

# Liver Defense™

*Immune Support for the Liver*



Good liver health is vital for good general health. The liver is a primary organ of detoxification. Its maintenance and support has traditionally been important in Chinese herbalism. Planetary Formulas® Liver Defense™ is based on one of the most well researched Chinese formulas for liver health, *Minor Bupleurum*, also known as *Sho-Saiko-To* in Japan. Modern studies show that *Sho-Saiko-To* supports healthy liver function and enhanced immune response.

Planetary Formulas Liver Defense contains some of the primary liver protecting botanicals of Chinese herbalism such as bupleurum and Chinese skullcap along with the primary immune and liver supportive botanicals astragalus, schizandra and milk thistle. The latest scientific research not only confirms the wisdom of these and other time-honored herbs, it offers particular benefits to our contemporary world. This clinically derived Planetary Formula delivers proven components for liver protection and revitalization.



**PLANETARY**  
F O R M U L A S®

**More Than Herbs – Herbalism!**

The liver is one of the most challenged organs in the body. In fact, it is estimated that one in every 10 Americans has sub-optimal liver health. The liver can become overburdened because it plays important roles in detoxification, hormonal balance, fat regulation, nutrient and enzyme activation, digestion and circulation. It manufactures and secretes bile in order to absorb fat-soluble nutrients and eliminate toxic substances. Liver Defense™ contains ingredients that have been shown in scientific research to support healthy liver enzyme levels and enhance immune response by promoting healthy cytokine levels. This formula's ingredients have even been shown to support the body's own interferon production—the complex protein that bolsters individual cell defense mechanisms.

The liver is also the only organ in the body that regenerates itself. Many of the herbs in Liver Defense support this regenerative process.

## Liver Support

Many studies have been done on *Sho-Saiko-To* confirming its ability to enhance immune response and support healthy liver function. The centerpiece of the formula is bupleurum, a primary liver protecting botanical that contains an important class of compounds known as saikosaponins. Another key ingredient in LIVER DEFENSE is astragalus, shown in a number of studies to stimulate the immune system and protect the liver. Astragalus also stimulates natural killer cell activity and normalizes liver enzyme levels.

Also added is milk thistle, which has been extensively studied for its liver supportive activity. Several human studies have shown the protective effect of milk thistle in reducing liver enzyme levels of humans. Schizandra has been shown to improve liver enzyme levels in humans and provide liver protection in animal

studies. Additional liver supportive herbs include licorice root, jujube, ginseng, Chinese skullcap, and ginger root.

## Clinically Derived Formulas

Liver Defense is part of a line of products developed by renowned herbalist Michael Tierra, L.Ac., O.M.D., an authority on the world's herbal traditions. Michael uses these formulas on a daily basis in his clinical practice. This means you can be assured of obtaining the benefits you are seeking from an herbal product. Our state-of-the-art formulas contain the most comprehensive and thoroughly researched natural ingredients for liver maintenance and protection.

## References:

- Yamashiki M. et al. 1992. Efficacy of a herbal medicine "sho-saiko-to" on the improvement of impaired cytokine production of peripheral blood mononuclear cells in patients with chronic viral hepatitis *Journal of Clinical and Laboratory Immunology*: 37(3):111-121.
- Luper, S. 1998. A review of the plants used in the treatment of liver disease: part 1 *Alternative Medicine Review*: 3(6):410-421.
- Zhang, W. 1999. Hepatitis C virus encodes a selenium-dependant glutathione peroxidase gene. Implications for oxidative stress as a risk factor in progression to hepatocellular carcinoma. *Medizinische Klinik*. 94 supplement 3:2-6.
- Yamashiki M. et al. 1997. Effects of the Japanese herbal medicine "sho-saiko-to" (TJ-9) on in vitro interleukin-10 production by peripheral blood mononuclear cells of patients with chronic hepatitis C *Hepatology* 25(6):1390-1397.
- Borchers, A.T. et al. 2000. Shosaiko-to and other Kampo (Japanese herbal) medicines: a review of their immunomodulatory activities *Journal of Ethnopharmacology* 73:1-13.

*Adhering to the quality control requirements and codes of ethics of:  
American Herbal Products Association  
National Nutritional Foods Association*



Developed exclusively for Planetary Formulas by world renowned herbalist, acupuncturist, and author Michael Tierra, L.Ac., O.M.D., who has more than 30 years of clinical experience.

\*The above information has not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.