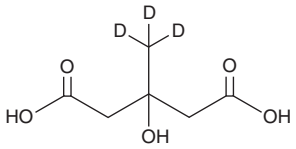
PRODUCT INFORMATION

Meglutol-d_3

Item No. 30914

CAS Registry No.: 59060-36-5
Formal Name: 3-hydroxy-3-(methyl-d_3)-pentanedioic acid
Synonyms: Dicrotalic Acid-d_3, 3-hydroxy 3-methyl Glutaric Acid-d_3, HMG-d_3, 3-methyl-3-Hydroxyglutaric Acid-d_3, Medroglutaric Acid-d_3, 3-hydroxy-3-Methylglutaric Acid-d_3
MF: $C_6H_7D_3O_5$
FW: 165.2
Chemical Purity: ≥95% (Meglutol)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_3); ≤1% d_0
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Meglutol-d_3 is intended for use as an internal standard for the quantification of meglutol (Item No. 33832) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Meglutol-d_3 is supplied as a solid. A stock solution may be made by dissolving the meglutol-d_3 in the solvent of choice, which should be purged with an inert gas. Meglutol-d_3 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of meglutol-d_3 in these solvents is approximately 30 mg/ml.

Description

Meglutol is an HMG-CoA reductase inhibitor (IC_{50} = 4 nM) and antimetabolite of mevalonic acid.[1] Dietary administration of meglutol (10, 20, and 30 mg/kg per day) reduces serum total cholesterol levels in normal rats, as well as reduces them in high-cholesterol fed and hypercholesterolemic rats when administered in the drinking water at a dose of 50 mg/kg per day.[2] It also reduces serum levels of cholesterol, triglycerides, phospholipids, and free fatty acids, as well as the severity of aortic atherosclerotic lesions, in a rabbit model of atherosclerosis induced by a high-cholesterol diet when administered at a dose of 25 mg/animal per day.[3] Intracerebroventricular administration of meglutol (0.5 µmol/g) induces lipid peroxidation and decreases the activity of glutathione peroxidase in the cerebral cortex of one-day old rat pups.[4] Meglutol accumulates in the tissues and fluids of patients with HMG-CoA lyase deficiency, a disorder characterized by metabolic acidosis, hypoglycemia, and lethargy.[4]

References

1. Medina-Franco, J.L., López-Vallejo, F., Rodríguez-Morales, S., *et al. Bioorg. Med. Chem. Lett.* **15(4)**, 989-994 (2005).
2. Beg, Z.H. and Siddiqi, M. *Experientia* **23(5)**, 380 (1967).
3. Lupien, P.J., Tremblay, M., and Beg, Z.H. *Atherosclerosis* **18(3)**, 407-416 (1973).
4. da Rosa, M.S., da Rosa-Junior, N.T., Parmeggiani, B., *et al. Neurotox. Res.* **37(2)**, 314-325 (2020).

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