

The Longwood Herbal Task Force
(<http://www.mcp.edu/herbal/default.htm>) and
The Center for Holistic Pediatric Education and Research

Clinician Information Summary

ASTRAGALUS

(*Astragalus membranaceus*)

SUMMARY

Astragalus is a mainstay of Traditional Chinese Medicine where it is included in a number of multi-herb compounds. Its main clinical use is as an immunomodulator to prevent viral illnesses; it is also used as an adjunctive therapy for cancer and HIV. In addition to its use for immune modulation, the root is used as a cardiotonic and liver tonic. Preliminary *in vitro* and animal studies lend support to its use as a cardiotonic and immunomodulator, but the only human data are from case series and methodologically weak trials. It appears to be relatively non-toxic, but caution should be used for patients taking hypoglycemic or anticoagulant medications. There are no data on its use during pregnancy, lactation or childhood.

POPULAR USES: Immunomodulator to prevent upper respiratory tract infections and other illnesses; adjunctive therapy for cancer and HIV disease; adjunctive therapy for asthma and allergies; cardiotonic, liver tonic.

CHEMICAL CONSTITUENTS: Polysaccharides, triterpenoid saponins, flavonoids

SCIENTIFIC DATA

In Vitro: Astragalus extracts have fibrinolytic, vasodilating and hypotensive effects. Astragalus enhances immune activity of mononuclear cells and macrophages, increasing production of cytokines, tumor necrosis factor and interleukin-6, and increasing lymphokine-activated killer cell activity. Astragalus extracts restore immune function that has been impaired in mice with renal carcinoma and markedly potentiates the anti-tumor effects of interleukin-2. Incubating the cells of human cancer patients with astragalus enhances the blastogenic

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response of lymphocytes to mitogens and restores impaired T-cell functioning.

In Animals: Astragalus extracts have mild hypotensive effects, yet improve left ventricular systolic function. Astragalus protects against renal and hepatic toxins in mice, rabbits and guinea pigs. It lowers serum glucose in diabetic rats. In immunosuppressed mice, astragalus administration significantly restores immune function. Astragalus improves cardiac function in mice infected with viral myocarditis and provides significant protection to mice experimentally infected with several different viruses. Astragalus-containing herbal mixtures inhibit tumor growth and augment macrophage activity in mice.

In Humans: Astragalus' use as a cardi tonic is supported by Chinese case series using it as part of a multi-herb mixture, but there no controlled trials evaluating it as a sole agent for acute MI or chronic heart failure. Similarly, preliminary results from a study of the use of an astragalus-containing herbal mixture by patients with hepatitis C reported improved liver enzyme levels, but there are no studies evaluating astragalus as an isolated agent. Healthy adults assigned to astragalus prophylaxis during flu season had significantly higher interferon levels than untreated adults. Numerous case series from China report the benefits of an astragalus-containing herbal mixture in preventing URTI and influenza, but there are no controlled trials evaluating it as a sole agent for prophylaxis or treatment for any viral infection. In randomized controlled trials in adults with cervical and breast cancer, hepatomas and non-small cell lung cancer, an astragalus-containing herbal mixture given as adjunctive therapy was associated with significant improvements in survival and quality of life compared with patients receiving standard therapy alone; however, there are no controlled trials evaluating the effects of astragalus as a single herbal remedy as an adjunctive cancer therapy.

TOXICITY AND SIDE EFFECTS:

Side effects: Astragalus has few adverse effects. No allergic reactions have been reported. Related species may contain toxic levels of selenium; other related species indigenous to North America are known as "loco weed" and may cause severe CNS toxicity. It is seldom

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recommended for more than three consecutive weeks in Traditional Chinese Medicine.

Interactions with other medications: None known, but based on in vitro and animal studies, caution should be used by diabetics, patients prone to hypotension and those taking anticoagulants.

Contraindications: Traditionally not recommended during acute febrile illnesses.

Pregnancy and lactation: No safety studies. Related species (loco weed) can cause spontaneous abortion and fetal abnormalities.

Pediatric use: No safety studies.

ADDITIONAL REFERENCES OR RESOURCES

- HOME: <http://www.mcp.edu/herbal/default.htm>