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Malondialdehyde Measurement Kit

Malondialdehyde Measurement Kit

1kit [M3637]

Malondialdehyde (MDA), known as a degradation product of lipid peroxides, is used as a quantitative indicator of intracellular oxidative stress. M3637 helps to determine the malondialdehyde content by the Thiobarbituric Acid Reactive Substances (TBARS) method.

Kit Components

for 100 tests (50 tests x2)

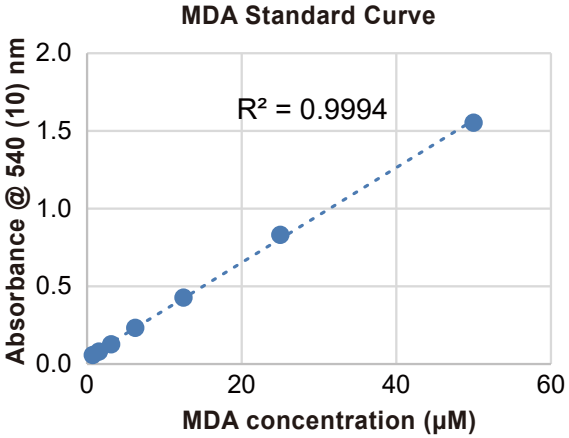
• 2-Thiobarbituric Acid (TBH)	2 vials
• Malonaldehyde standard solution (1 mM MDA solution)	1 vial
• Butylhydroxytoluene (BHT) solution	1 vial
• Acetic Acid	1 vial

Advantages

- MDA concentration can be measured linearly from 0.1 µM - 50 µM. (1 µM - 50 µM or 0.1 µM - 10 µM depending on the standard curve range)
- A total of 100 samples can be assayed in two batches.
- TBARS detection also allows for measurement of MDA from tissues.

Application: Measuring Malondialdehyde Concentration in a Mouse Brain with M3637

1. Use RIPA buffer to extract cellular contents from mouse brain.
2. Prepare a 1 µM - 50 µM MDA concentration dilution series solution using the 1 mM MDA standard contained in M3637.
3. Add 600 µL of DMSO to one vial of TBH and voltex to dissolve.
4. Add 5.5 mL of acetic acid to the TBH solution prepared in step 3 to make a 50 mM TBH solution.
5. Add 25 µL of BHT solution and 100 µL of 50 mM TBH solution to 100 µL of each sample / point in the dilution series from step 2.
6. Incubate at 95°C for 15 minutes.
7. Measure absorbance at 540 (10) nm.



Result: The A_{540} of the mouse brain extract sample was 0.3126, indicating that the MDA concentration was 8.92 µM.

Note

- Because of the heating step, plates and plate seals must be able to withstand 95˚C.
- This product allows for the measurement of malondialdehyde (MDA) at concentrations of either 1 µM - 50 µM or 0.1 µM - 10 µM, depending on how you prepare your standard curve. See below for example procedures.

Measurement of MDA between 1 µM - 50 µM

1. Combine 50 µL of 1 mM MDA solution and 950 µL of deionized water to obtain a 50 µM solution of malondialdehyde.
2. Prepare a 2x dilution series of the malondialdehyde solution from step 1 with 7 points total (0.78125 µM – 50 µM) of at least 250 µL each, to allow for duplicates.
3. Add 600 µL of DMSO to one of the vials of 2-Thiobarbituric Acid to dissolve. Vortex or use an ultrasonic bath if the powder does not dissolve.
4. Add 5.5 mL of Acetic Acid to the tube prepared in step 3 to prepare a 50 mM TBH solution.
5. Add 25 µL of BHT solution and 100 µL of 50 mM TBH solution to 100 µL of each sample / point in the dilution series from step 2.
6. Incubate at 95 °C for 15 minutes.
7. Measure the absorbance at 532 nm.

Measurement of MDA between 0.1 µM - 10 µM

1. Combine 10 µL of 1 mM MDA solution and 990 µL of deionized water to obtain a 10 µM solution of malondialdehyde.
2. Prepare a 3x dilution series of the malondialdehyde solution from step 1 with 7 points total (0.0137 µM – 10 µM) of at least 250 µL each, to allow for duplicates.
3. Add 600 µL of DMSO to one of the vials of 2-Thiobarbituric Acid to dissolve. Vortex or use an ultrasonic bath if the powder does not dissolve.
4. Add 5.5 mL of Acetic Acid to the tube prepared in step 3 to prepare a 50 mM TBH solution.
5. Add 25 µL of BHT solution and 100 µL of 50 mM TBH solution to 100 µL of each sample / point in the dilution series from step 2.
6. Incubate at 95 °C for 15 minutes.
7. Measure the fluorescence absorbance at Ex 540 nm / Em 590 nm.

Related Product

RIPA Buffer (Ready-to-use) [for Protein extraction] 100mL [R0246]

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