

Acetoacetic acid

Chemical Properties

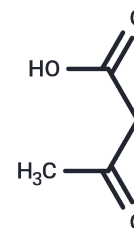
CAS No. : 541-50-4

Formula: C₄H₆O₃

Molecular Weight: 102.09

Storage: Keep away from moisture, Store at low temperature
Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



Biological Description

| | |
|---------------|--|
| Description | Acetoacetic acid (3-oxobutanoic acid) is a β -keto acid and oxidative stress inducer, produced in the body when poor hepatic metabolism leads to excessive catabolism of fatty acids, is involved in the process of gluconeogenesis, and can be used as an indicator of in ketoacidosis. |
| Targets(IC50) | Endogenous Metabolite |
| In vitro | Methods: Acetoacetic acid (0.6, 2.4, 4.8 mM, 24 h) was used to treat dairy cow hepatocytes, and the related enzyme activities and protein expressions were determined. Results: Acetoacetic acid can reduce the mRNA expression and enzyme activity of superoxide dismutase (SOD), catalase (CAT), and glutathione peroxidase (GSH-Px) in a dose-dependent manner, increase the malondialdehyde (MDA) content, induce oxidative stress, and downregulate the mRNA expression of apolipoprotein B100 (ApoB100), apolipoprotein E (ApoE), and low-density lipoprotein receptor (LDLR), inhibit the assembly of very low-density lipoprotein (VLDL), and lead to the accumulation of intracellular triglycerides (TG) and the reduction of VLDL content in the culture medium. [1] |

Preparing Stock Solutions

| | 1mg | 5mg | 10mg |
|-------|------------|------------|-------------|
| 1 mM | 9.7953 mL | 48.9764 mL | 97.9528 mL |
| 5 mM | 1.9591 mL | 9.7953 mL | 19.5906 mL |
| 10 mM | 0.9795 mL | 4.8976 mL | 9.7953 mL |
| 50 mM | 0.1959 mL | 0.9795 mL | 1.9591 mL |

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Shi X, et al. Acetoacetic acid induces oxidative stress to inhibit the assembly of very low density lipoprotein in bovine hepatocytes. J Dairy Res. 2016 Nov;83(4):442-446.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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