

ST. JOHN'S WORT (*Hypericum perforatum*) Herb-Drug Interaction Chart

St. John's Wort induces or potentially induces the metabolism of the following substrates, which may decrease serum level of drug:

1. P-450 2C9 or CYP 2C9 substrate (Speculative-direct significance not established—additional research needed)
2. P-450 1A2 or CYP 1A2 substrate (Significance not established—additional research needed)
3. P-450 3A4 or CYP450 3A substrate (Interaction with drugs cleared by CYP450 3A reported— No induction of CYP3A4 found in one study using Carbamazepine (Tegretol®) as a substrate.
4. Induction of P-glycoprotein (Clinical significance established)

5. Case reports/Clinical studies 6. Possible serotonin excess 7. Increased risk of photosensitivity

<p>5-Hydroxy-Tryptophan 6 Alfentanil (Alfenta®) 3 Alprazolam 3, 5 (no change in serum drug levels—small sample size, short duration) Amiodarone (Cordarone®) 3 Amitriptyline (Elavil®) 5, 7 Amlodipine (Norvasc®) 3 Amprenavir (Agenerase®) 3, 4 Antidepressants 6 Atorvastatin (Lipitor®) 3 Benzodiazepines 3 (Certain Long Acting) Bepridil (Vascor®) 3 Beta Blockers, Various Calcium Channel Blockers 3 Chlorpromazine (Thorazine®) 7 Cisapride (Propulsid®) 3 Citalopram (Celexa®) 6 Clarithromycin (Biaxin®) 3 Clonazepam (Klonopin®) 3 Clozapine (Clozaril®) 2 Corticosteroids 3 Cortisone (Cortone®) 3 Cyclobenzaprine (Flexeril®) 2, 3 Cyclophosphamide (Cytoxan®) 3 Cyclosporine (Sandimmune®, Neoral®) 3, 4, 5 Delavirdine (Rescriptor®) 3 Dexamethasone (Decadron®) 3, 4 Diazepam (Valium®) 2, 3 Diclofenac (Cataflam®, Voltaren®) 1 Digoxin (Lanoxin®) 4, 5 Diltiazem (Cardizem®) 3 Disopyramide (Norpace®) 3 Doxorubicin (Adriamycin®) 3 Doxycycline (Vibramycin®) 7 Efavirenz (Sustiva®) 3 Erythromycin (Ilotycin®) 3, 4 Estrogens 2, 3 Etoposide/Etoposide (Vepesid®) 3 Felbamate (Felbatol®) 7 Felodipine (Plendil®) 3 Fentanyl® (Actiq®, Duragesic®) 3 Fexofenadine (Allegra®) 3, 4 Finasteride (Proscar) 3 Flurbiprofen (Naprosyn®, Ansaïd®) 1 Flutamide (Eulexin®) 3 Fluvastatin (Lescol®) 1 Fluoxetine (Prozac®) 6 Fluvoxamine (Luvox®) 6 Glimepiride (Amaryl®) 1 Glipizide (Glucotrol®) 1</p>	<p>Grisactin® 7 Griseofulvin (Grifulvin®) 7 Granisetron (Kytril®) 3 Haloperidol (Haldol®) 2, 3 Ifosfamide (Ifex®) 3 Ibuprofen 1 Imipramine (Tofranil®) 2, 3 Indinavir (Crixivan®) 3, 4, 5 Interferon 7 Ivermectin 4 Isotretinoin (Accutane®) 7 Isradipine (DynaCirc®) 3 Ketoconazole (Nizoral®) 3, 4 L-Tryptophan 6 Lidocaine (Xylocaine®) 3 Loperamide (Imodium®) 4 Loratadine (Claritin®) 3 Losartan (Cozaar®) 1, 3 Lovastatin (Mevacor®) 3 Macrolide Antibiotics 3 MAOIs 6 Methadone (Methadose®) 3 Methylprednisolone (Medrol®) 3 Metoprolol (Lopressor®, Toprol®) 3 Miconazole (Monistat) 3 Midazolam (Versed®) 3 Morphine (MS Contin®) 4 Naratriptan (Amerge®) 6 Naproxen (Naprosyn®, Ansaïd®) 1 Nefazodone (Serzone®) 3, 5 Nelfinavir (Viracept®) 3, 4 Nevirapine (Viramune®) 3 Nicardipine (Cardene®) 3 Nifedipine (Adalat®, Procardia®) 3, 4 Nimodipine (Nimotop®) 3 Nisoldipine (Sular®) 3 NNRTIS (metabolized like protease inhibitors) Nortriptyline (Pamelor®, Aventyl®) 5 NSAIDs 1 Olanzapine (Zyprexa®) 2 Ondansetron (Zofran®) 3, 4 Oral Contraceptives (Ethinyl, Estradiol) 3, 5 Paclitaxel (Taxol®) 3, 4 Paracetamol 3 Paroxetine (Paxil®) 6 Phenelzine (Nardil®) 6 Phenprocoumon 5 Phenytoin (Dilantin®) 1 Photofrin 7 Pimozide (Orap®) 3</p>	<p>Piroxicam (Feldene®) 1, 7 Porfimer 7 Prednisone (Deltasone®) 3 Propranolol (Inderal®) 2 Protease Inhibitors 3, 4 Quinine 3 Quinidine (Quinaglute®) 3, 4 Reserpine (may ↑ sleep) Retinoic Acid 3 Rifabutin (Mycobutin®) 3 Ritonavir (Norvir®) 3, 4 Rizatriptan (Maxalt®) 6 Ropinirole (Requip®) 2 Rythmol® 2, 3 Saquinavir (Fortovase®, Invirase®) 3, 4 Seldane (Terfenadine) 3, 4 (U.S. banned in 1998) Sertraline (Zoloft®) 6, 5 Sildenafil (Viagra®) 3 Simvastatin (Zocor®) 3 SSRIs 6 Steroids 3 Sufentanil (Sufenta®) 3 Sulfa Drugs 7 Sulphamethoxazole 1 Sulfa Drugs 7 Sulphamethoxazole (Gantanol®) 1 Sumatriptan (Imitrex®) 6 Tacrine (Cognex®) 2 Tacrolimus (Prograf®) 3 Tamoxifen (Nolvadex®) 1, 3, 4 Temazepam (Restoril®) 3 Teniposide (Vumon®) 3 Terbinafine (Lamisil®) 3, 4 Testosterone 3 Tetracycline (Sumycin®, Achromycin®) 7 Theophylline (Elixophyllin®, Slo-BID®, Theodur®) 2, 5 Tolbutamide (Micronase, Orinase®) 1 Trazodone (Desyrel®) 6 Tretinoin (Avita®, Retin-A, Renova®) 7 Triptans 6 Troleandomycin 3 Venlafaxine (Effexor®) 6 Verapamil (Verelan®, Calan®, Isoptin®) 2, 3, 4 Vinblastine (Velban®) 3, 4 Vincristine (Vincasar®, Oncovin®) 3, 4 Warfarin (Coumadin®) 1, 5 Zolmitriptan (Zomig™) 6 Zolpidem (Ambien®) 3 Zonisamide (Zonegran®) 3</p>
---	--	--

Adapted from the Herb-Drug Interaction Handbook by Sharon M. Herr, RD, CDN. Information in this publication should not be construed as an endorsement. Any use of this information is done at your own risk.

For updates visit URL: www.onlinernd.com/SJWdrugs.htm

Copyright © April 2001

HIV ReSources, Inc., PO Box 39385, Fort Lauderdale, FL 33339-9385

E-mail: Subscriptions@hivresources.com

URL: www.hivresources.com

Rev. 2005

Selected Botanical Treatments

COMMON NAME	PURPORTED USES	POSSIBLE ADVERSE EVENTS - HERB-DRUG INTERACTIONS
☉ Aloe (<i>Aloe spp., Aloe vera</i>)	'Cure all' including HIV/AIDS and use as a laxative	Alter GI absorption (reduce intestinal absorption of drugs*), diarrhea, nausea, stomach pain, vomiting. Hypoglycemia, especially used with insulin and oral hypoglycemic agents. Use with antiarrhythmics, corticosteroids, digoxin or diuretics ↑ risk of hypokalemia. Acemannan (Carrisyn) may ↓ azidothymidine (AZT) dose.
☉ Bitter Melon (<i>Momordica charantia</i>)	'Cure all' including Diabetes, HIV/AIDS, Herpes	Abortifacient, blood thinner, body aches, diarrhea, fever, ↑ liver enzymes, insomnia, immunosuppression . See 2 below.
☉ Cat's Claw (<i>Uncaria tomentosa</i>)	'Cure all' including HIV/AIDS, Antiinflammatory, Intestinal disorders, Immune stimulant	Alter GI absorption*, blood thinner, constipation, diarrhea, fever, GI bleeding, intestinal disorders, microbiological contamination. See 1 below. May interact with CYP450 3A drug-metabolizing enzymes. See no. 3 on other side.
☉ Echinacea (<i>species- angustifolia, pallida, purpurea</i>)	Antifungal, Antiviral, Flu, Immune stimulant, Tumors, Upper respiratory infections, Vaginal yeast infection	Contraindicated with HIV/AIDS, TB, MS and other autoimmune diseases. Allergic reactions, altered nutrient absorption, ↓ immune response, ↓ muscle mass, diarrhea, fever, insomnia, nausea, vomiting. May inhibit sulfotransferase drug-metabolizing and CYP450 enzymes. See no. 3 on other side.
☉ Ephedra (<i>Ephedra sinica, Ephedrine, Epitonin, Ma-Huang</i>)	Enhance sports performance, Stimulant, Weight (wt) loss	The U.S. FDA banned supplements with ephedra in 2004 . Death, ↑ blood sugar/ pressure, alter heart rhythm. Interfere with anticonvulsants and vasoconstrictor sympathomimetics. ↑ clearance of corticosteroids, thermogenesis and weight loss if used with methylxanthines, including theophylline and caffeine. Interfere with thyroid medications, methylphenidate, and antidepressants.
☉ Garlic (<i>Allium sativum</i>)	Antimicrobial, 'Cure all', Heart health (improve lipid HDL/LDL ratios, ↓ triglycerides{TG})	↓ fat, ↑ (women)/↓ (men) HDL (high-density lipoprotein) cholesterol, blood thinner, breath/body odor, ↓ TG /blood sugar/pressure, heartburn, GI distress, drug interactions . See 1 and 2 below. ↓ PIs/NNRTIs levels. Interfere with thyroid drugs.
☉ Ginger (<i>Zingiber officinale</i>)	Motion sickness, Nausea	Blood thinner, contraindicated with gallbladder disease. See 1 and 2 below. ↓ symptoms of disequilibrium and nausea caused by discontinuation of SSRIs.
Ginkgo biloba	Cognitive disorders	Allergic skin reactions, CNS activation, headache, GI disturbances, spontaneous bleeding. May potentiate the effects of MAO inhibitors.
☉ Ginseng (Various species)	Anabolic, Colds/Flu, Diabetes, Digestive aid, Enhance performance, Impotence, Increase endurance, Stress adaptogen	Allergic/atopic potential, ↓ TG/blood sugar, blood thinner, headaches, hypothalamic. See 1 and 2 below. ↑ alcohol clearance and effect of stimulants, ↓ effectiveness of antihypertensives, potentiate MAOIs. Hypertension with excessive caffeine. Interfere with digoxin therapy. Do not use antipsychotics or corticosteroids.
☉ Guggul (<i>Commiphora mukul</i>)	↓ Inflammation, ↓ fat/cholesterol/wt, ↑ LDL, Antioxidant, Thyroid stimulant	GI upset (nausea, diarrhea), headache, rash. ↓ bioavailability/effectiveness of propranolol and diltiazem. Interfere with thyroid medications. Safety not established.
☉ Kava Kava	Relaxant	↓ wt, death, drug overdose, GI effects (diarrhea, nausea), rash, liver toxicity (banned in Australia, Canada, and Germany), microbiological contamination, pulmonary hypertension, ↓ platelets/lymphocytes/albumin, short of breath, yellow skin/hair/nails. Adverse interactions: alcohol, anesthetics, anti-anxiety drugs, antihistamines, CNS depressants, other psychopharmacological agents and sedatives.
Licorice	Antiinflammatory, Colds, GI distress, Hepatitis, Herpes, HIV/AIDS	Edema, headache, heart failure, ↑ blood pressure, hypernatremia, hypokalemia, malaise, seizures. Interfere with digoxin, contraceptives and minerals.
☉ Milk Thistle (<i>Silybum marianum</i>)	'Cure all' including Diabetes, Immune stimulant, Liver protectant	GI distress (diarrhea, nausea). Drug interactions: CYP450 3A, 2C9 and 2 drug-metabolizing enzymes. See no. 1 and no. 3 on other side.
☉ Olive Leaf	Diabetes, Herpes, Immunodepression, etc.	See 2 below. Monitor people on antihypertensive medications.
☉ Psyllium (<i>Plantago spp.</i>)	Fiber source, ↓ fat/cholesterol, Laxative	↓ insulin needs, drug absorption, vitamin B ₁₂ and minerals. Take drugs apart by 1-2 hours after psyllium. ↓ protease inhibitor-induced diarrhea and increase serum lithium.
St. John's Wort	Antiinflammatory, Anxiety, Depression, Obsessive-compulsive/seasonal affective disorder, Smoking cessation	↑ blood pressure, anxiety, chest tightness, death, ↓ platelets, depression, dizziness, G.I. upset (pain, nausea), headaches, heart palpitations, hives, insomnia, liver failure, memory loss, drug interactions , rash, seizures, short of breath, throat constriction, weakness. Avoid antidepressants, direct sunlight; use eye protection.

1. May increase bleeding risk if used concurrently with anticoagulants, antiplatelet medications, aspirin, fish oil supplements and NSAIDs.
2. Hypoglycemic effect of insulin and oral hypoglycemic agents may be enhanced. Patients with diabetes should be closely monitored to prevent hypoglycemia and/or loss of blood glucose control. There is the potential for some herbs to decrease insulin resistance, which may be helpful to patients with increased blood glucose induced by protease inhibitors. The expertise of a qualified medical provider should be sought to monitor patients.

☉ Please refer to HIV ReSource Review and HIV Nutrition Update newsletter issues for more information.