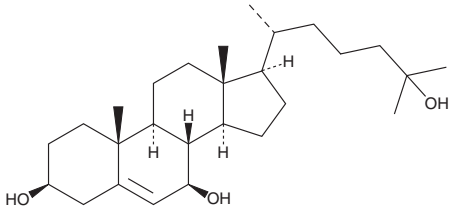
PRODUCT INFORMATION

7β,25-dihydroxy Cholesterol

Item No. 43245

CAS Registry No.:	64907-21-7
Formal Name:	cholest-5-ene-3β,7β,25-triol
Synonym:	7β,25-DHC
MF:	$C_{27}H_{46}O_3$
FW:	418.7
Purity:	≥98%
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years



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

Description

7β,25-dihydroxy Cholesterol is an active metabolite of cholesterol (Item Nos. 9003100 | 39088 | 39448).[1] It is formed from cholesterol *via* 7-keto,25-hydroxy cholesterol (Item No. 25973) or 7β-hydroxy cholesterol (Item No. 20099) intermediates by 11β-hydroxysteroid dehydrogenase (11β-HSD) or cholesterol 25-hydroxylase (CH25H), respectively. 7β,25-dihydroxy Cholesterol activates Epstein-Barr virus-induced G protein-coupled receptor 2 (EBI2), also known as GPR183, in a GTPγS assay (EC_{50} = 221 nM) but does not bind to EBI2 in CHO cell membranes expressing the human receptor in a radioligand binding assay (IC_{50} = 2,632 nM).[2] Unlike 7α,25-dihydroxy cholesterol (Item No. 11032), it does not induce migration of isolated mouse splenocytes when used at concentrations up to 100 nM.[3] 7β,25-dihydroxy Cholesterol acts as a cellular chaperone that corrects the localization defect of Niemann-Pick disease type C intracellular cholesterol transporter 1 containing an isoleucine-to-threonine substitution at position 1061 ($NPC1^{I1061T}$) in HEK293 cells expressing the mutant transporter (EC_{50} = 1.9 µM).[4]

References

1. Beck, K.R., Kanagaratnam, S., Kratschmar, D.V., *et al.* Enzymatic interconversion of the oxysterols 7β,25-dihydroxycholesterol and 7-keto,25-hydroxycholesterol by 11β-hydroxysteroid dehydrogenase type 1 and 2. *J. Steroid Biochem. Mol. Biol.* **190**, 19-28 (2019).
2. Hannedouche, S., Zhang, J., Yi, T., *et al.* Oxysterols direct immune cell migration via EBI2. *Nature* **475(7357)**, 524-527 (2011).
3. Liu, C., Yang, X.V., Wu, J., *et al.* Oxysterols direct B-cell migration through EB12. *Nature* **475(7357)**, 519-523 (2011).
4. Ohgane, K., Karaki, F., Noguchi-Yachide, T., *et al.* Structure-activity relationships of oxysterol-derived pharmacological chaperones for Niemann-Pick type C1 protein. *Bioorg. Med. Chem. Lett.* **24(15)**, 3480-3485 (2014).

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