CTCE-0214

Cat. No.:	HY-P3612
CAS No.:	577782-52-6
Molecular Formula:	$C_{170}H_{254}N_{44}O_{40}$
Molecular Weight:	3554.11
Sequence Shortening:	KPVSLSYRAPFRFFGGGGLKWIQEYLEKALN-NH2 (Lactam:Lys20-Glu24)
Target:	CXCR
Pathway:	GPCR/G Protein; Immunology/Inflammation
Storage:	Sealed storage, away from moisture and light Powder -80°C 2 years -20°C 1 year * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)

KPVSLSYRAPFRFFGGGGLKWIQEYLEKALN-NH_2 (Lactam:Lys_{20}-Glu_{24})

SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (28.14 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	0.2814 mL	1.4068 mL	2.8136 mL
	5 mM	0.0563 mL	0.2814 mL	0.5627 mL
	10 mM	0.0281 mL	0.1407 mL	0.2814 mL

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

BIOLOGICAL ACTIVITY

Description

CTCE-0214 is a chemokine CXC receptor 4 (CXCR4) agonist, SDF-1α (stromal cell-derived factor-1α) peptide analog. CTCE-0214 shows anti-inflammatory activity, and can be used in inflammation sepsis and systemic inflammatory syndromes research[1][2][3].

IC_{50} & Target

SDF-1α-CXCR4

In Vitro

CTCE-0214 (0.01-0.1 ng/mL; 4 d) increases the expansion of CD34+ cells subsets[3].

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

In Vivo

CTCE-0214 (intravenous injection; 1-25 mg/kg; once) treatment inhibits Lipopolysaccharide-induced plasma TNF-α production[1].

CTCE-0214 (intraperitoneal injection and intravenous injection; 25 mg/kg; once) decreases Zymosan-induced plasma TNF-α production[1].

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

Animal Model:	Male CD-1 mice injected with Lipopolysaccharide[1]
Dosage:	1, 10, or 25 mg/kg
Administration:	Intravenous injection; 1, 10, or 25 mg/kg; once
Result:	Decreased LPS-induced plasma TNF-α production in a dose dependent manor with a 93% reduction. Showed no significant effect on LPS-induced plasma IL-6 and IL-10 production.

Animal Model:	Zymosan-induced peritonitis mice model[1]
Dosage:	25 mg/kg
Administration:	Intraperitoneal injection and intravenous injection; 25 mg/kg; once
Result:	Showed a significant reduction in plasma TNF-α (53 reduction, $p<0.05$).

REFERENCES

[1]. Fan H, et al. Beneficial effect of a CXCR4 agonist in murine models of systemic inflammation. Inflammation. 2012 Feb;35(1):130-7.

[2]. Faber A, et al. The many facets of SDF-1alpha, CXCR4 agonists and antagonists on hematopoietic progenitor cells. J Biomed Biotechnol. 2007;2007(3):26065.

[3]. Li K, et al. Small peptide analogue of SDF-1alpha supports survival of cord blood CD34+ cells in synergy with other cytokines and enhances their ex vivo expansion and engraftment into nonobese diabetic/severe combined immunodeficient mice. Stem Cells. 2006 Jan;24(1):55-64.

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