Vidofludimus hemicalcium

Cat. No.: HY-14908A

CAS No.: 1354012-90-0

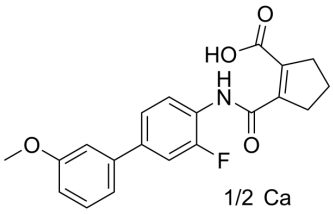
Molecular Formula: $C_{20}H_{18}FNO_4 \cdot 1/2Ca$

Molecular Weight: 375.4

Target: Dihydroorotate Dehydrogenase; Interleukin Related; FXR

Pathway: Metabolic Enzyme/Protease; Immunology/Inflammation

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Vidofludimus (4sc-101; SC12267) hemicalcium is an orally active inhibitor for dihydroorotate dehydrogenase (DHODH) and also is a novel modulator for farnesoid X receptor (FXR). Vidofludimus hemicalcium, as an immunomodulatory agent, can be used for the research of autoimmune disorders such as inflammatory bowel disease (IBD). Vidofludimus hemicalcium also can be used for the research of fatty liver by targeting FXR[1][2][3].
IC_{50} & Target	EC50: 450 nM (FXR)[1] IC50: 160 nM (human DHODH)[3]
In Vitro	Vidofludimus hemicalcium (0-1 μM) selectively activats FXR in a concentration dependent manner with an EC_{50} value of about 450 nM in inducing the recruitment of various coactivator LXXLL motifs[1]. Vidofludimus hemicalcium (0-8 μM) blocks nuclear translocation of p65 by suppressing IKK-IκB-NF-κB pathway[1]. Vidofludimus hemicalcium has inhibitory activity for human DHODH with an IC_{50} value of 160 nM[2]. Vidofludimus hemicalcium inhibits dihydro-orotate dehydrogenase and lymphocyte proliferation in vitro[3]. Vidofludimus hemicalcium inhibits interleukin (IL)-17 secretion in vitro independently of effects on lymphocyte proliferation [3]. Vidofludimus hemicalcium completely blocks IL-23 + IL-1β-stimulated secretion of IL-17 by colonic strips in ex vivo[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	"Vidofludimus hemicalcium (i.p.; once daily; for 14 days) exerts effects on dextran sodium sulfate (DSS) induced colitis in an FXR-dependent manner in vivo[1]. Vidofludimus hemicalcium (p.o; 60 mg/kg; for 6 days) effectively improves many parameters of TNBS-induced colitis in rats and has inhibitory effects on colonic STAT3 and IL-17[3]." MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Yanlin Zhu, et al. Repositioning an Immunomodulatory Drug Vidofludimus as a Farnesoid X Receptor Modulator With Therapeutic Effects on NAFLD. Front Pharmacol. 2020 May 14;11:590.

[2]. Andreas Muehler, et al. Vidofludimus calcium, a next generation DHODH inhibitor for the Treatment of relapsing-remitting multiple sclerosis. Mult Scler Relat Disord. 2020 Aug;43:102129.

[3]. Leo R Fitzpatrick, et al. Vidofludimus inhibits colonic interleukin-17 and improves hapten-induced colitis in rats by a unique dual mode of action. J Pharmacol Exp Ther. 2012 Sep;342(3):850-60.

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