Small Molecules

(S)-Duloxetine (Hydrochloride)

Inhibits serotonin (5-HT) and norepinephrine

Catalog #100-0882

50 mg

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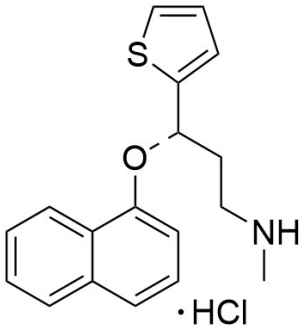
Product Description

(S)-Duloxetine is a thiophene derivative that potently inhibits the reuptake of serotonin (5-HT) and norepinephrine (IC_{50} = 28 nM and 46 nM, respectively; Kasamo et al.; Soni et al.; Wong et al.). It suppresses pyramidal neuronal firing in the hippocampus (Kasamo et al.). Duloxetine is metabolized in the liver by cytochrome P450 (CYP) 1A2 and 2D6 (Carter & McCormack). Duloxetine has been investigated as a treatment for depressive and motor symptoms in Parkinson's patients (Takahashi et al.).

Alternative Names:	LY248686
CAS Number:	136434-34-9
Chemical Formula:	$C_{18}H_{19}NOS \bullet HCl$
Molecular Weight:	333.9 g/mol
Purity:	≥ 98%
Chemical Name:	N-methyl-γS-(1-naphthalenyloxy)-2-thiophenepropanamine, monohydrochloride
Structure:	



Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at room temperature (15 - 25°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:	· Water ≤ 8.9 mM · DMSO ≤ 85 mM For example, to prepare a 5 mM stock solution in water, resuspend 10 mg in 6.0 mL of water. 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°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. 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.

Published Applications

DISEASE MODELING
· (S)-Duloxetine and 5-hydroxytryptophan suppress food intake in food-deprived rats (Wong et al.).

References

Carter NJ & McCormack PL. (2009) Duloxetine: a review of its use in the treatment of generalized anxiety disorder. CNS Drugs 23(6): 523–41.

Kasamo K et al. (1996) Blockade of the serotonin and norepinephrine uptake processes by duloxetine: in vitro and in vivo studies in the rat brain. J Pharmacol Exp Ther 277(1): 278–86.

Soni P et al. (2005) High-performance liquid chromatographic method for the simultaneous estimation of the key intermediates of duloxetine. Talanta 67(5): 975–8.

Takahashi M et al. (2019) Antidepressants for depression, apathy, and gait instability in Parkinson's disease: A multicenter randomized study. Intern Med 58(3): 361–8.

Wong DT et al. (1993) LY248686, a new inhibitor of serotonin and norepinephrine uptake. Neuropsychopharmacology 8(1): 23–33.

Related Small Molecules

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This product is hazardous. Please refer to the Safety Data Sheet (SDS).