

β-Endorphin, equine TFA

Cat. No.:	HY-P1866A		
Molecular Formula:	C ₁₅₆ H ₂₄₉ F ₃ N ₄₂ O ₄₆ S		
Molecular Weight:	3537.96		
Sequence:	Tyr-Gly-Gly-Phe-Met-Ser-Ser-Glu-Lys-Ser-Gln-Thr-Pro-Leu-Val-Thr-Leu-Phe-Lys-Asn-Ala-Ile-Ile-Lys-Asn-Ala-His-Lys-Lys-Gly-Gln YGGFMSSEKSQTPLVTLFKNAIIKNAHKKGQ (TFA salt)		
Sequence Shortening:	YGGFMSSEKSQTPLVTLFKNAIIKNAHKKGQ		
Target:	Opioid Receptor		
Pathway:	GPCR/G Protein; Neuronal Signaling		
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

H₂O : 100 mg/mL (28.26 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg
	1 mM		0.2826 mL	1.4132 mL	2.8265 mL
	5 mM		0.0565 mL	0.2826 mL	0.5653 mL
	10 mM		0.0283 mL	0.1413 mL	0.2826 mL

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

BIOLOGICAL ACTIVITY

Description	β-Endorphin, equine TFA is an endogenous opioid peptide, which binds at high affinity to both μ/δ opioid receptors. β-Endorphin, equine TFA has analgesic properties ^{[1][2][3][4]} .	
IC₅₀ & Target	δ Opioid Receptor/DOR	μ Opioid Receptor/MOR
In Vitro	β-Endorphin, equine TFA (0, 0.6, 1.2 and 3 μM) inhibits the striatal dopamine release ^[4] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.	
In Vivo	β-Endorphin, equine TFA (2 or 20 μg/kg; i.p., once) effects the acquisition and retention in the rat ^[3] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.	
	Animal Model:	Adult Female Wistar rats ^[3]

Dosage:	2 or 20 µg/kg
Administration:	2 or 20 µg/kg; i.p., once
Result:	Hindered the acquisition of shuttle avoidance learning and habituation of a rearing response to a tone at a dose of 20 µg/kg. Caused amnesia in the avoidance task with the pre- or post-training administration of 2 µg/kg and pre-training administration of 20 µg/kg.

REFERENCES

- [1]. Izquierdo I. Effects of a low and a high dose of beta-endorphin on acquisition and retention in the rat. *Behav Neural Biol.* 1980 Dec;30(4):460-4.
- [2]. Loh HH, et al. beta-Endorphin in vitro inhibition of striatal dopamine release. *Nature.* 1976 Dec 9;264(5586):567-8.
- [3]. Yahav Dikshstein, et al. β-Endorphin via the Delta Opioid Receptor is a Major Factor in the Incubation of Cocaine Craving. *Neuropsychopharmacology.* 2013 Nov; 38(12): 2508-2514.
- [4]. Niinistö KE, et al. Plasma levels of heat shock protein 72 (HSP72) and beta-endorphin as indicators of stress, pain and prognosis in horses with colic. *Vet J.* 2010 Apr;184(1):100-4.

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

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