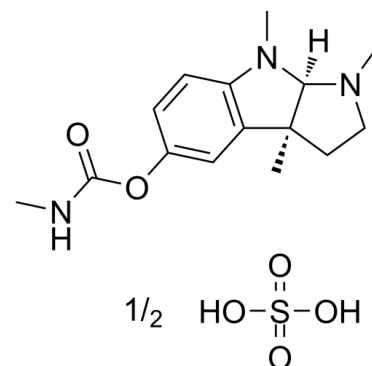


Data Sheet

Product Name:	Physostigmine (hemisulfate)
Cat. No.:	CS-0020755
CAS No.:	64-47-1
Molecular Formula:	C ₁₅ H ₂₁ N ₃ O ₂ ·1/2H ₂ O ₄ S
Molecular Weight:	324.38
Target:	Cholinesterase (ChE)
Pathway:	Neuronal Signaling
Solubility:	10 mM in DMSO



BIOLOGICAL ACTIVITY:

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^{[1][2][3][4]}. *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^[2].

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^[4].

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.

CAIndexNames:

Pyrrolo[2,3-b]indol-5-ol, 1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethyl-, 5-(N-methylcarbamate), (3aS,8aR)-, sulfate (2:1)

SMILES:

CN1[C@](N(C)CC2)([H])[C@]2(C)C3=C1C=CC(OC(NC)=O)=C3.O=S(O)(O)=O.[1/2]

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

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