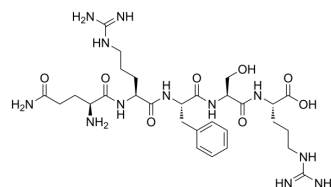


## Opiorphin

<b>Cat. No.:</b>	HY-W345510
<b>CAS No.:</b>	864084-88-8
<b>Molecular Formula:</b>	C <sub>29</sub> H <sub>48</sub> N <sub>12</sub> O <sub>8</sub>
<b>Molecular Weight:</b>	692.77
<b>Sequence Shortening:</b>	QRFSR
<b>Target:</b>	Neprilysin
<b>Pathway:</b>	Metabolic Enzyme/Protease
<b>Storage:</b>	Sealed storage, away from moisture and light, under nitrogen
	Powder    -80°C    2 years
	-20°C    1 year



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

### SOLVENT & SOLUBILITY

#### In Vitro

H<sub>2</sub>O : ≥ 100 mg/mL (144.35 mM)  
 DMSO : 100 mg/mL (144.35 mM; Need ultrasonic)  
 \* "≥" means soluble, but saturation unknown.

	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	1.4435 mL	7.2174 mL	14.4348 mL
	5 mM	0.2887 mL	1.4435 mL	2.8870 mL
	10 mM	0.1443 mL	0.7217 mL	1.4435 mL

Please refer to the solubility information to select the appropriate solvent.

### BIOLOGICAL ACTIVITY

#### Description

Opiorphin, an opioid peptide, is a potent enkephalin-inactivating zinc ectopeptidases in human inhibitor. Opiorphin inhibits two enkephalin-catabolizing ectoenzymes, human neutral ecto-endopeptidase, hNEP (EC 3.4.24.11) with an IC<sub>50</sub> value of 11 μM, and human ecto-aminopeptidase, hAP-N (EC 3.4.11.2). Opiorphin displays potent analgesic activity by activating endogenous opioid-dependent transmission<sup>[1][2]</sup>.

#### In Vitro

Opiorphin (1-100 μM; the mouse isolated colon) causes contractile effects in mouse distal colon in a concentration-dependent manner and enhances the contractile response induced by Met-enkephalin<sup>[1]</sup>.  
 Opiorphin (0-50 μM; hNEP or hAP-N transformed HEK293 cell line) is a dual inhibitor of enkephalin-degrading hNEP and hAP-N in vitro. Opiorphin inhibits Mca-BK2 endoproteolysis by the cell-surface recombinant hNEP with an IC<sub>50</sub> value of 33 μM, and inhibits the Ala-pNA cleavage by hAP-N with an IC<sub>50</sub> value of 65 μM<sup>[2]</sup>.  
 MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## In Vivo

Opiorphin (1.25-10 µg/kg; ICV; 0-60 min; male Kunming mice) induces potent analgesic effect in a dose- and time-dependent manner ( $ED_{50}=3.22 \mu\text{g}/\text{kg}$ )<sup>[1]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Kunming mice <sup>[1]</sup>
Dosage:	1.25, 2.5, 5, 10 µg/kg
Administration:	Intracerebroventricular injection; post-drug latency measurements were performed at 5, 10, 20, 30, 40, 50 and 60 min
Result:	Had the percentage change of tail withdrawal latency (TWL) at 10 min after i.c.v. administration of 1.25-10 mg/kg was 28.90%, 44.37%, 56.43% and 91.899.79%, respectively.

## REFERENCES

- [1]. Wisner A, et, al. Human Opiorphin, a natural antinociceptive modulator of opioid-dependent pathways. Proc Natl Acad Sci U S A. 2006 Nov 21;103(47):17979-84.
- [2]. Tian XZ, et, al. Effects and underlying mechanisms of human opiorphin on colonic motility and nociception in mice. Peptides. 2009 Jul;30(7):1348-54.

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

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