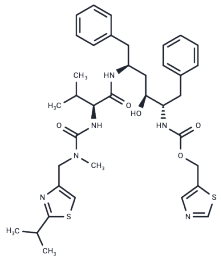
Data Sheet (Cat.No.T1525)

TargetMol

Ritonavir

Chemical Properties



CAS No. : 155213-67-5

Formula: C37H48N6O5S2

Molecular Weight: 720.94

Storage: Store at low temperature,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	Ritonavir (ABT 538) is a peptidomimetic agent that inhibits both HIV-1 and HIV-2 proteases. Ritonavir is highly inhibited by serum proteins but boosts the effect of other HIV proteases by blocking their degradation by cytochrome P450.
Targets(IC50)	Apoptosis,HIV Protease,SARS-CoV
In vivo	Ritonavir is a potent inhibitor of CYP3A-mediated biotransformation (terfenadine hydroxylation, IC50 of 0.14 mM; 17alpha-ethynylestradiol 2-hydroxylation, IC50 of 2 mM; nifedipine oxidation, IC50 of 0.07 mM).Ritonavir is a a potent inhibitor of CYP3A4-mediated testicular 6β-hydroxylation (Ki: 19 nM), and also inhibited hydroxylation by toluenesulfonylurea (IC50: 4.2 μM).Ritonavir also inhibited CYP2D6 (IC50: 2.5 mM) and CYP2C9/10 (IC50: 8.0 mM)-mediated responses.Ritonavir Ritonavir increased the cellular activity of uninfected human PBMC cultures.Ritonavir inhibited p-glycoprotein-mediated saquinavir solubilization (IC50: 0.2 μM), suggesting that Ritonavir has a high affinity for p-glycoprotein.Ritonavir significantly inhibited the metabolism of human hepatic microsomes ABT-378 (Ki: 13 nM). Ritonavir binding to ABT-378 (in 3:1 and 29:1 ratios) was able to inhibit CYP3A (IC50: 1.1 and 4.6 μM). In cultures of uninfected human PBMCs, Ritonavir significantly reduced the susceptibility of PBMCs to apoptosis (associated with low levels of caspase-1 expression), decreased caspase-3 activity, and reduced membrane-bound protein staining. Ritonavir inhibited the induction of tumor necrosis factor produced by PBMCs and monocytes at nontoxic concentrations in a time- and dose-dependent manner.

Solubility Information

Solubility	DMSO: 242.5 mg/mL (336.37 mM),Heating is recommended. Ethanol: 7.21 mg/mL (10 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Corn Oil: 2.5 mg/mL (3.47 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	1.3871 mL	6.9354 mL	13.8708 mL
5 mM	0.2774 mL	1.3871 mL	2.7742 mL
10 mM	0.1387 mL	0.6935 mL	1.3871 mL
50 mM	0.0277 mL	0.1387 mL	0.2774 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

Eagling VA, et al. Br J Clin Pharmacol, 1997, 44(2), 190-194.
Cheng C, Ji Z, Sheng Y, et al. Aphthous ulcer drug inhibits prostate tumor metastasis by targeting IKK/TBK1/NF-κB signaling. Theranostics. 2018, 8(17): 4633
Wu Y, Chu L, Yang H, et al. Simultaneous Determination of 6 Antiretroviral Drugs in Human Hair Using an LC-ESI+-MS/MS Method: Application to Adherence Assessment. Therapeutic Drug Monitoring. 2021, 43(6): 756-765.
Kumar GN, et al. J Pharmacol Exp Ther, 1996, 277(1), 423-431.
Fical L, Khalikova M, Kočová Vlčková H, et al. Determination of Antiviral Drugs and Their Metabolites Using Micro-Solid Phase Extraction and UHPLC-MS/MS in Reversed-Phase and Hydrophilic Interaction Chromatography Modes. Molecules. 2021, 26(8): 2123.
Weichold FF, et al. J Hum Virol, 1999, 2(5), 261-269.
Drewe J, et al. Biochem Pharmacol, 1999, 57(10), 1147-1152.
Kumar GN, et al. Drug Metab Dispos, 1999, 27(8), 902-908.
Fical L. Vývoj UHPLC-MS/MS metody pro analýzu vybraných antivirotik v HILIC a RP módu[J]. 2020
Chu, Liuxi, et al. Simultaneous quantitation of zidovudine, efavirenz, lopinavir and ritonavir in human hair by liquid chromatography-atmospheric pressure chemical ionization-tandem mass spectrometry [J]. Journal of Chromatography B . 2018 Oct 15;1097-1098:54-63.
Fical L, Khalikova M, Kočová Vlčková H, et al. Determination of Antiviral Drugs and Their Metabolites Using Micro-Solid Phase Extraction and UHPLC-MS/MS in Reversed-Phase and Hydrophilic Interaction Chromatography Modes [J]. Molecules. 2021, 26(8): 2123.