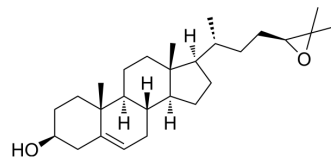


## (24S,25)-Epoxycholesterol

<b>Cat. No.:</b>	HY-W040150
<b>CAS No.:</b>	77058-74-3
<b>Molecular Formula:</b>	C <sub>27</sub> H <sub>44</sub> O <sub>2</sub>
<b>Molecular Weight:</b>	400.64
<b>Target:</b>	LXR
<b>Pathway:</b>	Metabolic Enzyme/Protease; Vitamin D Related/Nuclear Receptor
<b>Storage:</b>	Please store the product under the recommended conditions in the Certificate of Analysis.



### BIOLOGICAL ACTIVITY

<b>Description</b>	24S,25-Epoxycholesterol is an agonist for Liver X Receptor (LXR). 24S,25-Epoxycholesterol exhibits properties in regulating the cholesterol efflux <sup>[1]</sup> , inhibiting tumor growth against gastric cancer and glioblastoma <sup>[2][3]</sup> and inducing apoptosis in BMMC cells <sup>[5]</sup> .																
<b>In Vitro</b>	<p>24S,25-Epoxycholesterol (1-10 μM) upregulates the LXR-related genes ABCA1, ABCG1 and APOE, promotes the cholesterol efflux, therefore prevents the foam cell formation and blocks proliferation of mouse and human glioma stem-like cells through depleting cellular cholesterol<sup>[1][3]</sup>.</p> <p>24S,25-Epoxycholesterol inhibits proliferation and migration of HGC27, which is enhanced by knockout of LXRβ<sup>[2]</sup>.</p> <p>24S,25-Epoxycholesterol (40 μM) inhibits HMG-CoA reductase and activates the LXR, which suppresses mevalonate-dependent isoprenoid production and enhancing the ATP-binding cassette G1 expression, induces apoptosis in bone marrow-derived murine mast cells (BMMCs)<sup>[5]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Proliferation Assay<sup>[2]</sup></p> <table border="1"> <tr> <td>Cell Line:</td> <td>HGC27</td> </tr> <tr> <td>Concentration:</td> <td>1 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>18 h</td> </tr> <tr> <td>Result:</td> <td>Inhibited proliferation of HGC27</td> </tr> </table> <p>Cell Migration Assay<sup>[2]</sup></p> <table border="1"> <tr> <td>Cell Line:</td> <td>HGC27</td> </tr> <tr> <td>Concentration:</td> <td>1 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>18 h</td> </tr> <tr> <td>Result:</td> <td>Reduced HGC27 migration.</td> </tr> </table>	Cell Line:	HGC27	Concentration:	1 μM	Incubation Time:	18 h	Result:	Inhibited proliferation of HGC27	Cell Line:	HGC27	Concentration:	1 μM	Incubation Time:	18 h	Result:	Reduced HGC27 migration.
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<b>In Vivo</b>	<p>24S,25-Epoxycholesterol (5 mM, icv) enhances the mDA neurogenesis, limits the neurodegeneration in CYP46A1-overexpressing mice midbrain<sup>[4]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>																

Animal Model:	GGPP induced mDA neurogenesis defect in CYP46A1 overexpressing CD-1 mice <sup>[4]</sup>
Dosage:	5 mM
Administration:	icv, 1 $\mu$ L, single dosage
Result:	Increased levels of mDA neurons, blocked the GGPP induced decrease of double EdU and TH cells.

## REFERENCES

- [1]. Beyea MM, et al., Selective up-regulation of LXR-regulated genes ABCA1, ABCG1, and APOE in macrophages through increased endogenous synthesis of 24(S),25-epoxycholesterol. *J Biol Chem.* 2007 Feb 23;282(8):5207-16.
- [2]. Guo F, et al., Upregulation of 24(R/S),25-epoxycholesterol and 27-hydroxycholesterol suppresses the proliferation and migration of gastric cancer cells. *Biochem Biophys Res Commun.* 2018 Oct 12;504(4):892-898.
- [3]. Nguyen TP, et al., Selective and brain-penetrant lanosterol synthase inhibitors target glioma stem-like cells by inducing 24(S),25-epoxycholesterol production. *Cell Chem Biol.* 2023 Feb 16;30(2):214-229.e18.
- [4]. Theofilopoulos S, et al., 24(S),25-Epoxycholesterol and cholesterol 24S-hydroxylase (CYP46A1) overexpression promote midbrain dopaminergic neurogenesis in vivo. *J Biol Chem.* 2019 Mar 15;294(11):4169-4176.
- [5]. Fukunaga M, et al., Mast cell death induced by 24(S),25-epoxycholesterol. *Exp Cell Res.* 2010 Nov 15;316(19):3272-81.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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