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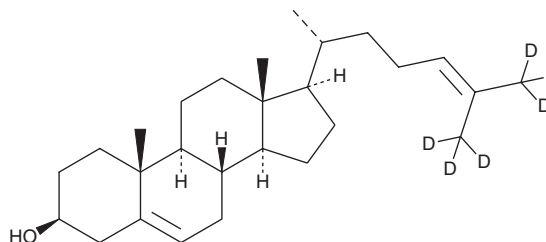
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PRODUCT INFORMATION



24-dehydro Cholesterol-d₆ Item No. 26777

CAS Registry No.: 1246298-67-8
Formal Name: cholesta-5,24-dien-26,26,26,27,27,27-d₆-3β-ol
Synonym: Desmosterol-d₆
MF: C₂₇H₃₈D₆O
FW: 390.7
Chemical Purity: ≥98% (24-dehydro Cholesterol)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₆); ≤1% d₀
Supplied as: A solid
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

24-dehydro Cholesterol-d₆ is intended for use as an internal standard for the quantification of 24-dehydro cholesterol (Item No. 14943) 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).

24-dehydro Cholesterol-d₆ is supplied as a solid. A stock solution may be made by dissolving the 24-dehydro cholesterol-d₆ in the solvent of choice. 24-dehydro Cholesterol-d₆ is soluble in organic solvents such as ethanol and dimethyl formamide, which should be purged with an inert gas. The solubility of 24-dehydro cholesterol-d₆ in these solvents is approximately 0.25 and 50 mg/ml, respectively.

Description

24-dehydro Cholesterol is an immediate precursor to cholesterol in the Bloch pathway of cholesterol biosynthesis. Structurally, it varies from cholesterol only by a single double bond at carbon 24 and has been used as cholesterol substitute in cellular membrane studies.¹ During brain development, 24-dehydro cholesterol transiently accumulates, composing up to 30% of total brain sterol, where it is poised to rapidly enrich membrane sterols.² However, defects in cholesterol synthesis can lead to a condition called desmosterolosis, which results in an accumulation of excess 24-dehydro cholesterol.³ 24-dehydro Cholesterol has been reported to activate liver X receptor-target genes in both the liver of cholesterol-free mice and in cholesterol-starved macrophage foam cells in atherosclerotic lesions.^{4,5}

References

1. Huster, D., Scheidt, H.A., Arnold, K., *et al.* Desmosterol may replace cholesterol in lipid membranes. *Biophys. J.* **88(3)**, 1838-1844 (2005).
2. Jansen, M., Wang, W., Greco, D., *et al.* What dictates the accumulation of desmosterol in the developing brain? *FASEB J.* **27(3)**, 865-870 (2013).
3. Clayton, P.T. Disorders of cholesterol biosynthesis. *Arch. Dis. Child.* **78(2)**, 185-189 (1998).
4. Heverin, M., Meaney, S., Brafman, A., *et al.* Studies on the cholesterol-free mouse: Strong activation of LXR-regulated hepatic genes when replacing cholesterol with desmosterol. *Arterioscler. Thromb. Vasc. Biol.* **27(10)**, 2191-2197 (2007).
5. Spann, N.J., Garmire, L.X., McDonald, J.G., *et al.* Regulated accumulation of desmosterol integrates macrophage lipid metabolism and inflammatory responses. *Cell* **151(1)**, 138-152 (2012).

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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