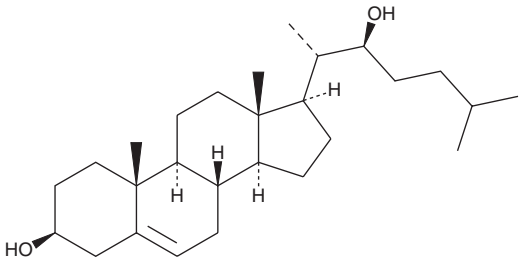
PRODUCT INFORMATION

22(S)-hydroxy Cholesterol

Item No. 21399



CAS Registry No.:	22348-64-7
Formal Name:	cholest-5-ene-3β,22S-diol
Synonym:	22β-hydroxy Cholesterol
MF:	$C_{27}H_{46}O_2$
FW:	402.7
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

22(S)-hydroxy Cholesterol is supplied as a crystalline solid. A stock solution may be made by dissolving the 22(S)-hydroxy cholesterol in the solvent of choice. 22(S)-hydroxy Cholesterol is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of 22(S)-hydroxy cholesterol in these solvents is approximately 20, 0.1, and 2 mg/ml, respectively.

22(S)-hydroxy Cholesterol is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 22(S)-hydroxy cholesterol should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. 22(S)-hydroxy Cholesterol has a solubility of approximately 0.3 mg/ml in a 1:2 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

22(S)-hydroxy Cholesterol is a synthetic oxysterol and a modulator of the liver X receptor (LXR).[1] It prevents monocyte chemoattractant protein 1 (MCP-1) expression induced by the LXR agonist GW 3965 (Item No. 10054) in primary hepatocytes and downregulates mRNA expression of the LXR target genes CD36, ACSL1, and SCD-1 in human myotubes.[2] It decreases triacylglycerol and diacylglycerol synthesis from labeled palmitate and acetate, respectively, in human myoblasts by 50% when used at a concentration of 10 µM.[1] 22(S)-hydroxy Cholesterol also reduces fatty acid synthase (FASN) reporter activity through an LXR response element in the promoter region in COS-1 cells transfected with RXRα and LXRα and decreases the expression of MCP-1 and CCR2 in a mouse model of chronic ethanol consumption.[1,2] Dietary supplementation of 22(S)-hydroxy cholesterol (30 mg/kg per day) leads to less body weight gain and lower liver triacylglycerol levels in rats when fed either a regular chow or high-fat diet as well as prevents an increase in plasma triacylglycerol levels resulting from a high-fat diet.[3]

References

1. Kase, E.T., Andersen, B., Nebb, H.I., *et al.* 22-Hydroxycholesterols regulate lipid metabolism differently than T0901317 in human myotubes. *Biochim. Biophys. Acta.* **1761(12)**, 1515-1522 (2006).
2. Na, T.-Y., Han, Y.-H., Ka, N.-L., *et al.* 22-S-Hydroxycholesterol protects against ethanol-induced liver injury by blocking the auto/paracrine activation of MCP-1 mediated by LXRα. *J. Pathol.* **235(5)**, 710-720 (2015).
3. Kase, E.T., Nikolić, N., Pettersen Hessvik, N., *et al.* Dietary supplementation with 22-S-hydroxycholesterol to rats reduces body weight gain and the accumulation of liver triacylglycerol. *Lipids* **47(5)**, 483-493 (2012).

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