Herbal & Mineral Supplements

UNIVERSITY OF LIVERPOOL
TherEx Centre for Experimental Therapeutics

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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
Herbal Supplements																						
African potato	↔	↔	↔	↔	↔	⇓	↔	↔	↔	⇓	⇓	⇓	⇓	⇓	↔	⇓	⇓	⇓	↔	⇓	⇓a	↔
Aloe vera	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Black cohosh	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Cat's claw	⇑	⇑	⇑	⇑	⇑	⇑	⇑	⇑	⇑	⇑	⇑	⇑	⇑	↔	↔	⇑	↔	⇑	⇑	↔	↔	↔
Cubeb pepper	↔	↔	↔	↔	↔	⇑	↔	↔	↔	⇑	↔	⇑	⇑	↔	↔	⇑	↔	⇑	⇑	↔	⇑a	⇑a
Echinacea	↔	↔	↔	↔	↔	⇓	↔	↔	↔	⇓	⇓	↔	⇓	⇓	↔	⇓	↔	↔	↔	↔	↔	↔
Eucalyptus globulus	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Garlic	⇓	⇓	⇓	⇓	⇓	⇓	⇓	⇓	⇓	⇓	⇓	↔	⇓	⇓	↔	↔	⇓	⇓	⇓	↔	⇓a	↔
Ginger	↔	↔	↔	↔	↔	⇑	↔	↔	↔	⇑	↔	↔	⇑	↔	↔	⇑	↔	↔	↔	↔	↔	↔
Gingko biloba	↔	↔	↔	↔	↔	⇓	⇓	⇓	⇓	⇓	⇓	⇓	⇓	⇓	↔	⇓	⇓	↔	↔	↔	↔	↔
Ginseng	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Goldenseal root	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Grapefruit juice	↔	↔	↔	↔	↔	⇑	↔	↔	↔	⇑	↔	↔	⇑	↔	↔	↔	↔	↔	↔	↔	↔	↔
Green tea extracts	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	⇑	?b	↔	↔	↔	?b	?b	↔	?b	?b
Guggulsterone	⇓	⇓	⇓	⇓	⇓	⇓	⇓	⇓	⇓	⇓	↔	⇓	⇓	⇓	↔	⇓	↔	⇓	⇓	↔	↔	↔
Hops	⇓	⇓	⇓	⇓	⇓	⇓	⇓	⇓	⇓	⇓	⇓	⇓	⇓	⇓	↔	⇓	⇓	⇓	⇓	↔	⇓a	↔
Inula racemosa	↔	↔	↔	↔	↔	⇑	↔	↔	↔	⇑	⇑	↔	⇑	↔	↔	⇑	↔	↔	↔	↔	↔	↔
Liquorice	↔	↔	↔	↔	↔	⇓	↔	↔	↔	⇓	⇓	⇓	⇓	⇓	↔	⇓	⇓	⇑	⇑	↔	⇑a	⇑a
Malabar nut tree	⇓	⇓	⇓	⇓	⇓	⇓	⇓	⇓	⇓	⇓	⇓	⇓	⇓	⇓	↔	⇓	⇓	⇓	⇓	⇓	↔	↔
Menthol	↔	↔	↔	↔	↔	⇑	↔	↔	↔	⇑	⇑	↔	⇑	↔	↔	⇑	↔	↔	↔	↔	↔	↔
Milk thistle	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Quercetin	⇑?	⇑?	⇑?	⇑?	⇑?	⇑	⇑?	⇑?	⇑?	⇑	↔	↔	⇑	↔	↔	⇑	↔	↔	↔	↔	↔	↔
Red yeast rice	↑	↑	↑	↑	↑	↔	↓	↓	↓	↔	↔	↑	↔	↔	↔	↔	↔	↑	↑	↔	↔	↔
Saw palmetto	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Seville orange juice	↔	↔	↔	↔	↔	⇑	↔	↔	↔	⇑	↔	↔	⇑	↔	↔	↔	↔	↔	↔	↔	↔	↔
St John's wort	⇓c	⇓c	⇓c	⇓c	⇓c	⇓c	⇓c	⇓c	⇓c	⇓c	⇓c	⇓c	⇓c	⇓c	⇓c	⇓c	⇓	⇓c	⇓c	⇓	⇓c,d	↔
Turmeric	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	⇑⇓?	?b	↔	↔	↔	?b	?b	↔	?b	?b
Valerian	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Mineral supplements																						
Ascorbic acid	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	⇓e	⇓e	↔	⇓e	⇓e	⇓e	⇓e	↔	↔
Calcium	⇓f	⇓f	↔	↔	↔	↔	↔	↔	↔	⇓f	↔	↔	↔	⇓	⇓	↔	⇓	⇓	⇓	⇓	↔	↔
Ferrous fumarate	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	⇓	⇓	↔	⇓	⇓	⇓	⇓	↔	↔
Folic acid	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	⇓e	⇓e	↔	⇓e	⇓e	⇓e	⇓e	↔	↔
Iodine	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	⇓e	⇓e	↔	⇓e	⇓e	⇓e	⇓e	↔	↔
Iron (infusion/injection)	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Iron (oral)	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	⇓	⇓	↔	⇓	⇓	⇓	⇓	↔	↔
Magnesium	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	⇓	⇓	↔	⇓	⇓	⇓	⇓	↔	↔
Multivitamins	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	⇓	⇓	↔	⇓	⇓	⇓	⇓	↔	↔
Nicotinamide	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	⇓e	⇓e	↔	⇓e	⇓e	⇓e	⇓e	↔	↔
Various vitamins	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	⇓g	⇓g	↔	⇓g	⇓g	⇓g	⇓g	↔	↔
Zinc	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	⇓	⇓	↔	⇓	⇓	⇓	⇓	↔	↔

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: Caution with Cubeb pepper and liquorice as tenofovir systemic concentrations could potentially increase.
TDF: The effect of green tea and turmeric on tenofovir is unclear (b).
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 supplement
↓ Potential decreased exposure of the supplement
↔ No significant effect

⇑ Potential increased exposure of HIV drug
⇓ Potential decreased exposure of HIV drug

Notes

a No effect on emtricitabine expected.
b The effect on tenofovir is unclear as green tea extracts or turmeric appeared to inhibit P-gp in vivo, but a contradictory effect was observed in vivo.
c Coadministration is not recommended in product label. However, a low risk of a clinically relevant pharmacokinetic interaction has been shown with low-hyperforin formulations (<1 mg/day) of St John's Wort (hyperforin is the constituent responsible for induction of CYPs and P-gp). Coadministration may be considered with St John's Wort formulations that clearly state the hyperforin content and which have a total daily hyperforin dose of 1 mg or less.
d No effect on emtricitabine is expected, but tenofovir alafenamide concentrations may decrease which may result in loss of therapeutic effect and development of resistance.
e Only when used in multivitamin preparations as they can contain mineral supplements.
f Calcium supplements containing calcium carbonate may decrease atazanavir or rilpivirine concentrations due to gastric pH increase.
g Only for vitamin preparations containing divalent cations.

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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

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