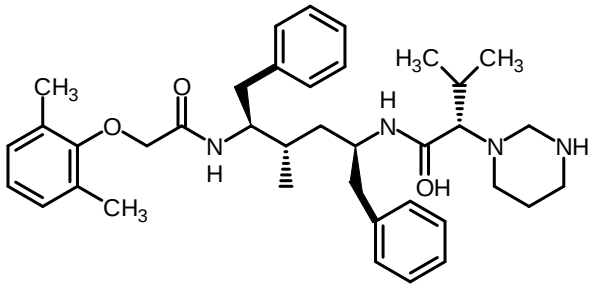
Lopinavir PK Fact Sheet

Details

Generic Name	Lopinavir
Trade Name	Kaletra®
Class	Protease Inhibitor
Molecular Weight	628.80
Structure	

Summary of Key Pharmacokinetic Parameters

Plasma half life	5-6 h
Cmax	9.6 ± 4.4 µg/ml (400/100 mg twice daily Kaletra dosing)
Cmin	5.5 ± 4.0 µg/ml (400/100 mg twice daily Kaletra dosing)
AUC	82.8 ± 44.5 µg/ml.hr (400/100 mg twice daily Kaletra dosing)
Bioavailability	Not established in humans
Absorption	Administration of a single 400/100 mg dose of Kaletra tablets under fed conditions (high fat, 872 kcal, 56% from fat) compared to fasted state was associated with no significant changes in Cmax and AUC. Kaletra tablets may be taken with or without food. Kaletra tablets have also shown less pharmacokinetic variability under all meal conditions compared to Kaletra soft capsules.
Protein Binding	98-99%
Volume of Distribution	Not available
CSF:Plasma ratio	Consistently undetectable
Semen:Plasma ratio	0.07 [1]
Renal Clearance	<3%
Renal Impairment	Pharmacokinetics have not been studied in patients with renal insufficiency; since the renal clearance of lopinavir is negligible, a decrease in total body clearance is not expected.
Hepatic Impairment	In mild to moderate hepatic impairment, an increase of approximately 30% in lopinavir exposure has been observed, but is not expected to be clinically relevant. No data are available in patients with severe hepatic impairment; Kaletra should not be given to these patients.

Metabolism and Distribution

Metabolised by	CYP3A
Inducer of	N/A
Inhibitor of	CYP3A, BCRP(*In vitro*) [2]
Transported by	P-glycoprotein, MRP1, MRP2, hOATPs [3]

References

Unless otherwise stated (see below), information is from:
Kaletra® Summary of Product Characteristics, AbbVie Ltd.
Kaletra® US Prescribing Information, AbbVie Inc.

1. Lafeuillade A, Solas C, Halfon P, *et al.* Differences in the detection of three HIV-1 protease inhibitors in non-blood compartments: clinical correlations. *HIV Clin Trials.* 2002; 3(1): 27-35.
2. Weiss J, Rose J, Storch CH, *et al.* Modulation of human BCRP (ABCG2) activity by anti-HIV drugs. *J Antimicrob Chemother.* 2007; 59(2): 238-245.
3. Janneh O, Hartkoorn RC, Jones E, *et al*. Cultured CD4T cells and primary human lymphocytes express hOATPs: intracellular accumulation of saquinavir and lopinavir. *Br J Pharmacol.* 2008; 155(6): 875-883.