

College of Pharmacy
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Information Type: Professional

St John's Wort – Drug Interaction Information for Health Professionals

A series of bioactive compounds has been detected in St. John's wort, namely phenylpropanes, flavonol derivatives, biflavones, proanthocyanidines, xanthenes, phloroglucinols, some amino acids, naphthodianthrones, and essential oil constituents. Worldwide, a large number of different St. John's wort preparations exist that differ in the content of known active compounds. Sufficient evidence from interaction studies and case reports indicate that St. John's wort is a potent inducer of cytochrome P450 enzymes (particularly CYP3A4) and/or P-glycoprotein. Co-medication of St. John's wort with drugs which are metabolized by CYP3A4 will result in decreased plasma levels of the medication. Recent studies could show that the degree of enzyme induction by correlates strongly with the amount of hyperforin found in the product.

Hyperforin a phloroglucinol derivative has been demonstrated to be a potent ligand for the nuclear receptor that regulates the expression of CYP3A4. Clinical results suggest that the hyperforin content determines the magnitude of St John's wort interactions, since extracts with low hyperforin content had a weak or no effect on both CYP and P-glycoprotein. The widely differing amounts of hyperforin in St. John's wort preparations should be taken into account when drug interactions with St. John's wort are discussed. Also, it should be noted that for most of the current cases which report a specific product involve St. John's wort products that are rich in hyperforin (up to 5%). No drug interaction has been reported with products that have low contents of hyperforin. Furthermore, it is interesting to note that reports of drug interactions with St. John's wort have not occurred before 1998 when a modified extraction method was introduced that led to products with higher content of hyperforin (10-20 folds higher). Since "hyperforin -free" extracts have been proven to be effective in clinical therapy it is recommended to use products with a low hyperforin amount (1%) in order to prevent clinically significant interactions with other co-medicated drugs if patients desire to use St. John's wort products.

St John's Wort General Information

Preparations of St John's Wort (*Hypericum perforatum* L.), enjoy a long history of use in traditional or folk medicine for treating a diverse range of ailments that includes bacterial and viral infections, respiratory impairment, skin wound, peptic ulcers, and inflammation. Nowadays, St. John's wort products have gained widespread popularity as "nature's Prozac". The efficacy of St. John's wort preparations for treating mild to moderate depression has been confirmed in several clinical studies. Furthermore, it has been shown that the therapeutic efficacy of St. John's wort is comparable to that of standard antidepressants, whereas the side effects of St. John's wort are less pronounced, resulting in a better compliance of the patients.

However, in the past decade interactions between St. John's wort and prescription drugs came into focus of particular interest. Co-medication with St. John's wort resulted in decreased plasma concentrations of a number of drugs including amitriptyline, cyclosporine, digoxin, indinavir, irinotecan, warfarin, phenprocoumon, alprazolam, dextrometorphane, and oral contraceptives, leading to ineffectiveness of the medication. Therefore, it is very important that you consult your doctor or pharmacist before taking any prescription or over-the-counter medicines with St John's wort preparations. This will help to ensure coordinated and safe care.

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