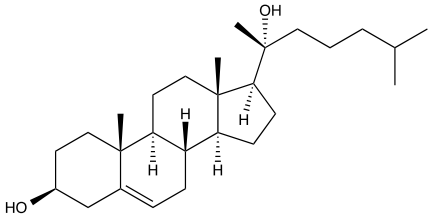
Catalog # 10-4540
20-(S)-Hydroxycholesterol

CAS# 516-72-3

5-Cholesten-3β, 20α-diol

Lot # FBS3018



20-(S)-Hydroxycholesterol is an endogenous ligand for the LXR receptor.[1] It has anti-adipogenic and pro-osteogenic effects in mesenchymal stem cells mediated via a non-LXR dependent pathway.[2] The osteogenic effects of 20-(S)-hydroxycholesterol have been shown to be mediated by activation of hedgehog signaling and expression of genes associated with Notch signaling.[3] Activation of Hedgehog is mediated via binding of 20(S)-hydroxycholesterol to Smoothened at a site distinct from the cyclopamine binding site.[4,5] It has also been found to be an endogenous ligand for the sigma 2 receptor.[6]

1) Janowski *et al*. (1996), *An oxysterol signaling pathway mediated by the nuclear receptor LXRα*; Nature **383** 728
2) Kha *et al.* (2004), O*xysterols regulate differentiation of mesenchymal stem cells: Pro-bone and Anti-fat*: J.Bone Min.Res. **19** 830
3) Kim *et al*. (2010), *Osteogenic oxysterol, 20(S)-hydroxycholesterol, induces notch target gene expression in bone marrow stromal cells* J.Bone Miner.Res. **25** 7823
4) Dwyer *et al*. (2007), *Oxysterols are novel activators of the hedgehog signaling pathway in pluripotent mesenchymal cells; J.Biol.Chem.* ***282*** *8959*
5) Nedelcu *et al*. (2013); *Oxysterol binding to the extracellular domain of Smoothened in Hedgehog signaling* Nat.Chem.Biol. **9** 557
6) Cheng *et al*. (2021); *A proteome-wide map of 20(S)-hydroxycholesterol interactors in cell membranes* Nat.Chem.Biol. **17** 1271

PHYSICAL DATA

Molecular Weight:	402.66
Molecular Formula:	$C_{27}H_{46}O_2$
Purity:	98% by TLC
	NMR: (Conforms)
Solubility:	DMSO or Ethanol
Physical Description:	White solid
Storage and Stability:	Store as supplied at -20°C for up to 1 year from the date of purchase. Solutions in DMSO or ethanol may be stored at -20°C for up to 3 months.

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