VUF11207 fumarate

Cat. No.: HY-110318

CAS No.: 1785665-61-3

Molecular Formula: $C_{31}H_{39}FN_2O_8$

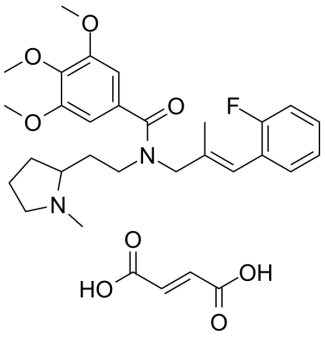
Molecular Weight: 586.65

Target: CXCR

Pathway: GPCR/G Protein; Immunology/Inflammation

Storage: 4°C, sealed storage, away from moisture

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (170.46 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.7046 mL	8.5230 mL	17.0459 mL
	5 mM	0.3409 mL	1.7046 mL	3.4092 mL
	10 mM	0.1705 mL	0.8523 mL	1.7046 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (3.55 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (3.55 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (3.55 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

VUF11207 fumarate is a CXCR7 agonist that binds specifically to CXCR7. VUF11207 fumarate reduces CXCL12-mediated osteoclastogenesis and bone resorption by inhibiting ERK phosphorylation[1].

IC_{50} & Target

CXCR7
8.1 (pKi)

In Vitro

VUF11207 fumarate (0.17 nM; 5 days) inhibits RANKL and TNFαinduced osteoclastogenesis through CXCL12 inhibition in osteoclast precursor cells[1].
VUF11207 fumarate inhibits osteoclastogenesis by suppressing phosphorylation of erk[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	Osteoclast precursor cells (RANKL□ and TnF□α□induced)
Concentration:	0.17 nM (100 ng/mL)
Incubation Time:	5 days
Result:	Showed inhibitory effect on CXCL12.

In Vivo

VUF11207 fumarate (100 μg/day; s.c.; single daily for 5 days) inhibits LPS□induced osteoclastogenesis, bone resorption and production of RANKL and TNF□α in mice[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male c57Bl/6J wild□type/WT mice (8□10□week□old; 20□25 g; LPS-induced)[1]
Dosage:	100 μg/day
Administration:	Subcutaneous injection; single daily for 5 days
Result:	Significantly decreased the number of osteoclasts and suppressed Cathepsin K mRNA, ranKl and TnF□α mRNA expression levels. Reduced the area of LPS-induced bone resorption.

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REFERENCES

[1]. Nugraha AP, et al. C□X□C receptor 7 agonist acts as a C□X□C motif chemokine ligand 12 inhibitor to ameliorate osteoclastogenesis and bone resorption. Mol Med Rep. 2022 Mar;25(3):78.

[2]. Wijtmans M, et al. Synthesis, modeling and functional activity of substituted styrene-amides as small-molecule CXCR7 agonists. Eur J Med Chem. 2012 May;51:184-92.