

[Pyr1]-Apelin-13

Chemical Properties

CAS No. : 217082-60-5

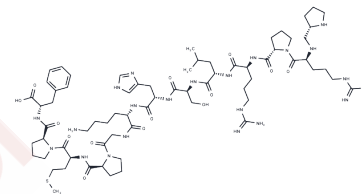
Formula: C₆₉H₁₀₈N₂₂O₁₆S

Molecular Weight: 1533.8

Appearance: no data available

Storage: keep away from moisture

Powder: -20°C for 3 years | In solvent: -80°C for 1 year



Biological Description

Description	[Pyr1]-Apelin-13 ([pGlu1]-Apelin-13) is a potent and selective endogenous Apelin receptor (APJ) agonist.
Targets(IC50)	Apelin receptor
In vitro	Encapsulation of [Pyr1]-apelin-13 in lipoPEG particles (lipoPEG-PA13) enables sustained and extended drug release in both in vitro and in vivo conditions[1].
In vivo	In a study involving a mouse model of pressure-overload induced heart failure, nanocarriers containing [Pyr1]-apelin-13 demonstrated a prolonged effect in preventing cardiac dysfunction, highlighting its potential therapeutic benefits. Additionally, [Pyr1] apelin-13 at doses of 1 and 5 µg was found to enhance locomotor activity, alleviate pain symptoms, decrease cavity size, and reduce caspase-3 levels in rats, indicating its analgesic and anti-inflammatory properties. Furthermore, the compound significantly increased thermal paw withdrawal latency and, at a 5 µg dose, notably improved paw withdrawal threshold in comparison to spinal cord injury (SCI) animals from the second week post-SCI, suggesting its effectiveness in pain management and functional recovery post-SCI.

Solubility Information

Solubility	H ₂ O: 50 mg/mL (32.6 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.652 mL	3.2599 mL	6.5198 mL
5 mM	0.1304 mL	0.652 mL	1.304 mL
10 mM	0.0652 mL	0.326 mL	0.652 mL
50 mM	0.013 mL	0.0652 mL	0.1304 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.

Reference

Serpooshan V, et al. [Pyr1]-Apelin-13 delivery via nano-liposomal encapsulation attenuates pressure overload-induced cardiac dysfunction. *Biomaterials*. 2015 Jan;37:289-98.

Song K, Yang X, An G, et al.Targeting APLN/APJ restores blood-testis barrier and improves spermatogenesis in murine and human diabetic models.*Nature Communications*.2022, 13(1): 1-17.

Shi N, Wang Y, Xia Z, et al.The regulatory role of the apelin/APJ axis in scarring: Identification of upstream and downstream mechanisms.*Biochimica et Biophysica Acta (BBA)-Molecular Basis of Disease*.2024: 167125.