

Product Data Sheet

Product Name: Chemerin-9, Mouse

Cat. No.: GC50742

Chemical Properties

Cas. No. 686324-96-9

SMILES O=C(N[C@@H](CC(C)C)C(N1[C@@H](CCC1)C(NCC(N[C@@H](CCC(N)=O)C(N[C@@H](CC2=CC=CC=C2)C(N[C@@H](C)C(N[C@@H](CC3=CC=CC=C3)C(N[C@@H](CO)C(O)=O)=O)=O)=O)=O)=O)[C@H](CC4=CC=CC=C4)N

Formula C₅₁H₆₈N₁₀O₁₂ M.Wt 1013.16

Solubility Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure ~~Phe-Leu-Pro-Gly-Gln-Phe-Ala-Phe-Ser~~

Protocol

Cell experiment [1]:

Cell lines Rat cardiac fibroblasts

Rat cardiac fibroblasts were cultured at 37°C and 5% CO₂ in RPMI-1640 medium supplemented with 0.5% fetal bovine serum (FBS). Cells were cultured to confluency in a 6-well dish. The wounds were made by scratching the cell Preparation Method surface using a 10µl pipette tip. Culture media (DMEM containing 0.5% FBS) were changed, and three crossing areas were photographed by a phase-contrast microscope connected to a camera. After Chemerin-9 (100ng/ml) was added for 24h (37°C; 5% CO₂), the three areas were photographed again.

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

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Reaction Conditions 100ng/ml; 24h

Applications Chemerin-9 treatment stimulated the migration of rat cardiac fibroblasts.

Animal experiment [2]:

Animal models APP/PS1 mice

Preparation Method APP/PS1 mice were accommodated within a controlled environment that was free of specific pathogens, with an ambient temperature range of 20-25°C and a light cycle of 12h on and 12h off. Chemerin-9 was dissolved in sterile PBS. Mice were treated intraperitoneally with Chemerin-9 (60µg/kg) every other day for eight weeks consecutively. The effects of Chemerin-9 on the cognitive deficits of APP/PS1 mice were evaluated using Y-maze and Morris water maze tests.

Dosage form 60µg/kg; every other day for 8 weeks; i.p.

Applications Chemerin-9 treatment ameliorated the cognitive impairment of the APP/PS1 mice.

References:

- [1] Yamamoto A, Sagara A, Otani K, et al. Chemerin-9 stimulates migration in rat cardiac fibroblasts in vitro[J]. European Journal of Pharmacology, 2021, 912: 174566.
[2] Zhang J, Zhang Y, Liu L, et al. Chemerin-9 is neuroprotective in APP/PS1 transgenic mice by inhibiting NLRP3 inflammasome and promoting microglial clearance of Aβ[J]. Journal of Neuroinflammation, 2025, 22(1): 5.

Background

Chemerin-9, Mouse is a chemerin-derived nonapeptide that retains the agonistic activity of chemerin

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that induces the chemotaxis of primary microglia [1]. Chemerin-9 can inhibit the formation of foam cells in macrophages induced by oxidized low-density lipoprotein (oxLDL), and prevent atherosclerosis by reducing the number of macrophages and smooth muscle cells within the plaque [2]. Chemerin-9 has been widely used to stimulate the sympathetic nerve and increase the systemic blood pressure in animal models[3].

In vitro, Chemerin-9 (100nM) treatment for 6 hours inhibited cholesterol efflux in THP-1 cells and upregulated the expression of low-density lipoprotein receptor (LDLR) [4]. Treatment with 100ng/ml Chemerin-9 for 24 hours significantly stimulated the migration activity of rat cardiac fibroblasts and promoted the phosphorylation of Akt and ERK in the cells[5].

In vivo, Chemerin-9 treatment via subcutaneous injection at a dose of 60µg/kg, every other day for 8 weeks, significantly improved Aβ deposition and cognitive impairment in APP/PS1 mice, while reducing the pro-inflammatory activity of microglia[6]. Daily intraperitoneal injection of Chemerin-9 (4µg dissolved in 200µl PBS) was administered for 42 days, which significantly increased the chemokine levels in the serum of mice with pancreatogenic diabetes mellitus (PDM) as well as the mRNA expression levels of GLUT2 and PDX1, and alleviated the glucose intolerance and insulin resistance in the mice[7].

References:

- [1] Lei Z L, Lu Y Q, Bai X, et al. Chemerin-9 peptide enhances memory and ameliorates Aβ1–42-induced object memory impairment in mice[J]. Biological and Pharmaceutical Bulletin, 2020, 43(2): 272-283.
- [2] Sato K, Yoshizawa H, Seki T, et al. Chemerin-9, a potent agonist of chemerin receptor (ChemR23), prevents atherogenesis[J]. Clinical science, 2019, 133(16): 1779-1796.
- [3] Yamamoto A, Matsumoto K, Hori K, et al. Acute intracerebroventricular injection of chemerin-9 increases systemic blood pressure through activating sympathetic nerves via CMKLR1 in brain[J]. Pflügers Archiv-European Journal of Physiology, 2020, 472(6): 673-681.
- [4] Tan L, Wang N, Galema-Boers A M H, et al. Statins, but not proprotein convertase subtilisin-kexin type 9 inhibitors, lower chemerin in hypercholesterolemia via low-density lipoprotein receptor upregulation[J]. MedComm, 2024, 5(9): e681.
- [5] Yamamoto A, Sagara A, Otani K, et al. Chemerin-9 stimulates migration in rat cardiac fibroblasts in vitro[J]. European Journal of Pharmacology, 2021, 912: 174566.

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[6] Zhang J, Zhang Y, Liu L, et al. Chemerin-9 is neuroprotective in APP/PS1 transgenic mice by inhibiting NLRP3 inflammasome and promoting microglial clearance of A β [J]. Journal of Neuroinflammation, 2025, 22(1): 5.

[7] Tu J, Yang Y, Zhang J, et al. Regulatory effect of chemerin and therapeutic efficacy of chemerin-9 in pancreatogenic diabetes mellitus[J]. Molecular medicine reports, 2020, 21(3): 981-988.

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