

# Ritonavir

**Catalog No: tcsc0432**



## Available Sizes

**Size:** 10mg

**Size:** 50mg

**Size:** 100mg

**Size:** 500mg



## Specifications

**CAS No:**

155213-67-5

**Formula:**

$C_{37}H_{48}N_6O_5S_2$

**Pathway:**

Metabolic Enzyme/Protease;Anti-infection

**Target:**

HIV Protease;HIV

**Purity / Grade:**

>98%

**Solubility:**

H<sub>2</sub>O :

**Alternative Names:**

ABT 538;RTV

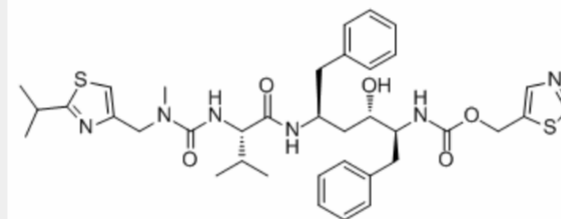
**Observed Molecular Weight:**

720.94

## Product Description

Ritonavir is an inhibitor of **HIV protease** used to treat HIV infection and AIDS.

**In Vitro:** Ritonavir is an inhibitor of CYP3A4 mediated testosterone 6 $\beta$ -hydroxylation with mean  $K_i$  of 19 nM and also inhibits tolbutamide hydroxylation with  $IC_{50}$  of 4.2  $\mu$ M<sup>[1]</sup>. Ritonavir is found to be a potent inhibitor of CYP3A-mediated biotransformations (nifedipine oxidation with  $IC_{50}$  of 0.07 mM, 17 $\alpha$ -ethynylestradiol 2-hydroxylation with  $IC_{50}$  of 2 mM; terfenadine hydroxylation with  $IC_{50}$  of 0.14 mM). Ritonavir is also an inhibitor of the reactions mediated by CYP2D6 ( $IC_{50}$ =2.5 mM) and CYP2C9/10 ( $IC_{50}$ =8.0 mM)<sup>[2]</sup>. Ritonavir results in an increase in cell viability in uninfected human PBMC cultures. Ritonavir markedly decreases the susceptibility of PBMCs to apoptosis correlated with lower levels of caspase-1 expression, decreases in annexin V staining, and reduces caspase-3 activity in uninfected human PBMC cultures. Ritonavir inhibits induction of tumor necrosis factor (TNF) production by PBMCs and monocytes in a time- and dose-dependent manner at nontoxic concentrations<sup>[3]</sup>. Ritonavir inhibits p-glycoprotein-mediated extrusion of saquinavir with an  $IC_{50}$  of 0.2  $\mu$ M, indicating a high affinity of ritonavir for p-glycoprotein<sup>[4]</sup>. Ritonavir inhibits human liver microsomal metabolism of ABT-378 potently with  $K_i$  of 13 nM. Ritonavir combined with ABT-378 (at 3:1 and 29:1 ratios) inhibits CYP3A ( $IC_{50}$ =1.1 and 4.6  $\mu$ M), albeit less potently than Ritonavir ( $IC_{50}$ =0.14  $\mu$ M)<sup>[5]</sup>.



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