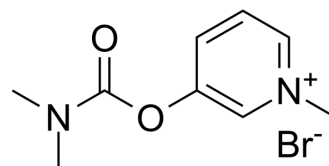


## Pyridostigmine bromide

Cat. No.:	HY-B0207A
CAS No.:	101-26-8
Molecular Formula:	C <sub>9</sub> H <sub>13</sub> BrN <sub>2</sub> O <sub>2</sub>
Molecular Weight:	261.12
Target:	Cholinesterase (ChE)
Pathway:	Neuronal Signaling
Storage:	4°C, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : 50 mg/mL (191.48 mM; Need ultrasonic)  
H<sub>2</sub>O : 8.8 mg/mL (33.70 mM; Need ultrasonic and warming)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	3.8297 mL	19.1483 mL	38.2966 mL
	5 mM	0.7659 mL	3.8297 mL	7.6593 mL
	10 mM	0.3830 mL	1.9148 mL	3.8297 mL

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

#### In Vivo

- Add each solvent one by one: PBS  
Solubility: 100 mg/mL (382.97 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 2.5 mg/mL (9.57 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 2.5 mg/mL (9.57 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility: ≥ 2.5 mg/mL (9.57 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

Pyridostigmine bromide is a parasymphathomimetic and a reversible cholinesterase inhibitor. Target: AChE. Pyridostigmine bromide is a parasymphathomimetic and a reversible cholinesterase inhibitor. Since it is a quaternary amine, it is poorly absorbed in the gut and does not cross the blood-brain barrier, except possibly in stressful conditions. Pyridostigmine bromide inhibits acetylcholinesterase in the synaptic cleft, thus slowing down the hydrolysis of acetylcholine. It is a quaternary carbamate inhibitor of cholinesterase that does not cross the blood-brain barrier which carbamylates about 30% of peripheral cholinesterase enzyme. The carbamylated enzyme eventually regenerates by natural hydrolysis and

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excess ACh levels revert to normal. Pyridostigmine bromide is used to treat muscle weakness in people with myasthenia gravis and to combat the effects of curariform drug toxicity. Pyridostigmine bromide has been FDA approved for military use during combat situations as an agent to be given prior to exposure to the nerve agent Soman in order to increase survival. Used in particular during the first Gulf War, pyridostigmine bromide has been implicated as a causal factor in Gulf War syndrome. Pyridostigmine bromide sometimes is used to treat orthostatic hypotension. It may also be of benefit in chronic axonal polyneuropathy.

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## REFERENCES

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- [1]. Gales BJ, et al. Pyridostigmine in the treatment of orthostatic intolerance. *Ann Pharmacother.* 2007 Feb;41(2):314-8. Epub 2007 Feb 6.
- [2]. Kanjwal K, et al. Pyridostigmine in the treatment of postural orthostatic tachycardia: a single-center experience. *Pacing Clin Electrophysiol.* 2011 Jun;34(6):750-5.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: [tech@MedChemExpress.com](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA