Data Sheet (Cat.No.T16879)

TargetMol

SHU 9119

Chemical Properties

CAS No. :	168482-23-3
Formula:	C54H71N15O9
Molecular Weight:	1074.26
Storage:	Keep away from moisture,Keep away from direct sunlight, Powder: -20°C for 3 years | In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.

Biological Description

Description	SHU 9119 is a potent ligand of human melanocortin receptors, exhibiting dual pharmacological properties: it acts as an antagonist at MC3R and MC4R, while functioning as a partial agonist at MC5R. The IC50 values of SHU 9119 against MC3R, MC4R, and MC5R are 0.23, 0.06, and 0.09 nM, respectively.
Targets(IC50)	Melanocortin Receptor
In vivo	Method: Rats received intracerebroventricular (i.c.v.) infusion of SHU9119 (24 nmol/day for 7 days). Primary adipocytes were isolated from epididymal white adipose tissue and incubated in vitro with [^{14}C]acetate for 4 hours. [^{14}C] incorporation into triglycerides (TAG) was measured by liquid scintillation counting. Result: The rate of TAG synthesis in adipocytes from the SHU9119-treated group was increased by approximately 100% compared with the control group, and this effect was consistent between ad libitum-fed and pair-fed groups [1]. Method: Rats received i.c.v. infusion of SHU9119 (24 nmol/day for 48 hours or 7 days). White adipose tissue and liver were collected for real-time quantitative PCR, Western blot, and enzyme activity assays to measure lipid metabolism-related gene expression and enzyme activities. Body composition was assessed by NMR imaging, respiratory quotient (RQ) was measured by indirect calorimetry, plasma biochemical parameters were measured, and hyperinsulinemic-euglycemic clamp experiments were performed to determine tissue glucose utilization. Result: SHU9119 rapidly upregulated the mRNA expression of FAS, ACCα, SCD1, and LPL in adipose tissue (2.7- to 19.7-fold) within 48 hours. After 7 days, it significantly increased body fat content and TAG content in WAT (approximately 37 μg/mg vs. 22.2 μg/mg in controls) and upregulated FAS enzyme activity. SHU9119 also elevated RQ, reduced glucose utilization in muscle and BAT while increasing WAT glucose uptake, and upregulated hepatic FAS, ACCα, SCD1, and SREBP1c expression with a concomitant increase in hepatic TAG content. These effects were consistent between ad libitum-fed and pair-fed groups, with no significant changes in plasma glucose, FFA, or TAG levels [1]. Method: APOE*3-Leiden.CETP transgenic mice received i.c.v. infusion of SHU9119 (5 nmol/day for 14-17 days). Brown adipose tissue (BAT) was collected for Western blot analysis of UCP-1, TH, and p-CREB protein expression, and H&E staining to observe lipid droplet morphology. BAT uptake of triglycerides (TG) was assessed by injection of ^{3}H-TO

In vivo	and ^{14}C-CO dual-labeled VLDL-like chylomicron particles. Result: SHU9119 significantly reduced BAT protein levels of UCP-1 (-60%), TH (-53%), and p-CREB (-22%), induced large lipid droplet accumulation in BAT, and decreased BAT uptake of VLDL-TG (-57% in the pair-fed group), indicating that SHU9119 directly suppresses BAT activity [2].

Solubility Information

Solubility	DMSO: 8 mg/mL (7.45 mM),Sonication is recommended. H2O: 20.00 mg/mL (18.62 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.9309 mL	4.6544 mL	9.3087 mL
5 mM	0.1862 mL	0.9309 mL	1.8617 mL
10 mM	0.0931 mL	0.4654 mL	0.9309 mL
50 mM	0.0186 mL	0.0931 mL	0.1862 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Nogueiras R, et al. The central melanocortin system directly controls peripheral lipid metabolism. J Clin Invest. 2007;117(11):3475-3488.

Kooijman S, et al. Inhibition of the central melanocortin system decreases brown adipose tissue activity. J Lipid Res. 2014;55(10):2022-2032.

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