

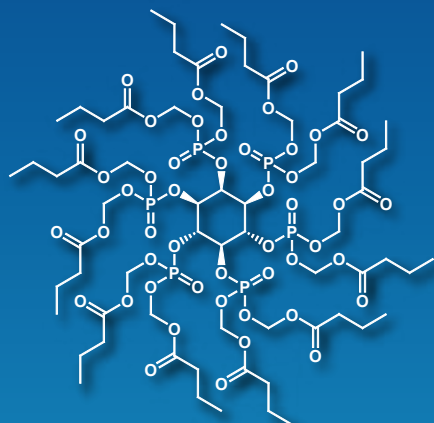
New

LIFE SCIENCE



Prodrug of Phytic Acid with High Cell Membrane Permeability

Pro-IP6



Pro-IP6 (ca. 10mM in DMSO)
0.1mL
[P3062]

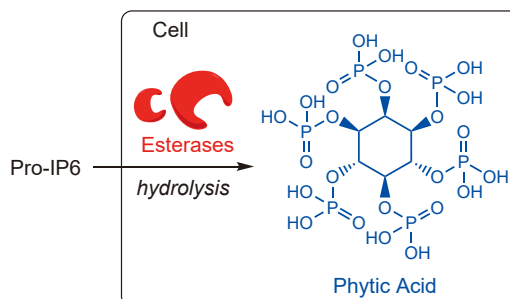
Phytic acid (= *myo*-inositol-1,2,3,4,5,6-hexaphosphate, IP6) is one of the components found in grains and legumes, and has been reported to have antioxidant and anticancer effects.¹⁾ However, in order to induce cell cycle arrest, apoptosis, DNA repair, and signal transduction regulation by phytic acid in cells, it is necessary to treat them with very high concentrations of 1-5 mM.²⁾ Treatment of IP6 with high concentrations causes significant changes in the properties of the medium, such as metal chelation and a decrease in pH.

Pro-IP6, a prodrug of phytic acid with high cell membrane permeability, has been developed to solve such problems. It consists of six phosphate moieties that have been modified with butyryloxymethyl groups.²⁾

Advantages

- Inhibits the Akt phosphorylation pathway in cancer cells and induces apoptosis at lower concentrations than phytic acid
- Reduces tumor size in mice more than phytic acid

* Please see reference 2 for detailed experimental data.



Pro-IP6 is useful as a tool for studying the function of phytic acid in cells as well as for drug discovery research.

References 1) V. Kumar, H. P. S. Makkar, *et al.*, *Food Chem.* **2010**, 120, 945. <https://doi.org/10.1016/j.foodchem.2009.11.052>
2) T. Masunaga, M. Otsuka, M. Fujita, *et al.*, *Bioorg. Chem.* **2019**, 92, 103240. <https://doi.org/10.1016/j.bioorg.2019.103240>

Pro-IP6 has been commercialized under a license agreement based on an international patent application (PCT/JP2019/034220) filed by Kumamoto University. The Medicinal and Biological Chemistry Science Farm Joint Research Laboratory, Faculty of Life Sciences, Kumamoto University is engaged in ongoing research utilising Pro-IP6.

Related Products

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

25g / 500g [P0409]

25g / 500g [P0410]

For Laboratory Use, Research Purposes Only.

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