Product Data Sheet

Product Name: Substance P 1-7
Cat. No.: GC37696

Chemical Properties

Cas. No.	68060-49-1		
Formula	$C_{41}H_{65}N_{13}O_{10}$	M.Wt	900.04
Solubility	Soluble in DMSO	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	Substance P 1-7		

Protocol

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Animal experiment:

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 nM) or Substance P (7-11) (0.01-1 nM) 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 (7-11) 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 (7-11) (1, 2, 4 pM) is then administered together with SP or SP(5-11)[2].

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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.

Background

Substance P (7-11) is a fragment of the neuropeptide, substance P (SP). Substance P (7-11) gives depressor and bradycardic effects when applied to the nucleus tractus

solitarius.

Substance P (7-11) 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 (7-11) is an endogenous modulator of SP actions[1]. Injection of low doses of Substance P (7-11) (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].

[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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