

**Table 21. Drugs That Should Not Be Used With PI, NNRTI, or CCR5 Antagonist Antiretrovirals**  
(Updated **January 29, 2008**)

Drug Category <sup>#</sup>	Calcium channel blocker	Cardiac	Lipid Lowering Agents	Anti-Mycobacterial <sup>‡</sup>	Anti-histamine <sup>§</sup>	Gastro-intestinal drugs <sup>¶</sup>	Neuro-leptic	Psychotropic	Ergot Alkaloids (vasoconstrictor)	Herbs	Other
Atazanavir	Bepiridil	(none)	simvastatin lovastatin	rifampin rifapentine	astemizole terfenadine	cisapride	pimozide	midazolam <sup>Σ</sup> triazolam	dihydroergotamine (D.H.E. 45) ergotamine <sup>†</sup> (various forms) ergonovine methylergonovine	St. John's wort	fluticasone indinavir irinotecan
Darunavir/ ritonavir	(none)	(none)	simvastatin lovastatin	rifampin rifapentine	astemizole terfenadine	cisapride	pimozide	midazolam <sup>Σ</sup> triazolam	as above	St. John's wort	carbamazepine phenobarbital phenytoin fluticasone <sup>⊗</sup>
Fosamprenavir	Bepiridil	(none)	simvastatin lovastatin	rifampin rifapentine	astemizole terfenadine	cisapride	pimozide	midazolam <sup>Σ</sup> triazolam	as above	St. John's wort	Delavirdine fluticasone oral contraceptives
Indinavir	(none)	amiodarone	simvastatin lovastatin	rifampin rifapentine	astemizole terfenadine	cisapride	pimozide	midazolam <sup>Σ</sup> triazolam	as above	St. John's wort	Atazanavir
Lopinavir/ Ritonavir	(none)	flecainide propafenone	simvastatin lovastatin	rifampin <sup>‡</sup> rifapentine	astemizole terfenadine	cisapride	pimozide	midazolam <sup>Σ</sup> triazolam	as above	St. John's wort	fluticasone <sup>⊗</sup>
Nelfinavir	(none)	(none)	simvastatin lovastatin	rifampin rifapentine	astemizole terfenadine	cisapride	pimozide	midazolam <sup>Σ</sup> triazolam	as above	St. John's wort	
Ritonavir	Bepiridil	amiodarone flecainide propafenone quinidine	simvastatin lovastatin	rifapentine	astemizole terfenadine	cisapride	pimozide	midazolam <sup>Σ</sup> triazolam	as above	St. John's wort	voriconazole (with RTV ≥ 400mg BID) fluticasone <sup>⊗</sup> alfuzosin
Saquinavir/ ritonavir	(none)	(none)	simvastatin lovastatin	rifampin rifapentine	astemizole terfenadine	cisapride	pimozide	midazolam <sup>Σ</sup> triazolam	as above	St. John's wort garlic supplements	fluticasone
Tipranavir/ ritonavir	Bepiridil	amiodarone flecainide propafenone quinidine	simvastatin lovastatin	rifampin rifapentine	astemizole terfenadine	cisapride	pimozide	midazolam <sup>Σ</sup> triazolam	as above	St. John's wort	fluticasone <sup>⊗</sup>
Delavirdine	(none)	(none)	simvastatin lovastatin	rifampin rifapentine <sup>‡</sup> rifabutin	astemizole terfenadine	cisapride H2 blockers proton pump inhibitors	(none)	alprazolam midazolam <sup>Σ</sup> triazolam	as above	St. John's wort	amprenavir fosamprenavir carbamazepine phenobarbital phenytoin
Efavirenz	(none)	(none)	(none)	rifapentine <sup>‡</sup>	astemizole terfenadine	cisapride	(none)	midazolam <sup>Σ</sup> triazolam	as above	St. John's wort	voriconazole
<b>Etravirine</b>	(none)	(none)	(none)	rifampin rifapentine <sup>‡</sup>	(none)	(none)	(none)	(none)	(none)	St. John's wort	Unboosted PI, ritonavir-boosted atazanavir, fosamprenavir, or tipranavir, other NNRTIs, Carbamazepine, phenobarbital, phenytoin
Nevirapine	(none)	(none)	(none)	rifampin rifapentine <sup>‡</sup>	(none)	(none)	(none)	(none)	(none)	St. John's wort	
Maraviroc	•	•	•	rifampin rifapentine <sup>‡</sup>	•	•	•	•	•	St. John's wort	•

# Certain listed drugs are contraindicated based on theoretical considerations. Thus, drugs with narrow therapeutic indices and suspected metabolic involvement with P450-3A, 2D6, or unknown pathways are included in this table. Actual interactions may or may not occur among patients.

‡ HIV patients treated with rifapentine have a higher rate of TB relapse than those treated with other rifamycin-based regimens; an alternative agent is recommended.

‡ In one small study, higher doses of RTV (additional 300mg BID) or a double dose of LPV/RTV offset rifampin-inducing activity of LPV. Of note, 28% of subjects discontinued because of increases in LFTs. The safety of this combination is still under evaluation. Further studies are needed.

Σ Midazolam can be used with caution as a single dose and given in a monitored situation for procedural sedation.

† This is likely a class effect.

∂ Astemizole and terfenadine are not marketed in the United States. The manufacturer of cisapride has a limited-access protocol for patients meeting specific clinical eligibility criteria.

⊗ Concomitant use of fluticasone and ritonavir results in significantly reduced serum cortisol concentrations. Coadministration of fluticasone and ritonavir or any ritonavir-boosted PI regimen is not recommended unless potential benefit outweighs risk of systemic corticosteroid side effects. Fluticasone should be used with caution and alternatives considered if given with an unboosted PI regimen.

**Suggested Alternatives:**

**Cerivastatin (no longer marketed in the United States), simvastatin, lovastatin:** Pravastatin and fluvastatin have the least potential for drug-drug interactions (except for pravastatin with darunavir/ritonavir, see [Table 22a](#)); atorvastatin should be used with caution, using the lowest possible starting dose and monitor closely; no pharmacokinetic data or safety data are available for coadministration of rosuvastatin with the antiretroviral agents.

**Rifabutin:** clarithromycin, azithromycin (MAI prophylaxis); clarithromycin, azithromycin, ethambutol (MAI treatment)

**Astemizole, terfenadine (no longer marketed in the United States):** desloratadine, loratadine, fexofenadine, cetirizine

**Midazolam, triazolam:** temazepam, lorazepam