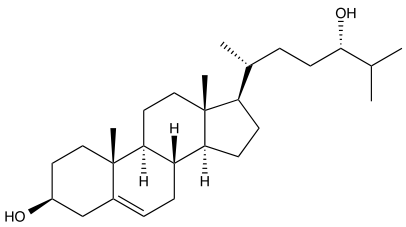
Catalog # 10-1331
24(S)-Hydroxycholesterol

CAS# 474-73-7

Lot # FBA1264



24(S)-Hydroxycholesterol is an important cholesterol metabolite (cholesterol 24-hydroxylase) found in the brain.[1] It is an endogenous agonist of the nuclear receptor LXR.[2] It has been shown to induce cell death in neuroblastoma cells[3], possibly via a necroptosis pathway[4]. 24(S)-Hydroxycholesterol has also been found to be a high affinity ligand for RORα and RORγ (Ki = 25 nM).[5] 24(S)-Hydroxycholesterol levels are elevated in the cerebral spinal fluids of patients with neurodegenerative diseases suggesting possible clinical applications.[6,7] It was also able to reduce Aβ production and increase ER-resident immature amyloid precursor protein (APP) levels in human neuroblastoma SH-Sy5Y cells and CHO cells via inhibition of intracellular amyloid precursor protein trafficking.[7]

1) Lujohann *et al*. (1996), *Cholesterol homeostasis in human brain: evidence for an age-dependent flux of 24S-hydroxycholesterol from the brain into circulation;* Proc. Natl. Acad. Sci. USA, **93** 9799
2) Chawla *et al.* (2001), *Nuclear receptors and lipid physiology:opening the X-files;* Science, **294** 1866
3) Kolsch *et al.* (1999), *The neurotoxic effect of 24-hydroxycholesterol on SH-SY5Y human neuroblastoma cells;* Brain Res., **818** 171
4) Yamanaka *et al*. (2011), *24(S)-hydroxycholesterol induces neuronal cell death through necroptosis, a form of programmed necrosis;* J. Biol. Chem., **286** 24666
5) Wang *et al*. (2010), *A second class of nuclear receptors for oxysterols: regulation of RORalpha and RORgamma activity by 24(S)-hydroxycholesteraol (cerebrosterol);* Biochim. Biophys. Acta, **1801** 917
6) Leoni and Caccia (2013), *Potential diagnostic applications of side chain oxysterols analysis inplasma and cerebrospinal fluid;* Biochem. Pharmacol., **86** 26
7) Urano *et al.* (2013), *Suppression of amyloid-β production by 24S-hydroxycholesterol via inhibition of intracellular amyloid precursor protein trafficking;* FASEB J., **27** 4305

PHYSICAL DATA

Molecular Weight:	402.66
Molecular Formula:	$C_{27}H_{46}O_2$
Purity:	99% by HPLC
	NMR: (Conforms)
Solubility:	DMSO (up to 10 mg/ml with warming), or ethanol (up to 10 mg/ml)
Physical Description:	White solid
Storage and Stability:	Store as supplied at -20°C for up to 2 years from the date of purchase. Solutions in DMSO or ethanol may be stored at -20°C for up to 2 months.

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