Product Data Sheet

Product Name: Neuronostatin-13 human
Cat. No.: GC31162

Chemical Properties

Cas. No.	1096485-24-3		
SMILES	Leu-Arg-Gln-Phe-Leu-Gln-Lys-Ser-Leu-Ala-Ala-Ala-Ala-NH2		
Formula	$C_{64}H_{110}N_{20}O_{16}$	M.Wt	1415.68
Solubility	H_2O : 25 mg/mL (17.66 mM; Need ultrasonic)	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ 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	Neuronostatin-13 human		

Protocol

Cell experiment:

For studies examining hormone secretion from cell lines, INS 832/13 or αTC1-9 cells are plated in 96- or 24-well plates at a density of 0.25×105 cells/well or 1.0×105 cells/well in complete medium. The day of the experiment, cells are washed in PBS and allowed to preincubate in low- or high-glucose KRB buffer for 1 h in the presence or absence of Neuronostatin-13 human. Hormone secretion is performed using a 2-h static incubation. Supernatants are collected, and insulin or glucagon content is determined[1].

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Animal experiment:

3-month-old adult male C57BL/6 mice are used and housed in a temperature-controlled environment (22.8±2.0°C, 45 to 50% humidity) with a 12:12h light/dark cycle with free access to food and tap water. For Neuronostatin-13 human challenge in vivo, 3-month-old adult C57BL/6 male mice are randomly divided into two groups and to receive Neuronostatin-13 human (50 μg/kg, i.p.). Cardiac function is evaluated at 3-, 6-, 12- and 18-hr after Neuronostatin-13 human treatment in the first group of animals[2].

References:

[1]. Salvatori AS, et al. Neuronostatin inhibits glucose-stimulated insulin secretion via direct action on the pancreatic α-cell. Am J Physiol Endocrinol Metab. 2014 Jun 1;306(11):E1257-63.
[2]. Zhu X, et al. Neuronostatin attenuates myocardial contractile function through inhibition of sarcoplasmic reticulum Ca2+-ATPase in murine heart. Cell Physiol Biochem. 2014;33(6):1921-32.

Background

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Neuronostatin-13 human is a 13-amino acid peptide hormone encoded by the somatostatin gene and plays an important role in the regulation of hormonal and cardiac function.

Neuronostatin-13 human is a 13-amino acid peptide hormone encoded by the somatostatin gene and plays an important role in the regulation of hormonal and cardiac function. Treatment with Neuronostatin-13 human (1,000 nM) enhances low-glucose-induced glucagon release compare with islets treated with control medium alone. Treatment with Neuronostatin-13 human for 1 h leads to a significant increase in the accumulation of glucagon mRNA compare with vehicle-treated control cells. In αTC1-9 α-cells, treatment with 100 nM Neuronostatin-13 human leads to an increase in phosphorylated PKA at 30 and 40 min[1].

Infusion with Neuronostatin-13 human delays glucose clearance in the rat model, such that blood glucose levels in Neuronostatin-13 human-treated animals are significantly higher at 1 and 10 min following intra-arterial injection of a glucose bolus[1]. Chocardiographic measurement reveals a remarkable drop in heart rate after 3-, 6- and 12-hr of Neuronostatin-13 human challenge. In addition, Neuronostatin-13 human treatment significantly decreases left ventricular end-systolic diameter (LVESD) and fractional shortening without affecting left ventricular end-diastolic diameter (LVEDD) between 6 and 12 hrs following Neuronostatin-13 human challenge, the effect of which returns to basal level 18-hr after Neuronostatin-13 human treatment[2].

[1]. Salvatori AS, et al. Neuronostatin inhibits glucose-stimulated insulin secretion via direct action on the pancreatic α-cell. Am J Physiol Endocrinol Metab. 2014 Jun 1;306(11):E1257-63. [2]. Zhu X, et al. Neuronostatin attenuates myocardial contractile function through inhibition of sarcoplasmic reticulum Ca2+-ATPase in murine heart. Cell Physiol Biochem. 2014;33(6):1921-32.

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