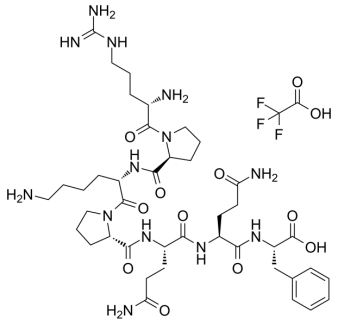
Substance P(1-7) TFA



Cat. No.:	HY-P1485A
CAS No.:	2828433-22-1
Molecular Formula:	$C_{43}H_{66}F_3N_{13}O_{12}$
Molecular Weight:	1014.06
Sequence:	Arg-Pro-Lys-Pro-Gln-Gln-Phe
Sequence Shortening:	RPKPQQF
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 (49.31 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	0.9861 mL	4.9307 mL	9.8613 mL
5 mM	0.1972 mL	0.9861 mL	1.9723 mL
10 mM	0.0986 mL	0.4931 mL	0.9861 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 (98.61 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Substance P(1-7) TFA is a fragment of the neuropeptide, substance P (SP). Substance P(1-7) TFA gives depressor and bradycardic effects when applied to the nucleus tractus solitarius[1].

In Vivo

Substance P(1-7) is found to act as a very potent antagonist against the SP-induced responses and is formed locally in the nigra after SP injection. It is proposed that Substance P(1-7) is an endogenous modulator of SP actions[1]. Injection of low doses of Substance P(1-7) (1.0-4.0 pM simultaneously with SP or SP(5-11) (0.1 nM), reduce aversive behaviours induced by SP or SP(5- 11) significantly. These results indicate that SP(1-7) formed endogenously could modulate the actions of SP or SP(5-11) in the spinal cord[2].

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

PROTOCOL

Animal Administration [1][2]

Rats[1]

Sprague-Dawley male rats weighing 250-300 g are anaesthetized with halothane and placed in a stereotaxic frame. An injection cannula, conically shaped with a penetration tip diameter of approximately 0.15 mm is loared into the SNR. Saline (0.2 μL), SP (0.007-0.7 nmol) or Substance P(1-7) (0.01-1 nmol) is injected into the left substantia nigra, pars reticulata (SNR) and the rat is placed in a rotometer. The substances are injected in a total volume of 0.2 μL over a period of 1 min. A group of animals is sacrificed by decapitation 1 hour after the injection, their brains are immediately removed and tissue samples are taken from left and right striatum, globus pallidum (GP) and substantia nigra (SN). Samples are assayed for SP and SP(1-7)[1].

Mice[2]

The accumulated response time (s) of reciprocal movements of hindlimb scratching, biting, fore- and hindpaw licking are measured in Male mice (STD strain, 23-28 g) during the whole period of aversive response and 20 min at maximum. Substance P(1-7) is tested for its ability to inhibit the aversive response produced by intrathecal injection of SP or SP(5-11) (0.1 nM/mouse). Substance P (1-7) (1, 2, 4 pmol) is then administered together with SP or SP(5-11)[2].

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

REFERENCES

[1]. Herrera-Marschitz M, et al. The substance P(1-7) fragment is a potent modulator of substance P actions in the brain. Brain Res. 1990 Jun 25;521(1-2):316-20.

[2]. Sakurada T, et al. Substance P(1-7) antagonizes substance P-induced aversive behaviour in mice. Neurosci Lett. 1988 Dec 19;95(1-3):281-5.

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