[Leu5]-Enkephalin, amide

Cat. No.: HY-P1470

CAS No.: 60117-24-0

Molecular Formula: $C_{28}H_{38}N_6O_6$

Molecular Weight: 554.64

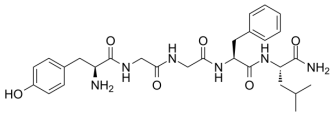
Sequence: Tyr-Gly-Gly-Phe-Leu-NH2

Sequence Shortening: YGGFL-NH2

Target: Opioid Receptor

Pathway: GPCR/G Protein; Neuronal Signaling

Storage: Sealed storage, away from moisture and light
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)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 250 mg/mL (450.74 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.8030 mL	9.0149 mL	18.0297 mL
	5 mM	0.3606 mL	1.8030 mL	3.6059 mL
	10 mM	0.1803 mL	0.9015 mL	1.8030 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (3.75 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (3.75 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (3.75 mM); Clear solution

BIOLOGICAL ACTIVITY

Description [Leu5]-Enkephalin, amide is a δ opioid receptor agonist.

IC_{50} & Target δ opioid receptor[1]

In Vitro	[Leu5]-Enkephalin causes concentration-dependent, reversible inhibition of pelvic nerve-evoked contractions, with an IC_{50} value of 2.1 nM[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Levels of [Leu5]-Enkephalin are significantly increased in the nucleus raphe magnus (NRM) of rats 2 weeks after the injection of complete Freund's adjuvant (CFA) (1.02±0.2 pmol/mg protein) as compared with saline-treated rats (0.49±0.04 pmol/mg protein; $p<0.01$). Tissue levels of [Leu5]-Enkephalin are uniformly increased in the caudal ventrolateral periaqueductal gray (PAG) 4 hr (1.15±0.25 pmol/mg protein), 4 d (1.16±0.18 pmol/mg protein), and 2 weeks (1.18±0.17 pmol/mg protein) after the injection of CFA as compared with saline-treated rats (0.55±0.03 pmol/mg protein; $p<0.05$, all times). A smaller increase in the levels of [Leu5]-Enkephalin occurred in the rostral aspect of the ventrolateral PAG at all time points. Finally, levels of [Leu5]-Enkephalin are also increased in the contralateral microcellular tegmental nucleus 4 d after the injection of CFA (0.53±0.04 pmol/mg protein) compared with levels in saline-treated rats (0.38±0.02 pmol/mg protein; $p<0.05$)[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Hurley RW, et al. Contribution of endogenous enkephalins to the enhanced analgesic effects of supraspinal mu opioid receptor agonists after inflammatory injury. J Neurosci. 2001 Apr 1;21(7):2536-45.

[2]. Kennedy C, et al. [Met5]enkephalin acts via delta-opioid receptors to inhibit pelvic nerve-evoked contractions of cat distal colon. Br J Pharmacol. 1987 Oct;92(2):291-8.

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