

Antiretrovirals and Recreational Drugs

Charts revised October 2021. Full information available at www.hiv-druginteractions.org

For personal use only. Not for distribution. For personal use only. Not for distribution. For personal use only. Not for distribution. For personal use only. Not for distribution.

	ATV/c	ATV/r	DRV/c	DRV/r	LPV/r	DOR	EFV	ETV	NVP	RPV oral	FTR	MVC	BIC/F/TAF	CAB oral	CAB/RPV	DTG	EVG/c/F/TAF	EVG/c/F/TDF	RAL	FTC/TAF	FTC/TDF	TDF	
Stimulants																							
Cocaine	↑ a ♥	↑ a ♥	↑ a	↑ a	↑ a ♥	↔	↑ b	↑ b	↑ b	↔ ♥	↔ ♥	↔	↔	↔	↔	↔	↑ a	↑ a	↔	↔	↔	↔	
Ecstasy (MDMA)	↑ c	↑ c	↑ c	↑ c	↑ c	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↑ c	↑ c	↔	↔	↔	↔	
Mephedrone	↑ d	↑ d	↑ d	↑ d	↑ d	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↑ d	↑ d	↔	↔	↔	↔	
Methamphetamine	↑	↑	↑	↑	↑	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↑	↑	↔	↔	↔	↔	
Poppers (Amyl nitrate)	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	
Depressants																							
Alcohol	↔	↔	↔	↔	↔ e	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	
Alprazolam	↑	↑ f	↑	↑ f	↑ f	↔	↓	↓	↓	↔	↔	↔	↔	↔	↔	↔	↑	↑	↔	↔	↔	↔	
Codeine	↑ g	↑ g	↑ g	↑ g	↑ g	↔	↓ g	↓ g	↓ g	↔	↔	↔	↔	↔	↔	↔	↑ g	↑ g	↔	↔	↔	↔	
Diazepam	↑	↑	↑	↑	↑	↔	↓	↑	↓	↔	↔	↔	↔	↔	↔	↔	↑	↑	↔	↔	↔	↔	
GHB (gamma hydroxybutyrate)	↔	↑ h	↔	↑ h	↑ h	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	
Heroin (Diamorphine)	↔ i	↓ i	↔ i	↓ i	↓ i	↔	↑	↔ i	↔	↔	↔	↔	↔	↔	↔	↔	↔ i	↔ i	↔	↔	↔	↔	
Hydrocodone	↑	↑	↑	↑	↑	↔	↓	↓	↓	↔	↔	↔	↔	↔	↔	↔	↑	↑	↔	↔	↔	↔	
Hydromorphone	↔	↓	↔	↓	↓	↔	↑	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	
Ketamine	↑	↑	↑	↑	↑	↔	↓	↓	↓	↔	↔	↔	↔	↔	↔	↔	↑	↑	↔	↔	↔	↔	
Methadone	↔ ♥	↔ ♥	↑	↓16%	↓53% ♥	↔	↓5%	↓26%	↓52%	↑6%	↓~50%	↓16% ♥	↑14% ♥	↔	↔	↔	↓ ♥	↓2%	↑7%	↑7%	↔	↔	↔
Midazolam (oral)	↑ j	↑ j	↑ j	↑ j	↑ j	↔	↓18%	↓ k	↓	↓	↔	↔	↔	↔	↔	↑10%	↔	↔	↑ j	↑ j	↔	↔	
Morphine	↔ l	↓ l	↔ l	↓ l	↓ l	↔	↑	↔ l	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔ l	↔ l	↔	↔	
Oxycodone	↑	↑	↑	↑	↑160%	↔	↓	↓	↓	↔	↔	↔	↔	↔	↔	↔	↑	↑	↔	↔	↔	↔	
Pethidine (Meperidine)	↑	↓ m	↑	↓ m	↓ m	↔	↓ m	↓ m	↓ m	↔	↔	↔	↔	↔	↔	↔	↑	↑	↔	↔	↔	↔	
Temazepam	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	
Triazolam	↑ j	↑ j	↑ j	↑ j	↑ j	↔	↓ k	↓	↓	↔	↔	↔	↔	↔	↔	↔	↑ j	↑ j	↔	↔	↔	↔	
Hallucinogens																							
Cannabis	↑ n ↓	↓ o ↓	↑ n	↓ o	↓ o	↔	↑ n	↑ n	↔	↔	↔	↔	↔	↔	↔	↔	↓ n	↓ n	↔	↔	↔	↔	
LSD (Lysergic acid diethylamide)	↑ p	↑ p	↑ p	↑ p	↑ p	↔	↓	↓	↓	↔	↔	↔	↔	↔	↔	↔	↑ p	↑ p	↔	↔	↔	↔	
Phencyclidine (PCP, angel dust)	↑ q	↑ q	↑ q	↑ q	↑ q	↔	↓	↓	↓	↔	↔	↔	↔	↔	↔	↔	↑ q	↑ q	↔	↔	↔	↔	

Interactions with CAB/RPV long acting injections
Pharmacokinetic interactions shown are mostly with RPV.
QT interactions shown are with RPV.

Interactions with Abacavir (ABC), Lamivudine (3TC) or Zidovudine (ZDV)
ABC: No clinically relevant interactions expected.
3TC: No clinically relevant interactions expected.
ZDV: No clinically relevant interactions expected.

Interactions with Ibalizumab
None

Colour Legend

- No clinically significant interaction expected.
- These drugs should not be coadministered.
- Potential interaction which may require a dose adjustment or close monitoring.
- Potential interaction predicted to be of weak intensity. No *a priori* dosage adjustment is recommended.

Text Legend

- ↑ Potential increased exposure of the recreational drug
 - ↓ Potential decreased exposure of the recreational drug
 - ↔ No significant effect
 - ♥ One or both drugs may cause QT and/or PR prolongation. ECG monitoring is advised if coadministered with atazanavir or lopinavir. Rilpivirine and fostemsavir were shown to prolong the QT interval at supratherapeutic doses. Caution is advised with rilpivirine. ECG monitoring is advised with fostemsavir and drugs with a known QT prolongation risk.
- Numbers refer to increase or decrease in AUC as observed in drug-drug interaction studies.

- ↑ Potential increased exposure of HIV drug
- ↓ Potential decreased exposure of HIV drug

Notes

- a Clinical relevance unknown as cocaine is metabolized by other non-CYP mediated pathways. Ensure patient is aware of signs/symptoms of cocaine toxicity (tremor, seizures, anxiety, headache, increased body temperature).
- b Concentrations of hepatotoxic metabolite increased.
- c Ensure patient is aware of signs/symptoms of ecstasy toxicity (increased body temperature, dehydration, dry mouth, tense jaw, teeth grinding).
- d Ensure patient is aware of signs/symptoms of mephedrone toxicity (agitation, tachycardia, hypertension).
- e Not recommended with oral solution due to large amount of propylene glycol in the solution which may compete with alcohol elimination.
- f Initial inhibitory effect followed by induction in presence of ritonavir.
- g Potential opiate withdrawal due to reduced conversion to morphine.
- h Ensure patient is aware of signs/symptoms of GHB toxicity (myoclonic or seizure activity, bradycardia, respiratory depression, loss of consciousness).
- i Heroin is rapidly deacetylated to 6-monoacetylmorphine (6-MAM) by plasma esterases and subsequently to morphine by liver esterases. 6-MAM enters the brain at a much faster rate than morphine and has been correlated to the acute effects of heroin. Pls/EFV are unlikely to alter 6-MAM concentrations but may alter morphine concentrations. Also, Pls, ETV, EVG/c could increase the amount of morphine entering the brain (via P-gp inhibition) and thus potentiate the effects of opiate in the CNS.
- j Increased sedation or respiratory depression.
- k Contraindicated by manufacturer.
- l Amount of morphine entering the CNS may be increased due to inhibition of P-gp and thus potentiate the effects of opiate in the CNS.
- m Concentrations of neurotoxic metabolite increased.
- n Concentrations of tetrahydrocannabinol (THC, the psychoactive component of cannabis) could be increased.
- o Concentrations of tetrahydrocannabinol (THC, the psychoactive component of cannabis) could be decreased, although to a modest extent.
- p Ensure patient is aware of signs/symptoms of LSD toxicity (hallucination, agitation, psychosis, flashbacks).
- q Ensure patient is aware of signs/symptoms of PCP toxicity (seizure, hypertension, increased body temperature).

Abbreviations ATV atazanavir DRV darunavir LPV lopinavir /c cobicistat /r ritonavir DOR doravirine EFV efavirenz ETV etravirine NVP nevirapine RPV rilpivirine FTR Fostemsavir MVC maraviroc BIC bictegravir CAB Cabotegravir DTG dolutegravir EVG elvitegravir RAL raltegravir F or FTC emtricitabine TAF tenofovir alafenamide TDF tenofovir-DP

© Liverpool Drug Interactions Group, University of Liverpool, Pharmacology Research Labs, 1st Floor Block H, 70 Pembroke Place, LIVERPOOL, L69 3GF.
We aim to ensure that information is accurate and consistent with current knowledge and practice. However, the University of Liverpool and its servants or agents shall not be responsible or in any way liable for the continued currency of information in this publication whether arising from negligence or otherwise howsoever or for any consequences arising therefrom. The University of Liverpool expressly exclude liability for errors, omissions or inaccuracies to the fullest extent permitted by law.