Cancer Therapies Treatment Selector (1)

Charts revised December 2023. Full information available at www.hiv-druginteractions.org

	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
Anti-tumour Antibiotics																						
Bleomycin	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Daunorubicin	↔ a	↔ a	↔	↔	↔ a	↔	↔ a	↔	↔	↔ a	↑ a	↔	↔	↔	↔	↔ a	↔	↔	↔	↔	↔	↔
Doxorubicin	↔ a	↔ a	↔	↔	↔ a	↔	↔ a	↔	↔	↔ a	↑ a	↔	↔	↔	↔	↔ a	↔	↔	↔	↔	↔	↔
Epirubicin	↔ a	↓ a	↔	↓	↓ a	↔	↑ a	↔	↔	↔ a	↔ a	↔	↔	↔	↔	↔ a	↔	↔	↔	↔	↔	↔
Alkylating Agents															↔							
Carboplatin	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔ b,c	↔	↔	↔ b,c
Chlorambucil	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Cisplatin	↑	↑	↑	↑	↑	↔	↔	↔	↔	↔	↔	↔	↔	↑⇑ d	↔	↔	↔	↑⇑ b,d	↑⇑ b,d	↔	↑⇑ b,d	↑⇑ b,d
Cyclophosphamide	↓ e	↓ e	↓ e	↓ e	↓ e	↔	↓ f	↓ f	↓ f	↔	↔	↓ e	↔	↔	↔	↔	↔	↓ e	↓ e	↔	↔	↔
Dacarbazine	↔	↓ e	↔	↓ e	↓ e	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↑⇑ g	↔	↔	↑⇑ g
Dactinomycin	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Ifosfamide	↑ h	↑ h	↑ h	↑ h	↑ h	⇓	↓ f	↓ f	↓ f	⇓	⇓	↑h⇓	⇓	⇑ or ⇓ i	↔	⇓	↔	↑ b,h	↑ b,h	↔	↔ b	↔ b
Oxaliplatin	↔ ♥	↔ ♥	↔	↔	↔ ♥	↔	↔ ♥	↔	↔	↔ ♥	↔ ♥	↔	↔	↔ j	↔	↔ ♥	↔ j	↔	↔ b	↔	↔	↔ b
Procarbazine	↔	↓ e	↔	↓ e	↓ e	↔	↓ e	↔	↓ e	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Antimetabolite Agents																						
Capecitabine	↔ ♥	↔ ♥	↔	↔	↔ ♥	↔	↔ ♥	↔	↔	↔ ♥	↔ ♥	↔	↔	↑?	↔	↔ ♥	↔	↑?	↑?	↔	↑?	↑?
Cytarabine	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Fluorouracil	↔ ♥	↔ ♥	↔	↔	↔ ♥	↔	↔ ♥	↔	↔	↔ ♥	↔ ♥	↔	↔	↑?	↔	↔ ♥	↔	↑?	↑?	↔	↑?	↑?
Gemcitabine	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Mercaptopurine	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Methotrexate	↑ k	↑ k	↑ k	↑ k	↑ k	↔ k	↔ k	↔ k	↔ k	↔ k	↑? k	↔ k	↔ k	↔ k	↑? k	↑? k	↔ k	↑ k	↑ b,k	↔ k	↔ k	↑ b,k

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: ABC may compete for the metabolic pathways of capecitabine and fluorouracil (clinical relevance unknown).
3TC: 3TC may compete for the metabolic pathways of capecitabine and fluorouracil (clinical relevance unknown).
3TC: Concentrations of cisplatin and 3TC could increase if coadministered. Furthermore, cisplatin may impair renal function. Closely monitor creatinine clearance.
3TC: Concentrations of oxaliplatin and 3TC could increase if coadministered. Monitor side effects.
TDF: Carboplatin may impair renal function: monitor creatinine clearance and adjust TDF dosage accordingly.
TDF: Potential additive nephrotoxicity with cisplatin, ifosfamide, and oxaliplatin. Closely monitor renal function.
TDF: Dacarbazine and tenofovir concentrations may increase when coadministered. Closely monitor renal function.
TDF: Potential additive nephrotoxicity with methotrexate. Closely monitor renal function. Use in HIV patients is contraindicated by some manufacturers.
ZDV: Potential additive haematological toxicity with capecitabine, carboplatin, chlorambucil, cisplatin, cyclophosphamide, cytarabine, dacarbazine, dactinomycin, daunorubicin, docetaxel, doxorubicin, epirubicin, etoposide, fluorouracil, gemcitabine, ifosfamide, irinotecan, mercaptopurine, methotrexate, oxaliplatin, paclitaxel, procarbazine, vinblastine, vincristine.

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 cancer drug
↓ Potential decreased exposure of the cancer drug
↔ No significant effect
⇑ Potential increased exposure of HIV drug
⇓ Potential decreased exposure of HIV drug
♥ 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.

Notes

a Cytostatic agent may induce cardiac toxicity including arrhythmias and/or non-specific ECG abnormalities; caution is warranted in presence of other drugs with potential effects on PR and QT intervals.
b Potential additive nephrotoxicity
c Carboplatin may impair renal function: monitor creatinine clearance and adjust NRTI dosage accordingly (may require a change from a single tablet regimen).
d Coadministration may increase concentrations of cisplatin and FTC. Close monitoring of renal function is recommended.
e Concentrations of parent drug decreased but concentrations of the active metabolite increased.
f Concentrations of parent drug decreased but concentrations of the active metabolite and toxic metabolite increased.
g Concentrations of dacarbazine and tenofovir may increase. Close monitoring of renal function is recommended.
h Concentrations of parent drug increased but concentrations of the active metabolite decreased which may result in decreased efficacy.
i Coadministration may affect bictegravir concentrations. In addition, ifosfamide and tenofovir alafenamide may show additive renal toxicity.
j The oxaliplatin effect may be potentially antagonised due to its reduced entry into the tumour cell arising from the inhibition of OCT2.
k Use in HIV patients is contraindicated by some manufacturers.

Abbreviations ATV atazanavir DRV darunavir LPV lopinavir /c cobicistat /r ritonavir DOR doravirine EFV 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

Cancer Therapies Treatment Selector (2)

Charts revised December 2023. Full information available at www.hiv-druginteractions.org

	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
Plant Alkaloids																						
Docetaxel	↑	↑	↑	↑	↑	↔	↓	↓	↓	↑?	↑	↑	↑?	↔	↔	↑?	↔	↑	↑	↔	↔	↔
Etoposide	↑	↑	↑	↑	↑	↔	↓	↓	↓	↔	↔	↑	↔	↔	↔	↔	↔	↑	↑	↔	↔	↔
Irinotecan	↑ a,b	↑ a,b	↑ a	↑ a	↑ a	↔	↓ c	↓ c	↓ c	↔	↑	↑ a	↔	↔	↔	↔	↔	↑ a	↑ a	↔	↔	↔
Paclitaxel	↑	↑	↑	↑	↑	⇓	↑	↓⇓	↔	⇓	↑	↑⇓	⇓	⇓ d	↔	⇓	⇓	↑	↑	⇓	↔	↔
Vinblastine	↑	↑	↑	↑	↑	⇓	↓	↓⇓	↓	⇓	⇓	↑	⇓	⇓ d	↔	⇓	↔	↑	↑	↔	↔	↔
Vincristine	↑	↑	↑	↑	↑	↔	↓	↓	↓	↔	↔	↑	↔	↔	↔	↔	↔	↑	↑	↔	↔	↔
Tyrosine Kinase Inhibitors																						
Dasatinib	↑♥	↑♥	↑	↑	↑♥	↔	↓♥	↓	↓	⇑♥	↔♥	↑	⇑	↔	↔	⇑♥	↔	↑	↑	↔	↔	↔
Erlotinib	↑	↑	↑	↑	↑	↔	↓	↓	↓	↔	↔	↑⇑	↔	↔	↔	↔	↔	↑	↑	↔	↔	↔
Gefitinib	↑	↑	↑	↑	↑	↔	↓	↓	↓	↔	↔	↑	↔	↔	↔	↔	↔	↑	↑	↔	↔	↔
Imatinib	↑♥	↑♥	↑	↑	↑♥	⇑	↓⇑♥	↓⇑	↓⇑	⇑♥	↑♥	↑	⇑	↔	↔	⇑♥	↔	↑	↑	↔	↔	↔
Lapatinib	↑♥	↑♥	↑♡	↑♡	↑♥	↔	↓♥	↓	↓	⇑♥	↔♥	↑♡	⇑	↔	↔	⇑♥	↔	↑♡	↑♡	↔	↔	↔
Nilotinib	↑♥	↑♥	↑♡	↑♡	↑♥	⇑	↓⇑♥	↓⇑	↓⇑	⇑♥	↔♥	↑⇑	⇑	⇓ d	↔	⇑♥	↔	↑♡	↑♡	↔	↔	↔
Pazopanib	↑♥	↑♥	↑♡	↑♡	↑♥	↔	↓♥	↓	↓	⇑♥	↔♥	↑♡⇑	⇑	↔	↔	⇑♥	↔	↑♡	↑♡	↔	↔	↔
Sunitinib	↑♥	↑♥	↑♡	↑♡	↑♥	↔	↓♥	↓	↓	↔♥	↔♥	↑	↔	↔	↔	↔♥	↔	↑♡	↑♡	↔	↔	↔

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: ABC may compete for the metabolic pathways of capecitabine and fluorouracil (clinical relevance unknown).
3TC: 3TC may compete for the metabolic pathways of capecitabine and fluorouracil (clinical relevance unknown).
3TC: Concentrations of cisplatin and 3TC could increase if coadministered. Furthermore, cisplatin may impair renal function. Closely monitor creatinine clearance.
3TC: Concentrations of oxaliplatin and 3TC could increase if coadministered. Monitor side effects.
TDF: No clinically relevant interactions expected.
ZDV: Potential additive haematological toxicity with capecitabine, carboplatin, chlorambucil, cisplatin, cyclophosphamide, cytarabine, dacarbazine, dactinomycin, daunorubicin, docetaxel, doxorubicin, epirubicin, etoposide, fluorouracil, gemcitabine, ifosfamide, irinotecan, mercaptopurine, methotrexate, oxaliplatin, paclitaxel, procarbazine, vinblastine, vincristine.

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 cancer drug
↓ Potential decreased exposure of the cancer drug
↔ No significant effect
⇑ Potential increased exposure of HIV drug
⇓ Potential decreased exposure of HIV drug
♥ 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.
♡ Potential QT and/or PR prolongation due to the cytostatic agent. Use with caution; ECG monitoring recommended

Notes

a Concentrations of SN-38 (active metabolite) increased.
b Coadministration is contraindicated in the atazanavir US product label, but the European product label recommends patients should be closely monitored for adverse reactions related to irinotecan.
c Conversion of SN-38 to inactive metabolite increased.
d Coadministration may decrease bictegravir concentrations, but no effect on emtricitabine or tenofovir alafenamide is expected.

Abbreviations ATV atazanavir, DRV darunavir, LPV lopinavir, /c cobicistat, /r ritonavir, DOR doravirine, EFV 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

Cancer Therapies Treatment Selector (3)

Charts revised December 2023. Full information available at www.hiv-druginteractions.org

	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
Others																						
Abiraterone	↔♥	↔♥	↔	↔	↔♥	↔	↓♥	↓	↓	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Avelumab	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Bortezomib	↑♥	↑♥	↑	↑	↑♥	↔	↓♥	↓	↓	↔♥	↔♥	↑	↔	↔	↔	↔♥	↔	↑	↑	↔	↔	↔
Brentuximab vedotin	↑a	↑a	↑a	↑a	↑a	↔	↓b	↓b	↓b	↔	↔	↑a	↔	↔	↔	↔	↔	↑a	↑a	↔	↔	↔
Cetuximab	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Enzalutamide	⇓	⇓	⇓	⇓	⇓	⇓	↑♥	⇓	⇓	⇓	⇓	⇓c	⇓d	⇓	⇓	⇓	⇓e	⇓	⇓	⇓f	↔	↔
Everolimus	↑	↑	↑	↑	↑	↔	↓	↓	↓	↔	↔	↑	↔	↔	↔	↔	↔	↑	↑	↔	↔	↔
Polatuzumab vedotin	↑a	↑a	↑a	↑a	↑a	↔	↓b	↓b	↓b	↔	↔	↑a	↔	↔	↔	↔	↔	↑a	↑a	↔	↔	↔
Sorafenib	↔g♥	↔g♥	↔g	↔g	↔g♥	↔	↓♥	↓	↓	↔♥	↔♥	↑	↔	↔	↔	↔♥	↔	↔g	↔g,h	↔	↔	↔h
Tamoxifen	↑i♥	↑i♥	↑i	↑i	↑i♥	⇓	↓♥	↓⇓	↓	⇓♥	↔♥	↑i	⇓	⇓	↔	⇓♥	↔	↑i	↑i	↔	↔	↔
Temsirolimus	↑	↑	↑	↑	↑	↔	↓j	↓j	↓j	⇑	↔	↑	⇑	↔	↔	⇑	↔	↑	↑	↔	↔	↔
Trastuzumab	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Trastuzumab emtansine	↑k	↑k	↑k	↑k	↑k	↔	↔	↔	↔	↔	↔	↑l	↔	↔	↔	↔	↔	↑k	↑k	↔	↔	↔

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: Enzalutamide may decrease ABC concentrations, although to a limited extent. No a priori dose adjustment is required.
3TC: No clinically relevant interactions expected.
TDF: Potential additive nephrotoxicity with sorafenib. Monitor renal function if coadministered or consider an alternate antiretroviral regimen if possible.
ZDV: Potential additive haematological toxicity with bortezomib, imatinib, trastuzumab, trastuzumab emtansine.

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 cancer drug
↓ Potential decreased exposure of the cancer drug
↔ No significant effect
⇑ Potential increased exposure of HIV drug
⇓ Potential decreased exposure of HIV drug
♥ 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.

Notes

a Brentuximab vedotin and polatuzumab vedotin are antibody-drug conjugates comprising a monoclonal antibody and monomethyl auristatin E (MMAE), a potent chemotherapeutic agent and a substrate of CYP3A4 and P-gp. Coadministration may increase concentrations of MMAE and the incidence of neutropenia. Patients should be closely monitored for toxicities.

b Brentuximab vedotin and polatuzumab vedotin are antibody-drug conjugate comprising a monoclonal antibody and monomethyl auristatin E (MMAE), a potent chemotherapeutic agent and a substrate of CYP3A4 and P-gp. Coadministration may decrease concentrations of MMAE but no a priori dose adjustment is necessary as the contribution of free MMAE to efficacy is minimal.

c Enzalutamide has a long half-life (5.8 days), therefore a minimum of 2 weeks (but preferably 4 weeks) cessation period is recommended prior to initiation of lenacapavir due to the persisting inducing effect upon discontinuation of a strong inducer.

d Consider increasing maraviroc to 600 mg twice daily in presence of enzalutamide. Enzalutamide has a long half-life (5.8 days), therefore the maraviroc dose should be kept at 600 mg twice daily for a minimum of 2 weeks (but preferably 4 weeks) following cessation of enzalutamide due to the persisting inducing effect upon discontinuation of a strong inducer.

e Dolutegravir should be administered at 50 mg twice daily in the absence of integrase class resistance. In the presence of integrase class resistance this combination should be avoided. Enzalutamide has a long half-life (5.8 days), therefore the dolutegravir dose should be kept at 50 mg twice daily for a minimum of 2 weeks (but preferably 4 weeks) following cessation of enzalutamide due to the persisting inducing effect upon discontinuation of a strong inducer.

f Consider increasing raltegravir dose to 800 mg twice daily when coadministering with enzalutamide. Coadministration of once daily raltegravir is not recommended. Enzalutamide has a long half-life (5.8 days), therefore the raltegravir dose should be kept at 800 mg twice daily for a minimum of 2 weeks (but preferably 4 weeks) following cessation of enzalutamide due to the persisting inducing effect upon discontinuation of a strong inducer.

g Poor tolerability has been observed in patients on ritonavir-containing regimens. (A similar effect may also occur with cobicistat-containing regimens.

h Potential additive nephrotoxicity with sorafenib and tenofovir-DF. Monitor renal function if coadministered or consider an alternate antiretroviral regimen if possible.

i Concentrations of parent drug increased but concentrations of the active metabolite decreased which may result in decreased efficacy.

j Concentrations of parent drug decreased but concentrations of the active metabolite increased.

k Coadministration not recommended due to the potential for an increase in exposure and toxicity of DM1 (an active component of emtansine).

l Potential increase in exposure and toxicity of DM1 (an active component of emtansine).

Abbreviations ATV atazanavir; DRV darunavir; LPV lopinavir; /c cobicistat; /r ritonavir; DOR doravirine; EFV 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