Trofinetide

Cat. No.: HY-16757
CAS No.: 853400-76-7
Molecular Formula: C₁₃H₂₁N₃O₆
Molecular Weight: 315.32
Target: Others
Pathway: Others
Storage: -20°C, protect from light, stored under nitrogen
* In solvent: -80°C, 6 months; -20°C, 1 month (protect from light, stored under nitrogen)

**SOLVENT & SOLUBILITY**

**In Vitro**

H₂O : ≥ 50 mg/mL (158.57 mM)
* "≥" means soluble, but saturation unknown.

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Concentration</th>
<th>Mass 1 mg</th>
<th>Mass 5 mg</th>
<th>Mass 10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 mM</td>
<td>3.1714 mL</td>
<td>15.8569 mL</td>
<td>31.7138 mL</td>
</tr>
<tr>
<td></td>
<td>5 mM</td>
<td>0.6343 mL</td>
<td>3.1714 mL</td>
<td>6.3428 mL</td>
</tr>
<tr>
<td></td>
<td>10 mM</td>
<td>0.3171 mL</td>
<td>1.5857 mL</td>
<td>3.1714 mL</td>
</tr>
</tbody>
</table>

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

**BIOLOGICAL ACTIVITY**

**Description**

Trofinetide (NNZ-2566), a synthetic analogue of the endogenous N-terminus tripeptide, Glycine-Proline-Glutamate (GPE), has been shown to be neuroprotective in animal models of brain injury.

**In Vivo**

Trofinetide (NNZ-2566) suppresses penetrating ballistic-like brain injury (PBBI) induced inflammatory cell infiltration at 3 days following PBBI as compared to vehicle treatment. Trofinetide treatment significantly reduces the elevation of IL-6 (79%), E-selectin (81%), IL-1β (76%) and TNF-α (72%) mRNA levels in the injured hemisphere at 12 h post-PBBI, with maximal inhibition occurring between 12 h and 24 h. Trofinetide treatment does not affect the PBBI-induced up-regulation of IL-6 expression at any time point, but does produce significant reductions in the injury-induced up-regulation of IL-1β, INF-γ, and TNF-α expression. Trofinetide treatment suppresses IL-1β expression in the injured brain hemisphere for up to 7 days post-PBBI[1]. The high doses of Trofinetide (NNZ-2566) (10 and 100 mg/kg bolus followed by continuous infusion) attenuate non-convulsive seizure (NCS) occurring beyond 2 h after permanent middle cerebral artery occlusion (pMCAo). All doses of Trofinetide completely suppress the delayed occurrence of NCS as compared with the vehicle-treated animals[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Three groups of eight rats are evaluated: vehicle/sham, vehicle/penetrating ballistic-like brain injury (PBBI), Trofinetide (NNZ-2566)/PBBI. A bolus injection of 10 mg/kg Trofinetide or 1 mL/kg saline (vehicle) is administered intravenously (IV) to each animal at 30 minutes post-PBBI surgery, immediately followed by a continuous IV infusion of Trofinetide at a rate of 3 mg/kg/h or an equal volume of vehicle for various durations (1 h, 4 h, or 12 h). Rats are subsequently euthanized and brain tissues are collected for processing at 1 h, 4 h, 12 h, 24 h, 3, and 7 days following the initiation of treatment. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES
