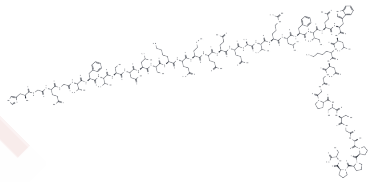
Data Sheet (Cat.No.T3967)

TargetMol

Exendin-4

Chemical Properties



CAS No. : 141758-74-9

Formula: C184H282N50O60S

Molecular Weight: 4186.57

Appearance: no data available

Storage: keep away from moisture,store at low temperature
Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Exendin-4 (Exenatide) is a glucagon-like peptide-1 receptor (GLP-1) agonist (IC50: 3.22 nM). Exenatide is a 39 amino acid peptide. Compared to GLP-1, exenatide has a longer half-life of 2.4 hours.
Targets(IC50)	Glucagon Receptor
In vitro	In HUVECs, exendin-4 dose-dependently significantly increases NO production, eNOS phosphorylation and GTPCH1 level[2]. Exendin-4 shows cytotoxic effects to MCF-7 breast cancer cells (IC50 5 μM) at 48 hours [3].
In vivo	In ob/ob mice, the treatment of exendin-4 improve serum ALT and reduce serum glucose, insulin levels and calculated HOMA scores compared with control. In the final 4 weeks of the study period, exendin-4-treated ob/ob mice sustain an obvious reduction in the net weight gain[4]. Animals treated with exendin-4 have more pyknotic nuclei, more pancreatic acinar inflammation and weigh significantly less than control rats[5]. Exenatide leads to dose-dependent relaxation of rat thoracic aorta, which is evoked via the GLP-1 receptor and is mediated mainly by H2S but also by CO and NO[6].

Solubility Information

Solubility	DMSO: 10 mM,Sonication is recommended. H2O: 1.23 mg/mL (0.29 mM),Sonication and heating are recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.2389 mL	1.1943 mL	2.3886 mL
5 mM	0.0478 mL	0.2389 mL	0.4777 mL
10 mM	0.0239 mL	0.1194 mL	0.2389 mL
50 mM	0.0048 mL	0.0239 mL	0.0478 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.

Reference

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Ren W, Chen J, Wang W, et al.Sympathetic nerve-enteroendocrine L cell communication modulates GLP-1 release, brain glucose utilization, and cognitive function.Neuron.2024
Wei R, et al. Exenatide exerts direct protective effects on endothelial cells through the AMPK/Akt/eNOS pathway in a GLP-1 receptor-dependent manner. Am J Physiol Endocrinol Metab. 2016 Jun 1; 310(11):E947-57.
Ding X, et al. Exendin-4, a glucagon-like protein-1 (GLP-1) receptor agonist, reverses hepatic steatosis in ob/obmice. Hepatology. 2006 Jan;43(1):173-81.
Nachnani JS, et al. Biochemical and histological effects of exendin-4 (exenatide) on the rat pancreas. Diabetologia. 2010 Jan;53(1):153-9.
Sélley, E., Kun, S., Szijártó, I., Laczy, B., Kovács, T., & Fülöp, F. et al. (2014). Exenatide induces aortic vasodilation increasing hydrogen sulphide, carbon monoxide and nitric oxide production. Cardiovascular Diabetology, 13(1), 69. doi: 10.1186/1475-2840-13-69
Fidan-YaylalI G, et al. Antidiabetic exendin-4 activates apoptotic pathway and inhibits growth of breast cancer cells. Tumour Biol. 2016 Feb;37(2):2647-53.
Huang L, Ma R, Lin T, et al. Glucagon-like peptide-1 receptor pathway inhibits extracellular matrix production by mesangial cells through store-operated Ca2+ channel[J]. Experimental Biology and Medicine. 2019: 1535370219876531.