

Astragalus and Goldenseal study confirm their immune system support during cold and flu season

Examination of Immuno-modulatory Effects

A study was recently published by the Department of Pathology and Laboratory Medicine, University of Texas-Houston Medical School, Houston, Texas. The study examined the immuno-modulatory effects of two medicinal plants (specifically, Goldenseal and Astragalus extracts) with great potential for their use as herbal agents to treat immune disorders and modulate immune-related challenges.

Two commercial Goldenseal liquid herbal extracts were purchased from a local health food store in Houston, Texas. These extracts were randomly selected at the store and labeled GS1 for a West coast company's Goldenseal and GS2 for Herbs, Etc.'s (New Mexico) Goldenseal. Similarly, in the Astragalus study, AG1 was for an East coast company's Astragalus and AG2 was for Herbs, Etc.'s (New Mexico) Astragalus. All four liquid herbal extracts were prepared as a water-alcohol extract.

Goldenseal and its effectiveness:

Goldenseal is traditionally used to decrease inflammation of mucous membranes. It is ideal once inflammation has occurred as an aftermath of a cold or flu viral infection. Goldenseal stops inflammation and starts the healing process of sinus and respiratory mucous passages.

In the Goldenseal study, both brands were effective at reducing activation and production of LPS-induced (lipopolysaccharide-stimulated macrophages) pro-inflammatory responses. LPS can induce fevers and increase inflammation.

Another test showed that Goldenseal reduced the secretion of pro-inflammatory immune system constituents called cytokines (interleukin-10, interleukin-12 and TNF- α) by immune cells. Less of these specific cytokines means less inflammation.

Astragalus and its effectiveness:

Astragalus, on the other hand, activates the immune system. It is primarily used to ready the immune system against the onslaught of outside challenges, such as cold or flu viruses. With the use of this herb, the immune system is “combat ready” to respond to challenges of a cold or flu viral attack.

In comparison to the data obtained for goldenseal, both Astragalus preparations were shown to be a direct stimulator for macrophage activation. Macrophages eat foreign invaders such as viruses or bacteria and stimulate lymphocytes and other immune cells to respond against their attempt to take over.

In another test, only AG2 (Herbs, Etc's Astragalus brand) was able to significantly reduce interleukin-6 production when high concentrations were used. Interleukin-6 (IL-6) is a substance produced by defender cells called T-cells and macrophages that act as either a pro-inflammatory or anti-inflammatory agent according to the body's needs. IL-6 also stimulates immune resistance against the bacterium *Streptococcus pneumoniae*, a microorganism responsible for pneumonia.

Confirmation of Study

The bottom line of this research is the re-affirmation that Goldenseal and Astragalus are important herbs in the fight against colds and flu. It confirms what traditional herbalists have long preached, these two herbs act differently on the immune system.

Astragalus is best used prior to the cold or flu season. Consider it your first line of defense against challenges of the immune system. Goldenseal is best used when your respiratory passages are inflamed. It cools the lining of the sinus and lung tissues and rapidly restores their protective functions.

The Importance of Buying Quality

The higher the quality of the herbs at the beginning of the manufacturing process, the higher the quality of the final extract. Buying a quality product from a reputable manufacturer will give you the results that you are looking for. It's a well known fact. Whether one is looking for relief from seasonal allergies, a great night's sleep or to ward off challenges during the cold and flu season, it is the old and true adage "you get what you pay for". Herbs, Etc. is dedicated to producing and delivering high quality products. This recent study done at a major Southwestern university substantiates our claim that our quality is unsurpassed.

To read more about this study, see: Clement-Kruzel, S., Hwang, S., Kruzel, M., Dasgupta, A. and Actor, J. 2008. Immune Modulation of Macrophage Pro-Inflammatory Response by Goldenseal and Astragalus Extracts. *J Med Food* 11(3): 493 - 498.

Immune Modulation of Macrophage Pro-Inflammatory Response by Goldenseal and *Astragalus* Extracts

Stacia Clement-Kruzel, Shen-An Hwang, Mark C. Kruzel, Amitava Dasgupta, and Jeffrey K. Actor

*Department of Pathology and Laboratory Medicine, University of Texas-Houston Medical School,
Houston, Texas*

ABSTRACT Goldenseal (*Hydrastis canadensis*) is a native American medicinal plant used as an immune stimulant. *Astragalus* (*Astragalus membranaceus*) is a widely used herbal product in China, other Asian countries, and the United States as an immune stimulant to be taken on first clinical signs of infection. In this study, the innate effects of goldenseal and *Astragalus* on pro-inflammatory cytokines produced by cultured macrophages were examined using two different commercial preparations of goldenseal and *Astragalus*. Both goldenseal and *Astragalus* were found to exhibit little to no direct effect on stimulation of mouse macrophages (J774A.1 cells), with only *Astragalus* able to affect production of tumor necrosis factor (TNF)- α when used in high concentrations. However, both goldenseal and *Astragalus* were able to modify responses from lipopolysaccharide-stimulated macrophages, with identified immunomodulatory effects to reduce production of TNF- α , interleukin (IL)-6, IL-10, and IL-12 in a dose-dependent manner. The results obtained indicate that both goldenseal and *Astragalus* exhibit abilities to modulate macrophage responses during stimulation. Therefore, it is hypothesized that their historical use as therapeutic agents may be due to reduction in the pro-inflammatory response that indirectly leads to limiting of clinical symptoms during infection. Both products differ in their immune stimulatory patterns, offering insight into differential use and therapeutic potential of these products to regulate macrophage immune responses and activation events.

KEY WORDS: • *Astragalus* • goldenseal • immunomodulators • medicinal herbs