Product Data Sheet

Product Name: Prolactin Releasing Peptide (12-31), human
Cat. No.: GC33733

Chemical Properties

Cas. No.	235433-36-0		
SMILES	Thr-Pro-Asp-Ile-Asn-Pro-Ala-Trp-Tyr-Ala-Ser-Arg-Gly-Ile-Arg-Pro-Val-Gly-Arg-Phe-NH2		
Formula	$C_{104}H_{158}N_{32}O_{26}$	M.Wt	2272.57
Solubility	H_2O : 100 mg/mL (44.00 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			

Protocol

Animal experiment:

Rats[3]Groups of rats are injected with either Prolactin Releasing Peptide (1-31) 5 nM or saline. Prolactin Releasing Peptide (1-31), human is dissolved in saline is administered in a total volume of 10 µL. Animals are habituated to the injection procedures by three ICV injections prior to the study to minimize stress in the animals. At 10, 20, 60 minutes following injection, rats are decapitated and trunk blood collected into plastic tubes[3].

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References:

[1]. Roland BL, et al. Anatomical distribution of prolactin-releasing peptide and its receptor suggests additional functions in the central nervous system and periphery. Endocrinology. 1999 Dec;140(12):5736-45.
[2]. Langmead CJ, et al. Characterization of the binding of [(125)I]-human prolactin releasing peptide (PrRP) to GPR10, a novel G protein coupled receptor. Br J Pharmacol. 2000 Oct;131(4):683-8.
[3]. Seal LJ, et al. Prolactin releasing peptide (PrRP) stimulates luteinizing hormone (LH) and follicle stimulating hormone (FSH) via a hypothalamic mechanism in male rats. Endocrinology. 2000 May;141(5):1909-12.

Background

Prolactin Releasing Peptide (12-31), human is a fragment of the prolactin releasing peptide (PrRP). Prolactin Releasing Peptide (1-31), human is a high affinity GPR10 ligand that cause the release of the prolactin.

The Prolactin Releasing Peptide (PrRP) is a C-terminally amidated, 31-amino acid peptide

derived from a 98-amino acid precursor. Radioiodinated PrRP-(1-31) binds to its receptor with high affinity (1 nM) and stimulates calcium mobilization in CHOK1 cells stably transfected with the receptor. A series of N-terminal deletions reveals that the Prolactin Releasing Peptide (12-31) amino acid is equipotent to PrRP-(1-31). Further N-terminal deletions reduce the affinity of the ligand considerably[1]. Prolactin Releasing Peptide (PrRP) has been identified as a specific, high affinity endogenous ligand for GPR10. Prolactin Releasing Peptide (PrRP) preproprotein can be cleaved at two different positions to give rise to two forms of 31 or 20 amino acids; Prolactin Releasing Peptide (PrRP)-31 and Prolactin Releasing Peptide (PrRP)-20 respectively. Rat Prolactin Releasing Peptide (PrRP) has also been identified and occurs as 31 or 20 amino acid forms; these peptides are highly conserved between species. Human PrRP-20, human PrRP-31, rat PrRP-20 and rat PrRP-31 display high affinity for GPR10 receptors, with Ki values of 0.26±0.07, 1.03±0.41, 0.22±0.06 and 0.33±0.11 nM, respectively[2].

Following intracerebroventricular injection of Prolactin Releasing Peptide (1-31), human 5 nM there is a highly significant simulation of plasma LH that began at 10 minutes and is maintained over the course of the experiment. Plasma FSH increased at 20 minutes following ICV injection. Total plasma testosterone increased at 60 minutes post injection[3].

[1]. Roland BL, et al. Anatomical distribution of prolactin-releasing peptide and its receptor suggests additional functions in the central nervous system and periphery. Endocrinology. 1999 Dec;140(12):5736-45. [2]. Langmead CJ, et al. Characterization of the binding of [(125)I]-human prolactin releasing peptide (PrRP) to GPR10, a novel G protein coupled receptor. Br J Pharmacol. 2000 Oct;131(4):683-8. [3]. Seal LJ, et al. Prolactin releasing peptide (PrRP) stimulates luteinizing hormone (LH) and follicle stimulating hormone (FSH) via a hypothalamic mechanism in male rats. Endocrinology. 2000 May;141(5):1909-12.

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