

# Antiretrovirals and Recreational Drugs

Charts revised December 2023. Full information available at [www.hiv-druginteractions.org](http://www.hiv-druginteractions.org)

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	ATV/c	ATV/r	DRV/c	DRV/r	LPV/r	DOR	EFV	ETV	NVP	RPV oral	FTR	LEN	MVC	BIC/F/TAF	CAB oral	CAB/ RPV	DTG	EVG/c/ F/TAF	EVG/c/ F/TDF	RAL	FTC/ TAF	FTC/ TDF
<b>Stimulants</b>																						
Cocaine	↑ a ♥	↑ a ♥	↑ a	↑ a	↑ a ♥	↔	↑ b ♥	↑ b	↑ b	↔ ♥	↔ ♥	↑ a	↔	↔	↔	↔ ♥	↔	↑ a	↑ a	↔	↔	↔
Ecstasy (MDMA)	↑ c	↑ c	↑ c	↑ c	↑ c	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↑ c	↑ c	↔	↔	↔
Mephedrone	↑ d	↑ d	↑ d	↑ d	↑ d	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↑ d	↑ d	↔	↔	↔
Methamphetamine	↑	↑	↑	↑	↑	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↑	↑	↔	↔	↔
Poppers (Amyl nitrate)	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
<b>Depressants</b>																						
Alcohol	↔	↔	↔	↔	↔ e	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Alprazolam	↑	↑ f	↑	↑ f	↑ f	↔	↓	↓	↓	↔	↔	↑	↔	↔	↔	↔	↔	↑	↑	↔	↔	↔
Codeine	↑ g	↑ g	↑ g	↑ g	↑ g	↔	↓ g	↓ g	↓ g	↔	↔	↑	↔	↔	↔	↔	↔	↑ g	↑ g	↔	↔	↔
Diazepam	↑	↑	↑	↑	↑	↔	↓	↑	↓	↔	↔	↑	↔	↔	↔	↔	↔	↑	↑	↔	↔	↔
GHB (gamma hydroxybutyrate)	↔	↑ h	↔	↑ 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	↓	↓	↔	↔	↑259%	↔	↔	↑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	↔	↔	↔
<b>Hallucinogens</b>																						
Cannabis	↑ n ↓	↓ o ↓	↑ n	↑ ↓ o	↑ ↓ o	↔	↑ n	↑ n	↔	↔	↔	↑ n	↔	↔	↔	↔	↔	↓ o	↓ o	↔	↔	↔
LSD (Lysergic acid diethylamide)	↑ p	↑ p	↑ p	↑ p	↑ p	↔	↓	↓	↓	↔	↔	↔	↔	↔	↔	↔	↔	↑ p	↑ p	↔	↔	↔
Phencyclidine (PCP, angel dust)	↑ q	↑ 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 Lenacapavir**

Residual LEN may affect exposure of sensitive CYP3A4 substrates initiated within 9 months after stopping subcutaneous LEN.

**Interactions with Ibalizumab**

None

**Interactions with Abacavir (ABC), Lamivudine (3TC), Tenofovir-DF (TDF) or Zidovudine (ZDV)**

ABC: No clinically relevant interactions expected.  
 3TC: No clinically relevant interactions expected.  
 TDF: No clinically relevant interactions expected.  
 ZDV: No clinically relevant interactions expected.

**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. Efavirenz has a potential risk of QT prolongation relating specifically to homozygous carriers of CYP2B6\*6/\*6. 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 The efavirenz European SPC (but no longer the US Prescribing Information) contraindicates coadministration citing competition for CYP3A4 by efavirenz as a potential mechanism for inhibition of midazolam or triazolam metabolism which may result in potential serious and/or life-threatening adverse events.
- 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 PK effect refers to concentrations of tetrahydrocannabinol (THC), the psychoactive component of cannabis).
- 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 EVF efavirenz ETV etravirine NVP nevirapine RPV rilpivirine FTR fostemsavir LEN lenacapavir MVC maraviroc BIC bictegravir CAB cabotegravir DTG dolutegravir EVG elvitegravir RAL raltegravir F or FTC emtricitabine TAF tenofovir alafenamide TDF tenofovir-DF

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