Forskolin - Coleus Forskohlii

Coleus and Hypothyroidism

Forskolin has demonstrated the ability to increase thyroid hormone production and stimulate thyroid hormone release.

Forskolin (7 beta-acetoxy-8, 13-epoxy-1 alpha,6 beta,9 alpha-trihydroxy-labd-14-ene-11-one) is the main active ingredient in the Ayurvedic herb Coleus forskohlii. Coleus is a member of the mint family and grows in subtropical areas in India, Burma, and Thialand. Forskolin has been extensively researched in the medical field for use in the treatment of allergies, respiratory problems, cardiovascular diseases, glaucoma, psoriasis, hypothyroidism and weight loss. Forskolin increases Cyclic AMP and appears to have additional actions that are due to its ability to alter a number of membrane transport proteins.

Effects of Coleus on Cyclic AMP in Thyroid

Increased cellular cyclic AMP results in inhibition of platelet activation, decreased likelihood of blood clots, reduced release of histamine, decreased allergy symptoms, increased force of contraction of the heart, relaxation of the arteries and other smooth muscles, increased thyroid function, increased fat metabolism, increased energy and possibly weight loss. Cyclic AMP and the chemicals it activates comprise a second messenger system that is responsible for carrying out the complex and powerful effects of hormones in the body.

In addition, asthma, eczema, psoriasis, angina, obesity and hypertension are believed to be associated with decreased Cyclic AMP.

Coleus and Glaucoma

Glaucoma is a condition in which the pressure in the eye is too high, due to an imbalance between the formation of aqueous humor in the eye and its absorption in or drainage out of the eye. Eventually, as the pressure builds up, the blood vessels nourishing the optic nerve are constricted, resulting in irreversible damage to the nerve and impaired vision culminating in blindness, if left untreated.

While there are no clinically proven alternative therapies for glaucoma, there are several treatments that may be beneficial and coleus is one of them. Clinical studies have shown that topical application of one percent forskolin eye drops resulted in significant decreases in intraocular pressure for up to five hours. Limited clinical experience suggests that oral forskolin appears to offer significant potential for sufferers of glaucoma. An Indian pharmaceutical company is currently engaged in clinical trials of a forskolin eye drop product.

Coleus and Depression

Depression is believed to be associated with an imbalance of neurotransmitters in the brain, serotonin and dopamine primarily. Where there is a shortage of serotonin, the supplements 5-HTP or tryptophan or the SSRI drugs like prozac or Zoloft may be beneficial. If the catecholamine neurotransmitters (epinephrine, norephinephrine) are deficient the amino acids L-Phenylalanine or L-Tyrosine, or monoamine oxidase inhibitors like GeroVital (GH3) or Deprenyl are may be helpful. Recent research has also been evaluating drugs that increase Cyclic AMP as a means of elevating the catecholamines. Since

forskolin elevates Cyclic AMP, it may improve neurotransmitter function and thereby relieve depression. Clinical trials using coleus to treat depression have not been done.

Coleus with Asthma and Allergies

Coleus is an effective smooth muscle relaxer, resulting in bronchodilation, decreased airway resistance, increased vital capacity and increased forced expiratory volume. This action is the result of the increase in Cyclic AMP caused by coleus. Many asthma medications increase Cyclic AMP by inhibiting the enzymes that cause its breakdown. Thus, coleus and the traditional asthma drugs are likely to act synergistically. Therefore, one should consult their physician before combining them.

Coleus and Weight Loss

In vitro (studies done in the lab) studies show that coleus stimulates fat metabolism. Researchers have found that many obese people have lower than normal Cyclic AMP production. Because of these considerations, coleus may, theoretically, be a weight loss agent, especially for those with reduced Cyclic AMP production. In a recent study, six overweight women took 25 mg of coleus (250 mg capsules of 10% standardized forskolin extract) twice daily for eight weeks. At the end of the eight-week trial, the participants lost a mean of ten pounds, and reduced their percentage of body fat by nearly 8%. Blood pressure levels also trended lower during the trial.

Coleus and Cancer Metastases

Reserch has shown coleus to be a potent inhibitor of tumor colonization in mice. It is theoretically possible that coleus could be used in humans to prevent or inhibit tumor metastases.

Coleus and Immune Enhancement

Forskolin appears to exhibit potent immune system enhancement by activating macrophages and lymphocytes.

Coleus and Psoriasis

In psoriasis, cells divide about 1,000 times faster than normal. Coleus helps to alleviate psoriasis by normalizing the cAMP /cGMP ratio.

Cardiovascular Effects of Coleus

Coleus forskohlii has traditionally been used to treat hypertension, congestive heart failure, and angina. Coleus's basic cardiovascular action is to lower blood pressure, while simultaneously increasing the contractility of the heart. This is believed to be due to forskolin's Cyclic AMP-elevating ability, which results in relaxation of the arteries, and increased force of contraction of the heart muscle. A preliminary trial found that coleus reduced blood pressure and improved heart function in people with cardiomyopathy. Coleus also increases cerebral blood flow, indicating that it may be beneficial in cerebral vascular insufficiency, and in enhancing post-stroke recovery. The platelet aggregation-inhibiting effects of coleus also adds to its value in cardiovascular disorders.

Drug Interactions with Coleus

There is some evidence that forskolin may enhance the effects of beta-agonists such as albuterol. Forskolin may also act synergistically with epinephrine, ephedrine and pseudoephedrine. It is possible that the use of forskolin may decrease the needed dosages of beta-agonists. Anyone taking these drugs should consult their physician if they want to also use forskolin.

Because forskolin inhibits platelet aggregation and clotting, it may enhance the effects of anti-clotting medications such as warfarin, clopidogre, aspirin, enoxaparin, and dalteparin. Anyone taking any anti-clotting medications or supplements should consult their physician before adding forskolin to their regimen.