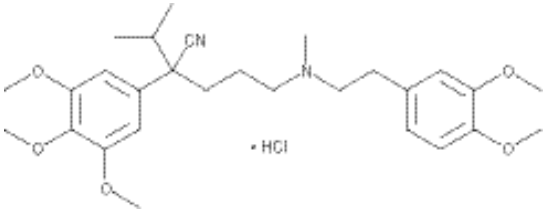
PRODUCT INFORMATION

(±)-Methoxyverapamil (hydrochloride)

Item No. 24270

CAS Registry No.: 16662-46-7
Formal Name: α-[3-[[2-(3,4-dimethoxyphenyl)ethyl]methylamino] propyl]-3,4,5-trimethoxy-α-(1-methylethyl)-benzeneacetonitrile, monohydrochloride
Synonyms: Gallopamil, NSC 274966
MF: $C_{28}H_{40}N_2O_5 \bullet HCl$
FW: 521.1
Purity: ≥98%
UV/Vis.: λ_{max}: 281, 305 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

(±)-Methoxyverapamil (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the (±)-methoxyverapamil (hydrochloride) in the solvent of choice. (±)-Methoxyverapamil (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 (±)-methoxyverapamil (hydrochloride) in ethanol and DMSO is approximately 10 mg/ml and approximately 16.7 mg/ml in DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of (±)-methoxyverapamil (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of (±)-methoxyverapamil (hydrochloride) in PBS, pH 7.2, is approximately 0.25 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

(±)-Methoxyverapamil is a phenylalkylamine L-type calcium channel blocker and methoxy derivative of verapamil (Item No. 14288).[1] (±)-Methoxyverapamil blocks recombinant rat L-type calcium channels expressed in tsA201 cells with IC_{50} values of 782 and 8,000 nM at holding potentials of 10 and -60 mV, respectively. It blocks maitotoxin-induced calcium influx in NIH3T3 fibroblasts (IC_{50} = 16 µM) and inhibits histamine-induced acid secretion in primary enriched guinea pig parietal cells (IC_{50} = 10.9 µM).[2,3] (±)-Methoxyverapamil binds to rat myocardial membranes (IC_{50} = 16 nM) and inhibits electrically-stimulated contractions in rat right myocardial ventricular strips (EC_{50} = 1.95 µM).[4] In conscious, ovariectomized, post-partum rats, it decreases blood pressure by 30 mm Hg and induces 60% inhibition of uterine contractions when administered at doses of 204 and 324 µg/kg, respectively.[5]

References

1. Johnson, B.D., Hockerman, G.H., Scheuer, T., *et al. Mol. Pharmacol.* **50(5)**, 1388-1400 (1996).
2. Daly, J.W., Lueders, J., Padgett, W.L., *et al. Biochem. Pharmacol.* **50(8)**, 1187-1197 (1995).
3. Sewing, K.F. and Hannemann, H. *Pharmacology* **27(1)**, 9-14 (1983).
4. Theodore, L.J., Nelson, W.L., Zobrist, R.H., *et al. J. Med. Chem.* **29(9)**, 1789-1792 (1986).
5. Abel, M.H. and Hollingsworth, M. *Br. J. Pharmacol.* **85(1)**, 263-269 (1985).

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