

Product Data Sheet

Product Name: 7 α -hydroxy Cholesterol-d7

Cat. No.: GC40202

Chemical Properties

Cas. No. 349553-94-2

Chemical Name cholest-5-ene-25,26,26,26,27,27,27-d7-3 β ,7 α -diol

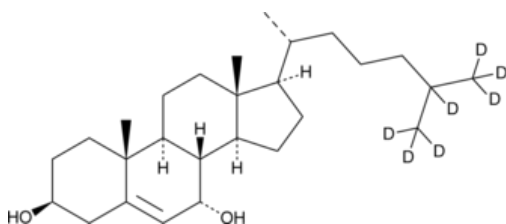
Formula C₂₇H₃₉D₇O₂ M.Wt 409.7

Solubility 20mg/mL in ethanol, 0.1mg/mL in DMSO, 2mg/mL in DMF Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Background

7 α -hydroxy Cholesterol-d7 is intended for use as an internal standard for the quantification of 7 α -hydroxy cholesterol by GC- or LC-MS. 7 α -hydroxy Cholesterol is an oxysterol and a precursor in the biosynthesis of the bile acids cholic acid and chenodeoxycholic acid.[1],[2] It is formed via the oxidation of cholesterol by cholesterol 7 α -hydroxylase/CYP7A1 in rat liver microsomes.[1] 7 α -hydroxy Cholesterol (40 μ M) increases levels of the adhesion molecules ICAM-1, VCAM-1, and E-selectin in human umbilical vein endothelial cells (HUVECs).[3] It increases secretion of chemokine (C-C motif) ligand 2 (CCL2) and matrix metalloproteinase-9 (MMP-9) in serum-deprived THP-1 cells when used at a concentration of 5 μ g/mL.[4] 7 α -hydroxy Cholesterol has been found in macrophages isolated from atherosclerotic lesions in rabbits fed a high-cholesterol diet.[5]

Reference:

Caution: Product has not been fully validated for medical applications. For research use only.

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- [1]. Mitropoulos, K.A., and Balasubramaniam, S. Cholesterol 7 α -hydroxylase in rat liver microsomal preparations. *Biochem. J.* 128(1), 1-9 (1972).
- [2]. Chiang, J.Y.L. Bile acid metabolism and signaling in liver disease and therapy. *Liver Res.* 1(1), 3-9 (2017).
- [3]. Lemaire, S., Lizard, G., Monier, S., et al. Different patterns of IL-1 β secretion, adhesion molecule expression and apoptosis induction in human endothelial cells treated with 7 α -, 7 β -hydroxycholesterol, or 7-ketocholesterol. *FEBS Lett.* 440(3), 434-439 (1998).
- [4]. Kim, S.M., Kim, B.Y., Son, Y., et al. 7 α -Hydroxycholesterol induces inflammation by enhancing production of chemokine (C-C motif) ligand 2. *Biochem. Biophys. Res. Commun.* 467(4), 879-884 (2015).
- [5]. Hultén, L.M., Lindmark, H., Diczfalusy, U., et al. Oxysterols present in atherosclerotic tissue decrease the expression of lipoprotein lipase messenger RNA in human monocyte-derived macrophages. *J. Clin. Invest.* 97(2), 461-468 (1996).

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