

Interaction Report

Report ID: PrEP supplements
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Antiretroviral Treatment

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP)

Co-medications

Aloe vera
Ascorbic Acid (Vitamin C) [alone]
Ascorbic Acid (Vitamin C) [in multivitamins]
Ashwagandha (*Withania somnifera*)
Ayahuasca
Black cohosh (*Actaea racemosa*, *Cimicifuga racemosa*)
Calcium supplements
Cat's Claw (*Uncaria tomentosa*)
Colecalciferol (Vitamin D3) [alone]
Colecalciferol (Vitamin D3) [in multivitamins]
Cubeb pepper (*Piper cubeba*)
Cyanocobalamin (Vitamin B12) [alone]
Cyanocobalamin (Vitamin B12) [in multivitamins]
Echinacea
Eucalyptus globulus
Ferrous fumarate
Folic acid [alone]
Folic acid [in multivitamins]
Garlic
Ginger (*Zingiber officinale*)
Ginkgo biloba
Ginseng (*Panax ginseng*, *Panax quinquefolis*)
Goldenseal root (*Hydrastis canadensis*)
Grapefruit juice
Green tea extracts (*Camellia sinensis*)
Guggulsterone
Hops (*Humulus lupulus*)
Inula racemosa
Iodine [alone]
Iodine [in multivitamins]
Iron supplements (infusion/injection)
Iron supplements (oral)
Liquorice (*Glycyrrhiza glabra*)
Magnesium supplements
Malabar nut tree (*Justicia adhatoda*, *Adhatoda vasica*)
Menthol
Milk thistle (*Silybum marianum*, *silymarin*)
Mucuna pruriens
Multivitamins
Nicotinamide (Niacinamide) [alone]
Nicotinamide (Niacinamide) [in multivitamins]
Phytomenadione (Vitamin K) [alone]
Phytomenadione (Vitamin K) [in multivitamins]
Pyridoxine (Vitamin B6) [alone]
Pyridoxine (Vitamin B6) [in multivitamins]
Quercetin

Red yeast rice
 Retinol (Vitamin A) [alone]
 Retinol (Vitamin A) [in multivitamins]
 Riboflavin (Vitamin B2) [alone]
 Riboflavin (Vitamin B2) [in multivitamins]
 Saw palmetto (*Serenoa repens*)
 Seville orange juice
 St John's Wort
 Thiamine (Vitamin B1) [alone]
 Thiamine (Vitamin B1) [in multivitamins]
 Tocopherol (Vitamin E) [alone]
 Tocopherol (Vitamin E) [in multivitamins]
 Turmeric (*Curcuma longa*)
 Valerian

This report lists the summaries of potential interactions (i.e. "red", "amber" and "yellow" classifications) for the drugs in the table above.

Interactions with a "green" or "grey" classification (i.e. no clinically significant interaction or no clear data) have been checked and are listed at the end of this report, but summaries are not shown.

For full details of all interactions, see www.hiv-druginteractions.org.

Description of the interactions

Potential clinically significant interaction - likely to require additional monitoring, alteration of drug dosage or timing of administration (AMBER)

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Cubeb pepper (*Piper cubeba*)

Coadministration has not been studied. Based on metabolism and clearance a clinically significant interaction is unlikely with emtricitabine. However, piperine, a component of *Piper cubeba*, inhibits intestinal P-gp and could potentially increase absorption of tenofovir-DF, thereby increasing tenofovir systemic concentrations. Monitoring of tenofovir-associated adverse reactions, including frequent renal monitoring, is recommended.

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Liquorice (*Glycyrrhiza glabra*)

Coadministration has not been studied. Based on metabolism and clearance, a clinically significant interaction with emtricitabine is unlikely. However, glycyrrhetic acid (the main active metabolite of glycyrrhizin) was shown to be a strong inhibitor of P-gp in vitro and could potentially increase absorption of tenofovir-DF, thereby increasing tenofovir systemic concentrations. Monitoring of tenofovir-associated adverse reactions, including frequent renal monitoring, is recommended.

Potential weak interaction - additional action/monitoring or dosage adjustment is unlikely to be required (YELLOW)

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Turmeric (*Curcuma longa*)

Coadministration has not been studied. No effect is expected on emtricitabine, however, the effect on tenofovir-DF is unclear as curcumin and/or turmeric extracts appeared to inhibit P-gp in vivo, but a contradictory effect was observed in vivo. No a priori dose adjustment is recommended.

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Green tea extracts (*Camellia sinensis*)

Coadministration has not been studied. No effect is expected on emtricitabine, however, the effect on tenofovir-DF is unclear as green tea extracts appeared to inhibit P-gp in vivo, but a contradictory effect was observed in vivo. No a priori dose adjustment is recommended.

No clinically significant interaction expected (GREEN)

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Aloe vera

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Ascorbic Acid (Vitamin C) [in multivitamins]

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Calcium supplements

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Cat's Claw (*Uncaria tomentosa*)

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Colecalciferol (Vitamin D3) [in multivitamins]
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Cyanocobalamin (Vitamin B12) [in multivitamins]
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Echinacea
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Eucalyptus globulus
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Folic acid [in multivitamins]
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Garlic
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Ginger (Zingiber officinale)
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Ginkgo biloba
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Goldenseal root (Hydrastis canadensis)
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Grapefruit juice
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Hops (Humulus lupulus)
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Inula racemosa
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Iodine [in multivitamins]
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Iron supplements (oral)
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Magnesium supplements
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Malabar nut tree (Justicia adhatoda, Adhatoda vasica)
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Menthol
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Milk thistle (Silybum marianum, silymarin)
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Multivitamins
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Nicotinamide (Niacinamide) [in multivitamins]
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Phytomenadione (Vitamin K) [in multivitamins]
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Pyridoxine (Vitamin B6) [in multivitamins]
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Quercetin
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Retinol (Vitamin A) [in multivitamins]
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Riboflavin (Vitamin B2) [in multivitamins]
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Saw palmetto (Serenoa repens)
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Seville orange juice
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + St John's Wort
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Thiamine (Vitamin B1) [in multivitamins]
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Valerian
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Tocopherol (Vitamin E) [in multivitamins]
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Folic acid [alone]
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Red yeast rice
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Ascorbic Acid (Vitamin C) [alone]
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Colecalciferol (Vitamin D3) [alone]
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Cyanocobalamin (Vitamin B12) [alone]
Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Iodine [alone]

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Ferrous fumarate

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Nicotinamide (Niacinamide) [alone]

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Phytomenadione (Vitamin K) [alone]

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Pyridoxine (Vitamin B6) [alone]

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Retinol (Vitamin A) [alone]

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Riboflavin (Vitamin B2) [alone]

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Thiamine (Vitamin B1) [alone]

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Tocopherol (Vitamin E) [alone]

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Guggulsterone

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Ashwagandha (*Withania somnifera*)

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Ayahuasca

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Ginseng (*Panax ginseng*, *Panax quinquefolis*)

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + *Mucuna pruriens*

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Black cohosh (*Actaea racemosa*, *Cimicifuga racemosa*)

Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP) + Iron supplements (infusion/injection)