

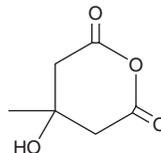
# PRODUCT INFORMATION



## 3-hydroxy-3-Methylglutaric anhydride

Item No. 18632

**CAS Registry No.:** 34695-32-4  
**Formal Name:** dihydro-4-hydroxy-4-methyl-2H-pyran-2,6(3H)-dione  
**Synonyms:** Dicrotalac anhydride, HMG anhydride  
**MF:** C<sub>6</sub>H<sub>8</sub>O<sub>4</sub>  
**FW:** 144.1  
**Purity:** ≥95%  
**UV/Vis.:** λ<sub>max</sub>: 218 nm  
**Supplied as:** A crystalline 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

3-hydroxy-3-Methylglutaric (HMG) anhydride is supplied as a crystalline solid. A stock solution may be made by dissolving the HMG anhydride in the solvent of choice. HMG anhydride is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of HMG anhydride in these solvents is approximately 10 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of HMG anhydride can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of HMG anhydride in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

The enzyme 3-hydroxy-3-methylglutaryl-coenzyme A (HMG-CoA) reductase mediates the rate-limiting step in cholesterol synthesis, converting HMG-CoA to mevalonate.<sup>1</sup> HMG anhydride is a precursor that is used in the synthesis of HMG-CoA.<sup>2,3</sup> It has also been used in the synthesis of 3-alkyl-3-hydroxyglutaric acids that act as inhibitors of HMG-CoA reductase.<sup>4</sup>

### References

1. Yeganeh, B., Wiechec, E., Ande, S.R., *et al.* Targeting the mevalonate cascade as a new therapeutic approach in heart disease, cancer and pulmonary disease. *Pharmacol. Ther.* **1143(1)**, 87-110 (2014).
2. Williamson, I.P. and Rodwell, V.W. Isolation and purification of 3-hydroxy-3-methylglutaryl-coenzyme A by ion-exchange chromatography. *J. Lipid Res.* **22(1)**, 184-187 (1981).
3. Louw, A.I., Bekersky, I., and Mosbach, E.H. Improved synthesis of 3-hydroxy-3-methylglutaryl-CoA (HMG-CoA). *J. Lipid Res.* **10(6)**, 683-686 (1969).
4. Baran, J.S., Laos, I., Langford, D.D., *et al.* 3-Alkyl-3-hydroxyglutaric acids: A new class of hypocholesterolemic HMG CoA reductase inhibitors. *J. Med. Chem.* **28(5)**, 597-601 (1985).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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