Dermorphin

Cat. No.: HY-P0244

CAS No.: 77614-16-5

Molecular Formula: $C_{40}H_{50}N_8O_{10}$

Molecular Weight: 802.87

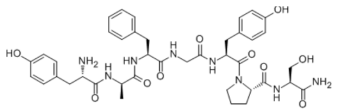
Sequence: Tyr-{d-Ala}-Phe-Gly-Tyr-Pro-Ser-NH2

Sequence Shortening: Y-{d-Ala}-FGYPS-NH2

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

H_2O : 120 mg/mL (149.46 mM; Need ultrasonic)

Preparing Stock Solutions	Concentration / Solvent / Mass	1 mg	5 mg	10 mg
	1 mM	1.2455 mL	6.2277 mL	12.4553 mL
	5 mM	0.2491 mL	1.2455 mL	2.4911 mL
	10 mM	0.1246 mL	0.6228 mL	1.2455 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 (124.55 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Dermorphin is a natural heptapeptide μ-opioid receptor (MOR) agonist found in amphibian skin. Inhibition of neuropathic pain[1].

IC_{50} & Target

μ Opioid Receptor/MOR

In Vitro

Dermorphin, a peptide isolated from the skin of Phyllomedusa frogs and the peptide receptor (NOP) component by the endogenous agonist nociceptin/orphanin FQ (N/OFQ). In displacement binding studies at CHO_{hMu}, Dermorphin and DeNo displac the binding of [^{3}H]-DPN in a concentration dependent and saturable manner. Dermorphin displays an affinity of 7.17, while N/OFQ fails to displace [^{3}H]-DPN at the Delta receptor. Dermorphin and DeNo stimulate the binding of GTPγ[^{35}S] in a concentration dependent and saturable manner at the Mu receptor[2].

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

PROTOCOL

Kinase Assay [2]

Membrane protein (40 μg) is incubated in 0.5 mL volume of 50 mM Tris, 0.2 mM EGTA, 1 mM $MgCl_2$, 100 mM NaCl, 0.1% BSA, 0.15 mM bacitracin; pH 7.4, GDP (33 μM), and ⊠150 pM GTPγ[^{35}S]. Varying concentrations of reference ligands (Dermorphin, N/OFQ, Dynorphin-A and Leu-enkephalin) or DeNo (1 pM-10 μM) is added prior to incubation. Non-specific binding is determined in the presence of unlabeled GTPγS (10 μM). Samples are incubated at 30°C for 1 h with gentle agitation. Reactions are terminated by vacuum filtration through dry Whatman GF/B filters, using a Brandel harvester[2].

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

REFERENCES

[1]. Tiwari V, et al. Activation of Peripheral μ-opioid Receptors by Dermorphin [D-Arg2, Lys4] (1-4) Amide Leads to Modality-preferred Inhibition of Neuropathic Pain. Anesthesiology. 2016 Mar;124(3):706-20.

[2]. Bird MF, et al. Characterisation of the Novel Mixed Mu-NOP Peptide Ligand Dermorphin-N/OFQ (DeNo). PLoS One. 2016 Jun 7;11(6):e0156897.

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