

Protirelin

Chemical Properties

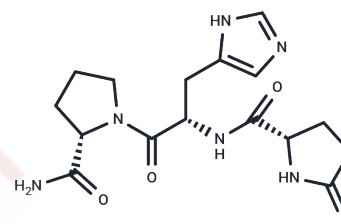
CAS No. : 24305-27-9

Formula: C₁₆H₂₂N₆O₄

Molecular Weight: 362.38

Storage: Keep away from moisture, Store at low temperature
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	Protirelin (Thyroliberin) is a tripeptide that stimulates the release of thyrotropin and prolactin.
Targets(IC50)	Endogenous Metabolite,Thyroid hormone receptor(THR)
In vivo	Protirelin (TRH), a neuropeptide predating the split between protostomes and deuterostomes, has likely played a role in regulating postembryonic growth and reproduction from its evolutionary origins. This study explores Protirelin's impact on body temperature, specifically through the administration of 1, 5, 10, and 20 mg/kg doses intraperitoneally to male Wistar rats (200-250 g). The findings reveal that Protirelin induces a temporary, dose-dependent increase in body temperature. Notably, thyroidectomized rats receiving a 20 mg/kg dose of Protirelin do not exhibit the significant hyperthermia observed in sham-operated counterparts, indicating that thyroid hormone release may be essential to Protirelin's hyperthermic effect.
Animal Research	Protirelin (TRH tartRatse) is dissolved in physiological saline (Rats).RatsNinety male Wistar rats weighing 200-250 g are subjected to the study. In the first experiment, 50 rats are divided into five groups randomly. Four doses of Protirelin dissolved in physiological saline, i. e., 1 mg/kg, 5 mg/kg, 10 mg/kg and 20 mg/kg, are administered intraperitoneally to the four groups and saline to the remaining control group. Rectal temperature is measured at the place 5 cm inner from the anus with the electronic thermister before and after treatment with Protirelin or saline. In the second experiment, 40 rats are thyroidectomized or sham-operated under the anesthesia by thiopental sodium. Ten days after the operation, 20 mg/kg of Protirelin or saline is administered to the thyroidectomized and sham-operated animals by i. p. and rectal temperature is measured using the same method as used in the first experiment. These two experiments are undertaken from 1 p, m, to 4 p. m. and the room temperature is kept at 24±1°C through the experiments including the breeding period. For a statistical analysis, Student's t test (two-tailed) is adopted.

Solubility Information

A DRUG SCREENING EXPERT

Solubility	Ethanol: 67 mg/mL (184.89 mM),Sonication is recommended. DMSO: 250 mg/mL (689.88 mM),Sonication is recommended. H2O: 66 mg/mL (182.13 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: 10 mg/mL (27.6 mM),Solution. <i>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.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.7595 mL	13.7977 mL	27.5953 mL
5 mM	0.5519 mL	2.7595 mL	5.5191 mL
10 mM	0.276 mL	1.3798 mL	2.7595 mL
50 mM	0.0552 mL	0.276 mL	0.5519 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

Van Sinay E,etal.Evolutionarily conserved TRH neuropeptide pathway regulates growth in Caenorhabditis elegans. Proc Natl Acad Sci U S A. 2017 May 16;114(20):E4065-E4074.

Noda Y,etal.Hyperthermia induced by thyrotropin-releasing hormone (TRH, protirelin) in the rat.Kurume Med J. 1979;26(2):107-12.

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