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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

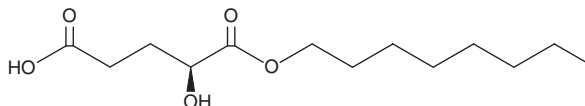
PRODUCT INFORMATION



(2S)-Octyl- α -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: C₁₃H₂₄O₅
FW: 260.3
Purity: ≥95%
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

(2S)-Octyl- α -hydroxyglutarate is supplied as a crystalline solid. A stock solution may be made by dissolving the (2S)-octyl- α -hydroxyglutarate in the solvent of choice, which should be purged with an inert gas. (2S)-Octyl- α -hydroxyglutarate is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of (2S)-octyl- α -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- α -hydroxyglutarate can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of (2S)-octyl- α -hydroxyglutarate in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

α -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.¹⁻³ 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 α -ketoglutarate.^{3,4} 2-HG is structurally similar to α -ketoglutarate and competitively inhibits α -ketoglutarate-dependent dioxygenases, including lysine demethylases and DNA hydroxylases.⁵⁻⁷ (2S)-Octyl- α -hydroxyglutarate is a cell-permeable derivative of the L-isomer of 2-HG.

References

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3. Struys, E.A., Salomons, G.S., Achouri, Y., *et al. Am. J. Hum. Genet.* **76**(2), 358-360 (2005).
4. Ward, P., Patel, J., Wise, D.R., *et al. Cancer Cell* **17**(3), 225-234 (2010).
5. Yang, H., Ye, D., Guan, K.L., *et al. Clin. Cancer Res.* **18**(20), 5562-5571 (2012).
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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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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM