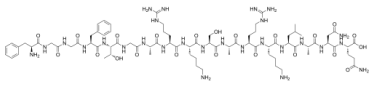
Data Sheet

Product Name:	Nociceptin
Cat. No.:	CS-7588
CAS No.:	170713-75-4
Molecular Formula:	$C_{79}H_{129}N_{27}O_{22}$
Molecular Weight:	1809.04
Target:	Opioid Receptor
Pathway:	GPCR/G Protein; Neuronal Signaling
Solubility:	H_2O : ≥ 50 mg/mL;DMSO : 50 mg/mL (ultrasonic)



BIOLOGICAL ACTIVITY:

Nociceptin, a heptadecapeptide, is the endogenous ligand of the nociceptin receptor, acting as a potent anti-analgesic. ***In Vitro:*** Nociceptin (1 μg/mL) significantly prevents LPS (10 ng/mL)-stimulated cell migration whereas it is ineffective when added alone. Nociceptin (1 nM-10 μM) elicits a concentration-dependent blockade of LPS-mediated cell migration, with a maximal effect at 1 and 10 μM. Nociceptin counteracts LPS-induced elevation of IL-1β mRNA levels. Nociceptin (1 μM) and NNC 55-0396 induce apoptotic cell death in U87 cells. Nociceptin (1 μM) counteracts LPS-induced $[Ca^{2+}]i$ increase in U87 cells via β-arrestin 2. Nociceptin counteracts the LPS-induced phosphorylation of PKC and ERK in U87 cells. Nociceptin inhibits the LPS-mediated transcriptional activation of NF-kB and AP-1 reporter genes[1].

PROTOCOL (Extracted from published papers and Only for reference)

Cell Assay: [1]Cell proliferation assay is carried out in the assay. U87 cells are plated on 12-well plate and treated for 24 h maintained in cell culture medium containing 10% fetal bovine serum. Five hours before the end of the treatments, [methyl-^{3}H] Thymidine (50 nM final concentration) is added to serum-free cell culture medium and the plate is incubated at 37°C. Thereafter, medium is removed and cells are washed twice with PBS. 200 μL of PBS is added to each well, the cells are scraped off and centrifuged at 13,000g for 3 min at 4°C; supernatants are then discarded, pellets resuspended in 500 μL of cold trichloroacetic acid (10% w/v), incubated on ice for 20 min and centrifuged at 13,000g for 3 min at 4°C. The obtained supernatant is then discarded, pellet suspended in 500 μL of cold methanol and centrifuged at 3 min for 13,000g at 4°C. After that, the pellet is suspended in 200 μL of NaOH 1 N and heated at 55°C for 10 min. Samples are then neutralized with 200 μL of HCl 1 N and 350 μL of the labeled DNA incubated in counting vials with 4 mL of Filter Count scintillation liquid. Vials are vortexed and incubated overnight at room temperature and the radioactivity is determined by liquid scintillation spectrometry.

References:

[1]. Bedini A, et al. Nociceptin/orphanin FQ antagonizes lipopolysaccharide-stimulated proliferation, migration and inflammatory signaling in human glioblastoma U87 cells. Biochem Pharmacol. 2017 Sep 15;140:89-104.

CAIndexNames:

L-Glutamine, L-phenylalanylglycylglycyl-L-phenylalanyl-L-threonylglycyl-L-alanyl-L-arginyl-L-lysyl-L-seryl-L-alanyl-L-arginyl-L-lysyl-L-leucyl-L-alanyl-L-asparaginyl-

SMILES:

NC(CC[C@@H](C(O)=O)NC([C@H](CC(N)=O)NC([C@H](C)NC([C@H](CC(C)C)NC([C@H](CCCCN)NC([C@H](CCCNC(N)=N)NC([C@H](C)NC([C@H](CO)NC([C@H](CCCCN)NC([C@H](CCCNC(N)=N)NC([C@H](C)NC(CNC([C@H]([C@H](O)C)NC([C@@H](NC(CNC(CNC([C@@H](N)CC1=CC=CC=C1)=O)=O)=O)CC2=CC=CC=C2)=O)=O)=O)=O)=O)=O)=O)=O)=O)=O)=O)=O)=O

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

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