

Please refer to the **Drug Interactions** section of the Adult Guidelines for more detailed discussions.

Table 16a. Interactions Among Protease Inhibitors

Drug Affected	Fosamprenavir	Atazanavir	Lopinavir/ Ritonavir	Nelfinavir	Ritonavir	Saquinavir*	Tipranavir
Protease Inhibitors							
Darunavir (DRV)	No data.	<u>Levels:</u> ATV 300mg once daily + DRV/r -- similar to ATV/r 300/100mg once daily. DRV was unchanged. <u>Dose:</u> Administer ATV 300mg once daily with DRV/r for exposure similar to ATV/r 300/100mg once daily.	<u>Levels:</u> DRV AUC and Cmin ↓ 53% and 65%, respectively. LPV AUC and Cmin ↑ 37% and 72%, respectively. Dose: Should not be coadministered, as doses are not established.	No data.	<u>Levels:</u> 14-fold ↑ in DRV exposure in combination with RTV 100mg BID. <u>Dose:</u> DRV should only be used in combination with RTV 100mg BID to achieve sufficient DRV exposure.	<u>Levels:</u> DRV AUC and Cmin ↓ 26% and 42%, respectively. SQV exposure similar to when administered with RTV 1,000/100mg BID. ‡ Dose: Should not be coadministered, as doses are not established.	No data.
Fosamprenavir (FPV)	•	<u>Levels:</u> With FPV/ATV 1,400/400 once daily, ATV AUC & Cmin ↓ 33% and 57%, resp. APV AUC & Cmin ↑ 78% and 283%, respectively. With FPV/r 700/100mg BID + ATV 300mg once daily, ATV AUC and Cmax ↓ 22% and 24%, resp; APV unchanged. <u>Dose:</u> Insufficient data for dose recommendation.	<u>Levels:</u> With coadministration of FPV 700mg BID and LPV/r capsules 400/100mg BID, FPV Cmin ↓64% and LPV Cmin ↓53%. An increased rate of adverse events was seen with coadministration. Dose: Should not be coadministered, as doses are not established.	See FPV + NFV cell	<u>Levels:</u> APV AUC and Cmin ↑100% and 400%, respectively, with 200mg RTV. <u>Dose:</u> (FPV 1,400mg + RTV 200mg) once daily; or FPV 700mg + RTV 100mg BID.	<u>Levels:</u> APV AUC ↓ 32%. <u>Dose:</u> Insufficient data for dose recommendation	<u>Levels:</u> APV AUC and Cmin ↓44% and 55%, respectively, when given as APV/r 600/100 BID with TPV/r. No data with FPV, but a ↓ in AUC is expected. Dose: Should not be coadministered, as doses are not established.
Indinavir (IDV)	<u>Levels:</u> APV AUC ↑33%. <u>Dose:</u> Not established.	Coadministration of these agents is not recommended because of potential for additive hyperbilirubinemia.	<u>Levels:</u> IDV AUC and Cmin ↑. <u>Dose:</u> IDV 600mg BID.	<u>Levels:</u> IDV ↑50%; NFV ↑80%. <u>Dose:</u> Limited data for IDV 1,200mg BID + NFV 1,250mg BID.	<u>Levels:</u> IDV ↑ 2–5 times. <u>Dose:</u> IDV/RTV 800/100mg, 800/200mg, or 400/400mg BID Caution: Renal events may ↑ with ↑ IDV concentrations.	<u>Levels:</u> IDV-No effect. SQV ↑ 4-7 times. † <u>Dose:</u> Insufficient data.	No data. Should not be coadministered, as doses are not established.
Lopinavir/ Ritonavir (LPV/r)	see LPV/r + FPV cell	<u>Levels:</u> With ATV 300 once daily + LPV/r 400/100 BID, ATV Cmin ↑45%; ATV AUC and Cmax were unchanged. LPV PK similar to historic data.	•	see LPV/r + NFV cell	Additional ritonavir is generally not recommended.	see LPV/r + SQV cell	<u>Levels:</u> LPV AUC and Cmin ↓ 55% & 70%, respectively. Dose: Should not be coadministered, as doses are not established.
Nelfinavir (NFV)	<u>Levels:</u> APV AUC ↑ 1.5-fold. <u>Dose:</u> Insufficient data.	No data	<u>Levels:</u> With LPV/r capsules, LPV ↓27%; NFV ↑ 25%. <u>Dose:</u> No data with LPV/r tablets. No dosing recommendation.	•	see NFV + RTV cell	see NFV+SQV cell	No data. Should not be coadministered, as doses are not established.
Ritonavir (RTV)	see RTV + FPV cell	<u>Levels:</u> ATV AUC ↑238%. <u>Dose:</u> ATV 300mg QD + RTV 100mg QD.	Lopinavir is coformulated with ritonavir as Kaletra®. Additional ritonavir is generally not recommended.	<u>Levels:</u> RTV - No effect. NFV ↑ 1.5 times. <u>Dose:</u> not established	•	<u>Levels:</u> RTV no effect SQV ↑ 20 times. †‡ <u>Dose:</u> 1,000/ 100mg SQV/RTV BID	<u>Levels:</u> TPV AUC ↑ 11-fold.
Saquinavir (SQV)	<u>Levels:</u> APV AUC ↓32%. <u>Dose:</u> Insufficient data.	<u>Levels:</u> SQV AUC ↑60% with SQV/ATV/RTV 1,600/300/100 once daily, compared with SQV/ RTV 1,600/100 once daily <u>Dose:</u> No dose recommendations can be made.	<u>Levels:</u> SQV† AUC and Cmin ↑ <u>Dose:</u> SQV 1,000mg BID; LPV/r standard.	<u>Levels:</u> SQV ↑ 3–5 times; NFV ↑ 20%. †	see SQV + RTV cell	•	<u>Levels:</u> SQV AUC & Cmin ↓ 76% & 82%, respectively, when given as SQV/r 600/100 BID with TPV/r. Dose: Should not be coadministered, as doses are not established.

* Several drug interaction studies have been completed with saquinavir given as Invirase (old hard-gel capsule formulation) or Fortovase (soft-gel capsule formulation). Currently, only Invirase (as 500mg tablet or 200mg hard-gel capsule) is available.

† Study conducted with Fortovase.

‡ Study conducted with Invirase