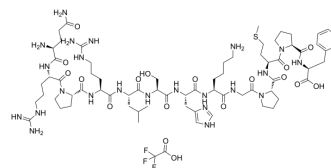


## Apelin-13 TFA

<b>Cat. No.:</b>	HY-P1944A
<b>Molecular Formula:</b>	C <sub>71</sub> H <sub>112</sub> F <sub>3</sub> N <sub>23</sub> O <sub>18</sub> S
<b>Molecular Weight:</b>	1664.85
<b>Sequence:</b>	Gln-Arg-Pro-Arg-Leu-Ser-His-Lys-Gly-Pro-Met-Pro-Phe
<b>Sequence Shortening:</b>	QRPRLSHKGPMPF
<b>Target:</b>	Apelin Receptor (APJ)
<b>Pathway:</b>	GPCR/G Protein
<b>Storage:</b>	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

DMSO : ≥ 100 mg/mL (60.07 mM)  
 H<sub>2</sub>O : 50 mg/mL (30.03 mM; Need ultrasonic)  
 \* "≥" means soluble, but saturation unknown.

Concentration	Solvent	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	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

- Add each solvent one by one: PBS  
Solubility: 100 mg/mL (60.07 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 2.5 mg/mL (1.50 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 2.5 mg/mL (1.50 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility: ≥ 2.5 mg/mL (1.50 mM); Clear solution

### 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<sub>50</sub> 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<sup>[1][2][3]</sup>.

#### IC<sub>50</sub> & Target

IC<sub>50</sub>: 0.37 nM (APJ)<sup>[1]</sup>

#### In Vivo

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<sup>[2]</sup>.

Apelin-13 (10 and 100 µM; ICV, single dosage) increases the spontaneous discharges in the majority of pallidal neurons<sup>[4]</sup>. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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) <sup>[2]</sup>
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Dosage:	200 µg/kg
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Administration:	IP, daily for 4 weeks
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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.
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Animal Model:	Adult Wistar rats (SPF, 8-10 weeks, 240-280 g) <sup>[4]</sup>
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Dosage:	10 and 100 µM
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Administration:	ICV, single dosage
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Result:	Increased the spontaneous discharges in the majority of pallidal neurons.
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## CUSTOMER VALIDATION

- Signal Transduct Target Ther. 2021 Dec 16;6(1):427.
- Int J Nanomedicine. 2024 Sep 7:19:9175-9193.
- Biochim Biophys Acta Mol Basis Dis. 2024 Mar 19;1870(4):167125.
- Stem Cells Int. 2022 Mar 21;2022:3742678.
- Microsc Res Tech. 2024 Feb 21.

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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).

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

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