(S)-Duloxetine (hydrochloride)

**CAS Registry No.:** 136434-34-9

**Formal Name:** N-methyl-γS-(1-naphthalenyl oxy)-2-thiophene propanamine, monohydrochloride

**Synonyms:** Cymbalta, Dulane 20, LY248686

**MF:** C_{18}H_{19}N_{O}S•HCl

**FW:** 333.9

**Purity:** ≥98%

**Stability:** ≥2 years at -20°C

**Supplied as:** A crystalline solid

**UV/Vis:** λ_{max}: 217, 291 nm

**Laboratory Procedures**

For long term storage, we suggest that (S)-duloxetine (hydrochloride) be stored as supplied at -20°C. It should be stable for at least two years.

(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.

(S)-Duloxetine is a potent inhibitor of serotonin and norepinephrine reuptake (K_{i} = 4.6 and 15.6 nM, respectively, for rat synaptosomes). It less effectively inhibits dopamine reuptake (K_{i} = 369 nM). It is effective in cells, tissues, and in vivo and in vitro. (S)-Duloxetine has applications in many chronic medical conditions, including major depressive disorder, generalized anxiety disorder, chronic neuropathic and musculoskeletal pain, and fibromyalgia.

**References**


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