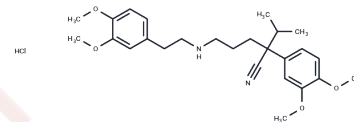


Norverapamil hydrochloride

Chemical Properties

CAS No. :	67812-42-4
Formula:	C ₂₆ H ₃₇ ClN ₂ O ₄
Molecular Weight:	477.04
Storage:	Powder: -20°C for 3 years In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.



Biological Description

Description	Norverapamil hydrochloride (D591 hydrochloride) ((±)-Norverapamil hydrochloride) is an N-demethylated metabolite of Verapamil and it is an L-type calcium channel blocker and a P-glycoprotein (P-gp) function inhibitor.
Targets(IC50)	Calcium Channel, Drug Metabolite, P-gp
In vitro	Norverapamil inhibits macrophage-induced tolerance and attains serum levels comparable to verapamil. Both verapamil and its primary metabolite, Norverapamil, are identified as mechanism-based inhibitors and substrates of CYP3A, exhibiting non-linear pharmacokinetics clinically. Furthermore, ((±)-Norverapamil hydrochloride) proves as effective as verapamil in inhibiting tolerance and killing intracellular M. tuberculosis in monotherapy, matching its efficacy against isoniazid and rifampicin tolerance [1][3].
In vivo	Norverapamil hydrochloride (9 mg/kg; p.o.) exhibits a terminal half-life of 9.4 hours, an AUC of 260 ng ml ⁻¹ h, and a C _{max} of 41.6 ng/mL[4].

Solubility Information

Solubility	H ₂ O: 50 mg/mL (104.81 mM), Sonication is recommended. DMSO: 31 mg/mL (64.98 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (4.19 mM), Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.0963 mL	10.4813 mL	20.9626 mL
5 mM	0.4193 mL	2.0963 mL	4.1925 mL
10 mM	0.2096 mL	1.0481 mL	2.0963 mL
50 mM	0.0419 mL	0.2096 mL	0.4193 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Adams KN, et al. Verapamil, and its metabolite norverapamil, inhibit macrophage-induced, bacterial efflux pump-mediated tolerance to multiple anti-tubercular drugs. *J Infect Dis.* 2014 Aug 1;210(3):456-66.

Pauli-Magnus C, et al. Characterization of the major metabolites of verapamil as substrates and inhibitors of P-glycoprotein. *J Pharmacol Exp Ther.* 2000 May;293(2):376-82.

Wang J et al. A semi-physiologically-based pharmacokinetic model characterizing mechanism-based auto-inhibition to predict stereoselective pharmacokinetics of verapamil and its metabolite norverapamil in human. *Eur J Pharm Sci.* 2013 Nov 20;50(3-4):290-302.

Choi DH, et al. Effects of simvastatin on the pharmacokinetics of verapamil and its main metabolite, norverapamil, in rats. *Eur J Drug Metab Pharmacokinet.* 2009 Jul-Sep;34(3-4):163-8.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

This product is for Research Use Only · Not for Human or Veterinary or Therapeutic Use

Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481