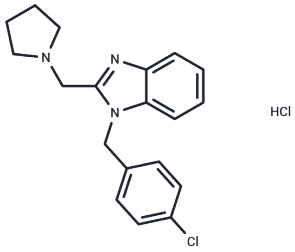
Data Sheet (Cat.No.T1822L)

TargetMol

Clemizole hydrochloride

Chemical Properties



CAS No. : 1163-36-6

Formula: C19H21Cl2N3

Molecular Weight: 362.3

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	Clemizole hydrochloride is an antagonist for H1 histamine receptor. According to the research, Clemizole hydrochloride can inhibit hepatitis C virus (HCV) replication and NS4B's RNA binding.
Targets(IC50)	HCV Protease,Histamine Receptor,TRP/TRPV Channel
In vitro	Clemizole hydrochloride inhibits HCV RNA replication in cell culture by suppressing NS4B's RNA binding, with minimal toxicity to host cells. The EC50 on the W55R mutant J6/JFH RNA is ~18 μM [1]. Clemizole is a novel TRPC5 channel inhibitor, effectively blocking TRPC5 currents and Ca2+ entry in the low micromolar range (IC50=1.0-1.3 μM), showing six-fold selectivity over TRPC4β (IC50=6.4 μM) and nearly 10-fold selectivity over TRPC3 (IC50=9.1 μM) and TRPC6 (IC50=11.3 μM). The concentration-response curves confirm a concentration-dependent block of TRPC5 by Clemizole, with an apparent IC50 of 1.1±0.04 μM [2].
In vivo	Clemizole hydrochloride has an exceptionally brief plasma half-life (0.15 hours) and is rapidly biotransformed into a glucuronide (M14), a dealkylated metabolite (M12), and various minor metabolites in C57BL/6J mice[3].
Cell Research	Clemizole hydrochloride is dissolved in DMSO and stored, and then diluted with appropriate media before use[1]. Huh7.5 cells are maintained in DMEM supplemented with 1% L-Glutamine, 1% Penicillin, 1% Streptomycin, 1× nonessential amino acids and 10% FBS. Cell lines are passaged twice weekly after treatment with 0.05% trypsin-0.02% EDTA and seeding at a dilution of 1:5. Subconfluent Huh7.5 cells are trypsinized and collected by centrifugation at 700 g for 5 min. The cells are then washed three times in ice-cold RNase-free PBS and resuspended at 1.5×107 cells/mL in PBS. Wild-type or mutant FL-J6/JFH-5'C19Rluc2AUbi RNA for electroporation is generated by transcription of XbaI linearized DNA templates using the T7 MEGAscript kit, followed by purification (RNA transcription and fluorescent labeling). We mixed 5 μg of RNA with 400 μL of washed Huh7.5 cells in a 2-mm-gap cuvette (BTX) and immediately pulsed (0.82 kV, five 99 μs pulses) with a BTX-830 electroporator. After a 10 min recovery at 25°C, pulsed cells are diluted into 10 mL of prewarmed growth medium. Cells from several electroporations are pooled to a common stock and seeded in 6-well plates (5×105 cells per well). After 24 h, medium is replaced and cells are grown in the presence of serial dilutions of the various inhibitory compounds (e.g., Clemizole hydrochloride) identified in the screen. Seventeen commercially available compounds, out of the 18 identified, are analyzed. Untreated cells are used as a negative control for water-soluble

Cell Research	compounds. For compounds (e.g., Clemizole hydrochloride) solubilized in DMSO, untreated cells are grown in the presence of corresponding concentrations of the solvent as a negative control. Medium is changed daily. After 72 h of treatment cells are subjected to an Alamar Blue-based viability assay and luciferase assay. After 72 h of treatment cells are incubated for 3 h at 37°C in the presence of 10% Alamar Blue reagent.Plates are then scanned and fluorescence is detected by using FLEXstation II 384. Depending on the inhibitory compound's solvent (e.g., Clemizole hydrochloride), water or DMSO, signal is normalized relatively to untreated samples or samples grown in the presence of DMSO, respectively[1].

Solubility Information

Solubility	DMSO: 18.11 mg/mL (49.99 mM),Sonication is recommended. H2O: 7.25 mg/mL (20.01 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 (5.52 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	2.7601 mL	13.8007 mL	27.6014 mL
5 mM	0.552 mL	2.7601 mL	5.5203 mL
10 mM	0.276 mL	1.3801 mL	2.7601 mL
50 mM	0.0552 mL	0.276 mL	0.552 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

Einav S, et al. Discovery of a hepatitis C target and its pharmacological inhibitors by microfluidic affinity analysis. Nat Biotechnol. 2008 Sep;26(9):1019-27.
Richter JM, et al. Clemizole hydrochloride is a novel and potent inhibitor of transient receptor potential channel TRPC5. Mol Pharmacol. 2014 Nov;86(5):514-21.
Nishimura T, et al. Using chimeric mice with humanized livers to predict human drug metabolism and a drug-drug interaction. J Pharmacol Exp Ther. 2013 Feb;344(2):388-96.