

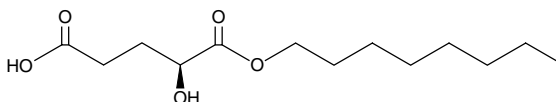
# Product Information



## (2S)-Octyl- $\alpha$ -hydroxyglutarate

Item No. 16367

**CAS Registry No.:** 1391194-64-1  
**Formal Name:** 2S-hydroxy-pentanedioic acid, 1-octyl ester  
**Synonym:** (2S)-Octyl-2-HG  
**MF:** C<sub>13</sub>H<sub>24</sub>O<sub>5</sub>  
**FW:** 260.3  
**Purity:** ≥95%  
**Stability:** ≥2 years at -20°C  
**Supplied as:** A crystalline solid



### Laboratory Procedures

For long term storage, we suggest that (2S)-octyl- $\alpha$ -hydroxyglutarate be stored as supplied at -20°C. It should be stable for at least two years.

(2S)-Octyl- $\alpha$ -hydroxyglutarate is supplied as a crystalline solid. A stock solution may be made by dissolving the (2S)-octyl- $\alpha$ -hydroxyglutarate in the solvent of choice. (2S)-Octyl- $\alpha$ -hydroxyglutarate is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of (2S)-octyl- $\alpha$ -hydroxyglutarate in ethanol is approximately 20 mg/ml and approximately 10 mg/ml in DMSO and DMF.

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 (2S)-octyl- $\alpha$ -hydroxyglutarate can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of (2S)-octyl- $\alpha$ -hydroxyglutarate in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

$\alpha$ -Hydroxyglutaric acid (2-HG; Item No. 16374) is normally metabolized to 2-oxoglutarate by D- and L-2-hydroxyglutarate dehydrogenases. Mutations in these enzymes cause 2-hydroxyglutaric aciduria, a neurometabolic disorder.<sup>1-3</sup> Recent studies have found that mutations in isocitrate dehydrogenase 1 (IDH1) and IDH2, typically associated with certain cancers, can cause these enzymes to convert isocitrate to 2-HG, rather than  $\alpha$ -ketoglutarate.<sup>4,5</sup> 2-HG is structurally similar to  $\alpha$ -ketoglutarate and competitively inhibits  $\alpha$ -ketoglutarate-dependent dioxygenases, including lysine demethylases and DNA hydroxylases.<sup>5-7</sup> (2S)-Octyl- $\alpha$ -hydroxyglutarate is a cell-permeable derivative of the L-isomer of 2-HG.

### References

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**WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

#### SAFETY DATA

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