Chemerin-9 (149-157) (TFA)

Cat. No.: HY-P1844A

Molecular Formula: $C_{56}H_{67}F_3N_{10}O_{15}$

Molecular Weight: 1177.18

Sequence Shortening: YFPGQFAFS

Target: Akt; ERK; Reactive Oxygen Species; Amyloid-β

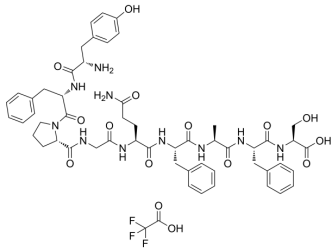
Pathway: PI3K/Akt/mTOR; MAPK/ERK Pathway; Stem Cell/Wnt; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB; Neuronal Signaling

Storage: Sealed storage, away from moisture

Powder -80°C 2 years

-20°C 1 year

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



SOLVENT & SOLUBILITY

In Vitro

H_2O : 100 mg/mL (84.95 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	0.8495 mL	4.2474 mL	8.4949 mL
5 mM	0.1699 mL	0.8495 mL	1.6990 mL
10 mM	0.0849 mL	0.4247 mL	0.8495 mL

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

BIOLOGICAL ACTIVITY

Description

Chemerin-9 (149-157) TFA is a potent agonist of chemokine-like receptor 1 (CMKLR1) . Chemerin-9 (149-157) TFA has anti-inflammatory activity. Chemerin-9 (149-157) TFA stimulates phosphorylation of Akt and ERK as well as ROS production. Chemerin-9 (149-157) TFA ameliorates $A\beta_{1-42}$-induced memory impairmen. Chemerin-9 (149-157) TFA regulates immune responses, adipocyte differentiation, and glucose metabolism[1][2][3][4].

In Vitro

Chemerin-9 (149-157) TFA (0.1 nM; 24 h; cardiac fibroblasts) stimulates migration in cardiac fibroblasts and stimulates phosphorylation of Akt and ERK as well as ROS production[4].

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

Western Blot Analysis[4]

Cell Line:	Cardiac fibroblasts
Concentration:	0.1 nM

Incubation Time:	24 hours
Result:	Stimulated phosphorylation of Akt and ERK.

In Vivo

Chemerin-9 (149-157) TFA (0.2 mg/kg; i.p.; daily, for 42 days) alleviates glucose intolerance and IR in PDM mice[1].
Chemerin-9 (149-157) TFA (7.7 μg /kg; i.h.; daily, for 28 days) has anti-inflammatory and anti-angiogenic effects in ApoE$^{-/-}$ mice and protects the abdominal aorta from MMP damage[2].
Chemerin-9 (149-157) TFA (8 μg/kg; ICV; daily; for 14 d; male Kunming mice) ameliorates $A\beta_{1-42}$-induced memory impairment[3].

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

Animal Model:	PDM mice[1]
Dosage:	0.2 mg/kg
Administration:	Intraperitoneal injection; daily, for 42 days
Result:	Increased expression of chemerin, GLUT2, and PDX1, which led to the alleviation of glucose intolerance and IR in PDM model mice.

Animal Model:	ApoE$^{-/-}$ mice[2]
Dosage:	7.7 μg /kg
Administration:	Subcutaneous injection; daily, for 28 days
Result:	Suppressed the enlargement of abdominal aorta and reversed the SMC loss.

Animal Model:	ApoE$^{-/-}$ mice[2]
Dosage:	7.7 μg /kg
Administration:	Subcutaneous injection; daily, for 28 days
Result:	Down-regulated MMP2 and MMP-9 expression and decreased the levels of chemerin and CMKLR1.

Animal Model:	Male Kunming mice[3]
Dosage:	8 μg/kg
Administration:	Intracerebroventrical injection; daily; for 14 days
Result:	Increased in the levels of pro-inflammatory cytokines such as interleukin-1β (IL-1β), tumor necrosis factor (TNF-α) and interleukin-6 (IL-6) in the hippocampus.

CUSTOMER VALIDATION

- Eur J Pharmacol. 2022 Oct 25;175343.

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REFERENCES

[1]. Tu J, et, al. Regulatory effect of chemerin and therapeutic efficacy of chemerin 9 in pancreatogenic diabetes mellitus. Mol Med Rep. 2020 Mar;21(3):981-988.

[2]. Chen S, et, al. Chemerin-9 Attenuates Experimental Abdominal Aortic Aneurysm Formation in ApoE-/- Mice. J Oncol. 2021 Apr 17;2021:6629204.

[3]. Lei Z, et, al. Chemerin-9 Peptide Enhances Memory and Ameliorates Aβ1-42-Induced Object Memory Impairment in Mice. Biol Pharm Bull. 2020 Feb 1;43(2):272-283.

[4]. Yamamoto A, et, al. Chemerin-9 stimulates migration in rat cardiac fibroblasts in vitro. Eur J Pharmacol. 2021 Dec 5;912:174566.

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