Substance P

Cat. No.: HY-P0201
CAS No.: 33507-63-0
Molecular Formula: C₆₃H₉₈N₁₈O₁₃S
Molecular Weight: 1347.63
Sequence: Arg-Pro-Pro-Gln-Gln-Phe-Gly-Leu-Met-NH₂
Sequence Shortening: RPKQQFFGLM-NH₂
Target: Neurokinin Receptor; Endogenous Metabolite
Pathway: GPCR/G Protein; Neuronal Signaling; Metabolic Enzyme/Protease
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 (mg)</th>
<th>Solubility</th>
</tr>
</thead>
<tbody>
<tr>
<td>H₂O : ≥ 20 mg/mL (14.84 mM)</td>
<td>* &quot;≥&quot; means soluble, but saturation unknown.</td>
<td></td>
</tr>
</tbody>
</table>

Preparing Stock Solutions

<table>
<thead>
<tr>
<th>Concentration</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>0.7420 mL</td>
<td>3.7102 mL</td>
<td>7.4204 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.1484 mL</td>
<td>0.7420 mL</td>
<td>1.4841 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.0742 mL</td>
<td>0.3710 mL</td>
<td>0.7420 mL</td>
</tr>
</tbody>
</table>

In Vivo

1. Substance P (SP) is dissolved in saline[^2].

BIOLOGICAL ACTIVITY

Description

Substance P is a neuropeptide, acting as a neurotransmitter and as a neuromodulator in the CNS. The endogenous receptor for substance P is neurokinin 1 receptor (NK1-receptor, NK1R).

IC₅₀ & Target

Human Endogenous Metabolite

In Vitro

The neuropeptide substance P (SP) that are mediated by the neurokinin 1 receptor (NK1-R) desensitize and resensitize, which may be associated with NK1-R endocytosis and recycling. SP and the NK1-R are internalized into the same clathrin immunoreactive vesicles, and then sorted into different compartments. SP is intact at the cell...
surface and in early endosomes, but slowly degraded in perinuclear vesicles. SP induces clathrin-dependent
internalization of the NK1-R. The SP/NK1-R complex dissociates in acidified endosomes. SP is degraded, whereas the
NK1-R recycles to the cell surface. SP induces internalization of the NK1-R both in transfected epithelial cells[1].

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REFERENCES
