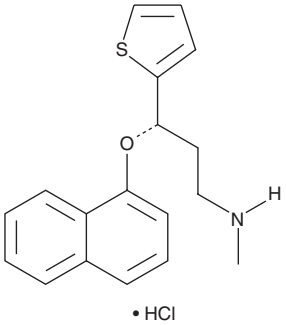
PRODUCT INFORMATION

(S)-Duloxetine (hydrochloride)

Item No. 14317

CAS Registry No.:	136434-34-9
Formal Name:	N-methyl-γS-(1-naphthalenyloxy)-2-thiophenepropanamine, monohydrochloride
Synonym:	LY248686
MF:	$C_{18}H_{19}NOS \bullet HCl$
FW:	333.9
Purity:	≥98%
UV/Vis.:	λ_{max}: 217, 291 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

(S)-Duloxetine (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the (S)-duloxetine (hydrochloride) in the solvent of choice. (S)-Duloxetine (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of (S)-duloxetine (hydrochloride) in these solvents is approximately 20, 25, and 30 mg/ml, respectively.

(S)-Duloxetine (hydrochloride) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, (S)-duloxetine (hydrochloride) should first be dissolved in DMF and then diluted with the aqueous buffer of choice. (S)-Duloxetine (hydrochloride) has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

(S)-Duloxetine is a potent inhibitor of serotonin and norepinephrine reuptake (K_is = 4.6 and 15.6 nM, respectively, for rat synaptosomes).[1] It also inhibits dopamine reuptake (K_i = 369 nM). (S)-Duloxetine suppresses spontaneous firing activity *in vivo* in the dorsal raphe and locus coeruleus (ED_{50}s = 99 and 475 µg/kg, respectively).[2] It also decreases immobility time and increases latency to first immobility in the forced swim test in mice when administered at doses of 16 and 32 mg/kg.[3] Formulations containing (S)-duloxetine have been used in the treatment of major depressive disorder, generalized anxiety disorder, chronic neuropathic and musculoskeletal pain, and fibromyalgia.

References

1. Wong, D.T., Bymaster, F.P., Mayle, D.A., *et al.* LY248686, a new inhibitor of serotonin and norepinephrine uptake. *Neuropsychopharmacology* **8(1)**, 23-33 (1993).
2. Kasamo, K., Blier, P., and De Montigny, C. 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)**, 278-286 (1996).
3. Castagné, V., Porsolt, R.D., and Moser, P. Use of latency to immobility improves detection of antidepressant-like activity in the behavioral despair test in the mouse. *Eur. J. Pharmacol.* **616(1-3)**, 128-133 (2009).

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