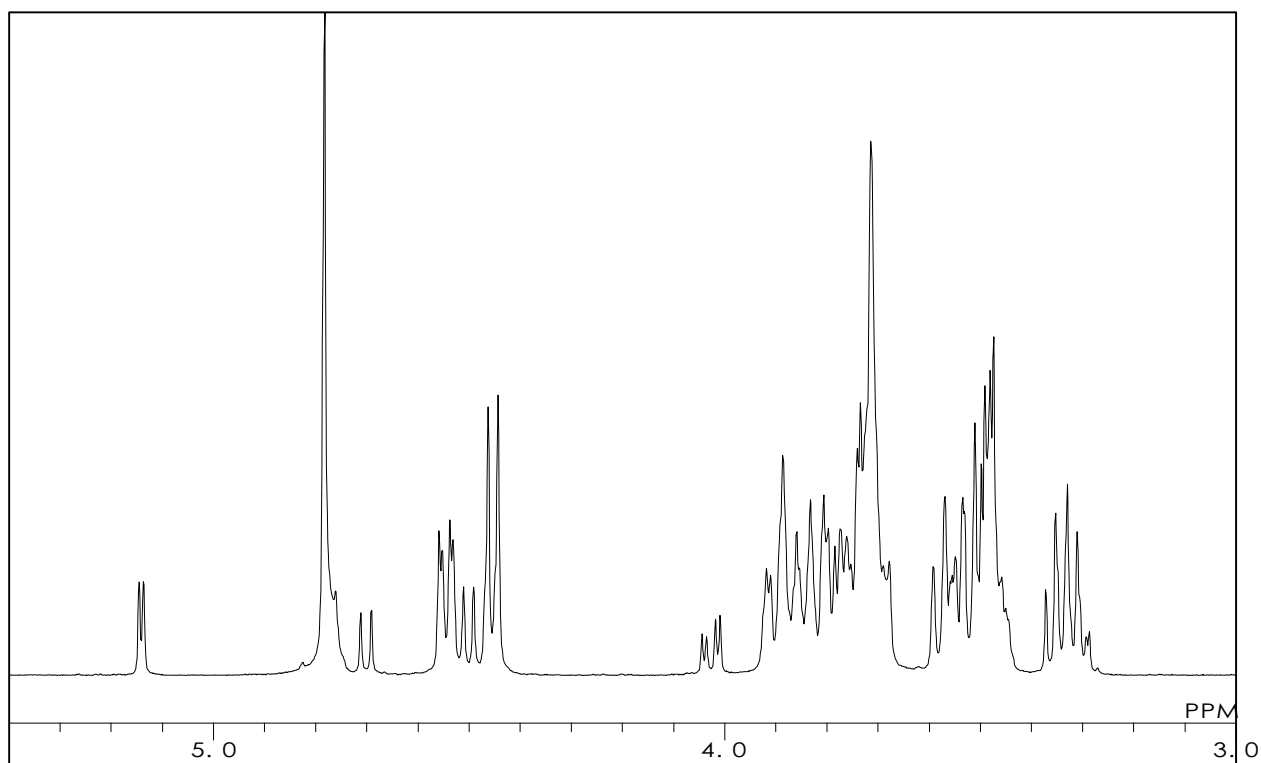
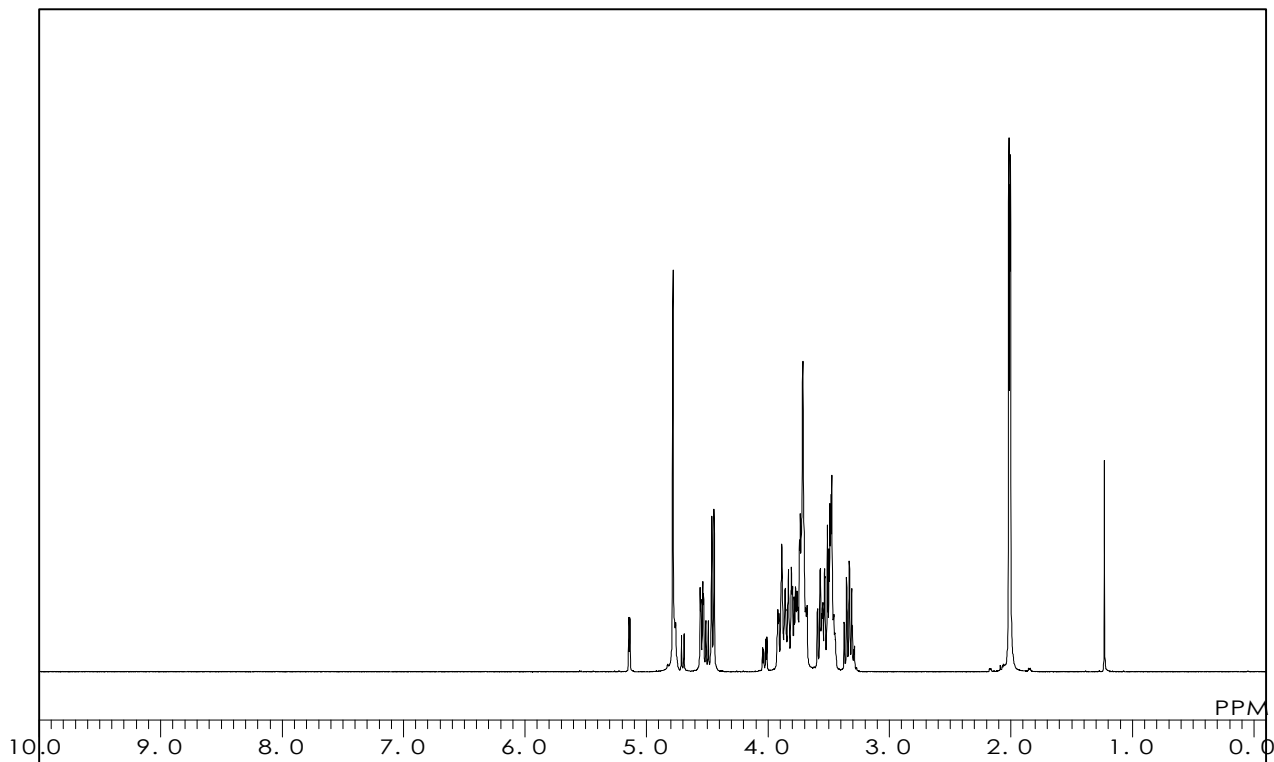
$C_{42}H_{65}N_3O_{34} = 1155.97$  [73603-40-4]



Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 23.1 °C



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**M2986**

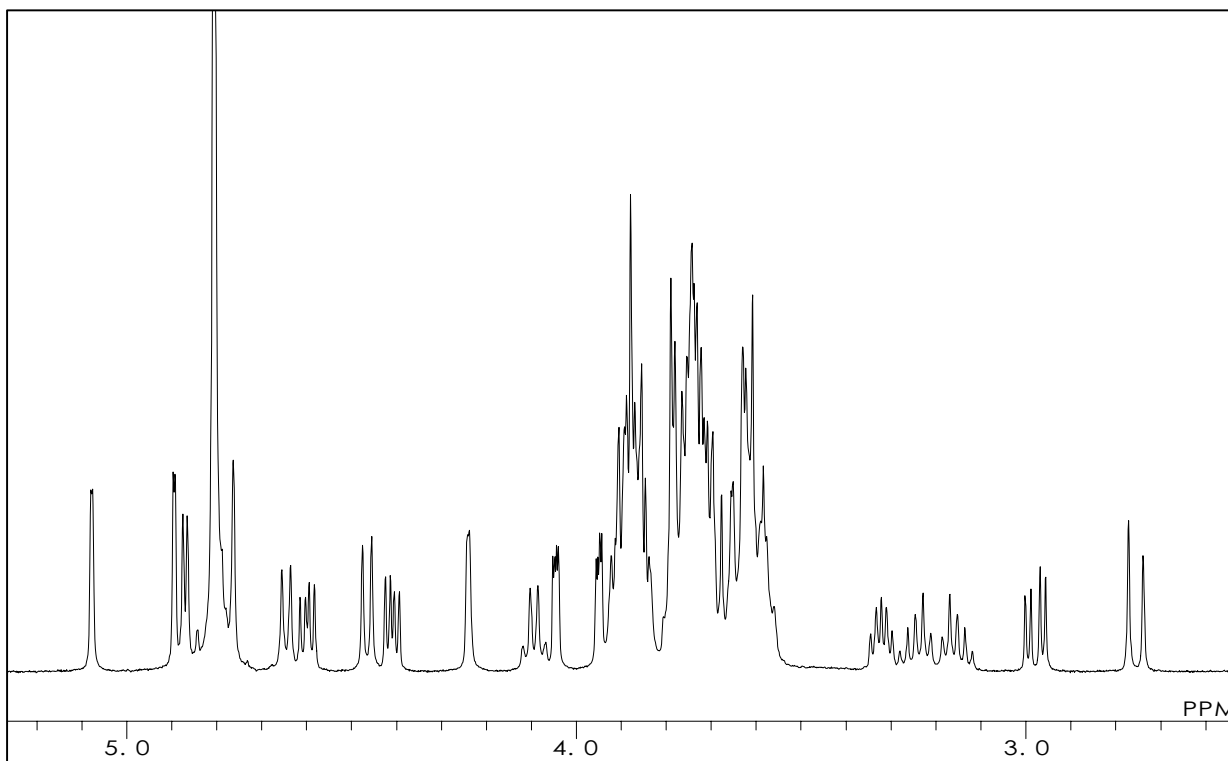
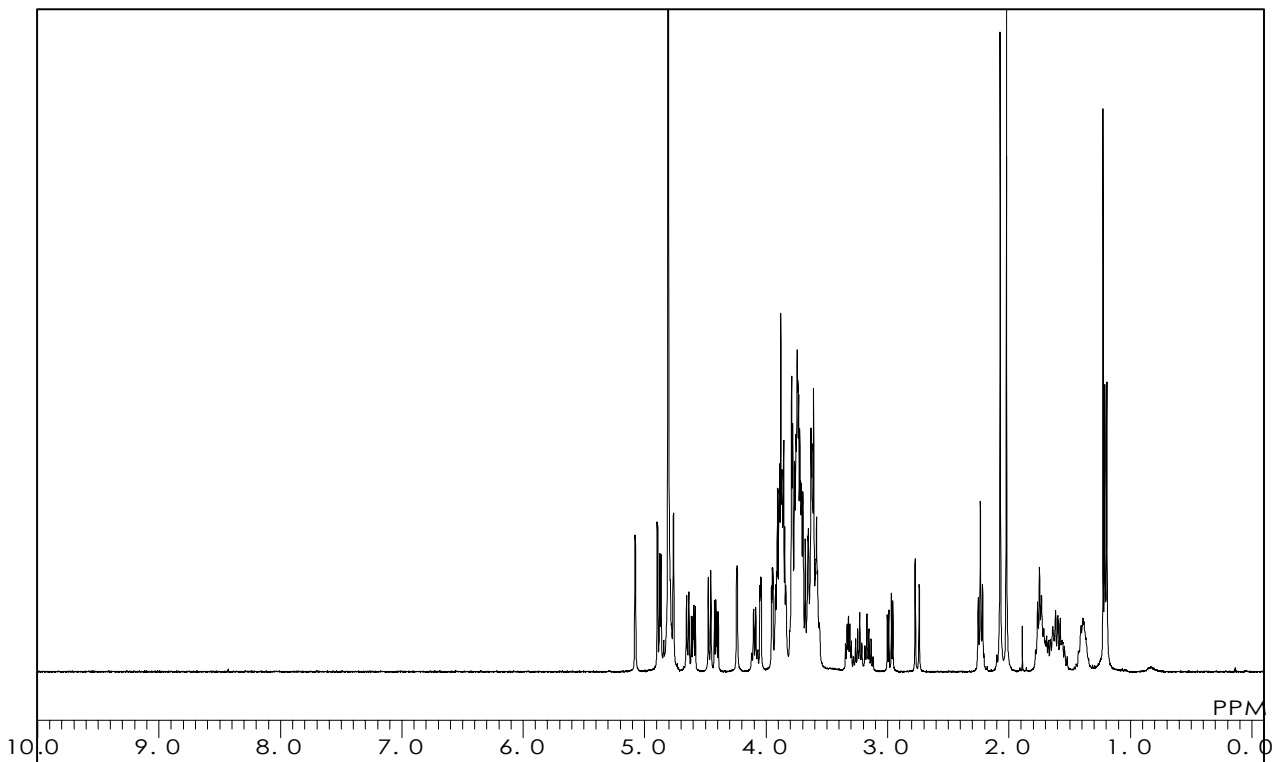
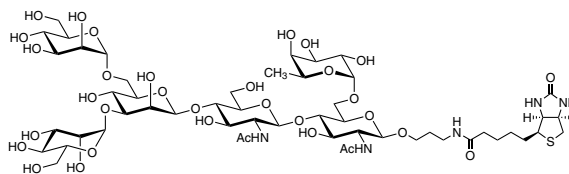
**M3(Fuc<sub>6</sub>)-biotin**

C<sub>53</sub>H<sub>89</sub>N<sub>5</sub>O<sub>32</sub>S = 1340.36 [1995898-20-8]

Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH (δ 1.23)

Measured Temperature : 20.6 °C



**M2985**

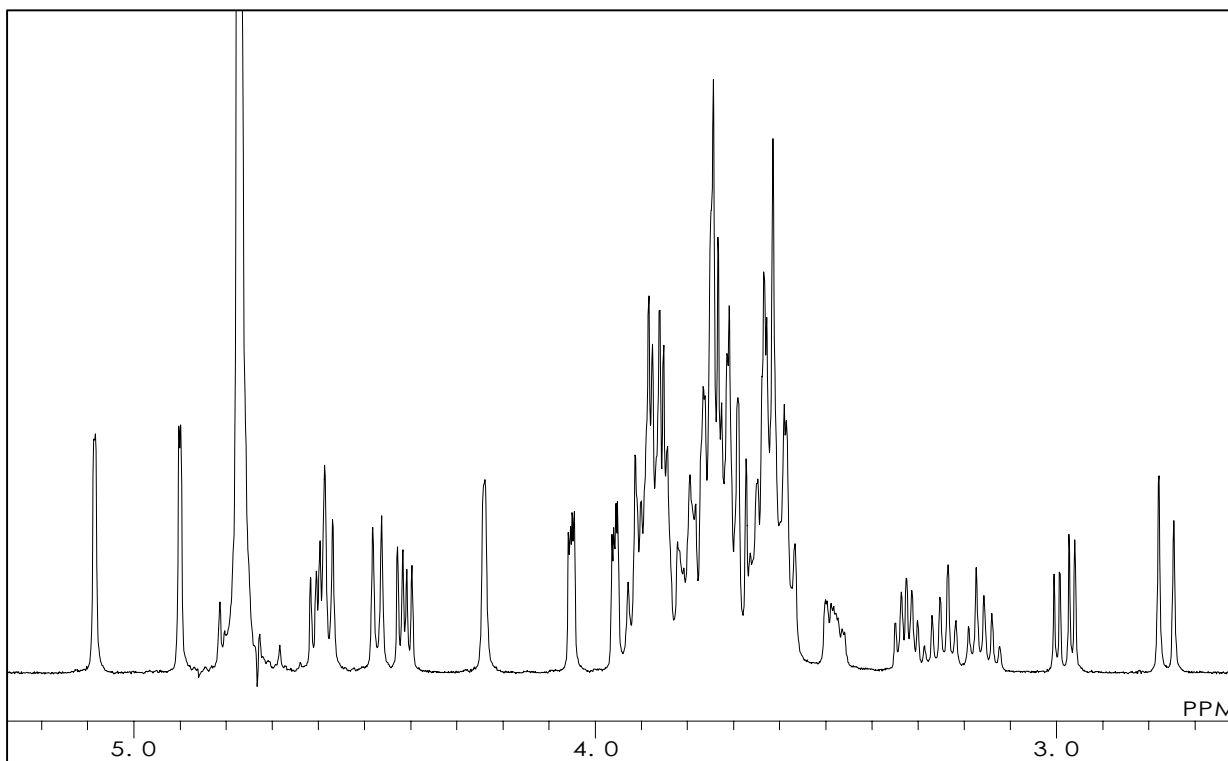
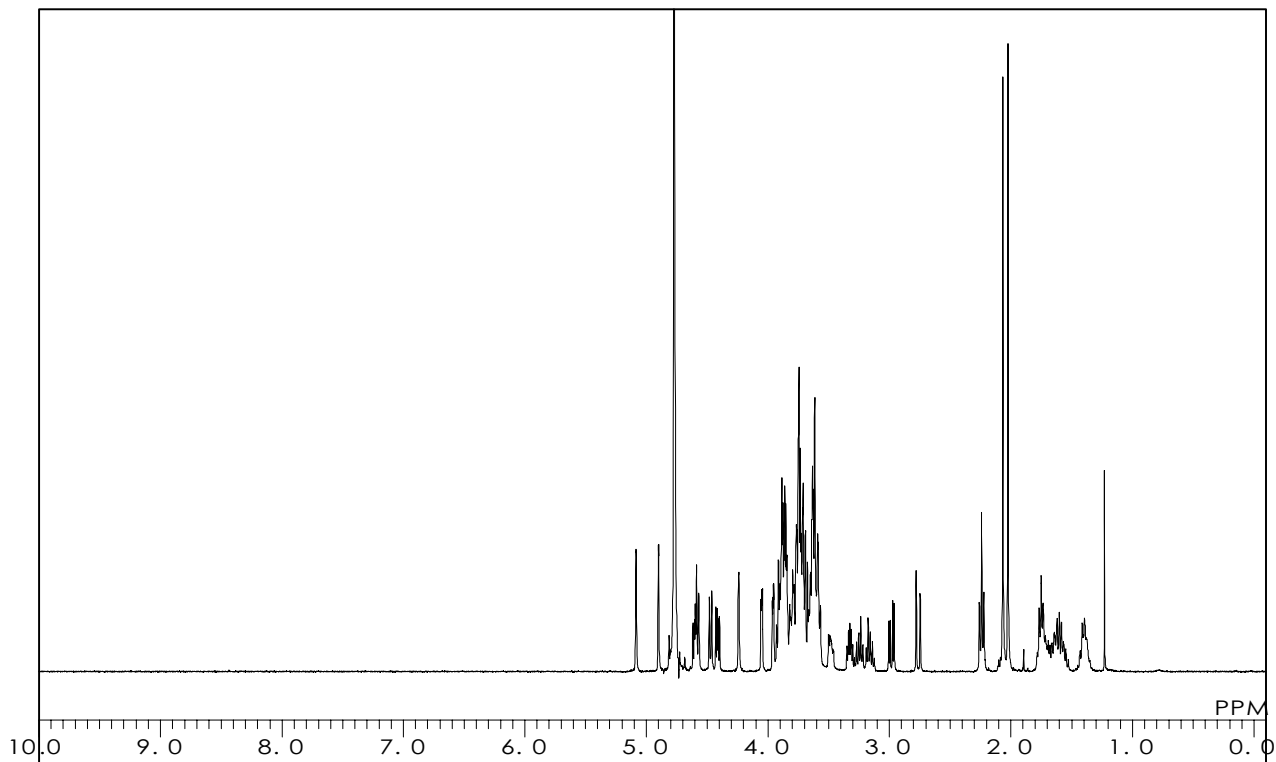
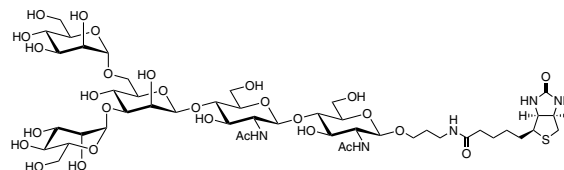
**M3-biotin**

$C_{47}H_{79}N_5O_{28}S = 1194.22$  [1995898-22-0]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 24.2 °C



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**M3086**

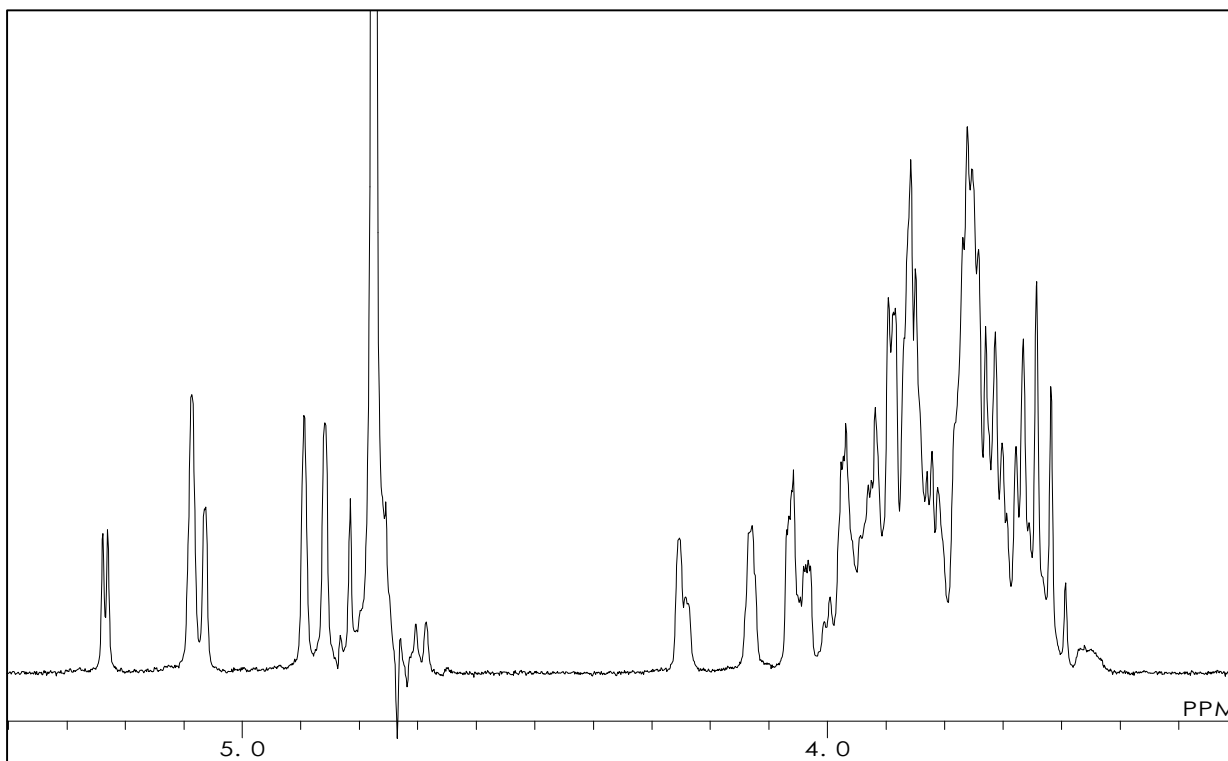
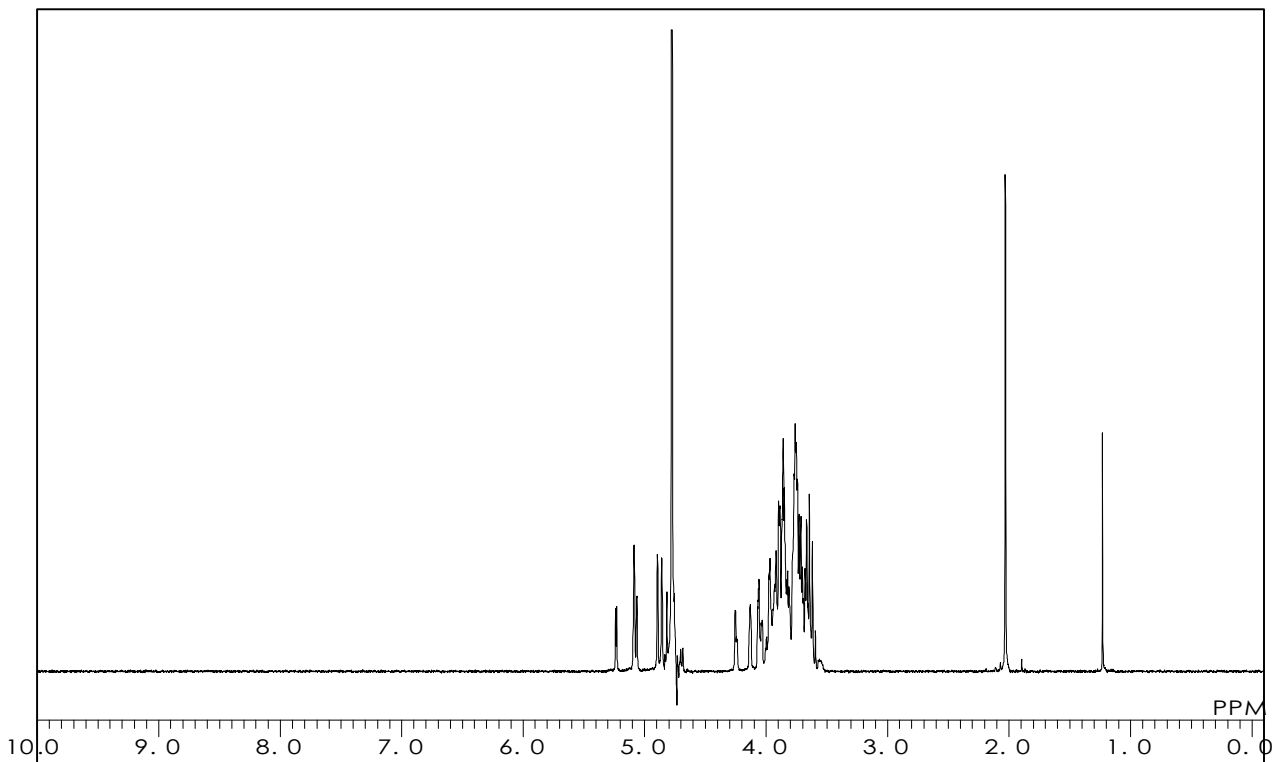
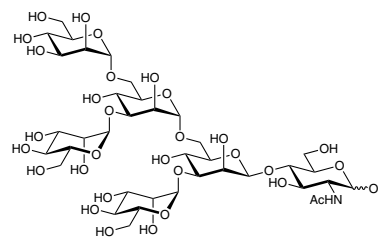
**M5 glycan (GN<sub>1</sub> type)**

C<sub>38</sub>H<sub>65</sub>NO<sub>31</sub> = 1031.91 [74385-50-5]

Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH (δ 1.23)

Measured Temperature : 24.1 °C



# M2439

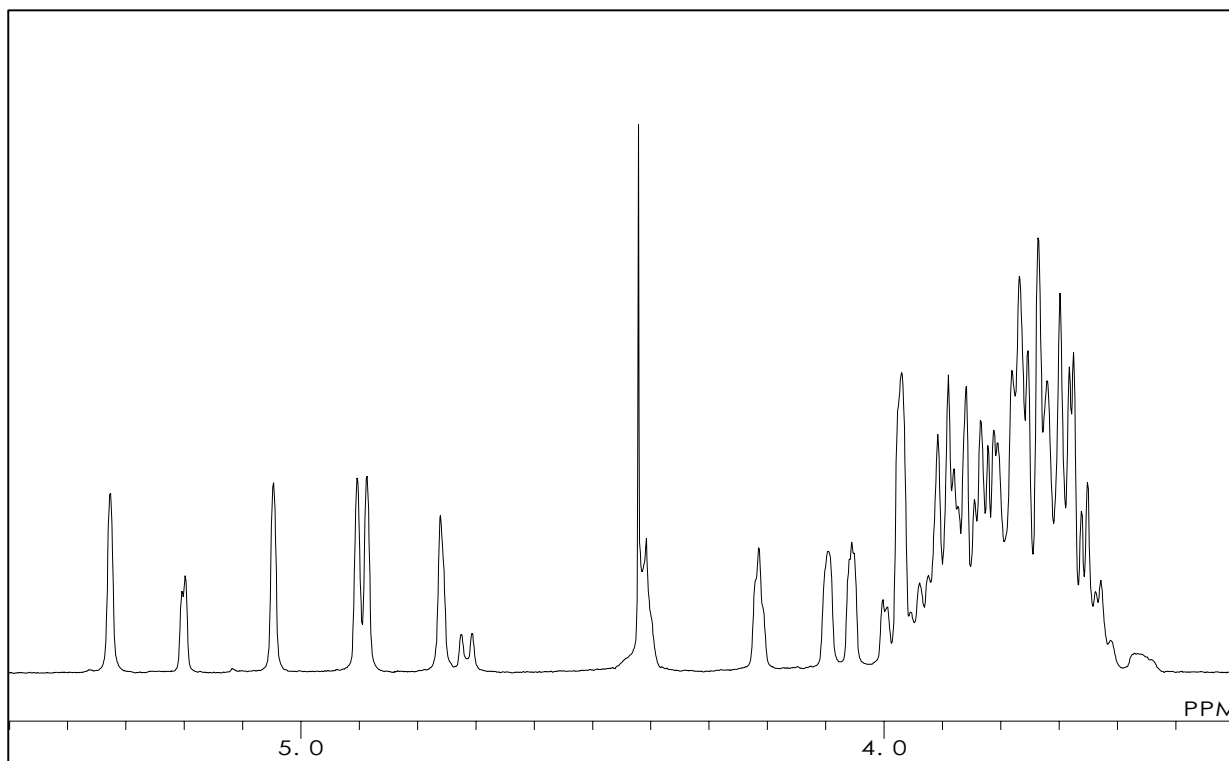
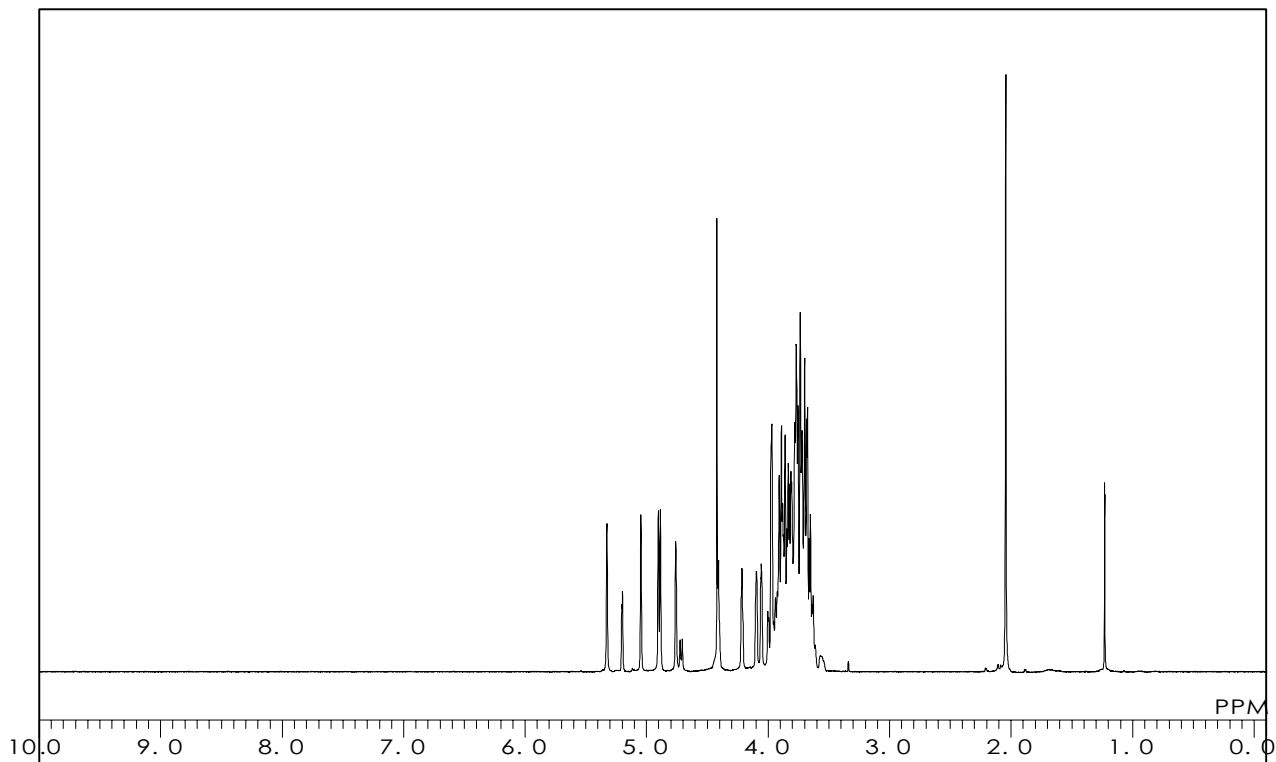
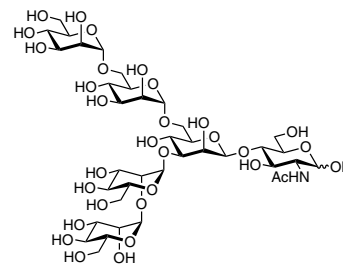
## Man $\alpha$ (1-2)Man $\alpha$ (1-3)[Man $\alpha$ (1-6)Man $\alpha$ (1-6)]Man $\beta$ (1-4)GlcNAc

$C_{38}H_{65}NO_{31} = 1031.91$

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

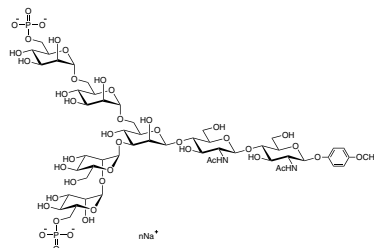
Measured Temperature : 60.0 °C



本データの無断転用はご遠慮下さい。こちらのデータは弊社のホームページでも公開しています。

**M3087**

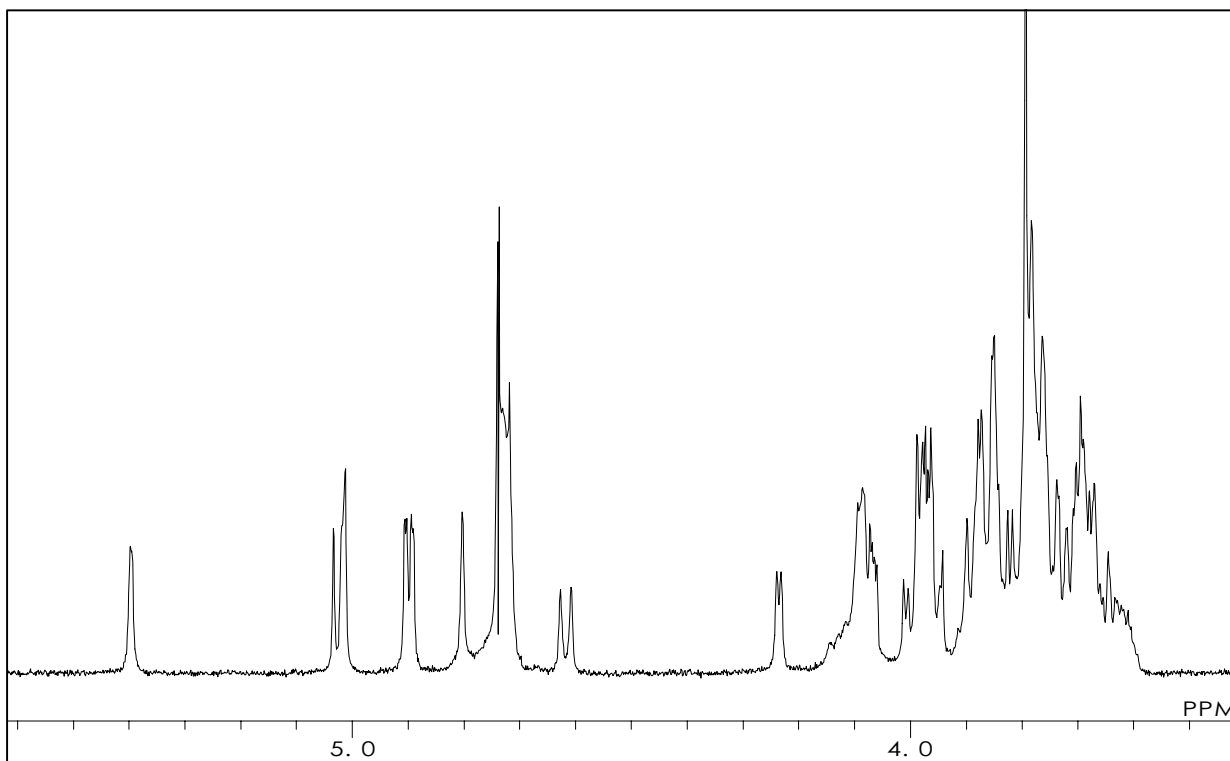
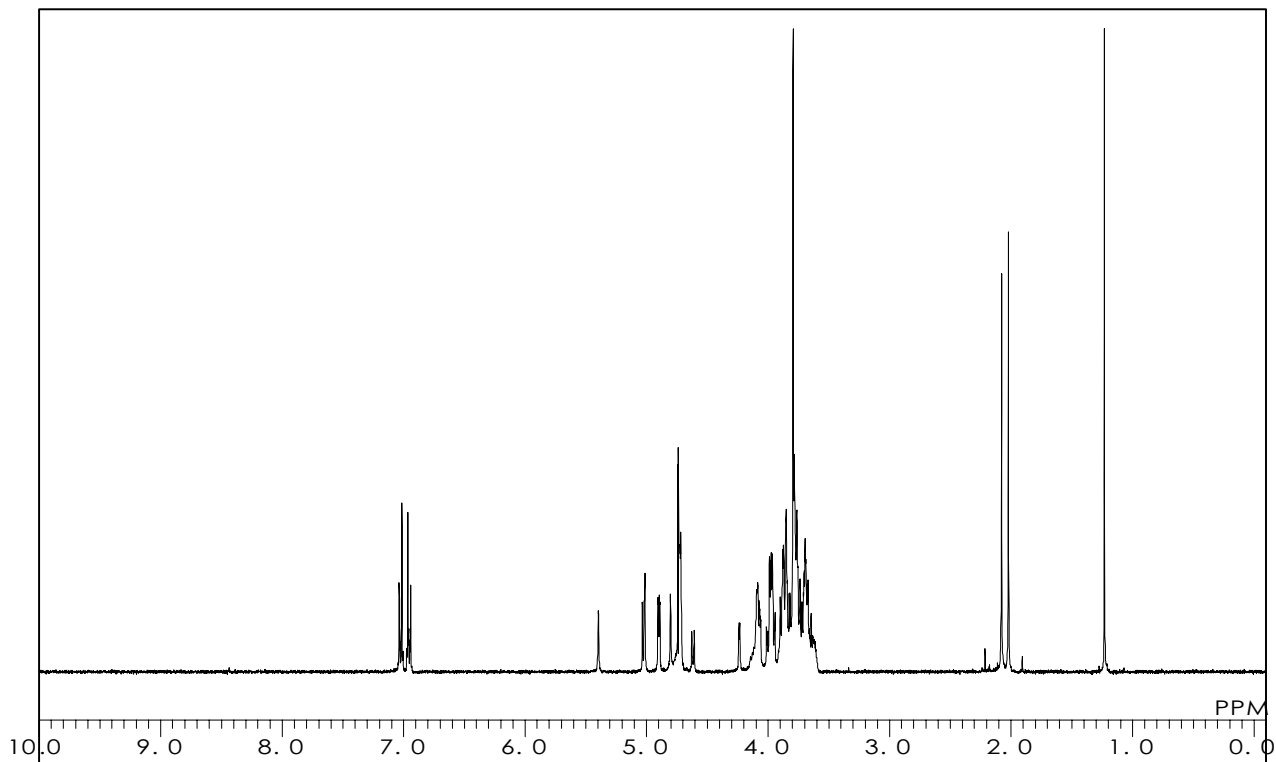
**Man[6P]  $\alpha$  (1-2)Man  $\alpha$  (1-3)[Man[6P]  
 $\alpha$  (1-6)Man  $\alpha$  (1-6)]Man  
 $\beta$  (1-4)GlcNAc  $\beta$  (1-4)GlcNAc- $\beta$ -MP**



Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 27.4  $^{\circ}C$



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**N1065**

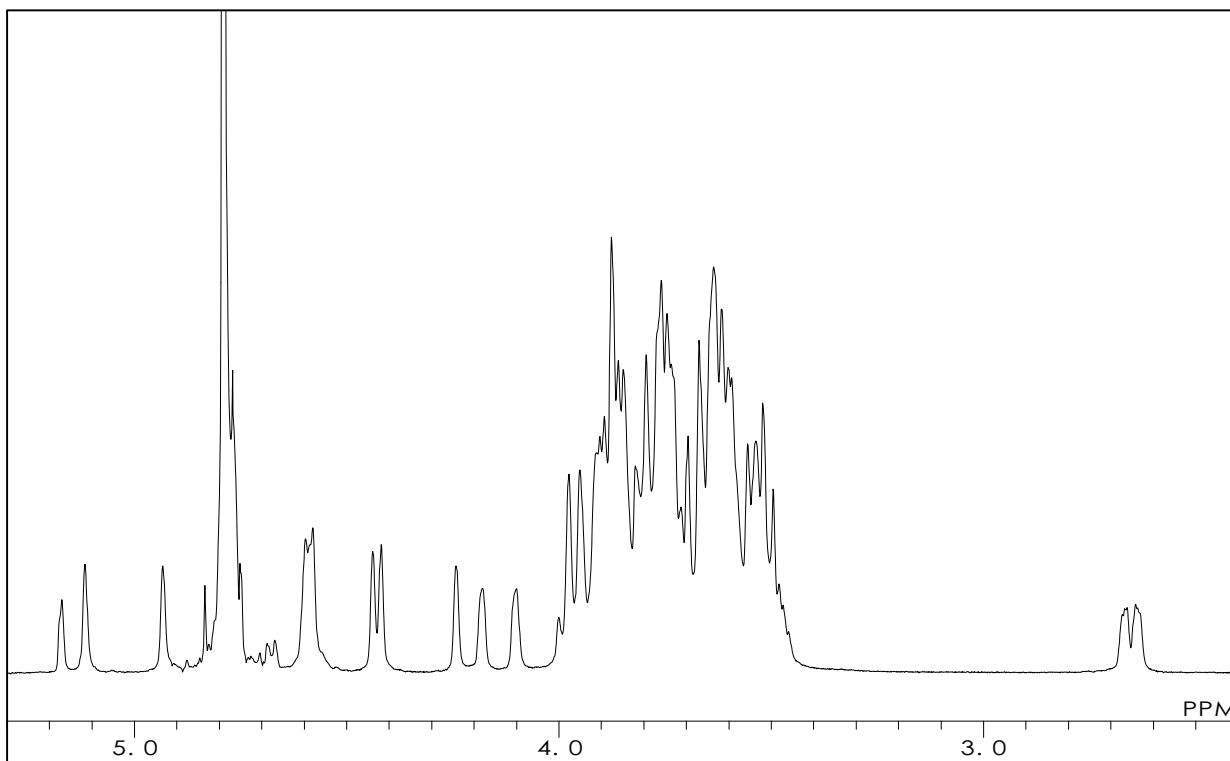
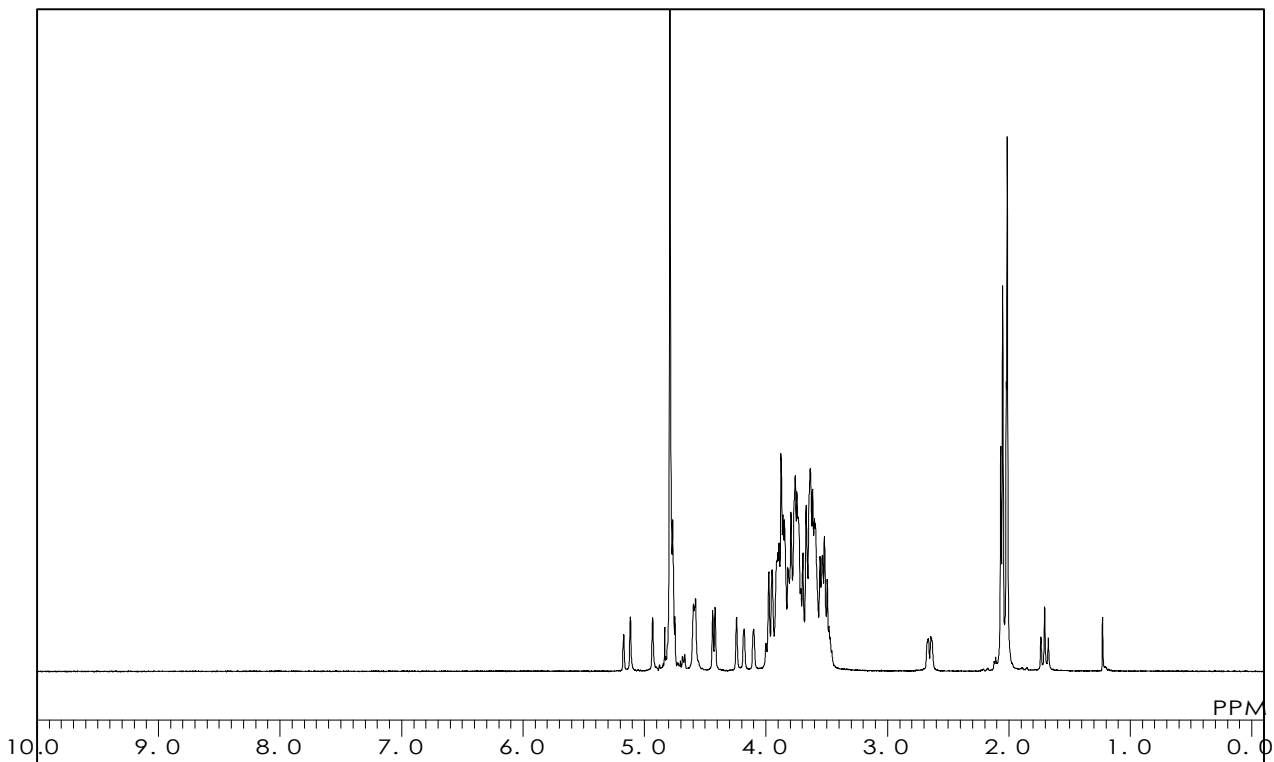
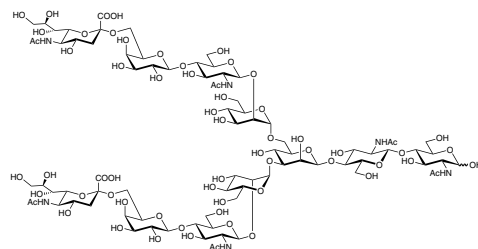
**Neu5Ac  $\alpha$  (2-6) N-Glycan**

$C_{84}H_{138}N_6O_{62} = 2224.01$  [1125602-44-9]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 22.5 °C



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**N1073**

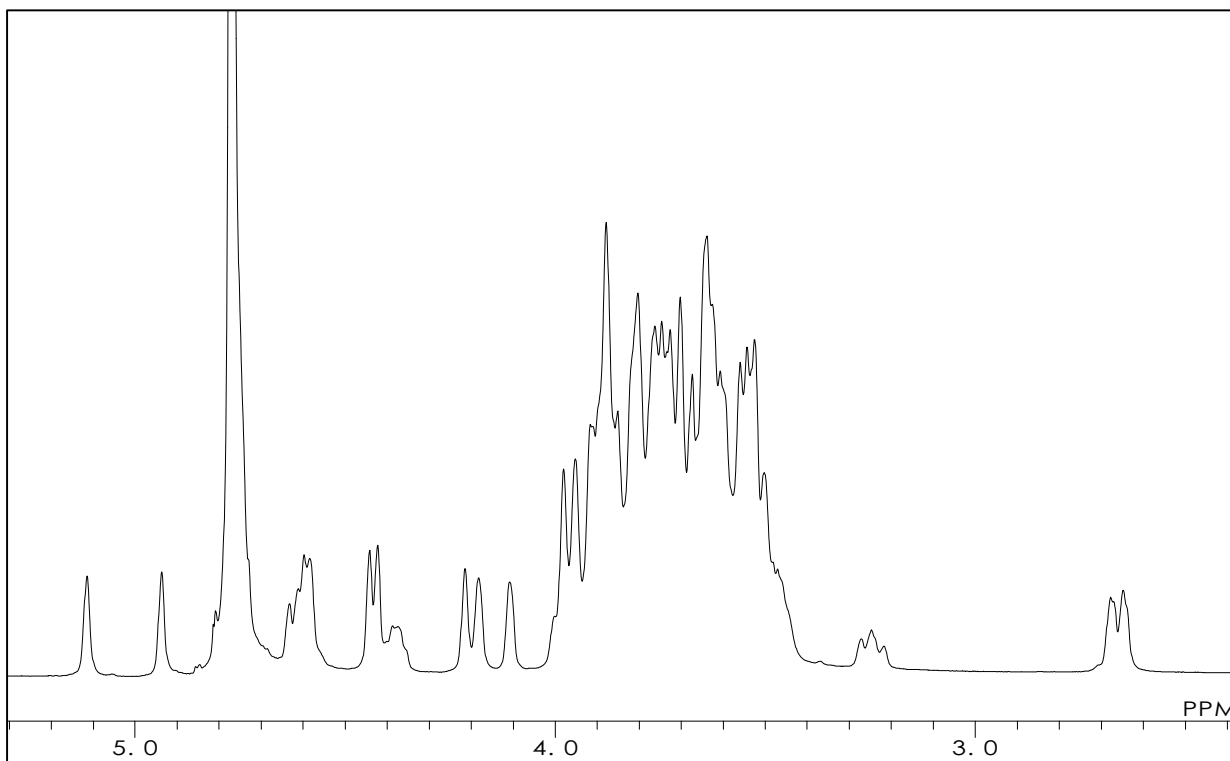
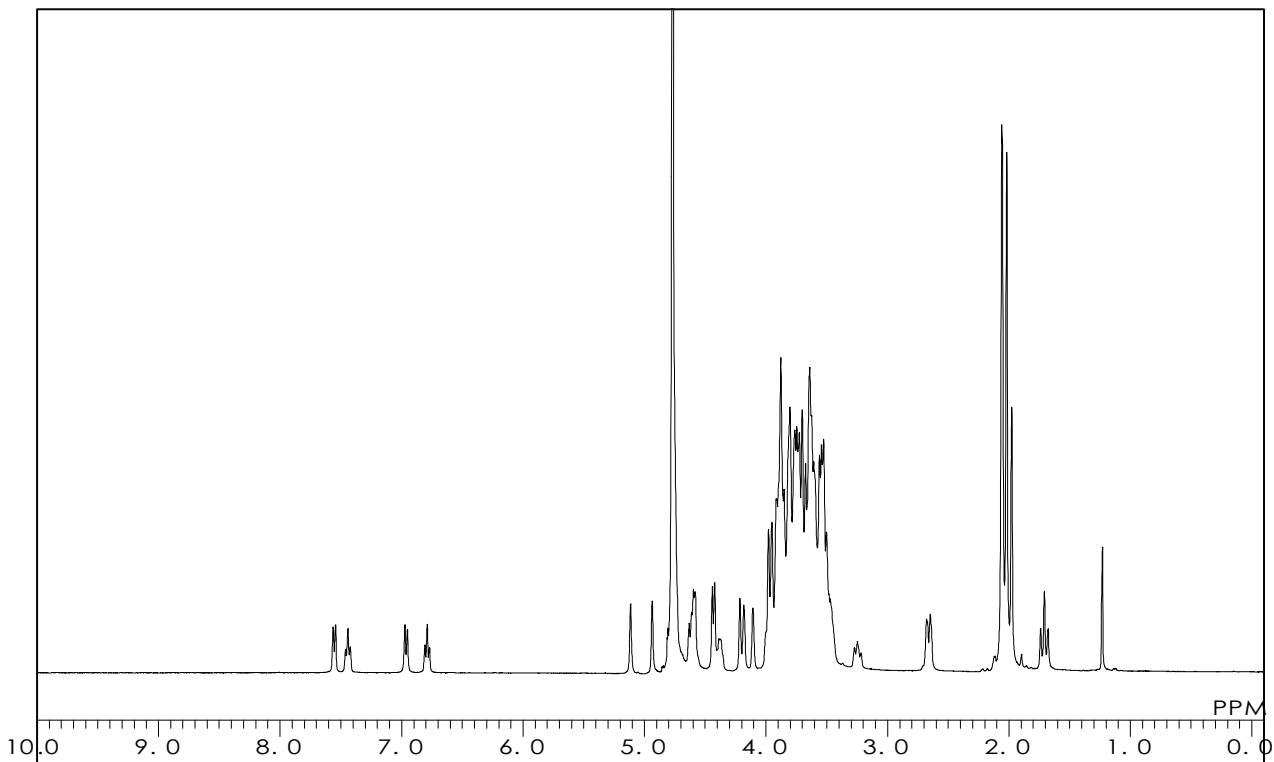
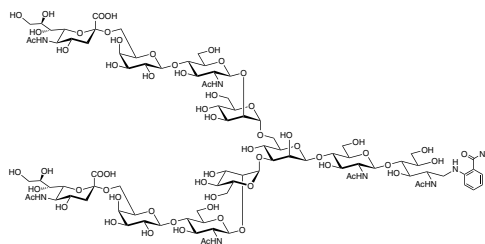
**Neu5Ac  $\alpha$  (2-6) N-Glycan 2AB**

$C_{91}H_{146}N_8O_{62} = 2344.16$  [1107646-22-9]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 24.1 °C



**N1118**

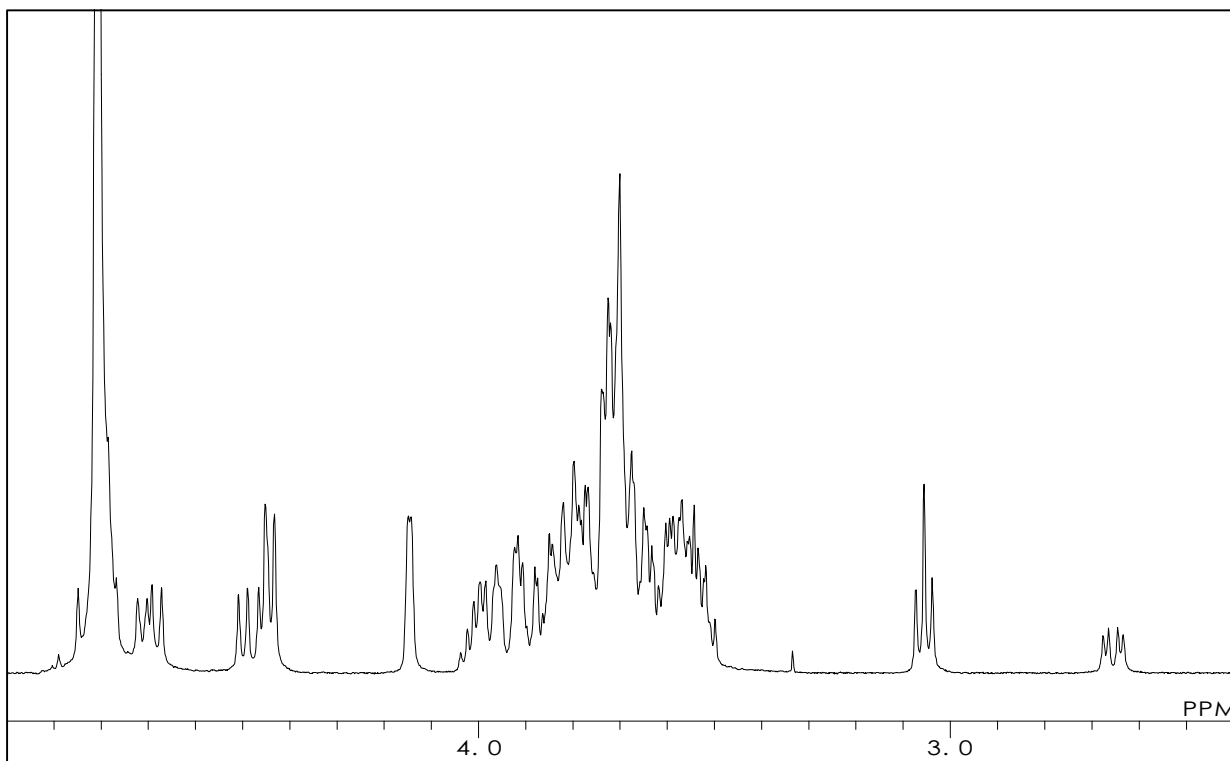
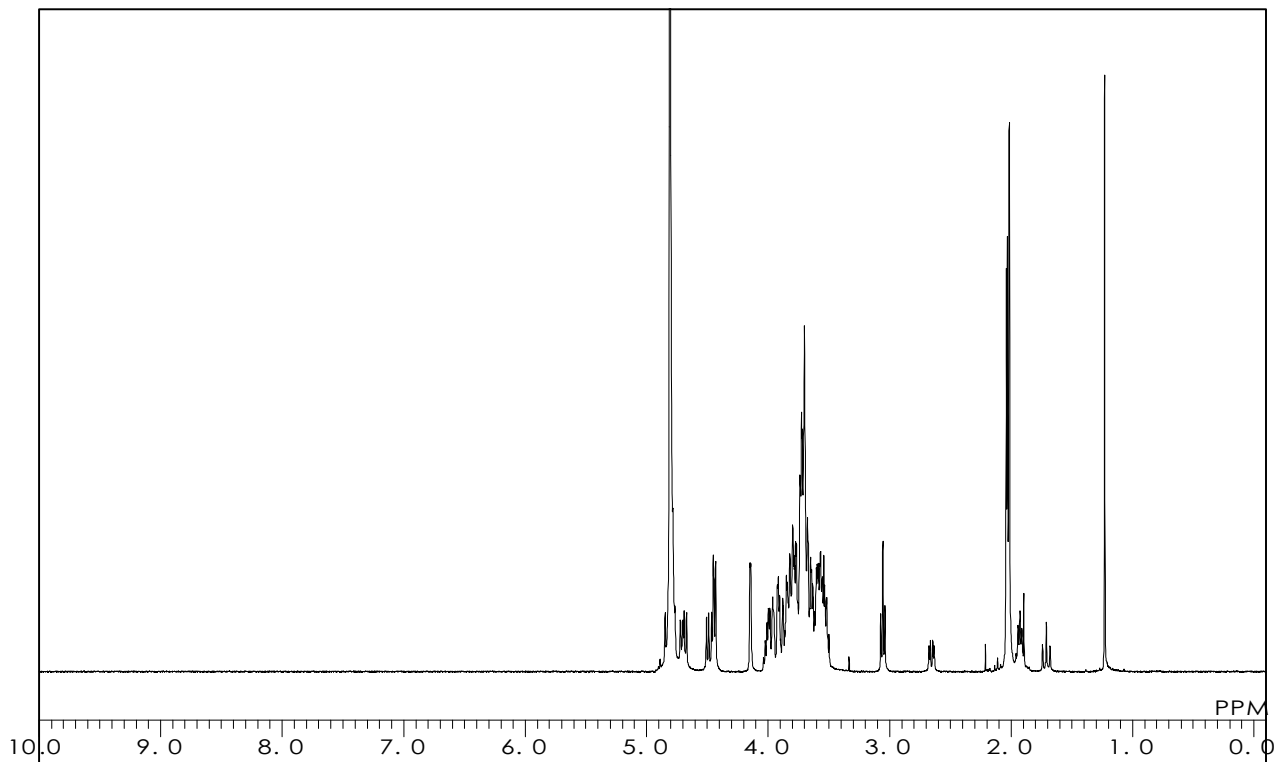
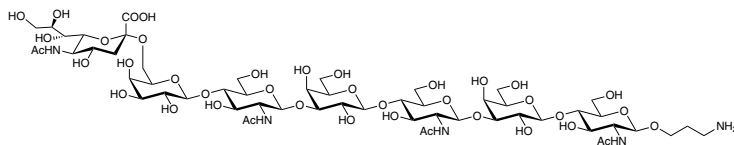
**Neu5Ac  $\alpha$  (2-6)Gal  $\beta$  (1-4)GlcNAc  $\beta$  (1-3)Gal  $\beta$  (1-4)GlcNAc  
 $\beta$  (1-3)Gal  $\beta$  (1-4)GlcNAc- $\beta$ -propylamine**

$C_{56}H_{95}N_5O_{39} = 1462.37$  [1342819-25-3]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 21.1  $^{\circ}C$



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**N1117**

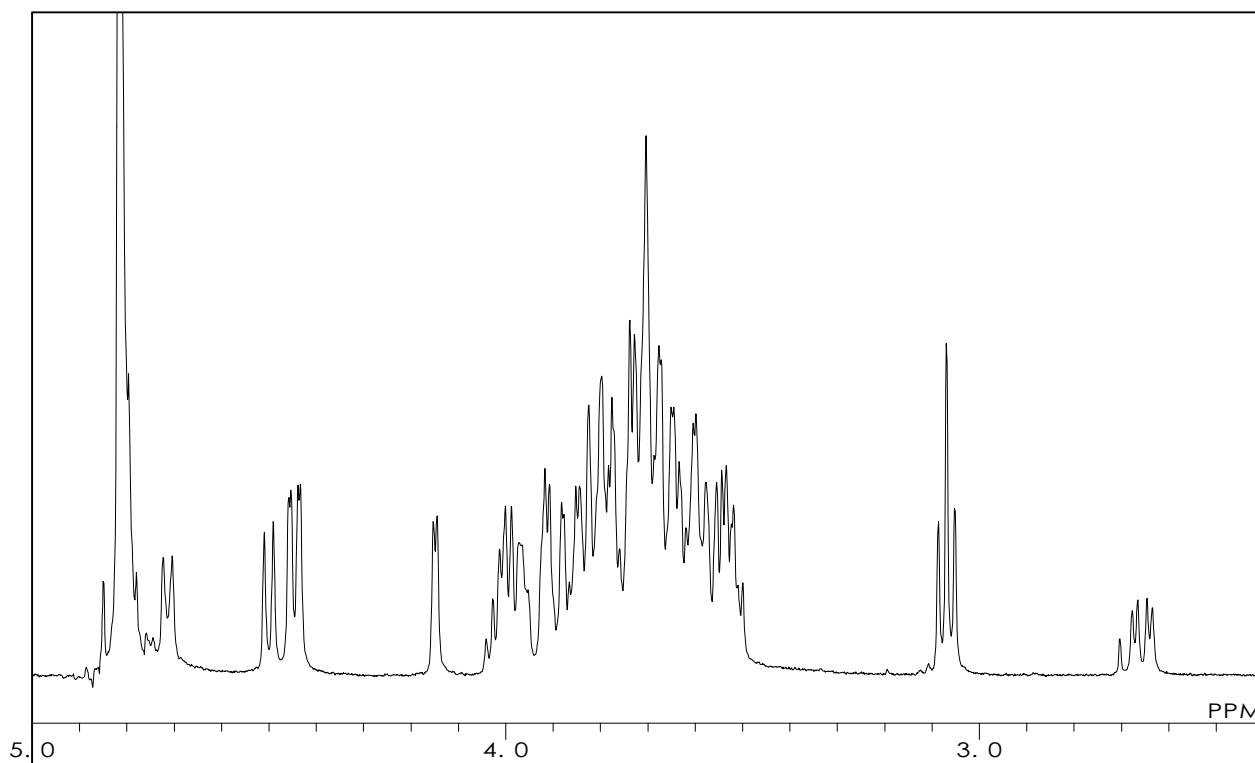
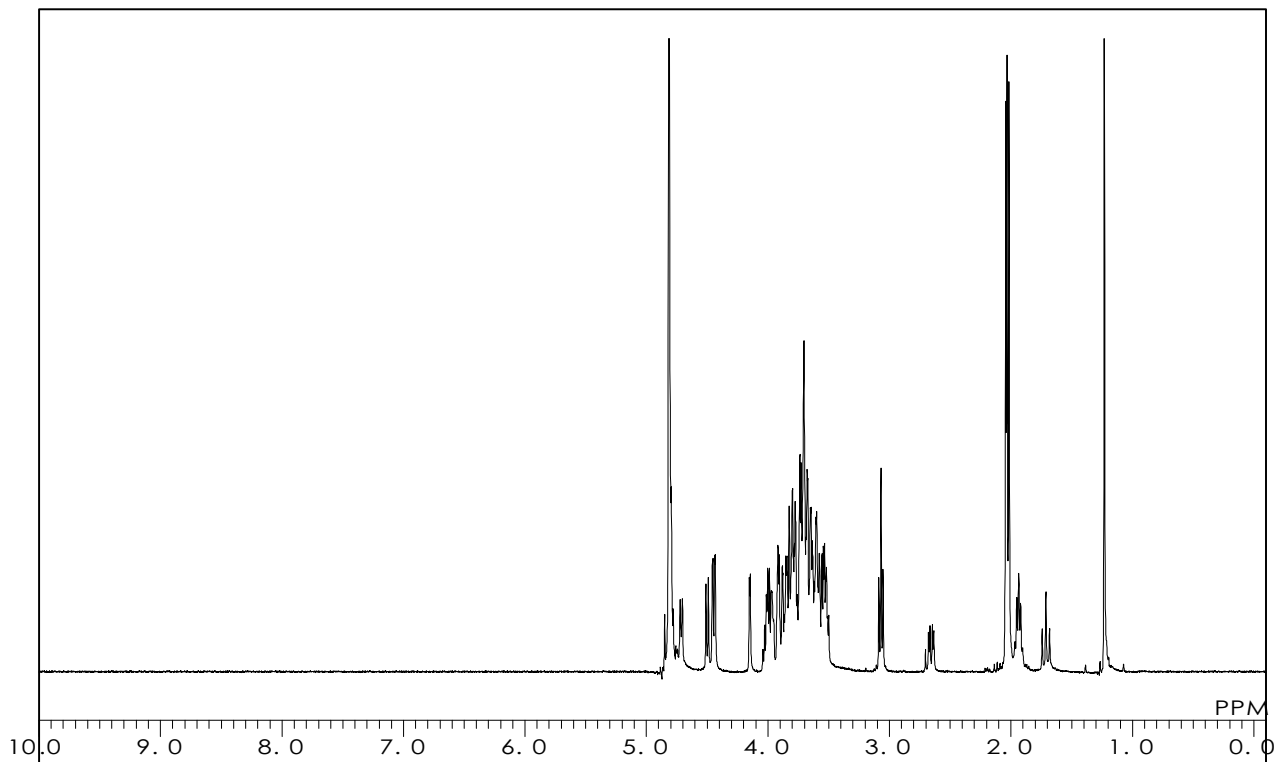
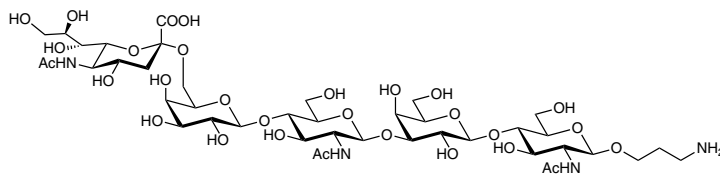
**Neu5Ac  $\alpha$  (2-6)Gal  $\beta$  (1-4)GlcNAc  $\beta$  (1-3)Gal  
 $\beta$  (1-4)GlcNAc- $\beta$ -propylamine**

$C_{42}H_{72}N_4O_{29} = 1097.04$  [1015760-62-9]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 24.8 °C



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**N1064**

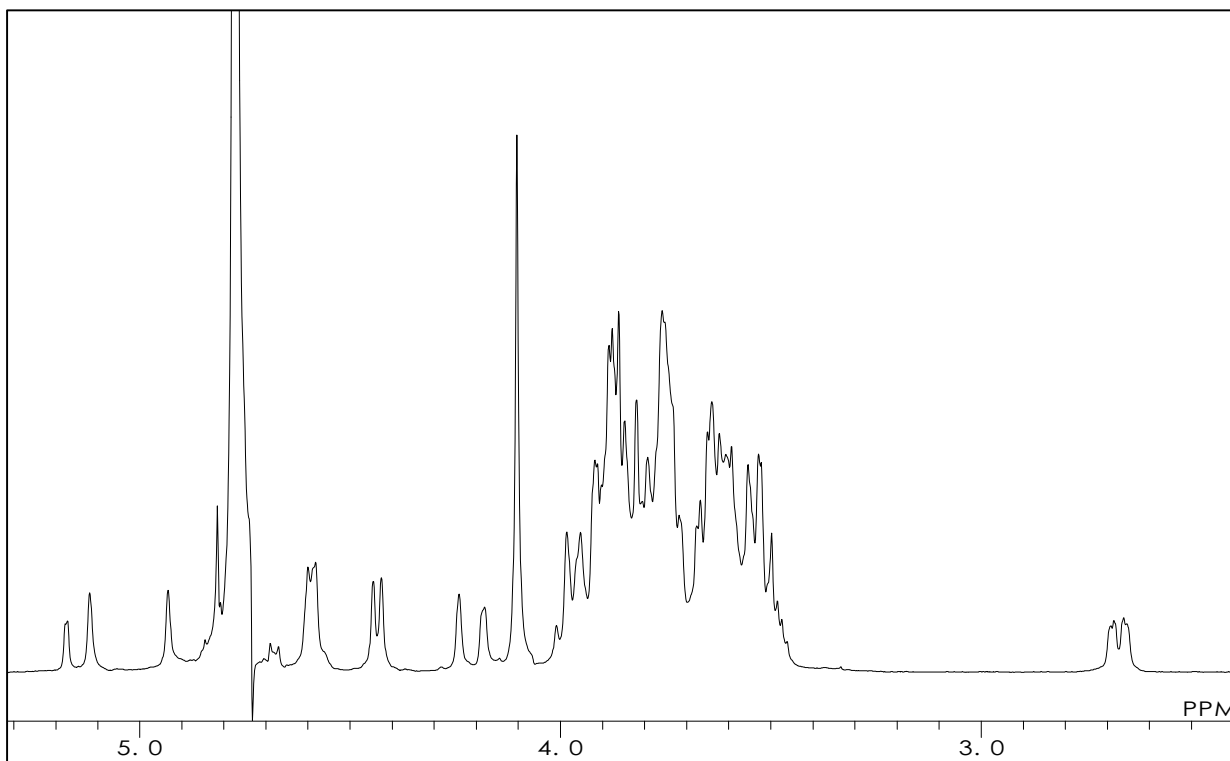
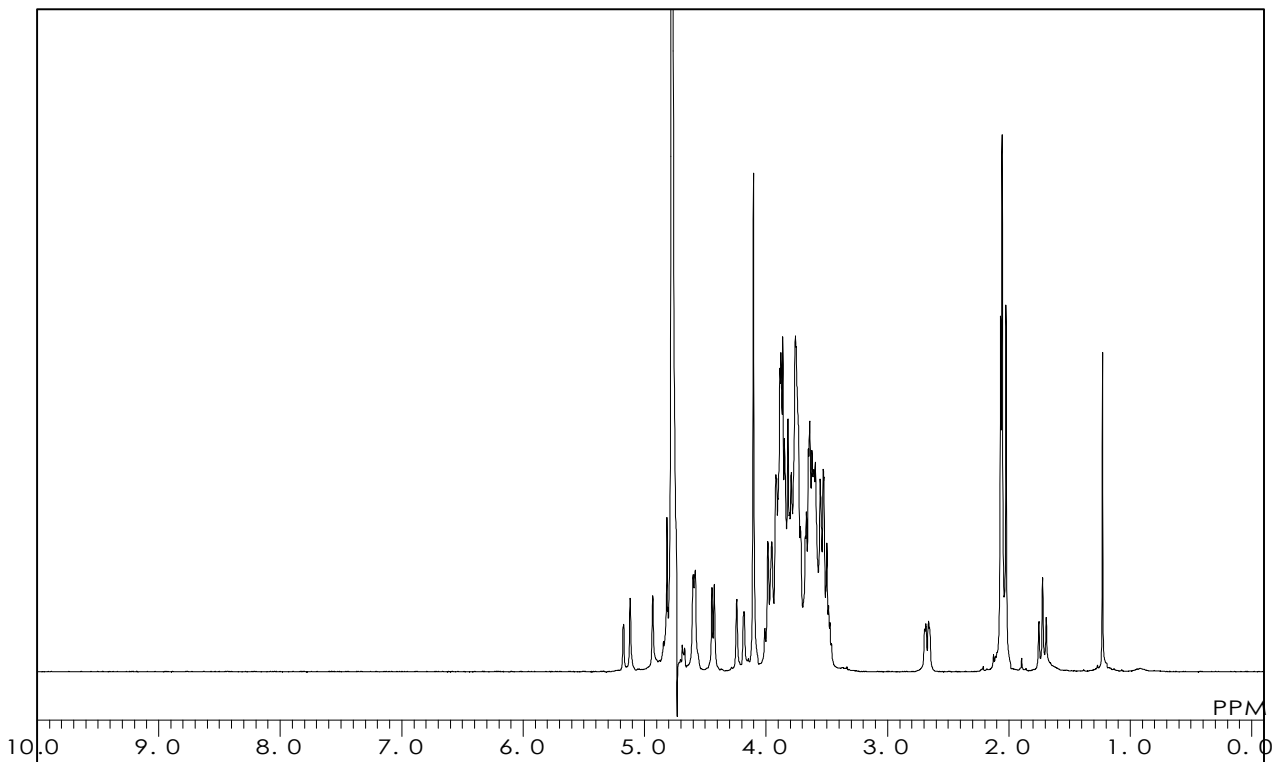
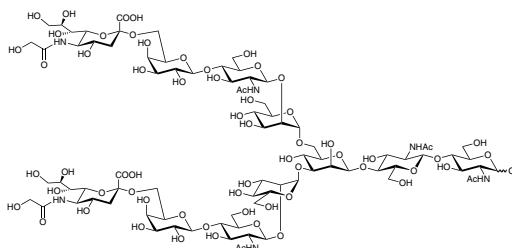
**Neu5Gc  $\alpha$  (2-6) N-Glycan**

$C_{84}H_{138}N_6O_{64} = 2256.01$  [125139-41-5]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 23.8 °C



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**N1075**

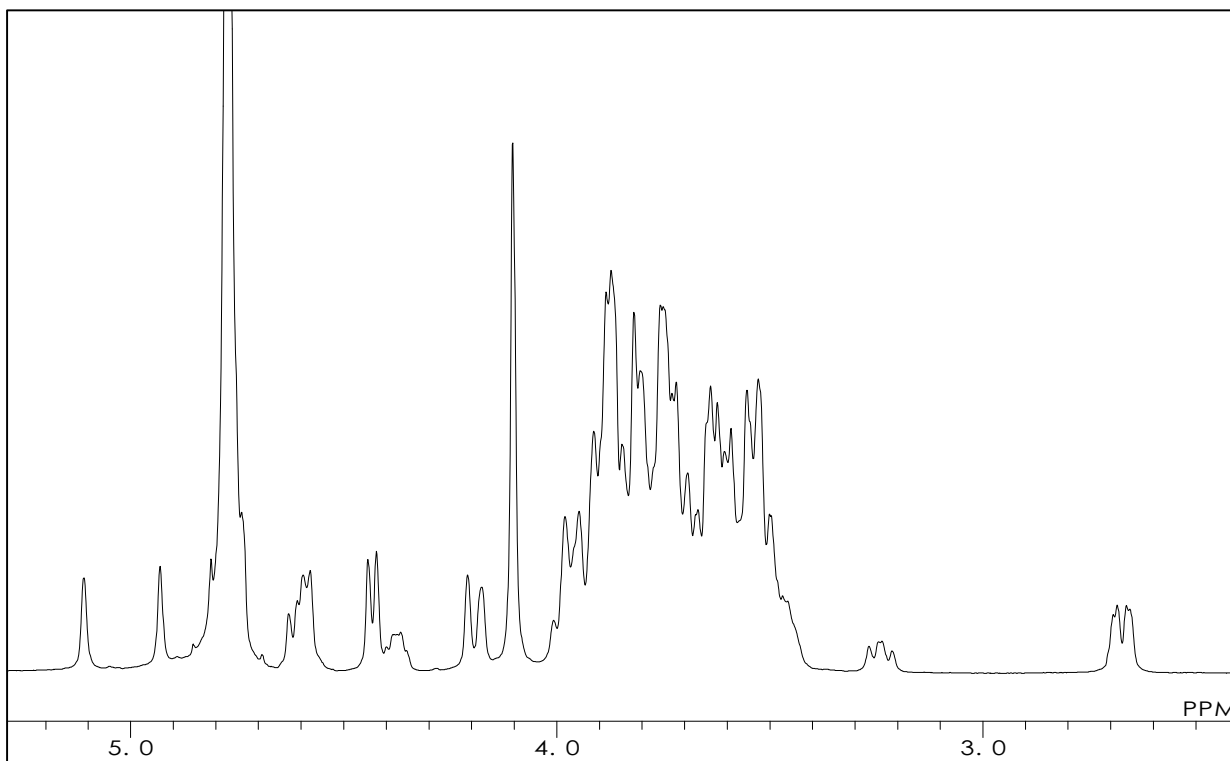
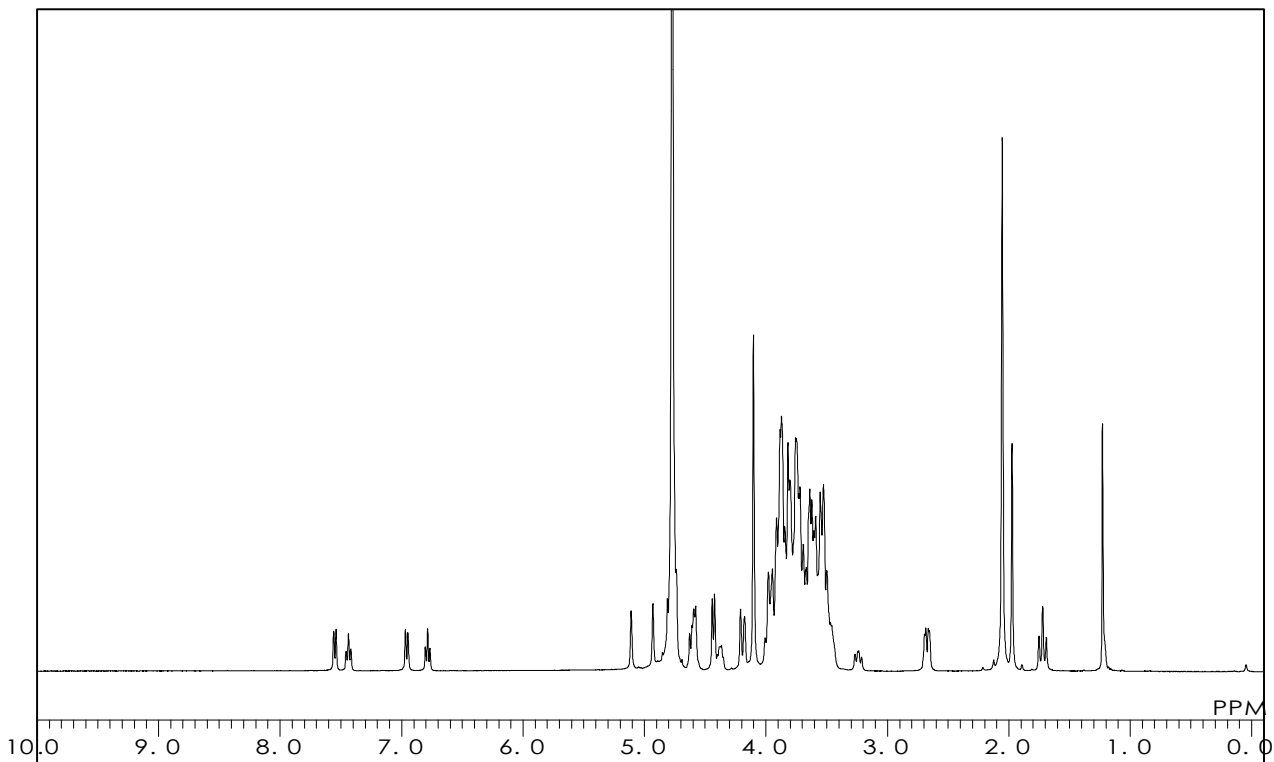
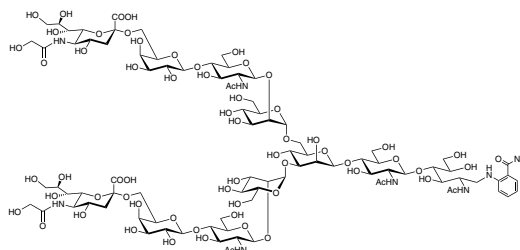
**Neu5Gc  $\alpha$  (2-6) N-Glycan 2AB**

$C_{91}H_{146}N_8O_{64} = 2376.16$

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 24.1 °C



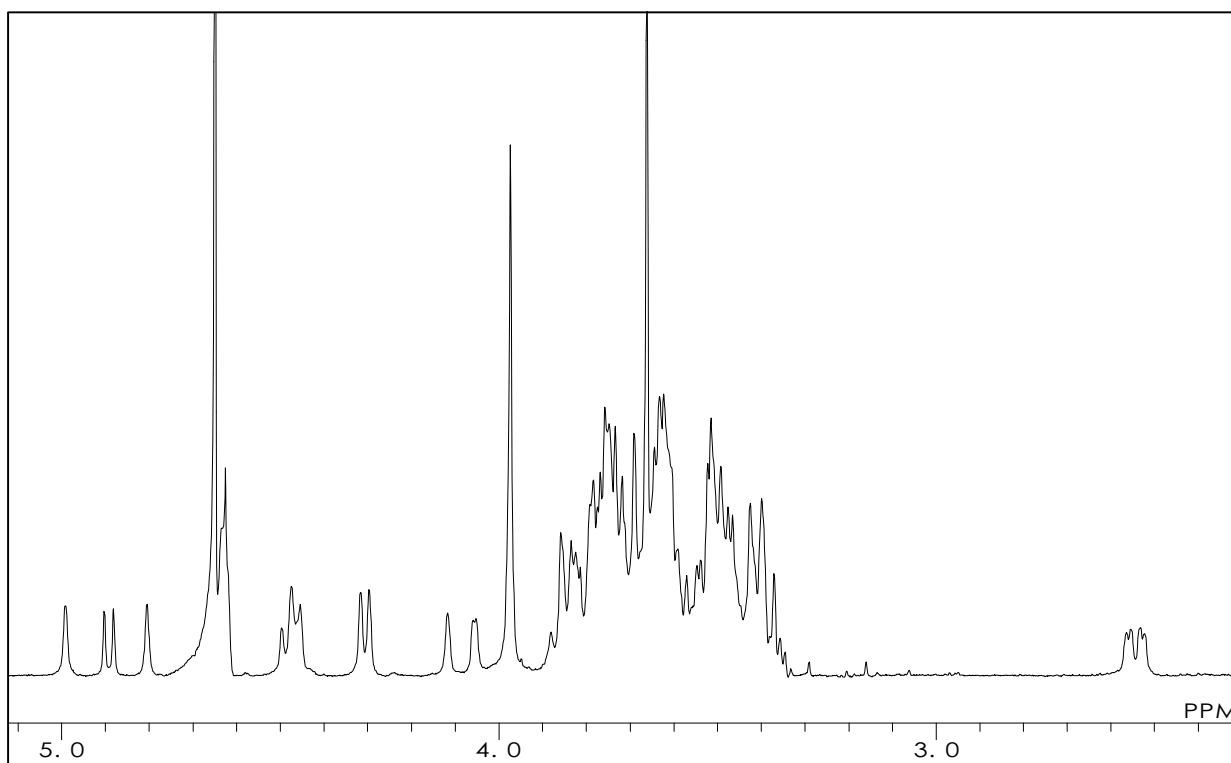
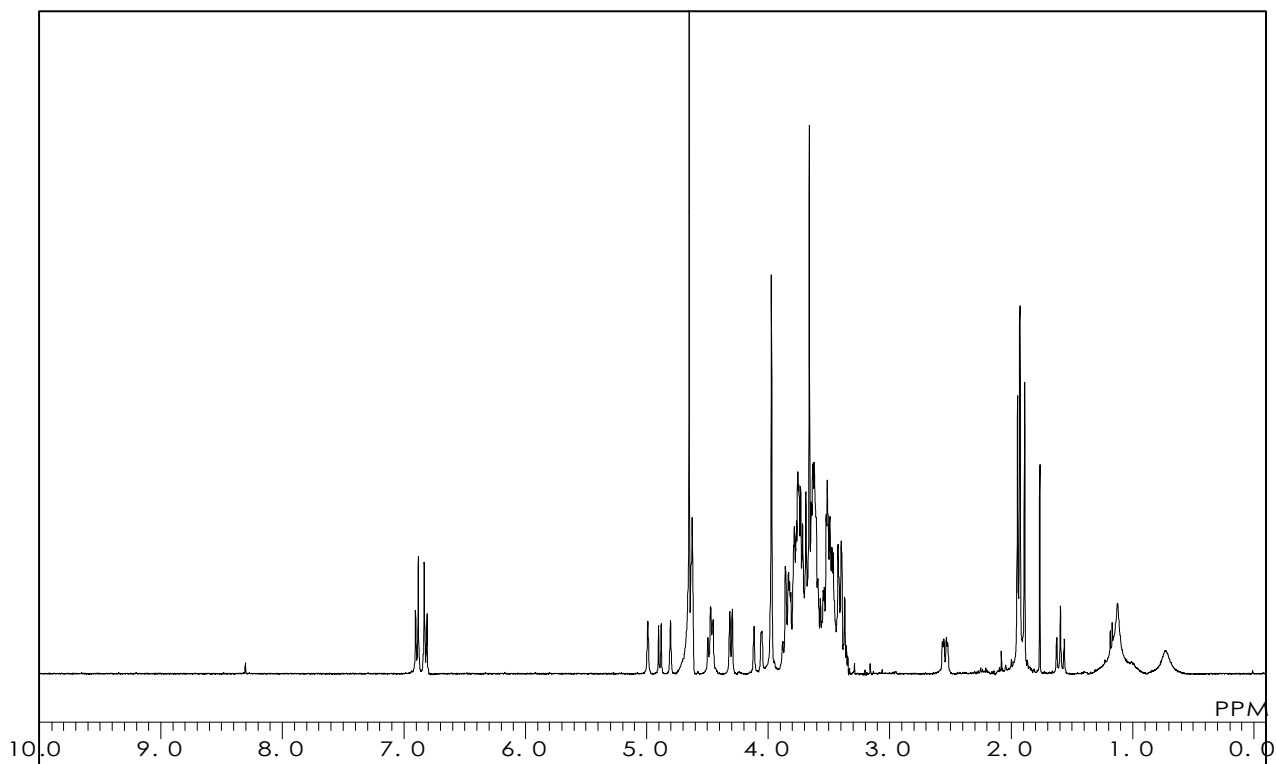
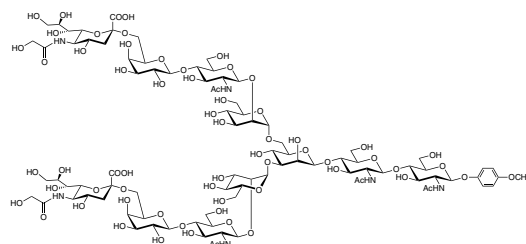
**N1046**

**Neu5Gc  $\alpha$  (2-6)  
N-Glycan MP Glycoside**

$C_{91}H_{144}N_6O_{65} = 2362.13$

Solvent :  $D_2O$

Measured Temperature : 23.3 °C



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**P2027**

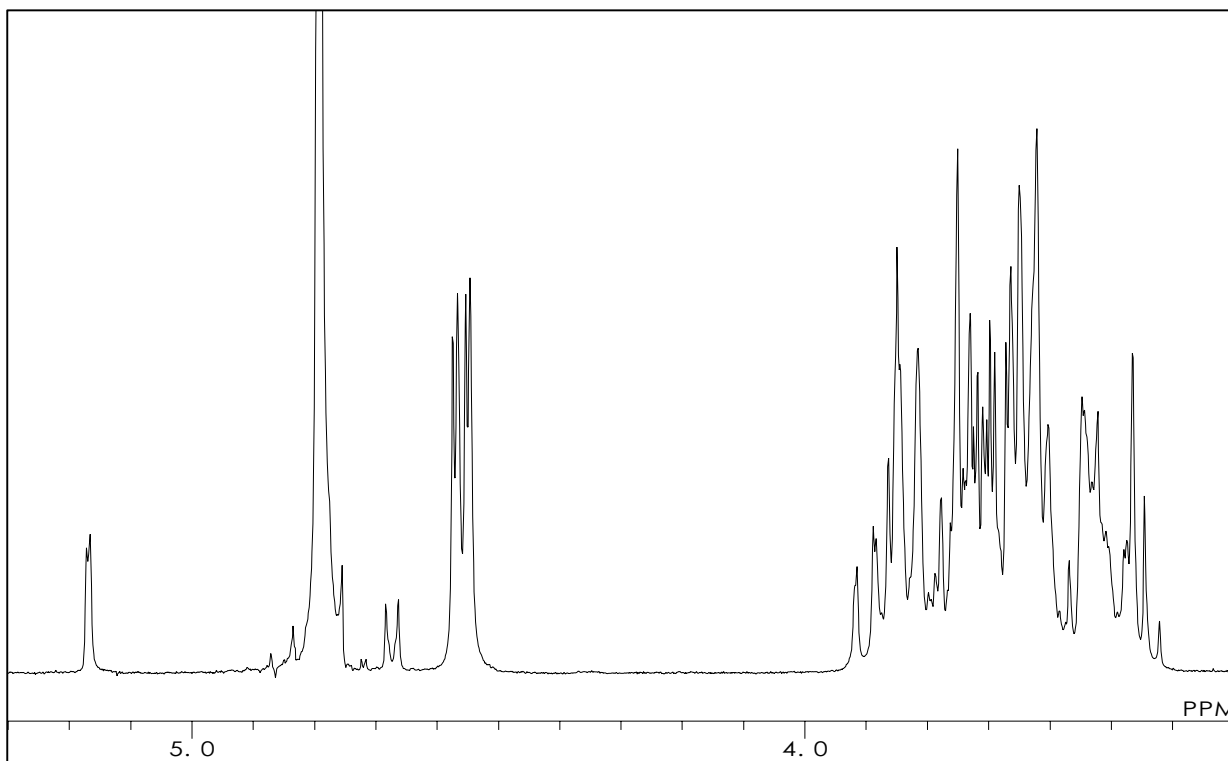
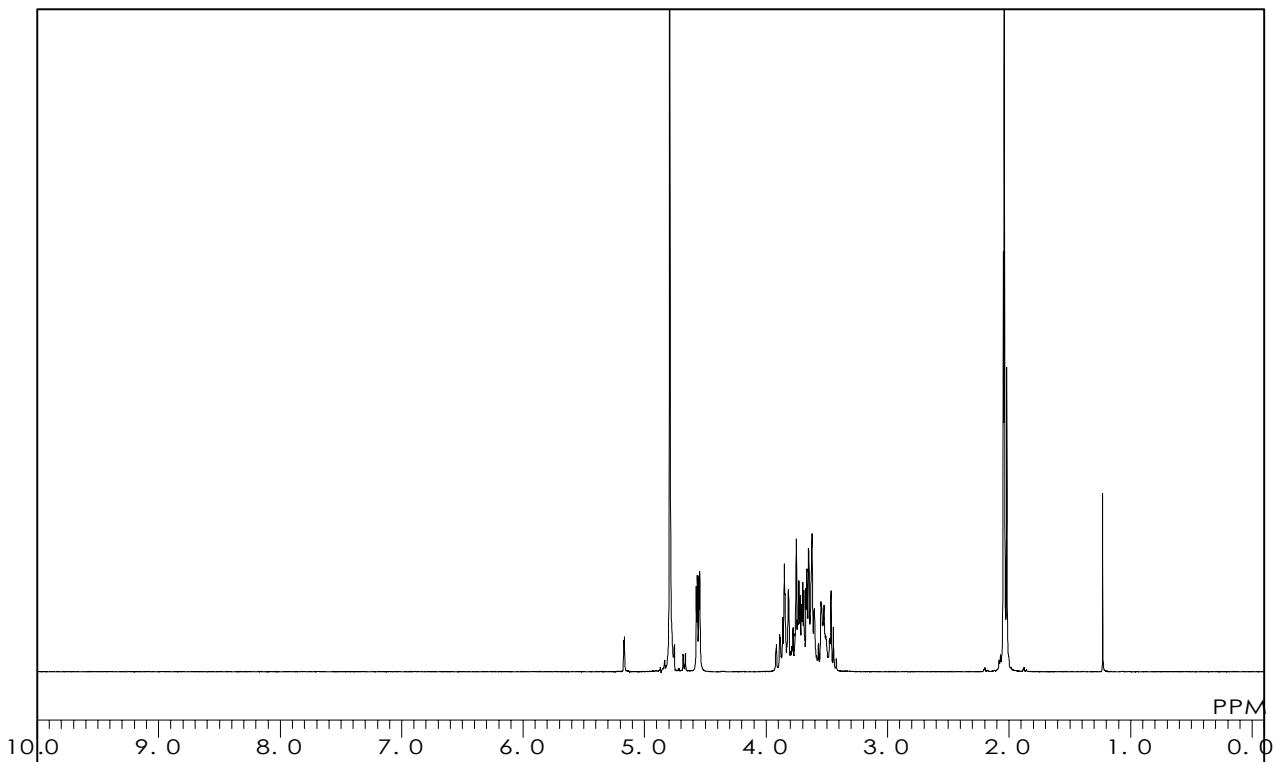
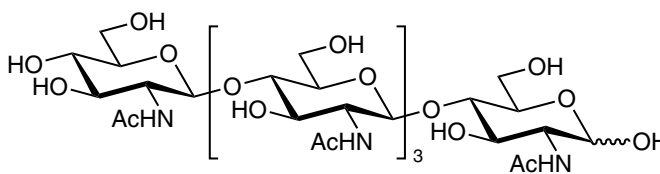
**N,N',N'',N''',N''''-Pentaacetylchitopentaose**

$C_{40}H_{67}N_5O_{26} = 1033.99$  [36467-68-2]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 22.1 °C



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S0849

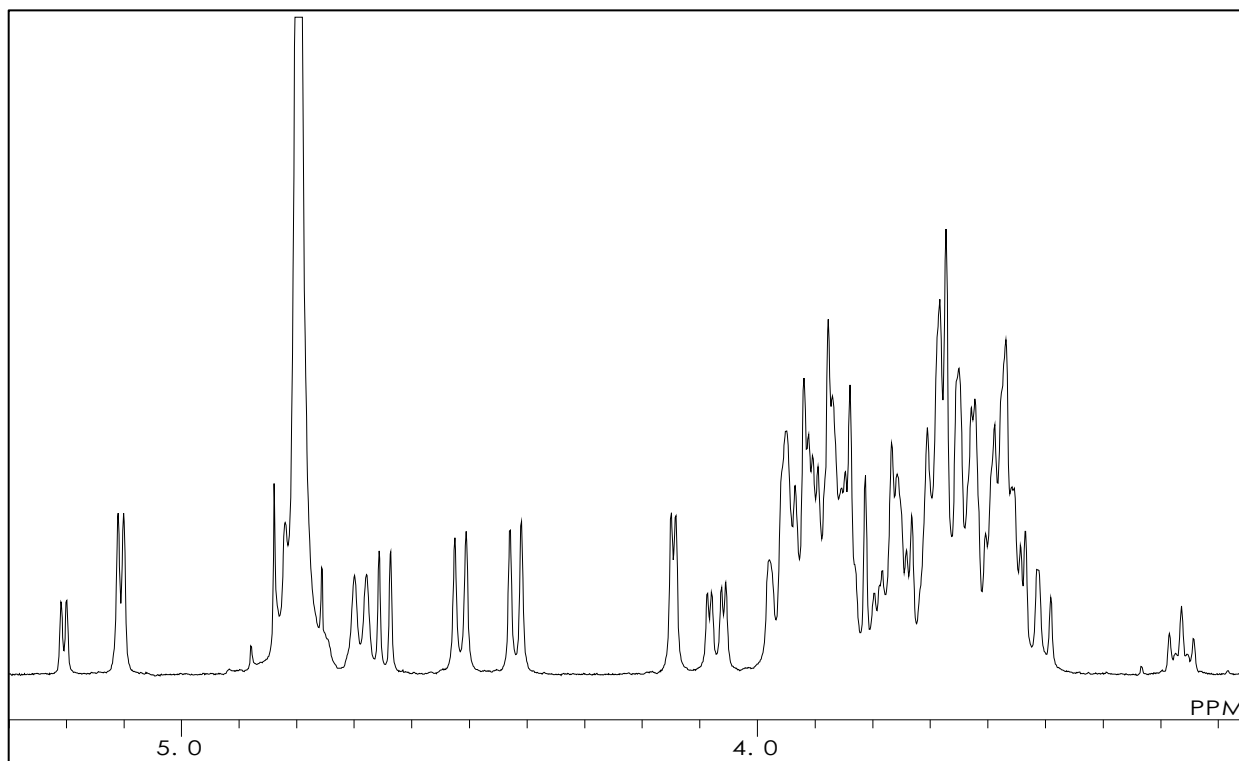
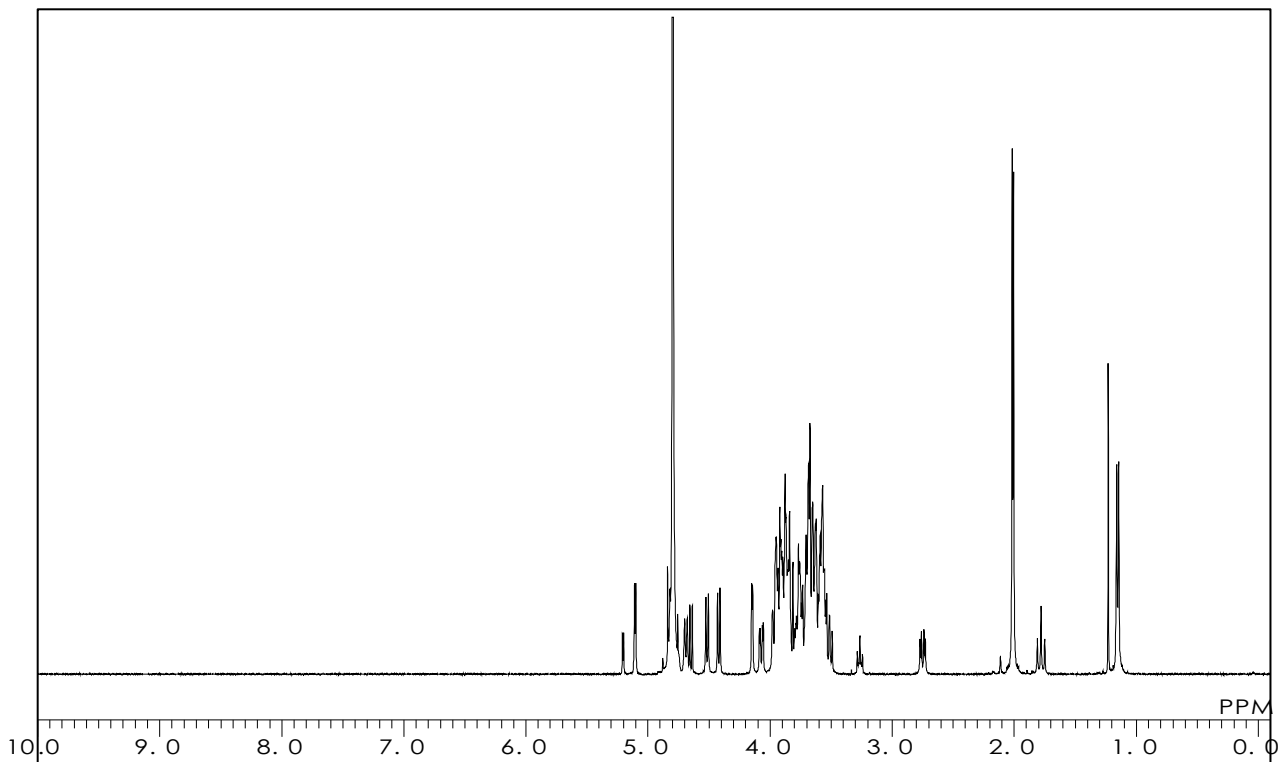
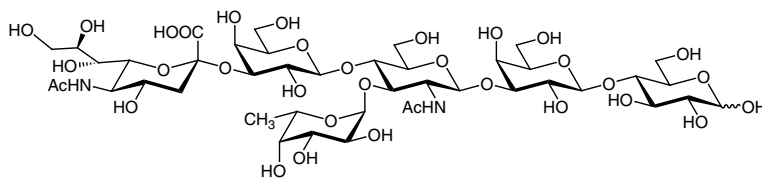
## Sialyl Lewis X-Lactose

$C_{43}H_{72}N_2O_{33} = 1145.03$  [127923-85-7]

Solvent :  $D_2O$

Internal Standard : *t*-BuOH ( $\delta$  1.23)

Measured Temperature : 21.3 °C



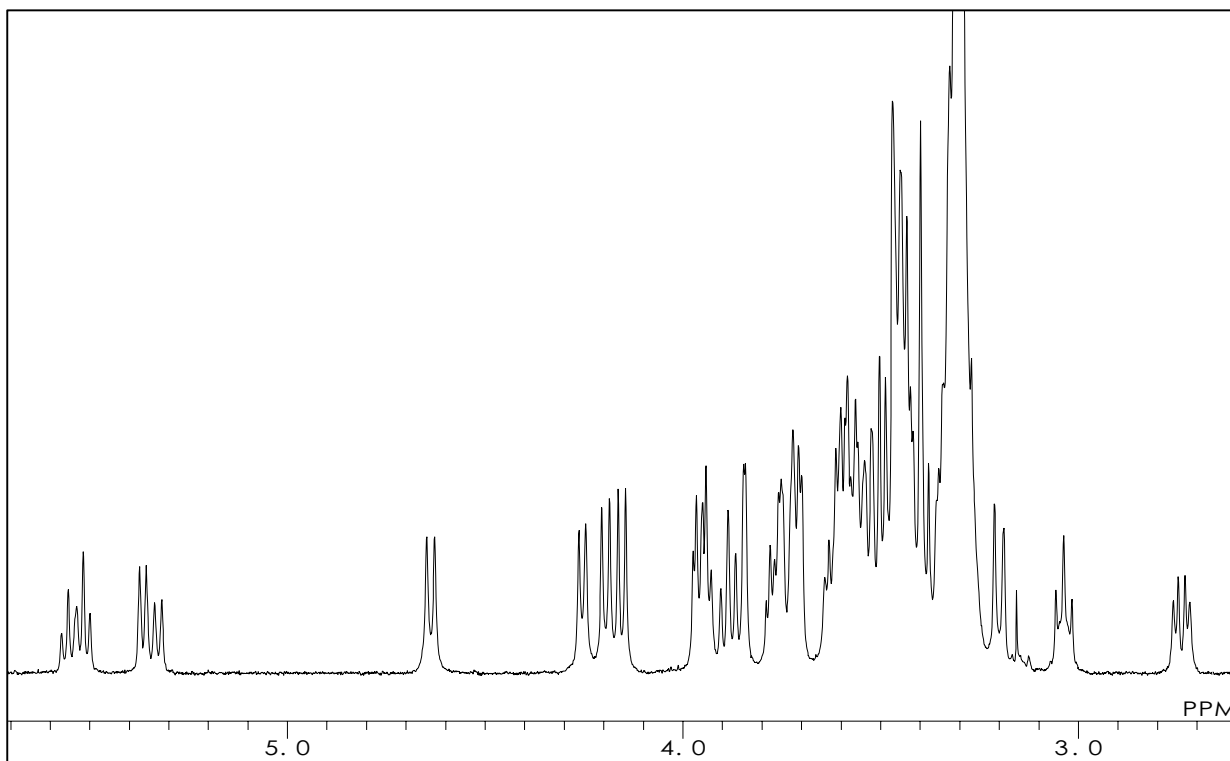
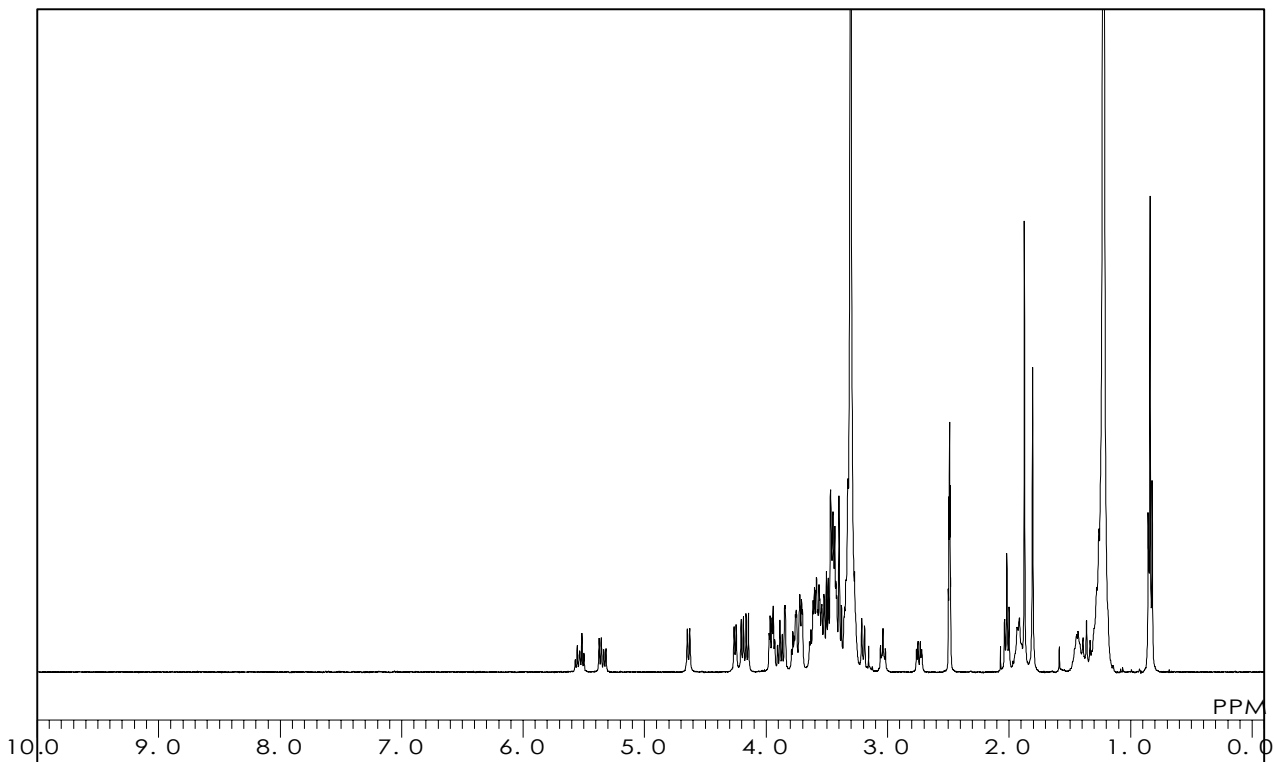
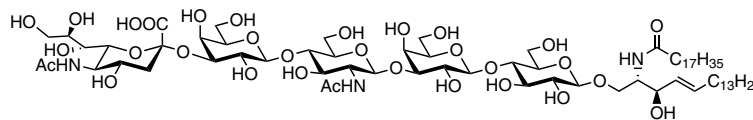
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**S0910**

**Sialyl Neolactotetraosylceramide (=Sialyl nLc<sub>4</sub>Cer)**

C<sub>73</sub>H<sub>131</sub>N<sub>3</sub>O<sub>31</sub> = 1546.84 [128529-29-3]

Solvent : DMSO-d<sub>6</sub>/D<sub>2</sub>O = 49/1  
Internal Standard : DMSO (δ 2.49)  
Measured Temperature : 50.0 °C



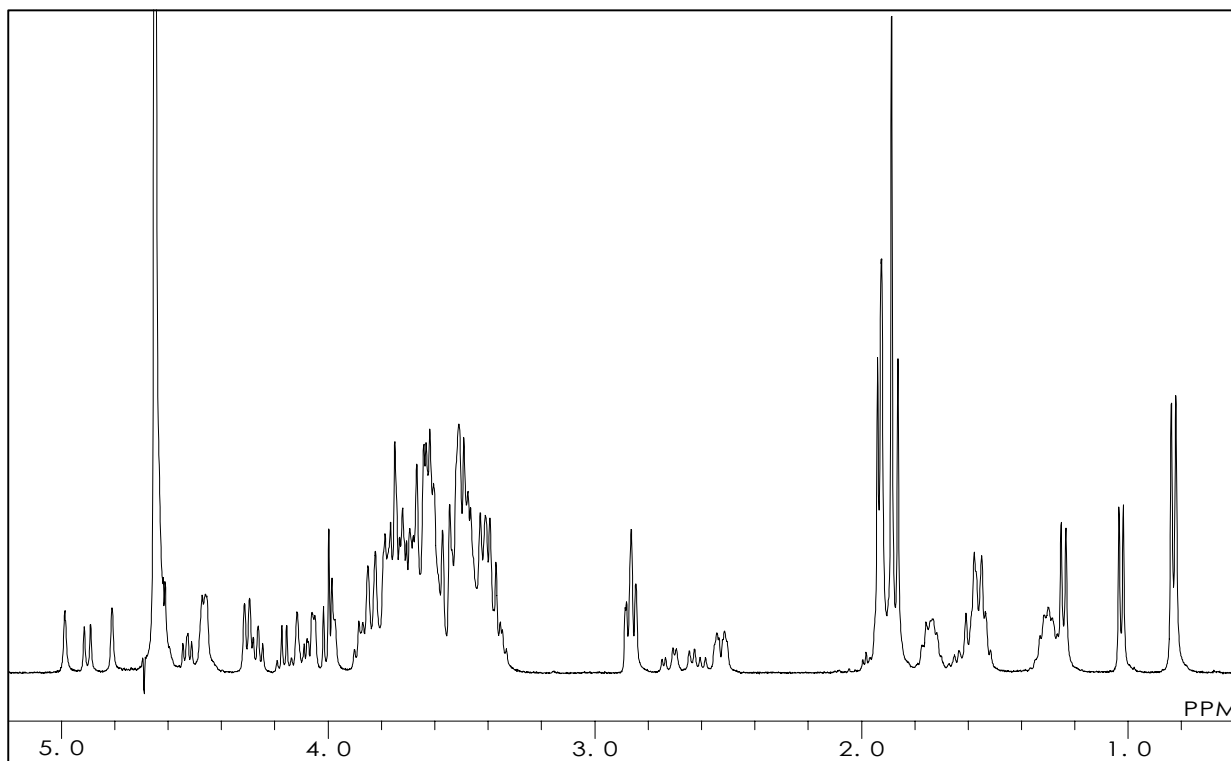
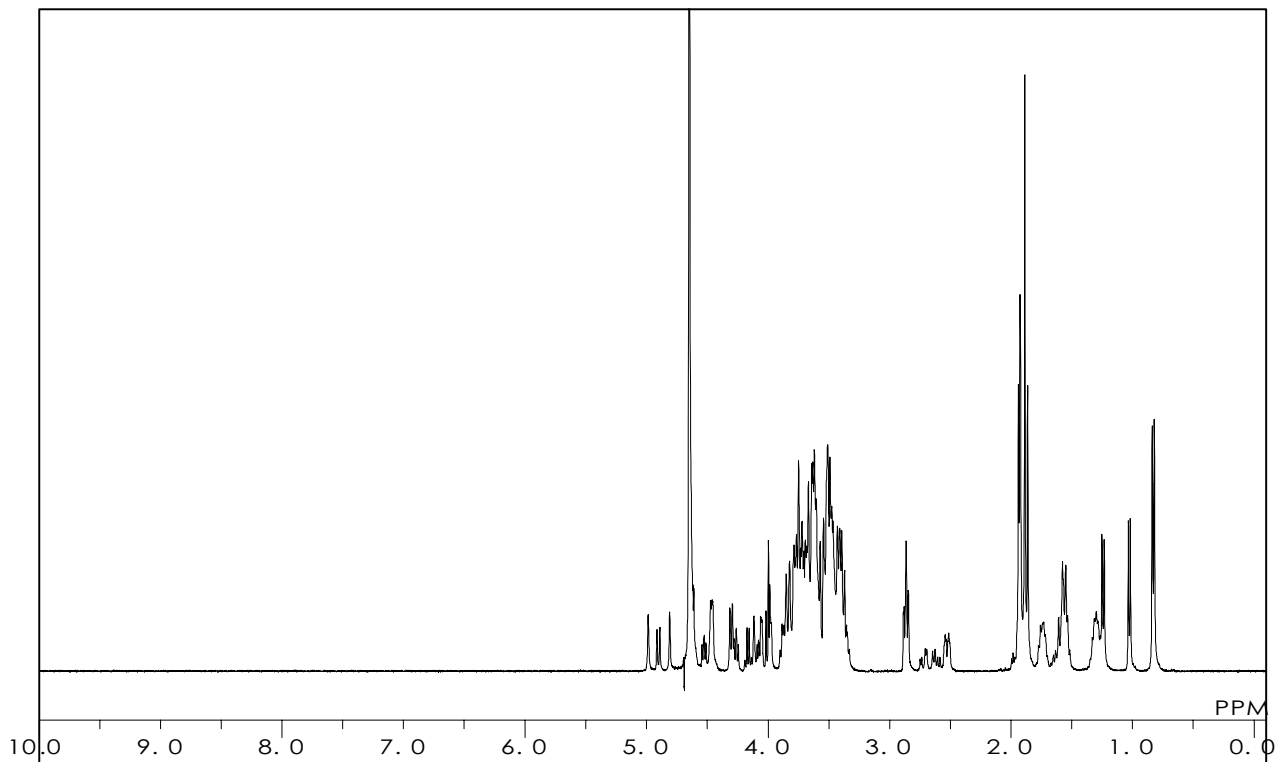
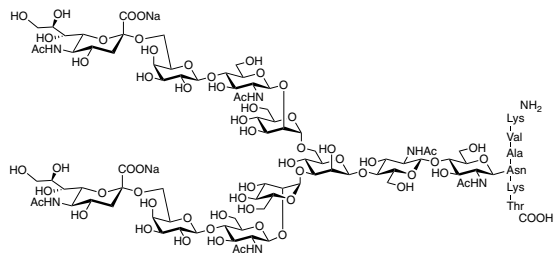
S0523

## Sialylglycopeptide

$C_{112}H_{187}N_{15}Na_2O_{70} = 2909.74$  [189035-43-6]

Solvent :  $D_2O$

Measured Temperature : 23.6 °C



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**S0946**

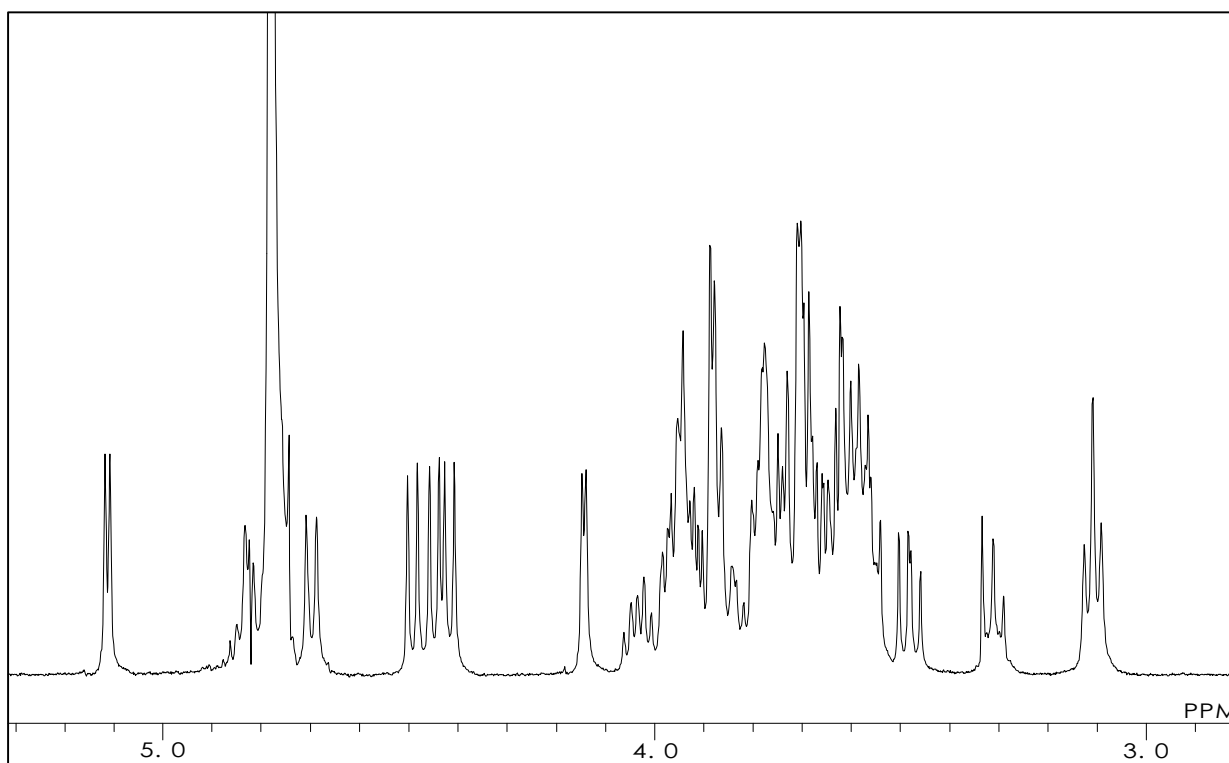
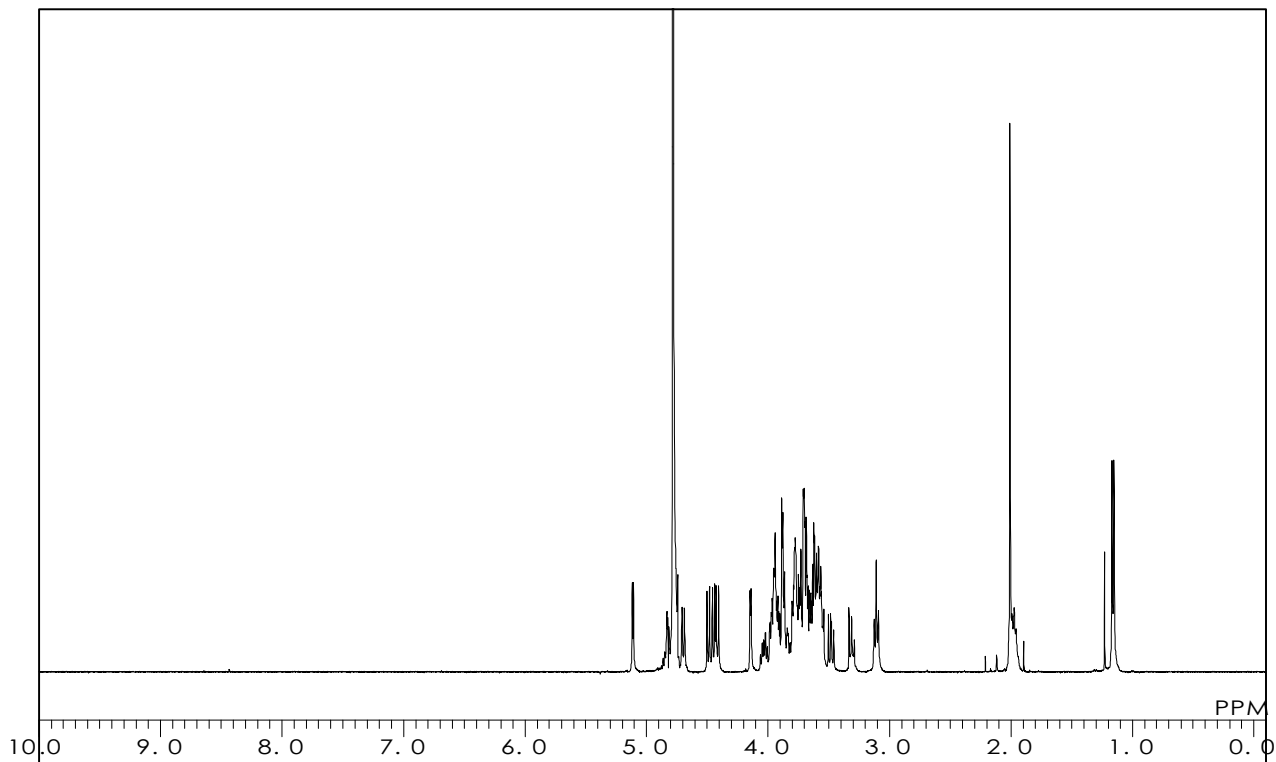
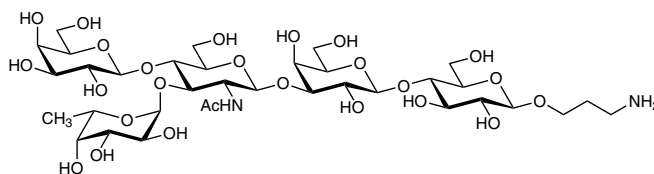
**SSEA-1-PrNH<sub>2</sub>**

C<sub>35</sub>H<sub>62</sub>N<sub>2</sub>O<sub>25</sub> = 910.87 [959862-91-0]

Solvent : D<sub>2</sub>O

Internal Standard : *t*-BuOH (δ 1.23)

Measured Temperature : 23.3 °C



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5-Bromo-6-chloro-3-indolyl $\beta$ -D-Galactopyranoside (contains ca. 10% Ethyl Acetate) [for Biochemical Research]	B3469	16
5-Bromo-4-chloro-3-indolyl $\beta$ -D-Glucopyranoside [for Biochemical Research]	B5393	27
5-Bromo-3-indolyl $\beta$ -D-Galactopyranoside [for Biochemical Research]	B3470	16
N-Bromosuccinimide	B0656	129
BSTFA [=N,O-Bis(trimethylsilyl)trifluoroacetamide] [for Gas Chromatography]	A5603	129
L-1,2,3,4-Butanetetrol	T1647	124
tert-Butyldimethylchlorosilane [tert-Butyldimethylsilylating Agent]	B0995	129
tert-Butyldimethylsilyl Triflate	T1525	130
tert-Butyldimethylsilyl Trifluoromethanesulfonate	T1525	130
tert-Butyldiphenylchlorosilane	B1223	130

## C

Calcium Alginate	A0738	111
Calcium Gluconate Monohydrate	G0037	27
Calcium Lactobionate Hydrate	L0006	74
( $\pm$ )-10-Camphorsulfonic Acid	C0016	130
(+)-10-Camphorsulfonic Acid	C0015	130
(-)-10-Camphorsulfonic Acid	C0972	130
CAN	C1806	126
Capsaicin $\beta$ -D-Glucopyranoside	C2548	27
3-(Carbobenzoxyamino)-1-propanol	C1932	130
N-Carbobenzoxyoxysuccinimide	C1124	130
1,1'-Carbonyldiimidazole [Coupling Agent for Peptides Synthesis]	C0119	131
Carboxymethyl Cellulose Sodium Salt (n=approx. 500)	C0045	111
Carboxymethyl Cellulose Sodium Salt (n=approx. 1,050)	C0603	111
Carboxymethyl dextran Sodium Salt (Mw.=ca. 10,000)	C3250	111
Carboxymethyl dextran Sodium Salt (Mw.=ca. 40,000)	C3251	112
Carmine	C0543	27
Carminic Acid (Natural dye)	C0782	28
$\iota$ -Carrageenan	C1805	112
$\kappa$ -Carrageenan	C1804	112
$\lambda$ -Carrageenan (High-viscosity)	C3313	112
$\lambda$ -Carrageenan (Low-viscosity)	C2871	112

Cbz Chloride	B3021	128
Cbz Chloride (30-35% in Toluene)	C0176	128
Cbz-Cl	B3021	128
Cbz-Cl (30-35% in Toluene)	C0176	128
O-Cbz-N-hydroxysuccinimide	C1124	130
Cbz-OSu	C1124	130
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D-(+)-Cellobiose	C0056	74
$\alpha$ -D-Cellobiose Octaacetate	C0861	74
Cellopentaose	C2644	99
Cellotetraose	C2796	95
Celotriose	C2795	88
Cellulase from <i>Aspergillus niger</i>	C0057	164
Cellulose PAB Capacity: 0.20meq/g	C0064	112
Cellulose TEAE Capacity: 0.72 meq/g	C0068	112
Cesium Acetate	C2430	131
Chitin	C0072	113
Chitin Oligosaccharides (contains N-Acetylglucosamine)	C2762	99
Chitosan (5-20mPa·s, 0.5% in 0.5% Acetic Acid at 20°C)	C2395	113
Chitosan (20-100mPa·s, 0.5% in 0.5% Acetic Acid at 20°C)	C2396	113
Chitosan (200-600mPa·s, 0.5% in 0.5% Acetic Acid at 20°C)	C0831	113
Chitosan Oligosaccharides	C2849	99
Chitotetraose Tetrahydrochloride Hydrate	C2641	95
Chitotriose Trihydrochloride Hydrate	C2642	88
$\alpha$ -Chloralose (contains $\beta$ -isomer)	C0074	28
Chlorhexidine Digluconate (20% in Water)	C3105	28
Chloroacetyl Chloride	C0098	131
Chlorodimethyl Ether	C0202	132
2-Chloro-1,3-dimethylimidazolium Chloride (stabilized with Diisopropylethylamine)	C1408	131
2-Chloro-1,3-dimethylimidazolium Chloride (ca. 25% in Dichloromethane)	C1639	131
Chlorodimethylphosphine Sulfide	D2159	136
6-Chloro-3-indolyl $\beta$ -D-Galactopyranoside [for Biochemical Research]	C2371	17
2-(Chloromethoxy)ethyltrimethylsilane (stabilized with Diisopropylethylamine)	C1339	131
(Chloromethylene)dimethyliminium Chloride	C1545	131
Chloromethyl Methyl Ether	C0202	132
2-Chloro-1-methylpyridinium Iodide	C0903	132
Chlorotrimethylsilane	C0306	132
Chondroitin Sulfate Sodium Salt	C0335	113
Chondrosamine Hydrochloride	G0007	24
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L-Cleland's Reagent	D1589	120
Copper(II) Gluconate	G0275	28
Copper(II) Triflate	T1292	132
Copper(II) Trifluoromethanesulfonate	T1292	132
Crocin (Gardenia Fruits Extract)	C1527	74
(+)-CSA	C0015	130
(-)-CSA	C0972	130
$\alpha$ -Cyclodextrin	C0776	107
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$\gamma$ -Cyclodextrin	C0869	108
$\beta$ -Cyclodextrin Henicosaacetate	T1844	110
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DABCO	D0134	133
Daidzin	D3920	28
DANA	A2205	66
Dansyl Chloride	D0656	132
Dansyl Chloride (10% in Acetone)	D0005	132
DAST	D1868	135
Daunorubicin Hydrochloride	D4532	119
DBT-Cl	B4587	129
DBU	D1270	133
DCC	D0436	134
DDQ	D1070	134
DEAD (40% in Toluene, ca. 2.2mol/L)	A0705	135
2-Deoxy-2,2-difluoro-D-erythro-pentonic Acid $\gamma$ -Lactone 3,5-Dibenzoate	D4207	63
2-Deoxy-2-fluoro-D-glucopyranose	C3023	28
2-Deoxy-2-fluoro-1,3,5-tri-O-benzoyl- $\alpha$ -D-arabinofuranose	D4594	10
2-Deoxy-D-galactose	D0050	17
2-Deoxy-D-glucose	D0051	28
2-Deoxy-D-ribose	D0059	63
Dermatan Sulfate Sodium Salt	D3672	113
Dextran 40 (Mw.=ca. 40,000)	D1448	113

Dextran 70 (Mw.=ca. 70,000)	D1449.. 114	(+)-1,4-Di-O-tosyl-2,3-O-isopropylidene-D-threitol	D1622.. 120
Dextrin	D4657.. 114	(-)-1,4-Di-O-tosyl-2,3-O-isopropylidene-L-threitol	D1623.. 120
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1,6-Di-O-acetyl-2,3,4-tri-O-benzyl- $\alpha$ -D-mannopyranose	D5294.. 55	Doxorubicin Hydrochloride	D4193.. 120
1,6:2,3-Dianhydro- $\beta$ -D-mannopyranose	D4372.. 55	DTE	D1320.. 12
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Dibenzyl Azodicarboxylate (40% in Dichloromethane, ca. 1.7mol/L)	A0776.. 133	<b>E</b>	
Dibenzyl Phosphate	P1120.. 133	EDAC	D4029.. 135
(+)-1,4-Di-O-benzyl-D-threitol	D2239.. 119	EDAC.HCl	D1601.. 135
(-)-1,4-Di-O-benzyl-L-threitol	D2240.. 119	EDC	D4029.. 135
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Di-tert-butyl Dicarboxylate (ca. 30% in Dioxane)	D3878.. 133	EDCI	D4029.. 135
Di-tert-butyl Dicarboxylate (ca. 30% in Tetrahydrofuran)	D3879.. 133	EDCI.HCl	D1601.. 135
Di-tert-butyl Dicarboxylate (ca. 30% in Toluene)	D3880.. 134	Emulsin from Almonds	G0035.. 164
Di-tert-butylsilyl Bis(trifluoromethanesulfonate)	D3135.. 134	Endo- $\alpha$ Recombinant: from <i>Bifidobacterium longum</i> expressed in <i>Escherichia coli</i>	A1844.. 163
Di-tert-butylsilyl Ditriflate	D3135.. 134	Endo-M Recombinant: from <i>Mucor hiemalis</i> expressed in <i>Candida boidinii</i> [Purity: single band by SDS-PAGE(85KDa)]	A1651.. 161
Dibutyltin Dichloride	D0223.. 134	Endo-M-W251N Recombinant: from <i>Mucor hiemalis</i> expressed in <i>Escherichia coli</i>	E1339.. 161
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G0 2AB	G0490	100
G2 2AB	G0493	101
3-G1 2AB	G0491	100
6-G1 2AB	G0492	101
Gal[246Ac,3All]-β-SPh	P1680	22
Gal[2Ac,346Bn]β(1-3)GlcNPhth[46Bzd]-β-MP	G0374	76
Gal[2Ac,346Bn]-β-SPh	P2078	22
Gal[2346Ac]α(1-3)Gal[246Ac]-β-MP	G0460	76
Gal[2346Ac]β(1-3)GalN <sub>3</sub> [46Bzd]-β-MP	G0330	76
Gal[2346Ac]β(1-3)GalN <sub>3</sub> -β-MP	G0329	76
Gal[2346Ac]β(1-4)Glc[236Ac]-β-MP	M1694	76
Gal[2346Ac]β(1-3)GlcN <sub>3</sub> [46Bzd]-β-MP	G0309	76
Gal[2346Ac]β(1-3)GlcNPhth[46Bzd]-β-MP	G0311	76
D-Galactal	G0273	17
Galactinol Hydrate	G0298	77
Galactitol	G0005	17
D-(+)-Galactosamine Hydrochloride	G0007	24
D-(+)-Galactose Anhydrous	G0008	17
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Gal[246Bn]β(1-4)Glc[236Bn]-β-MP	M1727	77
Gal[236Bn]β(1-4)Glc[236Bn]-β-MP	M1726	77
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Galβ(1-3)GalNAc-α-Thr	G0340	78
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Galβ(1-3)GlcNAcβ(1-3)Galβ(1-3)GlcNAc-β-PEG <sub>3</sub> -biotin	G0511	95
Galβ(1-3)GlcNAcβ(1-3)Galβ(1-4)GlcNAc-β-PEG <sub>3</sub> -biotin	G0513	95
Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAc-β-PEG <sub>3</sub> -biotin	G0515	95
Galβ(1-3)GlcNAc[6S]β(1-3)Galβ(1-3)GlcNAc[6S]-β-PEG <sub>3</sub> -biotin	G0512	95
Galβ(1-3)GlcNAc[6S]β(1-3)Galβ(1-4)GlcNAc[6S]-β-PEG <sub>3</sub> -biotin	G0514	95
Galβ(1-4)GlcNAc[6S]β(1-3)Galβ(1-4)GlcNAc[6S]-β-PEG <sub>3</sub> -biotin	G0516	97
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Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)Glc-β-pNP	G0351	96
Galβ(1-3)[GlcNAcβ(1-6)]GalNAc	G0529	89
Galβ(1-3)[GlcNAcβ(1-6)]GalNAc-α-Thr	G0343	89
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Galβ(1-4)GlcNAc[6S]	L0324	80
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Galα(1-3)N-Glycan	G0488	102
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GalNAcβ(1-3)Galα(1-3)Galβ(1-4)Glc-β-pNP	G0380	96
GalNAcβ(1-3)Galα(1-4)Galβ(1-4)Glc-β-pNP	G0354	96
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GalNAcβ(1-4)GlcNAc-β-pNP	G0356	79
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Galβ(1-3)[Neu5Acα(2-6)]GalNAc-β-pNP	G0345	90
Galβ(1-3)[Neu5Acα(2-6)]GalNAc-α-propylamine	G0440	90
Galβ(1-3)[Neu5Acα(2-6)]GlcNAc-β-pNP	G0347	90
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G2 Glycan	G0487	101
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G0 glycan (GN, type)	G0530	100
3-G,GN <sub>2</sub> M <sub>3</sub> GN <sub>2</sub> -MP	G0471	101
6-G,GN <sub>2</sub> M <sub>3</sub> GN <sub>2</sub> -MP	G0472	101
GITC	A5514	38
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GlcNAcβ(1-4)[Fucα(1-3)]GlcNAc	G0465	91
GlcNAcβ(1-4)[Fucα(1-6)]GlcNAc	G0423	91
GlcNAcβ(1-3)GalNAc-α-pNP	G0376	79
GlcNAcβ(1-3)GalNAc-α-Thr	G0341	79
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GlcNAcβ(1-2)Man-α-ethylazide	G0337	79
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4-Methoxyphenyl 2,3,4,6-Tetra- <i>O</i> -benzyl- β-D-galactopyranoside .....	M1588... 20	Methyl Tributylstannyl Sulfide .....	M1494... 141
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		Methyl Trifluoroacetate .....	T0680... 141
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		4-Methylumbelliferyl α- <i>D</i> -Mannopyranoside .....	M3023... 57
		Methyl-β- <i>D</i> -xylopyranoside .....	M1253... 72



M3(Fuc <sub>6</sub> )-biotin	M2986	104	4-Nitrophenyl β-D-Fucopyranoside	N0774	15
M5 glycan (GN <sub>1</sub> type)	M3086	104	2-Nitrophenyl β-D-Galactopyranoside		
M5GN <sub>1</sub> -OH	M3086	104	[Substrate for β-D-Galactosidase]	N0418	21
Migliol	M2302	123	4-Nitrophenyl α-D-Galactopyranoside		
Monoammonium Glycyrrhizinate Hydrate	G0151	82	[Substrate for α-D-Galactosidase]	N0492	21
Mono-6-(Fmoc-Gln-OtBu)-β-CD	M2978	108	4-Nitrophenyl β-D-Galactopyranoside		
Mono-6-O-mesitylenesulfonyl-γ-cyclodextrin	M1212	108	[Substrate for β-Galactosidase]	N0616	21
Mono-6-O-(2-naphthyl)-per-O-methyl-α-cyclodextrin	M1876	108	4-Nitrophenyl α-D-Glucopyranoside		
Mono-2-O-(p-toluenesulfonyl)-α-cyclodextrin	M1956	109	[Substrate for α-D-Glucosidase]	N0493	34
Mono-2-O-(p-toluenesulfonyl)-β-cyclodextrin Hydrate	M1741	109	4-Nitrophenyl β-D-Glucopyranoside Monohydrate		
Mono-2-O-(p-toluenesulfonyl)-γ-cyclodextrin	M1957	109	[Substrate for β-D-Glucosidase]	N0235	34
Mono-6-O-(p-toluenesulfonyl)-α-cyclodextrin	M1644	109	4-Nitrophenyl α-D-Glucuronide	N0857	49
Mono-6-O-(p-toluenesulfonyl)-β-cyclodextrin	M1381	109	4-Nitrophenyl β-D-Glucuronide		
Mono-6-O-(p-toluenesulfonyl)-γ-cyclodextrin	M1645	109	[Substrate for β-Glucuronidase]	N0618	49
Morph-DAST	M1573	142	4-Nitrophenyl α-D-Mannopyranoside		
Morpholinol sulfur Trifluoride	M1573	142	[Substrate for α-Mannosidase]	N0619	57
Mouse Anti-Human IgG Fc	M2977	179	2-Nitrophenyl β-D-Xylopyranoside	N0868	72
Mouse Anti-Human IgG Fc Biotin Conjugate	M3053	179	4-Nitrophenyl β-D-Xylopyranoside		
Myricitrin	M2361	62	[Substrate for β-Xylosidase]	N0620	72
			Nonasaccharide Glc <sub>4</sub> Xyl <sub>3</sub> Gal <sub>2</sub>	N0693	105
			Nonyl β-D-Glucopyranoside	N0909	34
<b>N</b>			<b>O</b>		
NANA	A1105	66	6-OAc PtdGlc(di-acyl Chain)	A2638	34
NANA Hydrate	A0639	66	Octa-O-acetyl D-(+)-Sucrose	S0052	85
Naringin Hydrate	N0073	83	n-Octyl β-D-Glucopyranoside [for Biochemical Research]	O0355	34
NBS	B0656	129	n-Octyl β-D-Glucopyranoside	O0232	35
Neohesperidin Dihydrochalcone Hydrate	N0675	83	Ononin	O0405	35
Neu5Ac	A1105	66	ONPG	N0418	21
Neu5Ac Hydrate	A0639	66	Oxalyl Chloride	O0082	142
Neu5Ac α (2-3)Gal-β-ethylamine	N0947	83			
Neu5Ac α (2-6)Gal-β-ethylamine	N0948	83	<b>P</b>		
Neu5Ac α (2-3)Gal β (1-4)GlcNAc-β-ethylamine	N0949	92	Paeoniflorin	P1876	35
Neu5Ac α (2-6)Gal β (1-4)GlcNAc-β-ethylamine	N0950	92	Paeonolide	P1879	85
Neu5Ac α (2-6)Gal β (1-4)GlcNAc β (1-3)Gal β (1-4)GlcNAc			Paeonoside	A2253	26
β (1-3)Gal β (1-4)GlcNAc-β-propylamine	N1118	105	Palatinose Hydrate	P1234	85
Neu5Ac α (2-6)Gal β (1-4)GlcNAc β (1-3)Gal β (1-4)GlcNAc-β-propylamine	N1117	105	Palladium 10% on Carbon (wetted with ca. 55% Water)	P1491	142
Neu5Ac α (2-3)Gal β (1-3)GlcNAc-β-pNP	N0853	93	Palladium 10% on Carbon (wetted with ca. 55% Water)		
Neu5Ac α (2-3)Gal β (1-4)GlcNAc-β-pNP	N0854	93	[Useful catalyst for coupling reaction, etc.]	P1785	142
Neu5Ac α (2-6)Gal β (1-3)GlcNAc-β-pNP	N0855	93	Palladium 5% on Carbon (wetted with ca. 55% Water)	P1490	143
Neu5Ac α (2-6)Gal β (1-4)GlcNAc-β-pNP	N0856	93	Palladium(II) Chloride	P1489	143
Neu5Ac α (2-3)Gal β (1-4)Glc-β-pNP	N0860	93	Palladium Hydroxide (contains Pd, PdO) on Carbon		
Neu5Ac α (2-3)Gal β (1-4)Glc Sodium Salt	S0885	94	(wetted with ca. 50% Water)	P1528	143
Neu5Ac α (2-3)Gal-β-MP	N0791	83	6-O-Palmitoyl-L-ascorbic Acid	A0540	123
Neu5Ac α (2-6)Gal-β-MP	N0792	83	Paromomycin Sulfate	P2092	123
Neu5Ac α (2-3)Gal β MP Glycoside	N0791	83	Pearlman's Catalyst (contains Pd, PdO)		
Neu5Ac α (2-6)Gal β MP Glycoside	N0792	83	(wetted with ca. 50% Water)	P1528	143
Neu5Ac α (2-6)GalNAc-α-pNP	N0890	83	Pectin from Citrus	P0024	117
Neu5Ac α (2-6) N-Glycan	N1065	104	Pectinase from <i>Aspergillus niger</i>	P0028	165
Neu5Ac α (2-6) N-Glycan 2AB	N1073	104	PEG <sub>n</sub> -Azide	A2294	127
Neu5Ac[1Me,4789Ac] α (2-6)Gal[24Bz,3Bn]-β-MP	M1761	84	2,4,7,8,9-Penta-O-acetyl-		
Neu5Ac[1Me,4789Ac] α (2-3)Gal[246Bz]-β-MP	N0846	84	N-acetylneuraminic Acid Methyl Ester	M1707	67
Neu5Ac[1Me,478Ac,9N <sub>3</sub> ]-β-SPh	M2695	67	N,N',N'',N''',N''''-Pentaacetylchitopentaose	P2027	105
Neu5Ac[1Me,4789Ac]-SPh	M1706	67	Penta-O-acetyl-β-D-galactopyranose	G0247	21
Neu5Gc	G0336	66	Penta-O-acetyl-α-D-glucopyranose	G0225	35
Neu5GcAc[1Me,4789Ac] α (2-6)Gal[24Bz,3Bn]-β-MP	M1763	84	Penta-O-acetyl-β-D-glucopyranose	P0028	35
Neu5GcAc[1Me,4789Ac] α (2-3)Gal[246Bz]-β-MP	N0816	84	1,2,3,4,6-Penta-O-acetyl-D-mannopyranose	P1514	58
Neu5GcAc[1Me,478Ac,9N <sub>3</sub> ]-β-SPh	M2696	67	1,2,3,4,6-Penta-O-pivaloyl-D-mannopyranose	P1803	58
Neu5Gc α (2-3)Gal-β-MP	N0793	84	Perfluoromethanesulfonic Acid	T0751	148
Neu5Gc α (2-6)Gal-β-MP	N0794	84	Phenyl N-Acetyl-α-D-glucosaminide	P0130	46
Neu5Gc α (2-3)Gal β MP Glycoside	N0793	84	Phenyl 2-O-Acetyl-3,4,6-tri-O-benzyl-1-thio-		
Neu5Gc α (2-6)Gal β MP Glycoside	N0794	84	β-D-galactopyranoside	P2078	22
Neu5Gc α (2-3)[GalNAc β (1-4)]Gal β (1-4)Glc-β-propylamine	N0971	97	Phenyl 3-O-Allyl-2,4,6-tri-O-benzyl-1-thio-		
[Neu5Gc α (2-6)] <sub>2</sub> G <sub>2</sub> GN <sub>2</sub> M <sub>3</sub> GN <sub>2</sub> -MP	N1046	105	β-D-galactopyranoside	P1660	22
Neu5Gc α (2-6) N-Glycan	N1064	105	Phenyl N-Benzyl-2-amino-4,6-O-benzylidene-		
Neu5Gc α (2-6) N-Glycan 2AB	N1075	105	2-N,3-O-carbonyl-2-deoxy-1-thio-β-D-glucopyranoside	P1762	46
Neu5Gc α (2-6) N-Glycan MP Glycoside	N1046	105	Phenyl 4,6-O-Benzylidene-1-thio-β-D-glucopyranoside	P1475	35
Neu5Troc[1Me,4789Ac] α (2-3)Gal[26Bn]-β-MP	M1729	84	Phenyl 2-Deoxy-1-thio-2-(2,2,2-trichloroethoxyformamido)-β-D-galactopyranoside	P1643	25
NHS	H0623	139	Phenyl β-D-Galactopyranoside	P1326	22
NIS	I0074	139	Phenyl α-D-Glucopyranoside	P1346	35
Nistose Trihydrate	N0571	97	Phenyl β-D-Glucopyranoside Hydrate	P0178	36
2-Nitrobenzoic Acid	N0155	142	Phenyl Mercaptan	B0041	127
4-Nitrophenol	N0220	142	Phenyl 2,3,4,6-Tetra-O-acetyl-1-thio-		
4-Nitrophenyl 2-Acetamido-2-deoxy-β-D-galactopyranoside	N0865	25	β-D-galactopyranoside	P1477	22
4-Nitrophenyl 2-Acetamido-2-deoxy-β-D-glucopyranoside	N0866	46	Phenyl 2,3,4,6-Tetra-O-acetyl-1-thio-		
4-Nitrophenyl β-D-Cellobioside	N0867	85	β-D-glucopyranoside	P1476	36
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Thiophenol	B0041	127
L-Threitol	T1647	124
TMCS	C0306	132
TMS-Cl	C0306	132
TMS-Diazomethane (ca. 10% in Hexane, ca. 0.6mol/L)	T1146	148
TMSOTf	T0871	149
Tobramycin	T2503	125
<i>p</i> -Toluenesulfonic Acid Monohydrate	T0267	147
<i>p</i> -Toluoyl Chloride	T0311	147
Topiramate	T2755	13
D-(+)-Trehalose Anhydrous	T0832	86
D-(+)-Trehalose Dihydrate	T0331	86
2,3,4-Tri- <i>O</i> -acetyl- $\beta$ -L-arabinopyranosyl 2,2,2-Trichloroacetimidate	T2695	11
<i>N,N,N,N'</i> -Triacetylchitotriose	T2912	94
Triacetyl- $\beta$ -cyclodextrin	T1844	110
3,4,6-Tri- <i>O</i> -acetyl-2-deoxy-D-glucopyranose	T1931	40
3,4,6-Tri- <i>O</i> -acetyl-2-deoxy-2-phthalimido- $\beta$ -D-glucopyranosyl 2,2,2-Trichloroacetimidate	T2615	47
1,2,3-Tri- <i>O</i> -acetyl-5-deoxy- $\beta$ -D-ribofuranose	T2607	65
Tri- <i>O</i> -acetyl-D-galactal	T1734	23
Tri- <i>O</i> -acetyl-D-glucal	T1596	40
1,3,5-Tri- <i>O</i> -benzoyl- $\alpha$ -D-ribofuranose	T2641	65
3,4,6-Tri- <i>O</i> -benzyl-2-deoxy-D-galactopyranose	T1932	23
3,4,6-Tri- <i>O</i> -benzyl-2-deoxy-D-glucopyranose	T1933	40
Tri- <i>O</i> -benzyl-D-glucal	T1859	40
Trichloroacetonitrile	T0372	147
<i>N</i> -(2,2,2-Trichloroethoxycarbonyloxy)succinimide	T2713	147
2,2,2-Trichloroethyl Chloroformate	C0795	147
Trichloro(methyl)silane	M0450	148
Triethylamine	T0424	148
Triethylamine - Sulfur Trioxide Complex	T2136	145
Triethylsilane	T0662	148
Triflic Acid	T0751	148
Trifluoroacetic Acid	T0431	148
<i>N</i> -Trifluoroacetyl-D-glucosamine	T0973	47
Trifluoromethanesulfonic Acid	T0751	148
Trifluoromethanesulfonic Anhydride	T1100	148

Trihydroxyethylrutin	T3541	86
6- <i>O</i> -(Triisopropylsilyl)-D-galactal	T1935	23
6- <i>O</i> -(Triisopropylsilyl)-D-glucal	T1936	41
Trimethyl- $\beta$ -cyclodextrin	T1094	110
Trimethylsilyldiazomethane (ca. 10% in Hexane, ca. 0.6mol/L)	T1146	148
Trimethylsilyl Triflate	T0871	149
Trimethylsilyl Trifluoromethanesulfonate [Trimethylsilylating Agent]	T0871	149
Triphenylphosphine	T0519	149
Triphosgene	T1467	149
Trisodium Glycyrhizinate Hydrate	G0217	86
1,1,1-Tris[4-(per- <i>O</i> -methyl- $\alpha$ -cyclodextrin-6-yloxy)phenyl]ethane	T2450	110
Trityl Chloride	C0308	149
Troloxerutin	T3541	86
D-(+)-Turanose	T0542	87

## V

<i>N</i> -Valeryl-D-glucosamine	V0011	47
Vilsmeier Reagent	C1545	131
Vitamin C	A0537	119
Vitamin C Sodium Salt	A0539	124
Vitamin L <sub>1</sub>	A0497	127
Vitamin P	H0049	80
Vitamin P (Water soluble)	M0338	82

## X

Xanthan Gum	X0048	118
X-Gal	B3201	16
X-Glc	B5393	27
XLLG Glc <sub>4</sub> Xyl <sub>3</sub> Gal <sub>2</sub>	N0693	105
XXXG Glc <sub>4</sub> Xyl <sub>3</sub>	H1041	103
XXXG Glc <sub>4</sub> Xyl <sub>3</sub>	H1044	103
Xylan from Corn Core	X0078	118
Xylitol	X0018	72
Xylobiose	X0067	87
DL-Xylose	X0020	73
D-(+)-Xylose	X0019	73
L-(-)-Xylose	X0021	73
Xylosucrose	X0065	87

## Z

Zanamivir Hydrate	Z0023	68
Z-Cl	B3021	128
Z-Cl (30-35% in Toluene)	C0176	128
Zinc (Powder)	Z0015	149
Zinc Bromide	Z0013	149
Zinc Chloride	Z0014	149
Zinc(II) Gluconate Hydrate	G0277	41
Z-OSu	C1124	130
Zymosan [Immunological Reagent]	Z0008	118



# Appendix

## 付録

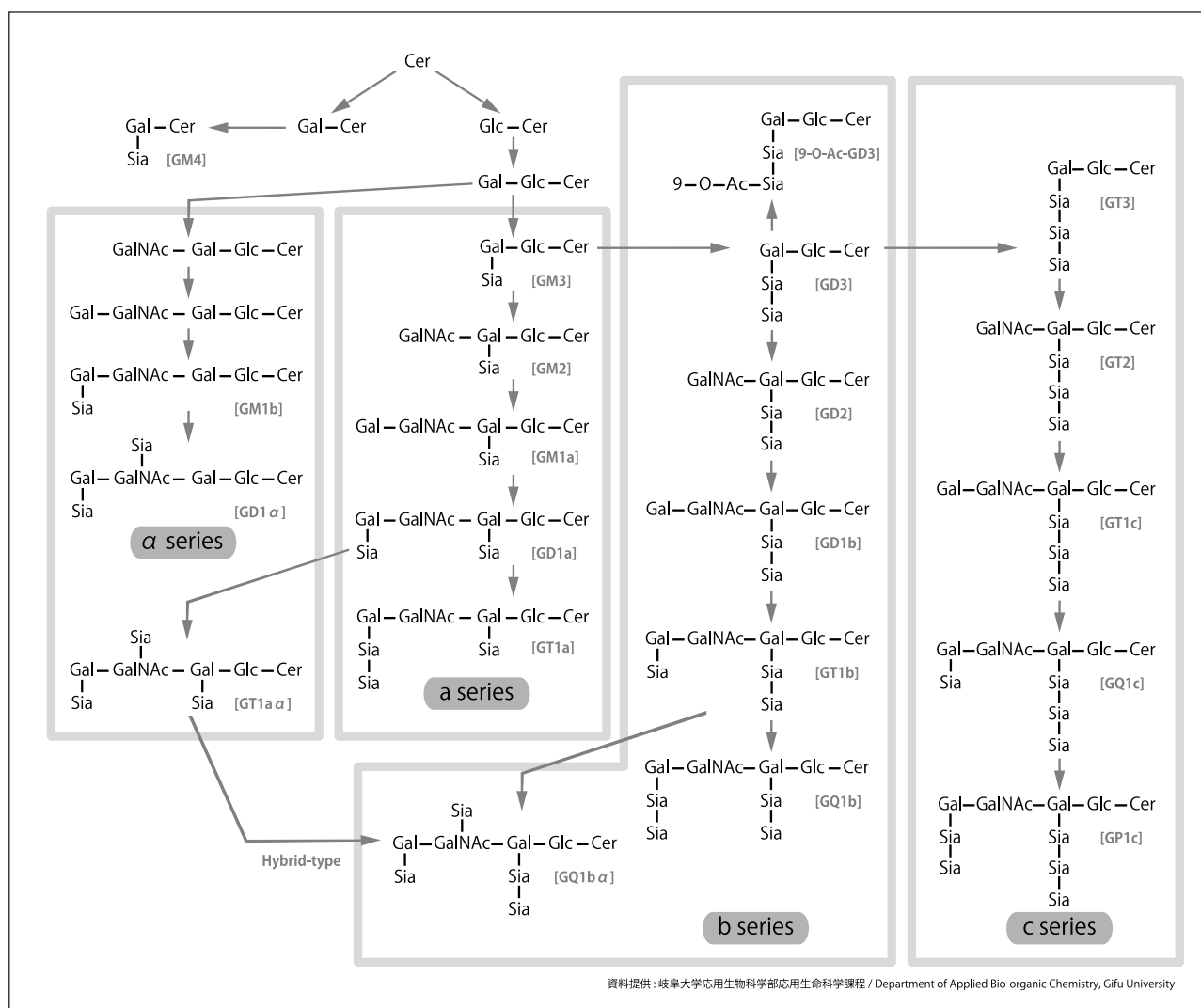
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## Basic Structures of Glycolipids

### ● Basic structures of glycosphingolipids

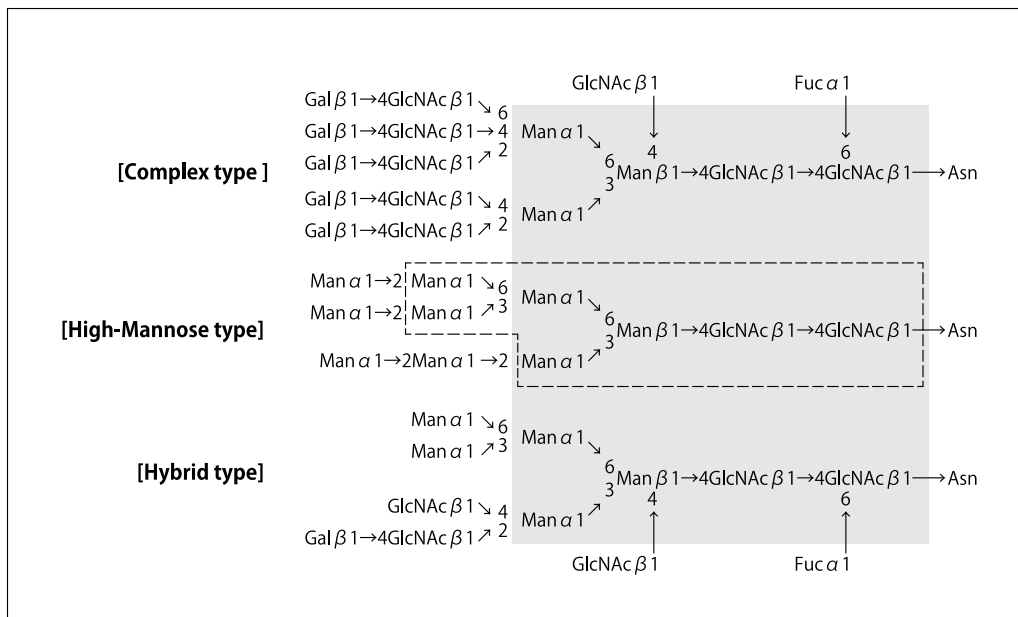
Series	Basic sugar	Basic structure
Gala-	Galabiose	Gal $\alpha$ 1-4Gal $\beta$ 1→Cer
Hemato-	Lactose	Gal $\beta$ 1→4Glc $\beta$ 1→Cer
Ganglio-	Gangliotriose	GalNAc $\beta$ 1→4Gal $\beta$ 1→4Glc $\beta$ 1→Cer
	Gangliotetraose	Gal $\beta$ 1→3GalNAc $\beta$ 1→4Gal $\beta$ 1→4Glc $\beta$ 1→Cer
Lacto-	Lactotetraose	Gal $\beta$ 1→3GlcNAc $\beta$ 1→3Gal $\beta$ 1→4Glc $\beta$ 1→Cer
Neolacto-	Neolactotetraose	Gal $\beta$ 1→4GlcNAc $\beta$ 1→3Gal $\beta$ 1→4Glc $\beta$ 1→Cer
Globo-	Globotriose	Gal $\alpha$ 1→4Gal $\beta$ 1→4Glc $\beta$ 1→Cer
	Globotetraose	GalNAc $\beta$ 1→3Gal $\alpha$ 1→4Gal $\beta$ 1→4Glc $\beta$ 1→Cer
Isoglobo-	Isoglobotriose	Gal $\alpha$ 1→3Gal $\beta$ 1→4Glc $\beta$ 1→Cer

### ● Ganglio-series ganglioside biosynthetic pathways

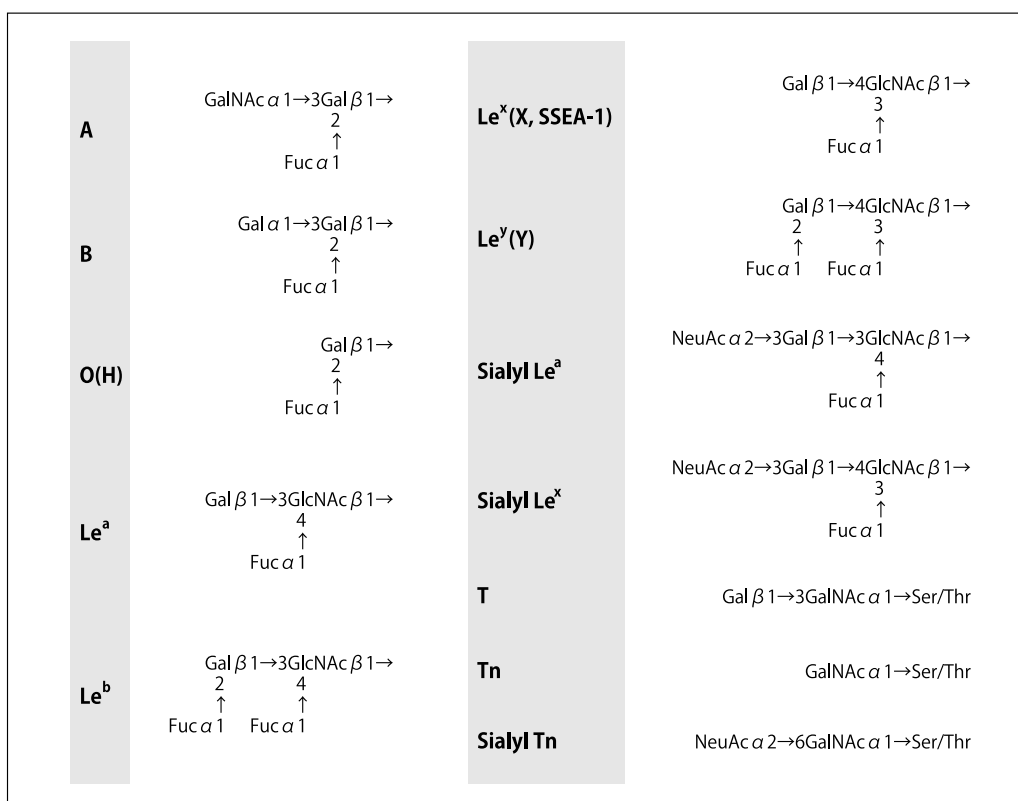


## Basic Structures of Glycoproteins

● Asn-linked oligosaccharide subgroups



● Typical carbohydrate antigen







## The Physical Properties of the Typical Organic Solvents <sup>1)</sup>

Organic Solvents	bp (°C)	mp (°C)	d (20/4°C)	Compatibility with Water (°C) (weight % of solvents)	Miscibility with Water <sup>b)</sup>
Methanol (MeOH)	64.5	-97.7	0.791	— a)	○
Ethanol (EtOH)	78.3	-114.5	0.789	78.2(96.0)	○
Propanol ( <i>n</i> -PrOH)	97.2	-126.2	0.804	87.7(71.7)	○
Isopropyl Alcohol ( <i>i</i> -PrOH)	82.2	-88.0	0.785	80.1(88.0)	○
Butanol (BuOH)	117.7	-88.6	0.810	92.7(57.5)	△
Isobutyl Alcohol ( <i>i</i> -BuOH)	107.9	-108	0.802	89.8(67)	△
<i>sec</i> -Butyl Alcohol ( <i>s</i> -BuOH)	99.5	-114.7	0.807	87.0(73.2)	△
<i>tert</i> -Butyl Alcohol ( <i>t</i> -BuOH)	82.3	25.6	0.781	79.7(88.2)	○
Ethylene Glycol	197.5	-12.6	1.114	— a)	○
1,2-Dimethoxyethane (Glyme)	84.5	-69	0.869	77.4(89.9)	○
Diethyl Ether (Et <sub>2</sub> O)	34.4	-116	0.714	34.2(98.7)	× c)
Diisopropyl Ether ( <i>i</i> -Pr <sub>2</sub> O)	68.5	-85.5	0.724	62.2(95.5)	×
Acetic Acid (AcOH)	117.9	16.7	1.050	— a)	○
Ethyl Acetate (AcOEt)	77.1	-83.6	0.901	70.4(91.5)	× c)
Acetic Anhydride (Ac <sub>2</sub> O)	140.0	-73.1	1.083		
Tetrahydrofuran (THF)	66.0	-108.4	0.889	63.4(93.3)	○
1,4-Dioxane	101.3	11.8	1.034	87.8(82)	○
Acetone	56.1	-94.7	0.790	— a)	○
Ethyl Methyl Ketone	79.6	-86.7	0.805	73.4(88.7)	△
Carbon Tetrachloride (CCl <sub>4</sub> )	76.6	-22.8	1.594	66(95.9)	×
Chloroform (CHCl <sub>3</sub> )	61.2	-63.5	1.489	56.1(97.8)	×
Dichloromethane (CH <sub>2</sub> Cl <sub>2</sub> )	39.6	-94.9	1.326	38.1(98.5)	×
1,2-Dichloroethane (ClCH <sub>2</sub> CH <sub>2</sub> Cl)	83.5	-35.7	1.252	72(91.8)	×
Benzene (C <sub>6</sub> H <sub>6</sub> )	80.1	5.5	0.879	69.3(91.2)	×
Toluene	110.6	-95.0	0.867	85(79.8)	×
<i>o</i> -Xylene	144.4	-25.2	0.880	93.5(50.1)	×
Cyclohexane	80.7	6.7	0.779	69.0(91)	×
Pentane	36.1	-129.7	0.626	34.6(98.6)	×
Hexane	68.7	-95.3	0.659	61.6(94.4)	×
Heptane	98.4	-90.6	0.684		×
Acetonitrile (CH <sub>3</sub> CN)	81.6	-43.8	0.782	76.7(84.2)	○
Nitromethane (CH <sub>3</sub> NO <sub>2</sub> )	101.2	-28.6	1.138	83.6(76.4)	×
Dimethylformamide (DMF)	153	-60.4	0.949	— a)	○
Hexamethylphosphoric Triamide (HMPA)	233	7.2	1.027		○
Triethylamine (Et <sub>3</sub> N)	89.6	-114.7	0.728		○
Pyridine (Py)	115.3	-41.6	0.983	93.6(58.7)	○
Dimethyl Sulfoxide (DMSO)	189.0	18.5	1.100	— a)	△
Carbon Disulfide (CS <sub>2</sub> )	46.2	-111.6	1.263	42.6(97.2)	×

a) It doesn't form azeotropic mixture

b) ○ : freely miscible

△ : partially miscible

× : practically immiscible (solubility : less than 1%)

c) highly soluble in water

### Example of combination of recrystallization solvents

The crystals are obtained from the solution of single or more than one solvent.

In the two solvent system, solvent A and B should be miscible : when solubility is A > B, it is desirable that the boiling point is A < B and the density is A > B.

## Freezing Mixtures <sup>2)</sup>

Freezing mixtures	Temp. (°C)	Freezing mixtures	Temp. (°C)
Ice	0	Chloroform / N <sub>2</sub>	-63
Ethylene Glycol / CO <sub>2</sub>	-15	Chloroform / CO <sub>2</sub>	-63
Ice(100) / NH <sub>4</sub> Cl (25)	-15	Ethanol / CO <sub>2</sub>	-72
Ice(100) / NaCl(33)	-21	Ether / CO <sub>2</sub>	-77
Carbon Tetrachloride / N <sub>2</sub>	-23	Acetone / CO <sub>2</sub>	-78
Carbon Tetrachloride / CO <sub>2</sub>	-23	Methanol / N <sub>2</sub>	-98
Ice(100) / EtOH (100)	-30	<i>n</i> -Pentane / N <sub>2</sub>	-131
Acetonitrile / N <sub>2</sub>	-41	N <sub>2</sub>	-180
Ice(100) / CaCl <sub>2</sub> (150)	-49		

#### References

- 1) "Yuki Kagaku Jikken no Tebiki 1", editors : T. Goto, T. Shiba, T. Matsuura, Kagaku Dojin
- 2) "Shinhan Kiso Yuki Kagaku Jikken", K. Hata, K. Watanabe, Maruzen

## Preparation of Reagents and Solutions

### ■ Concentration of Liquid Acids and Bases: Common Commercial Strength

Substance	Formula	MW	Concentration (mol/L)	Concentration (%)	Specific Gravity
Hydrochloric Acid	HCl	36.46	12	35~37	1.18
Sulfuric Acid	H <sub>2</sub> SO <sub>4</sub>	98.08	18	> 95	1.84
Nitric Acid	HNO <sub>3</sub>	63.01	15	60~62	1.38
Perchloric Acid	HClO <sub>4</sub>	100.46	9.4	60~62	1.54
Phosphoric Acid	H <sub>3</sub> PO <sub>4</sub>	98.00	14.8	85	1.70
			15.7	89	1.73
Acetic Acid	CH <sub>3</sub> COOH	60.05	17.4	99.5	1.05
Aqueous Ammonia	NH <sub>4</sub> OH	35.05	15	28	0.90

Modified from JIS (Japanese Industrial Standard) K 0050 "General rules of chemical analysis"

### ■ The Amount of Ammonium Sulfate to be Added to Give the Desired Final Concentration at 25°C

		Final Concentration of Ammonium Sulfate (%)																
		10	20	25	30	33	35	40	45	50	55	60	65	70	75	80	90	100
		Ammonium Sulfate (solid) to be added (g) to 1L																
Initial Concentration of Ammonium Sulfate (%)	0	56	114	144	176	196	209	243	277	313	351	390	430	472	516	561	662	767
	10		57	86	118	137	150	183	216	251	288	326	365	406	449	494	592	694
	20			29	59	78	91	123	155	189	225	262	300	340	382	424	520	619
	25				30	49	61	93	125	158	193	230	267	307	348	390	485	583
	30					19	30	62	94	127	162	198	235	273	314	356	449	546
	33						12	43	74	107	142	177	214	252	292	333	426	522
	35							31	63	94	129	164	200	238	278	319	411	506
	40								31	63	97	132	168	205	245	285	375	469
	45									32	65	99	134	171	210	250	339	431
	50										33	66	101	137	176	214	302	392
	55											33	67	103	141	179	264	353
60												34	69	105	143	227	314	
65													34	70	107	190	275	
70														35	72	153	237	
75															36	115	198	
80																77	157	
90																	79	

S. Englard, S. Seiffter, *Methods Enzymol.* **1990**, 182, 285-300; W. I. Wood, *Anal. Biochem.* **1976**, 73, 250; R. K. Scopes, *Protein Purification: Principle and Practice*, 3rd ed., Springer-Verlag, New York, **1994**, p.346.

## ■ Buffer Solution

### 1. Phosphate Buffer

A. 0.2M  $\text{NaH}_2\text{PO}_4 \cdot \text{H}_2\text{O}$  (Sodium Dihydrogenphosphate Monohydrate; FW 137.99) 27.6g/L  $\text{H}_2\text{O}$

B. 0.2M  $\text{Na}_2\text{HPO}_4 \cdot 7\text{H}_2\text{O}$  (Disodium Hydrogenphosphate Heptahydrate; FW 268.07) 53.6g/L  $\text{H}_2\text{O}$

Mix solution A and B in the proportions indicated shown below, then adjust the final volume to 200mL with deionized water. Adjust the final pH using a sensitive pH meter.

pH (25°C)	5.8	6.0	6.2	6.4	6.6	6.8	7.0	7.2	7.4	7.6	7.8	8.0
$\text{NaH}_2\text{PO}_4$ (mL)	92.0	87.7	81.5	73.5	62.5	51.0	39.0	28.0	19.0	13.0	8.5	5.3
$\text{Na}_2\text{HPO}_4$ (mL)	8.0	12.3	18.5	26.5	37.5	49.0	61.0	72.0	81.0	87.0	91.5	94.7

G. Gomori, *Methods Enzymol.* **1955**, 1, 138.

### 2. Tris-HCl Buffer

A. 0.1M Tris (Tris(hydroxymethyl)aminomethane); MW 121.14) 12.1g/L  $\text{H}_2\text{O}$

B. 0.1M HCl (Hydrochloric Acid); Dilute commercial concentrated hydrochloric acid to 1/120 with deionized water.

Mix 50mL of solution A and indicated volume of solution B and adjust the final volume to 100mL with deionized water. Adjust the final pH using a sensitive pH meter.

pH (25°C)	7.2	7.4	7.5	7.6	7.8	8.0	8.2	8.4	8.5	8.6	8.8
HCl (mL)	44.7	42.0	40.3	38.5	34.5	29.2	22.9	17.2	14.7	12.4	8.5

Temperature dependency of the pH of Tris buffer

4°C	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	9.0	9.1	9.2	9.3	9.4
25°C	7.5	7.6	7.7	7.8	7.9	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8
37°C	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8.0	8.1	8.2	8.3	8.4	8.5

J. Sambrook, D. W. Russell, *Molecular Cloning: A Laboratory Manual*, 3rd. ed, Cold Spring Harbor Laboratory Press, New York, **2001**, Vol.3, p. A1.2.

### 3. Acetate Buffer

A. 0.1M AcOH (Acetic Acid), 5.8mL/L

B. 0.1M NaOAc (Sodium Acetate, anhydrous; FW 82.03) 8.2g /L  $\text{H}_2\text{O}$

or (Sodium Acetate Trihydrate; FW 136.08) 13.6g/L  $\text{H}_2\text{O}$

Mix solution A and B in the proportions indicated shown below, then adjust the final volume to 100mL with deionized water. Adjust the final pH using a sensitive pH meter.

pH (25°C)	3.6	4.0	4.4	4.8	5.0	5.2	5.6
AcOH (mL)	46.3	41.0	30.5	20.0	14.8	10.5	4.8
NaOAc (mL)	3.7	9.0	19.5	30.0	35.2	39.5	45.2

■ Visualizing Reagents for Thin-Layer Chromatography<sup>1,2)</sup>

Reagent	Product Code / Recipe	Treatment	Spot Color	Target Compounds
Iodine	I0604 (place some crystals in a chamber)	Place the plate in the chamber.	Brown	General organic compounds
Sulfuric Acid	Dilute with water (50~98%)	Spray the solution and heat the plate at 110~130°C	Brown ~ Black	General organic compounds
Phosphomolybdic Acid	P1484; The prepared solution may be diluted with ethanol 2~4 fold.	Spray the solution and heat the plate at 110°C	Green to brown spot on yellow background	General organic compounds
<i>p</i> -Anisaldehyde	A1674	Spray the solution and heat the plate at 110°C	Depends on the compound: violet, gray, blue, green	General organic compounds
Ceric Ammonium Molybdate	C1794	Spray the solution and heat the plate at 110°C		General organic compounds
Ninhydrin	N0094 (Spray) N0719 (Solution)	Spray the solution and heat the plate at 110°C	Pink ~ yellow	Amino acids, primary, secondary amines
Dragendorff's Reagent	(Solution A) Dissolve 1.7g bismuth(III) nitrate, 20g tartaric acid in 80mL water; (Solution B) Dissolve 16g potassium iodide in 40mL water; (Stock Solution) Mix equal parts of A and B; (Spray Solution) Dissolve 10g tartaric acid in 50mL water and add 10mL to the stock solution.	Spray the solution.	Orange	Tertiary amines, quaternary ammonium salts (alkaloids)
<i>p</i> -Dimethylamino-benzaldehyde	Dissolve D0645 or D1495 1g in ethanol 50mL and conc. HCl 50mL.	Spray the solution and warm the plate	Yellow	Amines
2,4-Dinitrophenylhydrazine	D2968	Spray the solution.	Reddish orange	Aldehydes, Ketones
Bromocresol Green	B2401	Spray the solution.	Yellow spots on green to blue background	Carboxylic acids, Sulfonic Acids
Primuline	(Stock Solution) Dissolve 0.1g P0603 in 100mL water; (Spray Solution) Mix 1mL of the stock solution to the mixture of 100mL acetone-water (4:1 v/v) <sup>3)</sup>	Spray the solution.	Pale blue to yellow under UV light	Lipids

1) *TCI Mail* **2006**, 124, 15.

2) H. Jork, W. Funk, W. Fischer, & H. Wimmer, in *Thin-Layer Chromatography: Reagents and Detection Methods*, ed. by H. Jork, Wiley, New York, **1989**, Vol. 1A; W. Funk, W. Fischer, H. Wimmer, H. Jork, in *Thin-Layer Chromatography: Reagents and Detection Methods*, ed. by H. Jork, Wiley, New York, **1994**, Vol. 1B.

3) T. White, S. Bursten, D. Federighi, R. A. Lewis, E. Nudelman, *Anal. Biochem.* **1998**, 258, 109.

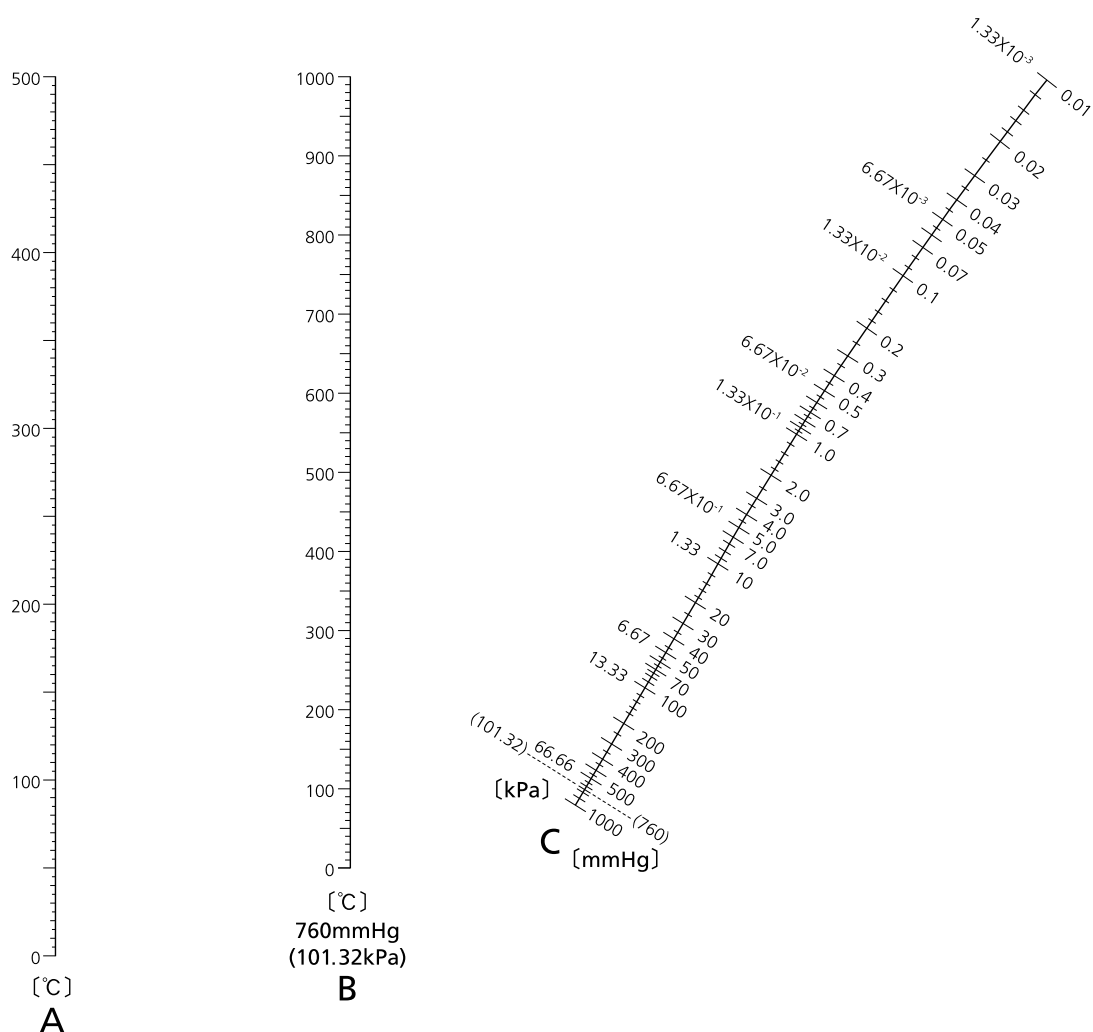
■ Solvent Strength in Chromatography

Solvent	Strength Parameter $\varepsilon^{\circ}$	Solvent	Strength Parameter $\varepsilon^{\circ}$
Hexane	0.01	Dioxane	0.56
Cyclohexane	0.04	Ethyl Acetate	0.58
Diisopropyl Ether	0.28	Acetonitrile	0.65
Toluene	0.29	Pyridine	0.71
Diethyl Ether	0.38	2-Propanol	0.82
Dichloromethane	0.40	Ethanol	0.88
Tetrahydrofuran	0.45	Methanol	0.95
Acetone	0.56	Acetic Acid	» 1

$\varepsilon^{\circ} = \Delta G_s^{\circ} / 2.3 / RT A_s$  : where,  $\Delta G_s^{\circ}$  is an adsorption free energy of the solvent,  $R$  is the gas constant,  $T$  is thermodynamic temperature.  $A_s$  is an area of the solvent molecule around the adsorbent. The values are obtained in absorption chromatography by using alumina.

L. R. Snyder, in *Principles of Adsorption Chromatography*, Marcel Dekker, 1968.

## Pressure-Temperature Nomograph



● How to calculate the bp under atmospheric pressure from bp under reduced pressure

- ① Connect a degree on the line C and its corresponding bp on the line A under reduced pressure using a straight line.
- ② An intersection found by step ① on the line B serves as an approximate bp in atmospheric pressure.

\*This nomograph applies to nonassociated solvent.

Since the bp obtained from this nomograph is an approximate value, it is not an exact bp.

**Reference** : Science of Petroleum, Vol.II, p.1281 (1938).

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## TCl Distributors

### 北海道地区・東北地区・関東地区

#### 北海道

(株)エル・エム・エス札幌営業所	001-0011	札幌市北区北十一条西3-1-1	011-707-7360
北海道和光純薬(株)	001-0015	札幌市北区北十五条西4-1-16	011-747-2811
(株)道央理化産業	001-0022	札幌市北区北二十二条西9-1-15	011-747-2131
(株)和科盛商会	001-0910	札幌市北区新琴似十条1-7-16	011-756-1821
純正化学(株)北海道営業所	003-0835	札幌市白石区北郷五条5-4-21-104	011-874-0151
北海ケミー(株)本社営業部	004-0811	札幌市清田区美しが丘1条8丁目4-1	011-807-0143
(株)タナカ札幌本社	060-0906	札幌市東区北六条東2-2-11 札幌総合卸センター内	011-731-0291
(株)タナカ	061-3241	石狩市新港西1-727-1	0133-73-0662
北海ケミー(株)旭川営業所	070-0825	旭川市北門町22-2168-219	0166-54-3331
(株)タナカ北見営業所	090-0001	北見市小泉438-11	0157-31-5410

#### 青森県

東北化学薬品(株)青森支店	030-0131	青森市問屋町1-8-12	017-738-4451
東北化学薬品(株)八戸支店	031-0071	八戸市沼館1-15-3	0178-43-9236
東北化学薬品(株)	036-8061	弘前市神田1-3-1	0172-32-4111
(株)成瀬理工八戸営業所	039-1114	八戸市北白山台2-12-12	0178-70-4141

#### 岩手県

(株)成瀬理工	020-0066	盛岡市上田3-8-29	0196-23-1256
東北化学薬品(株)盛岡営業所	020-0122	盛岡市みたけ6-15-5	019-601-7533
(株)成瀬理工北上営業所	024-0004	北上市村崎野13-25-8	0197-71-1630
東北化学薬品(株)岩手支店	024-0014	北上市流通センター18-39	0197-68-2271
(株)成瀬理工釜石営業所	026-0043	釜石市新町8-20	0193-23-6684

#### 宮城県

(株)エル・エム・エス仙台営業所	980-0821	仙台市青葉区春日町10-23 第一春山ビル1-A	022-221-3521
ナカライテスク(株)仙台営業所	981-0915	仙台市青葉区通町2-2-8 モンレーブ通町101	022-727-8070
東北化学薬品(株)仙台支店	981-3627	黒川郡大和町吉岡東3-7-14	022-345-4870
中山商事(株)仙台営業所	983-0013	仙台市宮城野区中野1-3-5	022-253-6511
仙台和光純薬(株)	984-0002	仙台市若林区卸町東2-2-32	022-239-2700
純正化学(株)東北支店	984-0015	仙台市若林区卸町1-2-3	022-232-6215
理科研(株)仙台営業所	984-0051	仙台市若林区新寺3-5-40	022-352-4851

#### 秋田県

(株)中央科学	010-0061	秋田市卸町3-1-22	018-863-6111
(株)十字屋	010-0921	秋田市大町1-4-20	0188-62-2004
東北化学薬品(株)秋田支店	011-0901	秋田市寺内字三千刈462-1	018-824-1201
東北化学薬品(株)大館営業所	017-0041	大館市大田面113-1	0186-45-0566

#### 山形県

山形科学薬品(株)	992-0011	米沢市中田町1218	0238-37-4155
東北化学薬品(株)米沢営業所	992-1125	米沢市万世町片子大下田4374-2	0238-24-7622
万成化学(株)	992-1125	米沢市万世町片子824	0238-23-3266
東北化学薬品(株)山形営業所	999-3765	東根市神町南2-3-14	0237-47-0068

#### 福島県

(株)小関秀雄商店	960-8072	福島市北中央3-85-1	0245-35-1351
中山商事(株)白河営業所	961-8061	西白河郡西郷村小田倉字岩下104-3	0248-22-5001
中山商事(株)郡山営業所	963-1304	郡山市熱海町安子島南原13-1	0249-84-2401
中山商事(株)いわき営業所	971-8125	いわき市小名浜島入海63	0246-58-7020
中山商事(株)原町営業所	975-0042	南相馬市原町区雫字南大江下93	0244-22-2518

#### 茨城県

キシダ化学(株)つくば営業所	300-0326	稲敷郡阿見町大字星の里13-2	029-833-6011
伊勢久(株)つくば営業所	300-1231	牛久市猪子町字原992-532	029-870-1111
(株)テーパーック	300-2307	つくばみらい市板橋3060-9	0297-58-3406
東海ケミー(株)筑波営業所	300-2406	つくばみらい市福岡2504-1	0297-52-4817



## 関東地区

岩井化学薬品(株)筑波支店	300-2635	つくば市東光台5-11-4	029-847-0321
中山商事(株)筑波営業所	300-2651	つくば市鬼ヶ窪1139-1	029-847-7383
(株)タナカつくば営業所	300-3261	つくば市花畑3-20-5	029-877-3930
純正化学(株)筑波営業所	304-0031	下妻市高道祖1417	0296-43-7711
片山化学工業(株)筑波営業所	305-0005	つくば市天久保2-11-21 小島ビル1階	029-851-0164
家田化学薬品(株)筑波支店	305-0821	つくば市春日4-3-5	029-852-6621
不二化学薬品(株)つくば営業所	305-0041	つくば市上広岡429-1	029-863-5380
茨城半井化学(株)	305-0074	つくば市高野台3-15-14	0298-39-0038
中山商事(株)下館営業所	308-0113	筑西市関館283-7	0296-37-7811
東海ケミール(株)	311-4165	水戸市木葉下町字富士山292-30	0292-54-6511
中山商事(株)水戸営業所	312-0063	ひたちなか市田彦字寄井新田1019-3	029-275-2591
伊勢久(株)鹿島営業所	314-0115	神栖市知字3678-4	0299-96-3009
中山商事(株)鹿島営業所	314-0121	神栖市溝口4580	0299-96-0250
東海ケミール(株)鹿島営業所	314-0252	神栖市柳川2615-16	0479-46-3315
中山商事(株)	317-0075	日立市相賀町17-9	0294-22-5291
東海ケミール(株)北部営業所	319-1418	日立市砂沢町1187-17	0294-44-7370

### 栃木県

アズサイエンス(株)北関東支店	321-0901	宇都宮市平出町385-15	0286-61-5616
中山商事(株)栃木営業所	322-0026	鹿沼市茂呂2620	0289-60-7871

### 群馬県

高信化学(株)	370-0072	高崎市大八木町801番地	027-361-3221
(有)共愛テクノサイエンス	370-0073	高崎市緑町1-11-11	027-363-8777
国産化学(株)群馬事業所	370-0718	邑楽郡明和町大輪2566	0276-70-3146
(有)共栄化学	376-0023	桐生市錦町2-12-7	0277-44-4420

### 埼玉県

(株)小松屋	330-0044	さいたま市浦和区瀬ヶ崎2-7-4	048-886-2451
川口薬品化学(株)	332-0015	川口市川口5-12-34	048-252-2149
埼玉化成(株)	335-0002	蕨市塚越1-18-7	048-420-4405
ナカライテスク(株)埼玉営業所	336-0022	さいたま市南区白幡1-17-12	048-866-5851
(有)トキワケミカル	336-0026	さいたま市南区辻8-13-19 フローレンス201号	048-838-6790
埼玉薬品(株)	337-0004	さいたま市見沼区卸町1-43	048-686-5221
純正化学(株)埼玉営業所	343-0844	越谷市大間野町1-6	048-988-6161
光洋サイエンス(株)	350-0052	川越市宮下町1-12-15	0492-22-6677
小島化学薬品(株)	350-1335	狭山市柏原337-26	0429-53-9231
鍋林(株)関東営業所	350-2218	鶴ヶ島市柳戸町11-7	0492-86-4970
家田化学薬品(株)埼玉支店	352-0011	新座市野火止4-19-4	0484-77-3905
みどり化学(株)埼玉営業所	356-0035	ふじみ野市丸山1-10	0492-61-3553
高信化学(株)埼玉支店	360-0023	熊谷市佐谷田1237-1	048-580-7747
小宗化学薬品(株)	361-0021	行田市富士見町1-19	0485-56-6261
昌栄化学(株)	362-0022	上尾市大字瓦葺字大島478-3	048-723-1651

### 千葉県

ナカライテスク(株)千葉連絡所	260-0028	千葉市中央区新町24-9	043-242-1810
理科研(株)千葉営業所	260-0842	千葉市中央区南町3-2-1 青木ビル1F	043-305-1751
(株)薬研社	260-0843	千葉市中央区末広3-12-6	043-265-4141
(株)薬研社柏営業所	277-0831	柏市根戸386-15	04-7137-2255
(株)高長柏営業所	277-0863	柏市豊四季167 マンション豊四季102	04-7141-0081
東海ケミール(株)東葛営業所	277-0873	柏市中十余二401-3	04-7140-9811
(株)メディセオ	279-0024	浦安市港76-1	047-305-1800
伊勢久(株)千葉営業所	290-0046	市原市岩崎西1-4-11	0436-22-2255
京葉ケミール(株)	290-0056	市原市五井9097番地	0436-22-9221
広島和光(株)千葉営業所	290-0056	市原市五井9130	0436-22-2671
純正化学(株)千葉営業所	299-0242	袖ヶ浦市久保田57-6	0438-62-1151

## 東京地区

### 東京都

利根化学(株)	101-0032	千代田区岩本町1-3-13	03-3862-6666
東北化学薬品(株)東京支店	101-0032	千代田区岩本町1-8-15	03-3866-9777
鈴木科学薬品(株)	101-0036	千代田区神田北乗物町18-1 SKYビル1F	03-3258-6961
大成化学(株)	101-0041	千代田区神田須田町2-3-16 千代田パリオンビル1F	03-3252-3336
伊勢久(株)東京営業所	101-0045	千代田区神田鍛冶町3-7	03-5295-0301
金剛薬品(株)東京支店	101-0054	千代田区神田錦町1-5	03-3518-0855
(株)イトー	103-0002	中央区日本橋馬喰町1-6-3 吉野第一ビル8F	03-3668-3222
キヨス薬品(株)	103-0007	中央区日本橋浜町3-34-8	03-3666-4351
ナカライテスク(株)東京営業所	103-0021	中央区日本橋本石町4-2-16 日本橋本石町トーセイビル	03-3242-5881
眞光化学(株)	103-0021	中央区日本橋本石町4-5-6	03-3279-2021
家田化学薬品(株)日本橋本店	103-0022	中央区日本橋室町4-3-4 オフィス家田室町	03-3270-0621
栄光科学(株)	103-0022	中央区日本橋室町4-6-7	03-3241-0885
関東化学(株)	103-0022	中央区日本橋室町2-2-1 室町東三井ビルディング	03-6214-1060
岩井化学薬品(株)	103-0023	中央区日本橋本町3-2-10	03-3241-4531
和光純薬工業(株)東京本店	103-0023	中央区日本橋本町2-4-1	03-3270-3499
昭和化学(株)	103-0023	中央区日本橋本町4-3-8	03-3270-2701
米山薬品工業(株)東京支店	103-0023	中央区日本橋本町4-2-12	03-3246-2311
中野化学(株)	103-0023	中央区日本橋本町4-13-10 日本橋中野ビル	03-3663-8581
久木田薬品工業(株)	103-0023	中央区日本橋本町4-2-10	03-3241-0351
中外薬品工業(株)	103-0023	中央区日本橋本町4-6-2	03-3241-7251
日化産商事(株)	103-0023	中央区日本橋本町4-15-1 タカコービル2F	03-3668-6641
山田化学薬品(株)	103-0023	中央区日本橋本町4-1-1 加島商館ビル5F	03-3241-1203
東新化成(株)	103-0023	中央区日本橋本町4-5-15	03-3279-1623
不二化学薬品(株)東京営業所	103-0023	中央区日本橋小伝馬町16-9	03-3667-7703
(株)山口薬品	112-0011	文京区千石4-10-1	03-3941-4398
(株)高長	113-0021	文京区本駒込5-1-4	03-3941-7161
(有)山本薬品商会	113-0033	文京区本郷1-8-18 岡戸ビル	03-3814-3821
(株)エル・エム・エス	113-0033	文京区本郷3-6-7 田中ビル	03-5842-4169
家田化学薬品(株)本郷支店	113-0033	文京区本郷3-14-16 オフィス家田2F	03-3813-4418
理科研(株)東京支社	113-0033	文京区本郷3-44-2	03-3815-8951
(株)カーク東京営業所	113-0033	文京区本郷4-37-17 本郷トーセイビル1F	03-3868-3951
(株)十條合成化学研究所	114-0023	北区滝野川3-84-2	03-3910-5471
日進化成(株)	120-0037	足立区千住河原町11-5	03-3882-8881
日理化学(株)	123-0873	足立区扇2-2-8	03-3898-7666
(株)宮川商店	130-0011	墨田区石原4-17-7	03-3621-4015
新陽化成(株)	130-0013	墨田区錦糸1-4-3 若山ビル	03-3623-2888
(株)ミカミ	131-0032	墨田区東向島5-4-12	03-3610-0331
キシダ化学(株)東京支店	135-0007	江東区新大橋2-11-8	03-5625-5593
アズサイエンス(株)東京営業所	135-0031	江東区佐賀1-18-8 佐賀町MDビル4F	03-5843-8155
広島和光(株)東京営業所	141-0001	品川区北品川5-8-26	03-5447-6181
西尾工業(株)	142-0062	品川区小山4-5-20	03-3785-4781
正晃(株)東京支店	130-0021	墨田区緑2丁目7番3号 ダイコービル2F	03-5638-5881
理科研(株)目黒支店	153-0042	目黒区青葉台3-12-6	03-3477-7251
東都化学工業(株)	170-0002	豊島区巢鴨3-39-4	03-3917-7161
宮田化学(株)	170-0012	豊島区上池袋2-8-14	03-3916-0505
(有)高橋藤吉商店	171-0044	豊島区千早1-17-8	03-3959-2618
東邦薬品(株)	173-0001	板橋区本町36-16	03-3962-8801
宮崎化学薬品(株)	174-0051	板橋区小豆沢3-1-30	03-3966-8721
国産化学(株)板橋営業所	174-0051	板橋区小豆沢4-25-11	03-3558-4601
東京試薬販売(株)	174-0075	板橋区桜川2-24-1	03-3931-6560
北辰化学(株)	176-0013	練馬区豊玉中3-10-7	03-3994-1473
(有)勝見化学	178-0062	練馬区大泉町1-48-14	03-3923-9498
片山化学工業(株)東京営業所	180-0004	武蔵野市吉祥寺本町1-31-11 KSビル706号室	0422-28-6011
(株)高長多摩営業所	186-0003	国立市富士見台3-22-7	0425-74-8371
理科研(株)多摩営業所	187-0022	小平市上水本町2-18-20	042-329-8651
(株)日栄東海	187-0031	小平市小川東町4-6-7	042-346-9713
尾崎理化(株)多摩営業所	192-0907	八王子市長沼町200-6	042-637-2200

## 関東地区・中部地区

### 神奈川県

(株) 高長川崎営業所	210-0804	川崎市川崎区藤崎2-16-9	044-221-5155
尾崎理化(株)川崎営業所	210-0852	川崎市川崎区鋼管通1-3-3 コスモ川崎グレイスアベニュー1階	044-329-1414
国産化学(株)	220-0004	横浜市西区北幸2-8-29	0120-81-5930
三共化学薬品(株)横浜営業所	224-0032	横浜市都筑区茅ヶ崎中央42番21号 第2佐藤ビル204号	045-943-0921
尾崎理化(株)横浜営業所	226-0028	横浜市緑区いぶき野31-10	045-988-0531
理科研(株)神奈川支店	227-0045	横浜市青葉区若草台1-5	045-530-0151
理科研(株)鶴見営業所	230-0033	横浜市鶴見区朝日町1-49	045-500-4551
家田化学薬品(株)横浜支店	230-0051	横浜市鶴見区鶴見中央4-31-13	045-508-2558
ナカライテスク(株)横浜営業所	231-0011	横浜市中区太田町6-84-2 三井生命横浜桜木町ビル1F	045-227-5321
(株)カーク神奈川営業所	232-0018	横浜南区花之木町3-52 シルク花之木	045-326-6651
純正化学(株)横浜営業所	242-0029	大和市上草柳7-8-3	046-264-6971
伊勢久(株)神奈川営業所	243-0018	厚木市中町3-11-18 MY厚木ビル3階	046-297-3951
(株)東明サイエンス	243-0812	厚木市妻田北3-31-5	0462-22-3720
尾崎理化(株)	252-0153	相模原市緑区根小屋1888	0427-84-2525
湘南和光純薬(株)	254-0002	平塚市横内4090	0463-55-0914
三共化学薬品(株)	254-0016	平塚市東八幡3-16-3	0463-21-3721
理科研(株)鎌倉営業所	248-0036	鎌倉市手広6-1-1	0467-39-2151

### 山梨県

タカヤマケミカル(株)山梨営業所	409-3845	中央市山之神流通団地1-6-3	055-273-9600
(株)ラポテック	409-3853	中巨摩郡昭和町築地新居659-3	055-275-6531
アズサイエンス(株)甲府支店	409-3867	中巨摩郡昭和町清水新居601-1	0552-22-5131

### 長野県

米山薬品工業(株)上田営業所	386-0005	上田市古里字篠井原693-3	02682-2-5910
タカヤマケミカル(株)富士見営業所	391-0012	茅野市金沢字横道下5468-3	0266-79-4398
アズサイエンス(株)	399-8754	松本市村井町西2-3-35	0263-58-0021
タカヤマケミカル(株)	399-0033	松本市笹賀5652-106	0263-26-1500

### 新潟県

鍋林(株)上越支店	942-0033	上越市福橋字前田744-1	025-543-4521
金剛薬品(株)新潟支店	950-0867	新潟市東区竹尾卸新町752-1	0252-75-8141
アズサイエンス(株)新潟営業所	950-2054	新潟市西区寺尾東1-19-19	025-269-5161
中野化学(株)新潟支店	951-8116	新潟市中央区東中通り1番町203	025-223-6401

### 富山県

不二化学薬品(株)富山営業所	930-0032	富山市栄町2-7-9	076-421-0501
純正化学(株)富山営業所	930-0801	富山市中島1-11-28	076-433-3100
並木薬品(株)	930-0834	富山市問屋町3-1-33	0764-51-4545
金剛薬品(株)	930-0834	富山市問屋町1-8-7 富山問屋センター	0764-51-0161
平野純薬(株)富山支店	930-0892	富山市石坂1117番1	076-442-4890

### 石川県

平野純薬(株)金沢支店	920-0062	金沢市割出町15-3	076-239-0758
(株)片岡	920-1155	金沢市朝霧台2-27	076-263-2011
(株)エル・エム・エス金沢営業所	921-8808	野々口市市長池201	076-294-5522

### 福井県

(株)上田五兵衛商店	918-8231	福井市問屋町1-4	0776-24-0004
平野純薬(株)	918-8112	福井市下馬2丁目1420番地	0776-37-4890
理科研(株)福井営業所	910-0842	福井市開発3-3010	0776-52-1651

### 岐阜県

理科研(株)岐阜営業所	500-8225	岐阜市岩地2-25-2	0582-40-0721
伊勢久(株)岐阜営業所	500-8355	岐阜市六条片田2-19-9	058-273-1625
(株)カーク岐阜営業所	500-8438	岐阜市島原町29番地	058-268-8151
(株)フナト理化	502-0812	岐阜市八代2-4-15	058-232-7125
伊勢久(株)多治見営業所	507-0827	多治見市平和町4-48-8	0572-22-0251

中部地区・近畿地区

静岡県

キシダ化学(株)沼津出張所	410-0059	沼津市若葉町11-31-107	055-926-6711
(株)エル・エム・エス沼津営業所	410-0065	沼津市花園町7-1	055-920-2455
国産化学(株)沼津営業所	410-0894	沼津市仲町26	055-963-9911
伊勢久(株)三島営業所	411-0822	三島市松本104-35	0559-77-6637
三立ケミ―(株)	411-0941	駿東郡長泉町上土狩697-1	0559-87-5150
中北薬品(株)三島支店	411-0943	駿東郡長泉町下土狩202-8	0559-88-1515
理科研(株)静岡営業所	422-8005	静岡市駿河区池田379番地	054-208-5351
三立ケミ―(株)静岡営業所	422-8006	静岡市駿河区曲金6-1-1	054-203-7530
中北薬品(株)焼津センター	425-0092	焼津市越後島347	054-629-2837
中北薬品(株)浜松支店	430-0802	浜松市東区将監町23-1	053-463-1311
(株)カーク浜松営業所	431-3125	浜松市東区半田山6-2-31	053-431-6801
伊勢久(株)掛川営業所	436-0048	掛川市細田144-1	0537-23-8484
ハヤシ化成(株)袋井営業所	437-0021	袋井市広岡1691	0538-43-3226
三立ケミ―(株)浜松営業所	438-0817	磐田市上万能183-1	0538-37-3328

愛知県

伊勢久(株)豊橋営業所	442-0012	豊川市新豊町2-111	0533-84-3261
理科研(株)岡崎営業所	444-0864	岡崎市明大寺町字西長峰50番	0564-57-1751
(株)カーク愛知東営業所	444-2134	岡崎市大樹寺1-11-11	0564-66-1580
米山薬品工業(株)名古屋営業所	452-0821	名古屋市西区上小田井2-99	052-504-2221
ハヤシ化成(株)名古屋営業所	456-0031	名古屋市熱田区神宮2-11-25	052-682-3883
(株)カーク愛知南営業所	458-0915	名古屋市緑区野末町1204	052-624-5819
伊勢久(株)	460-8558	名古屋市中区丸の内3-4-15	052-961-8321
(株)カーク	460-0002	名古屋市中区丸の内3-8-5	052-971-6551
中北薬品(株)	460-0002	名古屋市中区丸の内3-5-15	052-911-3681
(株)多次商店名古屋営業所	460-0003	名古屋市中区錦3-13-5 中央マンションA棟504	052-951-1232
理科研(株)	460-0007	名古屋市中区新栄1-33-1	052-241-5351
伊勢久(株)名古屋東営業所	464-0801	名古屋市千種区星ヶ丘2-55	052-783-3011
ハヤシ化成(株)豊田営業所	473-0922	豊田市高岡本町南24	0565-51-5050
伊勢久(株)名古屋南営業所	474-0001	大府市北崎町井田1-1	0562-47-1475

三重県

伊勢久(株)四日市営業所	510-0013	四日市市富士町8-3	0593-31-5284
(株)カーク四日市営業所	510-0017	四日市市羽津町16-18	059-337-9700
後藤化学(株)	510-0068	四日市市三栄町2-15	0593-51-1330
(株)中部化成	510-0864	四日市市中里町25-2	0593-46-4647
ハヤシ化成(株)四日市営業所	510-0871	四日市市川尻町719	0593-45-5507
伊勢久(株)津営業所	514-0131	津市あのとつ台4-7-6	059-236-1211
(株)長谷部薬局	514-0028	津市東丸の内18-16	059-227-0147
理科研(株)三重支店	514-0103	津市栗真中山町43-1	059-236-5511
(株)カーク三重営業所	514-0131	津市あのとつ台4-6-8	059-236-2531

滋賀県

京都和光純薬(株)滋賀営業所	524-0035	守山市阿村町流212-4	077-514-2451
ナカライテスク(株)滋賀営業所	524-0033	守山市浮気町346	077-581-3610
和研薬(株)滋賀営業部	525-0029	草津市下笠町945-1	077-568-2503
佐々木化学薬品(株)滋賀支店	529-1663	蒲生郡日野町北脇日野第二工業団地5-4	0748-53-2411

奈良県

ナカライテスク(株)京阪奈営業所	630-8124	奈良市三条桜町5-16	0742-35-2001
京都和光純薬(株)奈良営業所	634-0803	橿原市上品寺町370-55	0744-23-1311

京都府

京都和光純薬(株)	601-8343	京都市南区吉祥院稲葉町31-1	075-661-3591
中村宗商店	604-0854	京都市中京区二条通烏丸東入仁王門町21	075-231-2248
ナカライテスク(株)	604-0855	京都市中京区二条通烏丸西入東玉屋町498	075-251-1723
和研薬(株)本社営業部	606-8171	京都市左京区一乗寺西水干町17	075-711-7117
(株)エル・エム・エス京都営業所	607-8184	京都市山科区大宅甲ノ辻町37	075-583-3700

近畿地区・中国地区

佐々木化学薬品(株) 607-8225 京都市山科区勤修寺西北出町10 075-593-4711  
 和研薬(株)京阪奈営業部 610-0343 京田辺市大住池ノ端66-5 0774-65-2521

大阪府

(株)アズバイオ 530-0043 大阪市北区天満3-5-8 06-6351-5351  
 (株)エル・エム・エス大阪営業所 530-0044 大阪市北区東天満2-2-17 東天満パークビル 06-6354-8755  
 不二化学薬品(株) 530-0044 大阪市北区東天満2-6-11 06-6358-0981  
 キシダ化学(株) 540-0029 大阪市中央区本町橋3-1 06-6946-8062  
 純正化学(株)大阪営業所 540-0029 大阪市中央区本町橋6-6 RES本町橋1階 06-6940-3091  
 林純薬工業(株) 540-0037 大阪市中央区内平野町3-2-12 06-6910-7338  
 和光純薬工業(株) 540-8605 大阪市中央区道修町3-1-2 06-6203-3748  
 米山薬品工業(株)大阪営業課 541-0045 大阪市中央区道修町2-3-11 06-6231-3555  
 片山化学工業(株) 541-0045 大阪市中央区道修町2-5-10 06-6201-3391  
 三栄化工(株) 541-0045 大阪市中央区道修町1-3-6 06-6231-1964  
 重松貿易(株) 541-0047 大阪市中央区淡路町2-2-5 06-6231-6146  
 関東化学(株)大阪支店 541-0048 大阪市中央区瓦町2-5-1 06-6231-1672  
 (株)関薬 550-0003 大阪市西区京町堀1-12-30 06-6445-0215  
 双葉化学薬品(株) 550-0025 大阪市西区九条南4-13-18 06-6583-2834  
 太洋(株) 554-0024 大阪市此花区島屋4-3-24 06-6465-0573  
 (株)ダイトー 555-0025 大阪市西淀川区姫里2-2-22 06-4808-8038  
 和研薬(株)大阪営業部 562-0035 箕面市船場東1-12-8 072-749-5200  
 片山化学工業(株)池田営業所 563-0024 池田市鉢塚1-9-14 072-763-1920  
 (株)カーク大阪営業所 564-0051 吹田市豊津町16-12 グラン・シャリオ江坂 06-6389-2411  
 ナカライテスク(株)大阪営業所 564-0072 吹田市出口町4-1 06-4861-7500  
 八洲薬品(株) 567-0085 茨木市彩都あさぎ7-7-18 彩都バイオヒルズセンター内 072-640-1265  
 不二化学薬品(株)高槻営業所 569-0063 高槻市南庄所町1-5 072-671-1080  
 八洲薬品(株)京阪奈営業所 574-0057 大東市新田西町3-10 072-870-2711  
 佐々木化学薬品(株)東大阪営業所 581-0056 八尾市南太子堂4-3-11 0729-94-0061  
 八洲薬品(株)堺営業所 592-8333 堺市西区浜寺石津町西1-4-20 072-244-1368

兵庫県

広瀬化学薬品(株) 650-0046 神戸市中央区港島中町2-2-2 078-303-3807  
 八洲薬品(株)神戸営業所 650-0047 神戸市中央区港島南町1-5-2 神戸キメックセンタービル8F 078-306-1739  
 和研薬(株)神戸営業部 650-0047 神戸市中央区港島南町5-2-5 078-306-6060  
 (株)多次商店 653-0015 神戸市長田区菅原通2-4 078-575-7985  
 ナカライテスク(株)神戸営業所 657-0843 神戸市灘区大石北町7-3 078-861-0145  
 不二化学薬品(株)尼崎営業所 661-0964 尼崎市神崎町21-29 06-6499-3191  
 (株)シマヤ 672-8075 姫路市飾磨区思案橋60番地 0792-34-1001  
 広瀬化学薬品(株)兵庫西支店 674-0074 明石市魚住町清水字井桶田 078-942-2511  
 播磨薬品(株) 675-0025 加古川市尾上町養田1575 0794-24-2536

和歌山県

竹内化学(株) 640-8131 和歌山市弁財天丁63 073-424-2321  
 八洲薬品(株)和歌山営業所 640-8303 和歌山市鳴神746-3 073-473-5951  
 (株)ダイトー和歌山営業所 640-8324 和歌山市吹屋町3-36-1 073-433-8648

鳥取県

鳥取サイエンス(株) 680-0841 鳥取市吉方温泉3-110 0857-23-5651  
 (有)友田大洋堂鳥取営業所 680-0874 鳥取市叶316-9 0857-51-1810  
 (株)林薬品 683-0003 米子市皆生3-11-3 0859-33-3061

島根県

(株)宮田薬品 690-0017 松江市西津田1-5-29 0852-21-0279  
 (有)友田大洋堂 690-0047 松江市嫁島町13-34 0852-24-3456

岡山県

広島和光(株)岡山営業所 700-0971 岡山市北区野田5-11-31 086-241-0771  
 岡山薬品工業(株) 701-2155 岡山市北区中原551 086-275-0666  
 片山化学工業(株)岡山営業所 703-8236 岡山市中区国富1-11-3 086-271-6511

中国地区・四国地区・九州地区

広島県

広島和光(株)福山営業所	721-0926	福山市大門町4-16-43	084-943-2720
山本薬品(株)	730-0805	広島市中区十日市町1-4-29	082-291-8931
米山薬品工業(株)広島営業所	733-0007	広島市西区大宮3-7-4	082-537-0290
広島和光(株)広島営業所	735-0024	安芸郡府中町緑ヶ丘6-40	082-285-6225
広島和光(株)東広島営業所	739-0046	東広島市鏡山3-12-26 ハナヤマビル101号	0824-31-3511
中国ケミー(株)	739-0263	東広島市志和流通1番85	0824-33-5152

山口県

広島和光(株)岩国営業所	740-0024	岩国市旭町2-12-29	0827-22-0683
キシダ化学(株)山口営業所	745-0062	周南市月丘町3-11	0834-22-3177
田中藍(株)徳山営業所	745-0074	周南市今宿町4-17	0834-31-6331
広島和光(株)徳山営業所	745-0801	周南市久米字沖角田3039-1	0834-25-1230
広島和光(株)防府営業所	747-0825	防府市新田66-2	0835-24-5432
中国ケミー(株)小郡営業所	754-0001	山口市小郡上郷2296-54	083-973-0913
正晃(株)山口営業所	754-0015	山口市小郡大江町7-12	083-972-0215
広島和光(株)宇部営業所	755-0008	宇部市明神町3-3-26	0836-34-3331
片山化学工業(株)山口営業所	755-0028	宇部市東本町1-2-30	0836-21-9196

徳島県

四国八洲薬品(株)	770-0873	徳島市東沖洲2-17	088-664-6321
アルフレッサ篠原化学(株)徳島支店	771-0132	徳島市川内町平石夷野224-29	088-678-2201
(株)阿波化成	771-0138	徳島市川内町平石流通団地76番	088-665-6565
片山化学工業(株)徳島営業所	771-1151	徳島市応神町古川字戎子野137-11	088-666-3711
四国理科(株)徳島営業所	771-1201	板野郡藍住町奥野字山畑39-3	088-693-4660

愛媛県

四国八洲薬品(株)松山営業所	791-1102	松山市来住町1445-1	089-960-0260
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## ■ Bulk Orders and Custom Synthesis

Prices for bulk quantities and custom synthesis are available on request. Please contact us for information on the availability of bulk chemicals and new chemicals not listed here. (Please refer to the back cover or page 000 for a list of our local TCI offices and contact information.)

## ■ Return Shipment

Return shipment cannot be accepted without prior authorization and unless made in compliance with proper shipment procedures. All claims for damage or shortage must be filed within 10 days of receipt.

## ■ Product Liability

All products described in this catalog are for research purpose only. They are in no way to be used for food, drug, household or any other application.

The hazards, physiological and toxicological properties of most chemicals have not yet been fully investigated and/or determined. Therefore, all chemicals should be handled with the utmost caution when used, stored or during disposal.

All of our chemicals should be handled only by individuals familiar with their potential hazards and who have been fully trained in proper safety, laboratory and chemical handling procedures.

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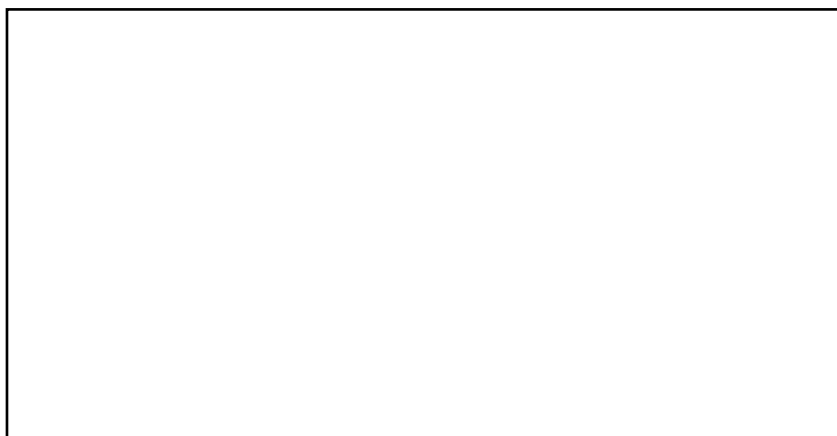
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Reagents for  
Glyco Chemistry  
& Biology  
5th Edition

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Not for Sale

Fifth Edition : June 2017

Publisher TOKYO CHEMICAL INDUSTRY CO., LTD.

東京化成工業株式会社

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Technical Information Management Department

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# TCl's Sugar Syntheses

We have achieved the mass production and supply of functional carbohydrate chains as well as monosaccharide blocks or oligo-saccharide units by chemical synthesis. Therefore, we can meet your needs of various situations in the sugar chain research.

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We can synthesize large quantities of useful raw materials in the syntheses of the functional sugar chains, and can supply these materials at 10-100 kg scales.

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We succeeded in the syntheses of cancer antigens, virus-related sugar chains and the marker sugar chains of the many functions stem cells such as the iPS cell. We start supplying these sugar chains at the 10g scale. Furthermore, we develop the mass production process of these sugar chains.

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We can supply oligosaccharides for

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### TCl Local Offices

The business names and contact address are listed on page 469.

# 東京化成工業の糖鎖合成

弊社では、単糖・オリゴ糖ブロックのご提供にとどまらず、化学合成を中心とした機能性糖鎖の大量生産および供給体制を実現させました。これにより、様々な段階の糖鎖研究におけるニーズにお応えすることができます。

## 糖鎖合成研究のために

機能性糖鎖の合成において特に使用頻度の高い2糖, 3糖の合成原料について、商業レベルでの量産化を実現しました。10 ~ 100kgレベルでご提供が可能です。

## 糖鎖機能研究のために

癌抗原やウイルス関連糖鎖, あるいはiPS細胞のような多能性幹細胞のマーカー糖鎖などの合成に成功し、数十gレベルでのご提供を開始しました。さらに、これら糖鎖の量産化に向けたプロセスを開発中です。

## 糖鎖機能を利用したプローブの供給

医薬・診断薬や疾病誘引物質の除去など、実践的な応用利用を目的とした機能性糖鎖プローブをご提供します。生化学, 生物学研究の分野において、ぜひお役立てください。

## 糖鎖コンジュゲート

糖鎖コンジュゲートは、DDS, タンパク/糖鎖相互解析, アフィニティークロマト, ウィルス・毒素の除去, 糖鎖ワクチンなどへの応用が期待されています。

弊社では、コンジュゲート体に対応可能な糖鎖の供給も可能です。

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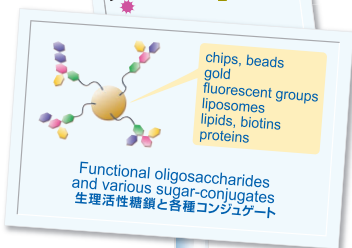
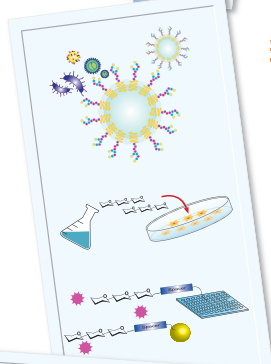
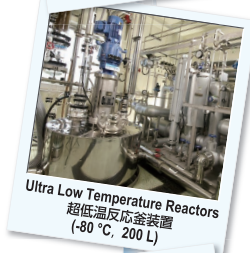
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