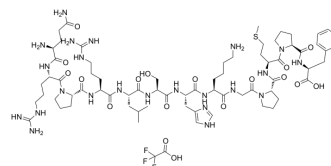


Apelin-13 TFA

Cat. No.:	HY-P1944A
Molecular Formula:	C ₇₁ H ₁₁₂ F ₃ N ₂₃ O ₁₈ S
Molecular Weight:	1664.85
Sequence:	Gln-Arg-Pro-Arg-Leu-Ser-His-Lys-Gly-Pro-Met-Pro-Phe
Sequence Shortening:	QRPRLSHKGPMFP
Target:	Apelin Receptor (APJ)
Pathway:	GPCR/G Protein
Storage:	Sealed storage, away from moisture
	Powder -80°C 2 years
	-20°C 1 year

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro	H ₂ O : 50 mg/mL (30.03 mM; Need ultrasonic)					
	Preparing Stock Solutions	<div><div>Solvent</div><div>Concentration</div></div>	Mass	1 mg	5 mg	10 mg
		1 mM	0.6007 mL	3.0033 mL	6.0065 mL	
		5 mM	0.1201 mL	0.6007 mL	1.2013 mL	
	10 mM	0.0601 mL	0.3003 mL	0.6007 mL		
Please refer to the solubility information to select the appropriate solvent.						
In Vivo	1. Add each solvent one by one: PBS Solubility: 100 mg/mL (60.07 mM); Clear solution; Need ultrasonic					

BIOLOGICAL ACTIVITY

Description	Apelin-13 TFA is an endogenous ligand for the G-protein coupled receptor angiotensin II protein J (APJ), activating this G protein-coupled receptor with an EC ₅₀ value of 0.37 nM. Apelin-13 TFA has vasodilatory and antihypertensive effects. Apelin-13 TFA also can be used for researching type 2 diabetes and metabolic syndrome ^{[1][2][3]} .
IC ₅₀ & Target	IC ₅₀ : 0.37 nM (APJ) ^[1]
In Vivo	<p>Apelin-13 (200 µg/kg; IP, daily for 4 weeks) improves cardiac function, improves insulin resistance, improves lipid metabolism, significantly decreases TNF-α and leptin on serum,? induces the expression of Apelin-12 in serum and markedly elevates GLUT4 and p-AMPKα2 levels^[2].</p> <p>?Apelin-13 (10 and 100 µM; ICV, single dosage) increases the spontaneous discharges in the majority of pallidal neurons^[4].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

Animal Model:	Goto-Kakizaki (GK) rats (12 weeks old; 240-280 g; fed with a high-fat diet: 66.5% standard chow, 10% lard, 20% sucrose, 2.5% cholesterol and 1% pig bile salt) ^[2]
Dosage:	200 µg/kg
Administration:	IP, daily for 4 weeks
Result:	Significantly decreased heart rate; lowered the levels of fasting plasma glucose (FPG), fasting insulin (FINS) and homeostasis model assessment for insulin resistance (HOMA-IR); decreased serum levels of total cholesterol (TC), triglyceride (TG) and low density lipoprotein-cholesterol (LDL-C) and increased high density lipoprotein-cholesterol (HDL-C); decreased NO level, cNOS activity, TNF-α and leptin in serum; induced the expression of Apelin-12.

Animal Model:	Adult Wistar rats (SPF, 8-10 weeks, 240-280 g) ^[4]
Dosage:	10 and 100 µM
Administration:	ICV, single dosage
Result:	Increased the spontaneous discharges in the majority of pallidal neurons.

CUSTOMER VALIDATION

- Signal Transduct Target Ther. 2021 Dec 16;6(1):427.
- Stem Cells Int. 2022 Mar 21;2022:3742678.
- Ann Transl Med. 2021 Apr;9(8):627.

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REFERENCES

- [1]. Yamaleyeva LM, et al. Apelin-13 in blood pressure regulation and cardiovascular disease. Curr Opin Nephrol Hypertens. 2016 Sep;25(5):396-403.
- [2]. Wang Y, et al. Apelin-13 regulates electrical activity in the globus pallidus and induces postural changes in rats. Neural Regen Res. 2021 Nov;16(11):2264-2268.
- [3]. Tatemoto, K., et al. Isolation and characterization of a novel endogenous peptide ligand for the human APJ receptor. Biochemical and Biophysical Research Communications 251, 471-476 (1998).
- [4]. Li M, et al. Apelin 13 ameliorates metabolic and cardiovascular disorders in a rat model of type 2 diabetes with a high fat diet. Mol Med Rep. 2018 Dec;18(6):5784-5790.

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

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