

## Verapamil hydrochloride

### Chemical Properties

CAS No. : 152-11-4

Formula: C<sub>27</sub>H<sub>39</sub>ClN<sub>2</sub>O<sub>4</sub>

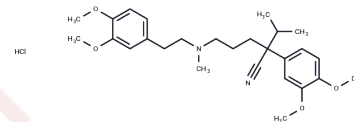
Molecular Weight: 491.06

Storage:

Keep away from direct sunlight, Keep away from moisture

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	Verapamil hydrochloride (Verapamil HCl) is a calcium channel blocker that is a class IV anti-arrhythmia agent.
Targets(IC50)	Calcium Channel, Cytochromes P450, P-gp
In vitro	Verapamil exhibits antiarrhythmic properties, reduces myocardial oxygen consumption in rats, and preserves Cx43 protein.
In vivo	Verapamil and Diltiazem essentially inhibit the hydrolase activity of recombinant CES2, with inhibition constants (K <sub>i</sub> ) of 0.25 ± 0.02 μM and 3.84 ± 0.99 μM, respectively.
Cell Research	Verapamil is dissolved in DMSO and stored, and then diluted with appropriate media before use[1]. Cells (1×10 <sup>5</sup> ) are treated with 10 nM Bortezomib and/or 70 μM Verapamil for 16 hours and incubated for another 4 hours with Alamar-Blue. Activity of the mitochondrial dehydrogenase results in conversion of the coloring, which is followed by measurement of the absorption using a spectrophotometer[1].

### Solubility Information

Solubility	DMSO: 86.67 mg/mL (176.5 mM), Sonication is recommended. H <sub>2</sub> O: 24.6 mg/mL (50.1 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 (4.07 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

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	1mg	5mg	10mg
1 mM	2.0364 mL	10.1821 mL	20.3641 mL
5 mM	0.4073 mL	2.0364 mL	4.0728 mL
10 mM	0.2036 mL	1.0182 mL	2.0364 mL
50 mM	0.0407 mL	0.2036 mL	0.4073 mL

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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

Yanjiao X, et al. Drug Metab Pharmacokinet, 2013.

Zhou P, et al. PLoS One, 2013, 8(8), e71567.

Mao J Y, Su L X, Li D K, et al. The effects of UCP2 on autophagy through the AMPK signaling pathway in septic cardiomyopathy and the underlying mechanism[J]. Annals of Translational Medicine. 2021, 9(3).

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