
Product Data Sheet

Product Name: Setmelanotide (RM-493)

Cat. No.: GC30372

Chemical Properties

Cas. No. 920014-72-8

SMILES O=C(N[C@@H](CSSC[C@](C(N[C@@H]1C)=O)([H])NC([C@@H](NC(C)=O)CCCNC(N)=N)=O)C(N)=O)[C@@H](NC([C@@H](NC([C@@H](NC([C@@H](NC1=O)CC2=CN=CN2)=O)([H])CC3=CC=CC=C3)=O)CCCNC(N)=N)=O)CC4=CNC5=CC=CC=C45

Formula C₄₉H₆₈N₁₈O₉S₂ M.Wt 1117.31

Solubility Water : ≥ 24 mg/mL (21.48 mM) 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 **Protocol****Kinase experiment:**

Cell membranes are prepared from CHO-K1 cells stably expressing the human melanocortin receptor subtypes (MC1R, MC3R, MC4R and MC5R). They are incubated at 1-10 µg protein/well in 50 mM Tris-HCl, pH 7.4, containing 0.2% BSA, 5 mM MgCl₂, 1 mM CaCl₂ and 0.1 mg/mL bacitracin, with increasing concentrations of setmelanotide and 0.1-0.3 nM [125I]-NDP-α-MSH for 90-120 min at 37°C, depending on the receptor subtype. Bound from free [125I]-NDP-α-MSH is separated by filtration through GF/C glass fiber filters presoaked with 0.1 % (w/v) PEI. Filters are washed three times with 50 mM Tris-HCl, pH 7.4, at 0-4°C and assayed for radioactivity using Perkin Elmer Topcount scintillation counter[1].

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

Animal experiment:

Mice: Mice are weighed. Baseline blood glucose is measured and 2 g/kg body weight of D-glucose injected by i.p. BIM-22493 is administered chronically at a dose of 300 nmol/kg/day for 14 days by sc. osmotic pump. Controls are administered with 0.9% saline during the same period. Blood glucose is measured at 15, 30, 60, and 120 minutes post injection[1].

References:

- [1]. Kumar KG, et al. Analysis of the therapeutic functions of novel melanocortin receptor agonists in MC3R- and MC4R-deficient C57BL/6j mice. *Peptides*. 2009 Oct;30(10):1892-900.
- [2]. Kievit P, et al. Chronic treatment with a melanocortin-4 receptor agonist causes weight loss, reduces insulin resistance, and improves cardiovascular function in diet-induced obese rhesus macaques. *Diabetes*. 2013 Feb;62(2):490-7.

Background

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

Setmelanotide (RM-493, BIM-22493, CAM 4072) is a cyclic peptide full agonist of melanocortin-4 receptor (MC4R) with an EC₅₀ of 0.27 nM and a K_i of 2.1 nM.

Setmelanotide decreases TNF- α /IFN- γ -induced chemokine expression in astrocytes and increases IL-6 and IL-11 mRNA and protein secretion via MC4R. Setmelanotide Induces CREB phosphorylation in astrocytes and setmelanotide treated astrocytes secrete factors that are able to modulate macrophage polarization into an anti-inflammatory phenotype.[2]

RM-493 and liraglutide co-treatment enhances weight loss in DIO mice and hypothalamic Glp-1r expression is higher in mice treated with the combination therapy after both acute and chronic treatment. Adjunctive administration of RM-493 and liraglutide improves glucose tolerance and insulin sensitivity, lowers fasting levels of glucose and insulin and decreases cholesterol levels beyond what can be achieved with the corresponding mono-therapies.[3]

[1] Kong Y Chen, et al. J Clin Endocrinol Metab. 2015 Apr;100(4):1639-45. [2] Alwin Kamermans, et al. Front Immunol. 2019 Oct 4;10:2312. [3] Christoffer Clemmensen, et al. EMBO Mol Med. 2015 Mar; 7(3): 288-298.

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA