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

Cat. No.: HY-P1012

CAS No.: 110880-55-2

Molecular Formula: $C_{64}H_{100}N_{18}O_{15}S$

Molecular Weight: 1393.66

Sequence: Arg-Pro-Lys-Pro-Gln-Gln-Phe-Phe-{Sar}-Leu-{Met[O2]}-NH2

Sequence Shortening: RPKPQQFF-{Sar}-L-{Met[O2]}-NH2

Target: Neurokinin Receptor

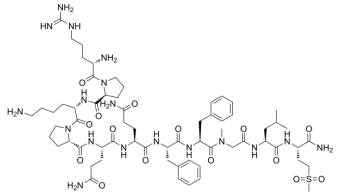
Pathway: GPCR/G Protein; Neuronal Signaling

Storage: Sealed storage, away from moisture

Powder -80°C 2 years

-20°C 1 year

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 50 mg/mL (35.88 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	0.7175 mL	3.5877 mL	7.1754 mL
5 mM	0.1435 mL	0.7175 mL	1.4351 mL
10 mM	0.0718 mL	0.3588 mL	0.7175 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (71.75 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description [Sar9,Met(O2)11]-Substance P is a tachykinin NK_1 receptor selective agonist.

IC_{50} & Target NK_1 receptor[1]

In Vitro [Sar9,Met(O2)11]-Substance P and septide (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].

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

PROTOCOL

Kinase Assay [1]

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

[1]. Cellier E, et al. Characterization of central and peripheral effects of septide with the use of five tachykinin NK1 receptor antagonists in the rat. Br J Pharmacol. 1999 Jun;127(3):717-28.

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