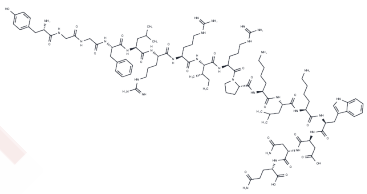
Data Sheet (Cat.No.TP2040)

TargetMol

Dynorphin A

Chemical Properties



CAS No. : 80448-90-4

Formula: C99H155N31O23

Molecular Weight: 2147.48

Storage: Keep away from moisture
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Dynorphin A is an endogenous opioid peptide and a κ-opioid receptor (KOR) agonist, with some agonistic activity on μ- and δ-opioid receptors. It primarily functions as a neurotransmitter and regulator in the central and peripheral nervous systems, exerting analgesic and mood-regulating effects.
Targets(IC50)	Apoptosis,Opioid Receptor,Caspase,Endogenous Metabolite
In vitro	**Method**: Mouse striatal neurons were treated with Dynorphin A at a concentration of 10 μM, and cell viability was assessed at 0, 24, 48, and 72 hours to evaluate its effect on neuronal survival. **Result**: Dynorphin A treatment induced neuronal death, characterized by fragmentation and destruction of the cell body and neurites. [3]
In vivo	**Method**: A 24-hour water-deprived male rat model was used, and Dynorphin A (1 μg in 2 μL) was administered via intracerebroventricular injection to evaluate its effect on vasopressin (VP) release. **Result**: Dynorphin A inhibited vasopressin release within 30 minutes after injection. [5]

Solubility Information

Solubility	H2O: 80 mg/mL (37.25 mM),Sonication is recommended. DMSO: 80 mg/mL (37.25 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2.5 mg/mL (1.16 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.4657 mL	2.3283 mL	4.6566 mL
5 mM	0.0931 mL	0.4657 mL	0.9313 mL
10 mM	0.0466 mL	0.2328 mL	0.4657 mL
50 mM	0.0093 mL	0.0466 mL	0.0931 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Zhang, et al.Dynorphin A as a Potential Endogenous Ligand for Four Members of the Opioid Receptor Gene Family. J Pharmacol Exp Ther. 1998 Jul;286(1):136-41.

Aruna Sharma, et al. Monoclonal antibodies as novel neurotherapeutic agents in CNS injury and repair. Int Rev Neurobiol. 2012;102:23-45.

I. N. SINGH, et al. Dynorphin A (1-17) induces apoptosis in striatal neurons in vitro through AMPA/kainate receptor-mediated cytochrome c release and caspase-3 activation. Neuroscience. 2003;122(4):1013-23.

K F Hauser, et al. Dynorphin A (1-13) neurotoxicity in vitro: opioid and non-opioid mechanisms in mouse spinal cord neurons. Exp Neurol. 1999 Dec;160(2):361-75.

B J Van de Heijning, et al. Dynorphin-A and vasopressin release in the rat: a structure-activity study. Neuropeptides. 1994 Jun;26(6):371-8.