

Small Molecules

Tacrine (Hydrochloride)

L-type calcium channel inhibitor; Inhibits acetylcholinesterase and butyrylcholinesterase

Catalog #100-0888

5 g



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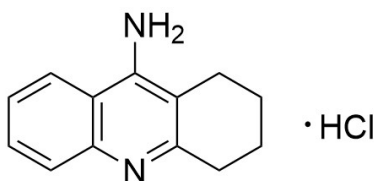
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Product Description

Tacrine potently inhibits acetylcholinesterase and butyrylcholinesterase ($IC_{50} = 31$ and 26.5 nM, respectively; Ahmed et al.). It also inhibits both human and rat histamine-N-methyltransferase in a dose-dependent manner (Taraschenko et al.). Tacrine is used in the treatment of Alzheimer's disease (Ahmed et al.; McKenna et al.; Taraschenko et al.).

Alternative Names:	C.I. 970; Hydroaminacrine
CAS Number:	1684-40-8
Chemical Formula:	$C_{13}H_{14}N_2 \cdot HCl$
Molecular Weight:	234.7 g/mol
Purity:	$\geq 98\%$
Chemical Name:	1,2,3,4-tetrahydro-9-acridinamine, monohydrochloride
Structure:	



Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at $-20^{\circ}C$ as supplied. Protect product from prolonged exposure to light. For long-term storage, store with a desiccant. Stable as supplied for 12 months from date of receipt.
Solubility:	<ul style="list-style-type: none">· PBS (pH 7.2) ≤ 65 mM· DMSO ≤ 210 mM· Absolute ethanol ≤ 85 mM <p>For example, to prepare a 10 mM stock solution in PBS, resuspend 1 g in 430 mL of PBS.</p> <p>Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at $-20^{\circ}C$. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application.</p> <p>For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.</p>

Published Applications

DISEASE MODELING

· Inhibits L-type calcium channels and decreases the influx of calcium in mouse neurons (Dolezal et al.).

References

Ahmed M et al. (2006) Inhibition of two different cholinesterases by tacrine. *Chem Biol Interact* 162(2): 165–71.

Dolezal V et al. (1997) Effect of tacrine on intracellular calcium in cholinergic SN56 neuronal cells. *Brain Res* 769(2): 219–24.

McKenna MT et al. (1997) Novel tacrine analogues for potential use against Alzheimer's disease: potent and selective acetylcholinesterase inhibitors and 5-HT uptake inhibitors. *J Med Chem* 40(22): 3516–23.

Taraschenko OD et al. (2005) Actions of tacrine and galanthamine on histamine-N-methyltransferase. *Methods Find Exp Clin Pharmacol* 27(3): 161–5.

Related Small Molecules

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