[Sar9, Met(O2)11]-Substance P

Cat. No.: HY-P1012
CAS No.: 110880-55-2
Molecular Formula: C₆₄H₁₀₀N₁₈O₁₅S
Molecular Weight: 1393.66
Sequence: Arg-Pro-Lys-Pro-Gln-Gln-Phe-Phe-[Sar]-Leu-Met[O2]-NH2
Sequence Shortening: RPKPQFF-[Sar]-LM[O2]-NH2
Target: Neurokinin 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

<table>
<thead>
<tr>
<th>Solvent</th>
<th>Mass (mg/mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H₂O</td>
<td>50 mg/mL (35.88 mM; Need ultrasonic)</td>
</tr>
<tr>
<td></td>
<td>1 mg</td>
</tr>
<tr>
<td></td>
<td>5 mg</td>
</tr>
<tr>
<td></td>
<td>10 mg</td>
</tr>
<tr>
<td>1 mM</td>
<td>0.7175 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.1435 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.0718 mL</td>
</tr>
</tbody>
</table>

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

BIOLOGICAL ACTIVITY

Description: [Sar9, Met(O2)11]-Substance P is a tachykinin NK₁ receptor selective agonist.

IC₅₀ & Target: NK₁ receptor[¹]

In Vitro: [Sar9, Met(O2)11]-Substance P and peptide (10-100 pmol per rat, i.c.v.) are equipotent in increasing mean arterial blood pressure (MAP) and heart rate (HR), yet they have dissimilar time-course. Both agonists increase dose-dependently face washing and sniffing while [Sar9, Met(O2)11]-Substance P is the sole to produce grooming[¹].

PROTOCOL

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Rats initially receive an i.c.v. injection of artificial cerebrospinal fluid (aCSF; 1 μl) followed 60 min later by a single dose of either [Sar9, Met(O2)11]-Substance P (10 pmol (n=9), 25 pmol (n=9), 65 pmol (n=8) or 100 pmol (n=8)) or septide (10 pmol (n=12), 25 pmol (n=9), 65 pmol (n=6) or 100 pmol (n=6)) to construct a complete dose-response curve. Each rat is selected randomly and injected with only one of the two agonists for the remainder of the protocol. Increasing doses of [Sar9, Met(O2)11]-Substance P or septide are given at 24 h intervals on day 1 (10 pmol), day 2 (25 pmol), day 3 (65 pmol) and day 4 (100 pmol). Control rats (n=18) receive only the vehicle (aCSF) each day of experiment. Peptides are administered in a volume of 1 μL of vehicle followed by 5 μL flush volume of aCSF which corresponds to the void volume of the catheter. Each dose is calculated per rat in 1 μL solution\[1\].

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

REFERENCES