

# **PHYTOSOMES, Highly Bioavailable Plant Extracts**

**by Parris M. Kidd, Ph.D**

Phytomedicines, complex chemical mixtures prepared from plants, have been used in medicine since ancient times and continue to have widespread popular use. PHYTOSOME dietary supplements are the modern culmination of this great tradition. PHYTOSOME is a patented process developed by Indena, a leading supplier of nutraceutical ingredients, to incorporate phospholipids into standardized extracts and so vastly improve their absorption and utilization.

Over the past century, chemical and pharmacologic science established the compositions, biological activities and healthgiving benefits of numerous plant extracts. But often when individual components were separated from the whole there was loss of activity—the natural ingredient synergy became lost. Standardization was developed to solve this problem.

As standardized extracts became established, poor bioavailability often limited their clinical utility. Then it was discovered that complexation with certain other clinically useful nutrients substantially improved the bioavailability of such extracts. The nutrients so helpful for enhancing the absorption of other nutrients are the phospholipids.

Phospholipids are complex molecules that are used in all known life forms to make cell membranes. They are cell membrane building blocks, making up the matrix into which fit a large variety of proteins that are enzymes, transport proteins, receptors, and other biological energy converters. In humans and other higher animals the phospholipids are also employed as natural digestive aids and as carriers for both fat-miscible and water-miscible nutrients.

Increased bioavailability of the PHYTOSOMES over the simpler, non-complexed plant extracts has been demonstrated by pharmacokinetic (tissue distribution) and activity studies, conducted in animals as well as in humans. PHYTOSOME has an added dimension: the proven healthgiving activity of the phospholipids themselves. The following PHYTOSOME preparations have been demonstrated safe and effective:

## **SILIPHOS™ Milk Thistle PHYTOSOME**

The liver is especially responsible for processing potentially toxic substances such as alcohol, pharmaceuticals and drugs of abuse, pollutants, excess hormones, and others. The detoxication process can deplete essential biomolecules and damage the liver. A standardized extract from *Silybum marianum* (milk thistle) is an excellent liver protectant but very poorly absorbed. Pharmacokinetic and clinical studies prove that the PHYTOSOME complex of milk thistle (called SILIPHOS) is far better absorbed, as well as safe and effective in subjects with impairment of liver function that ranges from mild to severe.

Other Indena PHYTOSOME extracts include:

***Ginkgoselect***® PHYTOSOME is a more fully absorbable form of the standardized extract of *Ginkgo biloba* leaves. Its major indications are cerebral insufficiency and peripheral vascular disorders, and it also can ameliorate reduced cerebral circulation. Its improved oral bioavailability and good tolerability makes it the ideal Ginkgo product even for long term treatment.

***Leucoselect***® PHYTOSOME is composed of oligomeric polyphenols (grape procyanidins) of varying molecular size, complexed with phospholipids. The markedly improved oral bioavailability of these procyanidin flavonoids offers marked protection for the cardiovascular system and other organs through a network of mechanisms that extend beyond their great antioxidant potency.

***Greenselect***® PHYTOSOME contains a totally standardized polyphenolic fraction (not less than 66.5 percent) obtained from green tea leaves and mainly characterized by the presence of epigallocatechin and its derivatives. These compounds are potent modulators of several biochemical processes linked to the breakdown of homeostasis in major chronic-degenerative diseases such as cancer and atherosclerosis. The complexation of green tea polyphenols with phospholipids strongly improves their poor oral bioavailability.

***Mirtoselect***® PHYTOSOME contains an extract of bilberry which provides anthocyanosides. These improve capillary tone, reduce abnormal blood

vessel permeability, and are potent antioxidants. They hold great potential for the management of retinal blood vessel problems and venous insufficiency.

***Sabalselect***<sup>®</sup> PHYTOSOME includes an extract prepared from saw palmetto berries through supercritical CO<sub>2</sub> (carbon dioxide) extraction. It delivers fatty acids, alcohols and sterols that benefit prostate health. In particular this extract may benefit non-cancerous prostate enlargement.

***Lymphaselect***<sup>™</sup> PHYTOSOME includes a standardized extract from *Melilotus officinalis*. This preparation is particularly indicated for venous disorders, including chronic venous insufficiency of the lower limbs.

***Oleaselect***<sup>™</sup> PHYTOSOME is a newer preparation from olive oil polyphenols. These are potent free radical scavengers (antioxidants), inhibit harmful oxidation of LDL cholesterol, and also have anti-inflammatory activity.

***Polinacea***<sup>™</sup> is an immunomodulating preparation made from *Echinacea angustifolia*. It includes echinacosides and a unique high-molecular weight polysaccharide. This preparation especially enhances immune function in response to a toxic challenge.

For all these breakthrough phytomedicines , the PHYTOSOME technology enables cost effective delivery AND synergistic benefits from the phospholipid nutraceuticals intrinsic to life. For more, in-depth information on PHYTOSOME preparations go to [www.indena.com](http://www.indena.com)

For more in-depth information on phospholipids, including Dr. Kidd's contributions, go to [www.phospholipidsonline.com](http://www.phospholipidsonline.com)