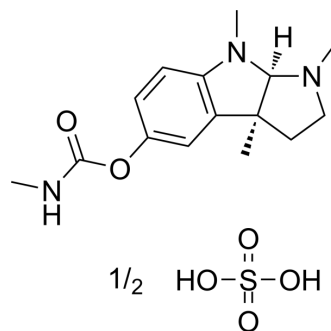


## Physostigmine hemisulfate

<b>Cat. No.:</b>	HY-N2320
<b>CAS No.:</b>	64-47-1
<b>Molecular Formula:</b>	C <sub>15</sub> H <sub>21</sub> N <sub>3</sub> O <sub>2</sub> ·1/2H <sub>2</sub> O <sub>4</sub> S
<b>Molecular Weight:</b>	324.38
<b>Target:</b>	Cholinesterase (ChE)
<b>Pathway:</b>	Neuronal Signaling
<b>Storage:</b>	-20°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



### SOLVENT & SOLUBILITY

#### In Vitro

H<sub>2</sub>O : 50 mg/mL (154.14 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent		1 mg	5 mg	10 mg
	Concentration	Mass			
	1 mM		3.0828 mL	15.4140 mL	30.8280 mL
	5 mM		0.6166 mL	3.0828 mL	6.1656 mL
	10 mM		0.3083 mL	1.5414 mL	3.0828 mL

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

### BIOLOGICAL ACTIVITY

#### Description

Physostigmine hemisulfate (Eserine hemisulfate) is a reversible acetylcholinesterase (AChE) inhibitor. Physostigmine hemisulfate can cross the blood-brain barrier and stimulate central cholinergic neurotransmission. Physostigmine hemisulfate can reverse memory deficits in transgenic mice with Alzheimer's disease. Physostigmine hemisulfate is also an antidote for anticholinergic poisoning<sup>[1][2][3][4]</sup>.

#### IC<sub>50</sub> & Target

AChE

#### In Vivo

Physostigmine hemisulfate (Eserine hemisulfate; 0.03-0.3 mg/kg; s.c.; daily for 6 weeks) improves deficits in contextual and cued memory in Tg(+) mice<sup>[2]</sup>.

Physostigmine hemisulfate (IV; 0.1, 0.2 mg/kg) delays time to emergence from isoflurane anesthesia at doses ≥0.2 mg/kg in male Sprague-Dawley rats<sup>[4]</sup>.

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

Animal Model: Heterozygous transgenic mice (Tg(+) mice)<sup>[2]</sup>

Dosage: 0.03, 0.1, and 0.3 mg/kg

Administration:	SC; daily for 6 weeks
Result:	Tended to normalize the contextual memory deficit in Tg(+) animals so that they became more similar to Tg(-) animals.

## CUSTOMER VALIDATION

- bioRxiv. 2024 Mar 29.

See more customer validations on [www.MedChemExpress.com](http://www.MedChemExpress.com)

## REFERENCES

- [1]. Jonathan D Kenny, et al. Physostigmine and Methylphenidate Induce Distinct Arousal States During Isoflurane General Anesthesia in Rats. *Anesth Analg*. 2016 Nov;123(5):1210-1219.
- [2]. Haase U, et al. Pharmakotherapie--physostigmin post OP [Pharmacotherapy--physostigmine administered post-operatively]. *Anesthesiol Intensivmed Notfallmed Schmerzther*. 2007;42(3):188-189.
- [3]. Dong H, et al, Bertchume A, Vallera D, Csernansky JG. Acetylcholinesterase inhibitors ameliorate behavioral deficits in the Tg2576 mouse model of Alzheimer's disease. *Psychopharmacology (Berl)*. 2005;181(1):145-152.
- [4]. Frascogna N. Physostigmine: is there a role for this antidote in pediatric poisonings? *Curr Opin Pediatr*. 2007;19(2):201-205.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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