Nociceptin

Cat. No.: HY-P0183
CAS No.: 170713-75-4
Molecular Formula: C\textsubscript{79}H\textsubscript{129}N\textsubscript{27}O\textsubscript{22}
Molecular Weight: 1809.04
Sequence Shortening: FGGFTGARKSARKLANQ
Target: Opioid Receptor
Pathway: GPCR/G Protein; Neuronal Signaling
Storage: Powder
-80°C 2 years
-20°C 1 year
In solvent
-80°C 6 months
-20°C 1 month

SOLVENT & SOLUBILITY

In Vitro

<table>
<thead>
<tr>
<th>Solvent</th>
<th>Mass Concentration</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>H\textsubscript{2}O</td>
<td>≥ 50 mg/mL (27.64 mM)</td>
<td>0.5528 mL</td>
<td>2.7639 mL</td>
<td>5.5278 mL</td>
</tr>
</tbody>
</table>

Preparing Stock Solutions

<table>
<thead>
<tr>
<th>Concentration</th>
<th>1 mM</th>
<th>5 mM</th>
<th>10 mM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>0.5528 mL</td>
<td>2.7639 mL</td>
<td>5.5278 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.1106 mL</td>
<td>0.5528 mL</td>
<td>1.1056 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.0553 mL</td>
<td>0.2764 mL</td>
<td>0.5528 mL</td>
</tr>
</tbody>
</table>

*"≥" means soluble, but saturation unknown.*

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

BIOLICAL ACTIVITY

Description
Nociceptin, a heptadecapeptide, is the endogenous ligand of the nociceptin receptor, acting as a potent anti-analgesic.

In Vitro
Nociceptin (1 \(\mu\)g/mL) significantly prevents LPS (10 ng/mL)-stimulated cell migration whereas it is ineffective when added alone. Nociceptin (1 nM-10 \(\mu\)M) elicits a concentration-dependent blockade of LPS-mediated cell migration, with a maximal effect at 1 and 10 \(\mu\)M. Nociceptin counteracts LPS-induced elevation of IL-1\(\beta\) mRNA levels. Nociceptin (1 \(\mu\)M) and NNC 55-0396 induce apoptotic cell death in U87 cells. Nociceptin (1 \(\mu\)M) counteracts LPS-induced [Ca\textsuperscript{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

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-3H] 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.

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

REFERENCES


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

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