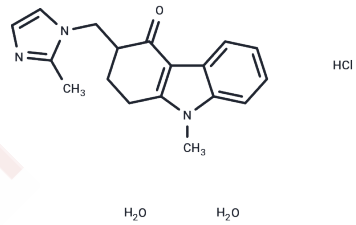
Data Sheet (Cat.No.T1478)

TargetMol

Ondansetron hydrochloride dihydrate

Chemical Properties



CAS No. :	103639-04-9
Formula:	C18H19N3O·HCl·2H2O
Molecular Weight:	365.86
Storage:	Powder: -20°C for 3 years Actual storage temperature shall be subject to the COA.

Biological Description

Description	Ondansetron hydrochloride dihydrate (GR 38032) is a competitive serotonin type 3 receptor antagonist. It is effective in the treatment of nausea and vomiting caused by cytotoxic chemotherapy drugs, including cisplatin, and has reported anxiolytic and neuroleptic properties.
Targets(IC50)	5-HT Receptor
In vitro	Ondansetron is a potent, highly selective, competitive antagonist at 5-HT3 receptors. It demonstrates some affinity to other receptor subtypes, including 5-HT1B, 5-HT1C, 5-HT4, opioid, and 1-adrenergic receptors, and to the μ-opioid receptor. However, ondansetron has 1000:1 selectivity toward 5-HT3 receptors[1]. Ondansetron is found to be the most potent HERG-channel blocker among several 5-HT3 antagonists, with an IC50 of 810 nM and has been reported to block Na+ channels[2].
In vivo	Ondansetron(Ond) is well tolerated and its side effects are mild. Ond acts on the CNS as well as on the peripheral nervous system (PNS). Ondansetron is available both for oral and intravenous administration. The bioavailability of orally administered ondansetron is only 60%. The low bioavailability is due to a significant first-pass metabolism. The peak plasma concentration of ondansetron is usually reached at approximately 1.5 h after oral administration. A major portion of this drug, about 75%, is bound to plasma proteins. Ondansetron is currently used to prevent and treat nausea and vomiting associated with chemotherapy, radiation treatment and general anesthesia. It has been shown to inhibit GABA and glycine receptor activity in animal models[1]. Therapeutic dose of Ond allows delivery of significantly higher amounts of Dox to the brain tissue in vivo, which is otherwise disallowed by the BBB. The rate of penetration of the blood-brain barrier by Ond is very low[3].
Cell Research	Cells are plated in 60-mm Petri dishes (2×105 per dish) and cultured in serumcontained medium for 24 h. The next day the medium is removed and serum-contained medium with or without Dox (0.1 or 0.5 μg/ml) and Ond (10 or 30 μg/ml) in combination or respectively, is added. After 3 days, the cells are washed twice with PBS, trypsinized, and counted by using the trypan blue exclusion method.(Only for Reference)

Solubility Information

Solubility	Ethanol: 38 mg/mL (103.86 mM),Sonication is recommended. H2O: 67 mg/mL (183.13 mM),Sonication is recommended. DMSO: 10 mg/mL (27.33 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: 1 mg/mL (2.73 mM),Sonication is recommended. *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.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.7333 mL	13.6664 mL	27.3329 mL
5 mM	0.5467 mL	2.7333 mL	5.4666 mL
10 mM	0.2733 mL	1.3666 mL	2.7333 mL
50 mM	0.0547 mL	0.2733 mL	0.5467 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

Ye JH, et al. CNS Drug Rev. 2001, 7(2):199-213.
Weissenburger J, et al. Fundam Clin Pharmacol. 2009, 23(6):719-26.
Sardi I, et al. Cancer Lett. 2014, 353(2):242-7.