Neomycin sulfate

Cat. No.: HY-B0470
CAS No.: 1405-10-3
Molecular Formula: C₂₃H₅₂N₆O₂₅S₃
Molecular Weight: 908.88
Target: Bacterial; Calcium Channel
Pathway: Anti-infection; Membrane Transporter/Ion Channel; Neuronal Signaling
Storage:
- Powder: -20°C for 3 years, 4°C for 2 years
- In solvent: -80°C for 6 months, -20°C for 1 month

SOLVENT & SOLUBILITY

In Vitro: H₂O: ≥ 31 mg/mL (34.11 mM)

*“≥” means soluble, but saturation unknown.

Preparation of Stock Solutions:

<table>
<thead>
<tr>
<th>Solvent Concentration</th>
<th>Mass (1 mg)</th>
<th>Mass (5 mg)</th>
<th>Mass (10 mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>1.1003 mL</td>
<td>5.5013 mL</td>
<td>11.0026 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.2201 mL</td>
<td>1.1003 mL</td>
<td>2.2005 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.1100 mL</td>
<td>0.5501 mL</td>
<td>1.1003 mL</td>
</tr>
</tbody>
</table>

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

BIOLOGICAL ACTIVITY

Description:
Neomycin sulfate is an aminoglycoside antibiotic used for preventing or treating bacterial infections.

In Vitro:
Neomycin inhibits thrombin-stimulated release of inositol 1,4,5-trisphosphate (IP₃), by selectively binding PIP₂, but does not inhibit ³²P incorporation into PI or initiation of DNA synthesis[1]. Neomycin (10 μM-1 mM) induces considerable release of [³H]arachidonic acid from phosphatidylinositol, phosphatidylcholine and phosphatidylethanolamine in saponin-permeabilized human platelets prelabeled with [³H]arachidonic acid. Moreover, neomycin enhances arachidonic acid release induced by thrombin. Addition of neomycin (100 μM) to ⁴⁵Ca²⁺-preloaded platelets elicits ⁴⁵Ca²⁺ mobilization from intracellular stores[2]. Neomycin (0-10 mM) inhibits guanosine 5’-γ-thiotriphosphate-stimulated PLD activity in digitonin-permeabilized NG108-15 cells in a concentration-dependent manner (50% inhibition at 100 μM). Neomycin similarly inhibits PLD activity present in rat brain membranes and assayed in vitro with [³H]phosphatidylcholine as substrate (50% inhibition at 65 μM)[3]. Neomycin (5 mM) causes reversible reductions in the level of intracellular Ca²⁺, but PtdIns(4,5)P₂ is not required for the channel activity[4].
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REFERENCES


