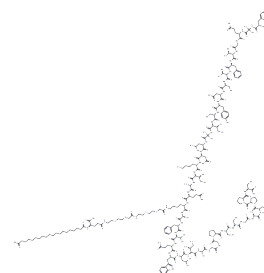


Tirzepatide

Chemical Properties

CAS No. :	2023788-19-2
Formula:	C225H348N48O68
Molecular Weight:	4813.45
Storage:	Keep away from moisture, Store at low temperature Powder: -20°C for 3 years In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>



Biological Description

Description	Tirzepatide (LY3298176) is a long-acting glucose-dependent insulinotropic polypeptide (GIP) and glucagon-like peptide-1 (GLP-1) receptor dual agonist. In HEK293 cells, it can effectively stimulate cAMP accumulation, with an EC50 of 0.0224 nM for the GIP receptor (GIPR) and an EC50 of 0.934 nM for the GLP-1 receptor (GLP-1R).
Targets(IC50)	Glucagon Receptor
In vitro	METHODS: SHSY5Y cells were treated with Tirzepatide (0-0.4 μM) for 7 days, and the expression level of target proteins was detected by Western Blot method. RESULTS: Tirzepatide upregulates the protein levels of CREB and BDNF, and simultaneously increases the protein levels of Bcl-2, pAkt, MAP2, GAP43, AGL4, GLUT4, and SORBS1. [1]
In vivo	Methods: To investigate the effect of Tirzepatide on obesity, Tirzepatide (10 nmol/kg) was administered subcutaneously to obese mice induced by high-fat diet. Results: Treatment with Tirzepatide reduced body weight in mice and also improved obesity-induced serum adiponectin, leptin, GIP, and C-reactive protein levels. [2]

Solubility Information

Solubility	DMSO: 100 mg/mL (20.78 mM), Sonication is recommended. H2O: < 0.5 mg/mL (insoluble) (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.2078 mL	1.0388 mL	2.0775 mL
5 mM	0.0416 mL	0.2078 mL	0.4155 mL
10 mM	0.0208 mL	0.1039 mL	0.2078 mL
50 mM	0.0042 mL	0.0208 mL	0.0416 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

Fontanella RA, et al. Tirzepatide prevents neurodegeneration through multiple molecular pathways. *J Transl Med.* 2024 Jan 29;22(1):114.

Weimin K, et al. Tirzepatide as an innovative treatment strategy in a pre-clinical model of obesity-driven endometrial cancer. *Gynecologic Oncology.* 2024;191:116-123.

Guo X, et al. Tirzepatide ameliorates spatial learning and memory impairment through modulation of aberrant insulin resistance and inflammation response in diabetic rats. *Front Pharmacol.* 2023 Aug 28;14:1146960.

Coskun, Tamer, et al. LY3298176, a novel dual GIP and GLP-1 receptor agonist for the treatment of type 2 diabetes mellitus: from discovery to clinical proof of concept. *Molecular metabolism* 18 (2018): 3-14.

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Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481