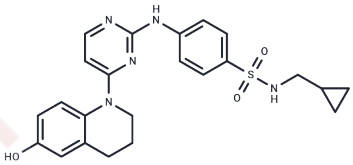
Data Sheet (Cat.No.T16695)

TargetMol

Pyrintegrin

Chemical Properties



CAS No. : 1228445-38-2

Formula: C23H25N5O3S

Molecular Weight: 451.54

Storage: 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	Pyrintegrin, a β1-integrin agonist, promotes the survival of embryonic stem cells, can be used as a podocyte-protective agent, and enhances cell-extracellular matrix adhesion-mediated integrin signaling.
Targets(IC50)	Integrin
In vitro	Pyrintegrin decreases Runx2 and Osx via BMP-mediated SMAD1/5 phosphorylation. Pyrintegrin treatment prevents damage-induced decreases in F-actin stress fibers, focal adhesions, and active β1-integrin levels in cultured cells. Pyrintegrin stimulates human adipose stem/progenitor cells (hASCs) to differentiate into lipid-laden adipocytes by upregulating peroxisome proliferator-activated receptor (PPARγ) and CCAAT/enhancer-binding protein-α (C/EBPα), with differentiated cells increasingly secreting adiponectin, leptin, glycerol, and total triglycerides. Pyrintegrin (0-10 μM; 1 hour; hASCs) treatment inhibits BMP4-mediated phosphorylation of BMP responsive SMAD1/5 in a dose-dependent manner (IC50 of 1.14 μM) [1][2].
In vivo	Pyrintegrin induces postnatal adipose tissue formation in vivo of transplanted adipose stem/progenitor cells (ASCs) and recruited endogenous cells. Pyrintegrin decreases peak proteinuria caused by puromycin aminonucleoside-induced nephropathy. Pyrintegrin-treated human adipose stem/progenitor cells (ASCs) in 3D-bioprinted scaffolds, when transplanted in the dorsum of athymic mice, yielded ectopically formed adipose tissue that expressed human PPARγ. Pyrintegrin-adsorbed collagen gel implanted in the inguinal fat pad promoted adipogenesis formed by host endogenous cells, suggesting its ability to induce in situ adipogenesis without the need for cell transplantation. Pyrintegrin (10 mg/kg; intraperitoneal injection; once; C57BL/6J mice) treatment protects mice from LPS-induced podocyte foot process effacement and proteinuria. LPS administration decreases the levels of active β1 integrin in the podocytes, which is prevented by cotreatment with Pyrintegrin [1][2].

Solubility Information

Solubility	DMSO: 150 mg/mL (332.2 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 5 mg/mL (11.07 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.2146 mL	11.0732 mL	22.1464 mL
5 mM	0.4429 mL	2.2146 mL	4.4293 mL
10 mM	0.2215 mL	1.1073 mL	2.2146 mL
50 mM	0.0443 mL	0.2215 mL	0.4429 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

Shah BS, et al. Pyrintegrin Induces Soft Tissue Formation by Transplanted or Endogenous Cells. Sci Rep. 2017 Jan 27;7:36402.

Lee HW, et al. A Podocyte-Based Automated Screening Assay Identifies Protective Small Molecules. J Am Soc Nephrol. 2015 Nov;26(11):2741-52.

Xu Y, et al. Revealing a core signaling regulatory mechanism for pluripotent stem cell survival and self-renewal by small molecules. Proc Natl Acad Sci U S A. 2010 May 4;107(18):8129-34.

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