

published by  srl  
Via Mario Donati, 6  
20146 Milano - Italy  
Tel. 0039 02 83241119  
Fax 0039 02 8376457  
www.b5srl.com

**PRITMA SINGH**

VAV Life Sciences P. Ltd.  
51/B Mittal Court  
224 Nariman Point  
Mumbai - 400021, India  
Tel +91 22 22836802  
Fax +91 22 22836809  
marketing@vav.in  
www.vav.in

# Phospholipids - The novel and functional ingredient for a healthy life

**P**hospholipids are essential molecules that are found in cellular membranes. A cell in the human body cannot function normally without the presence of these phospholipids. As the name implies, phospholipids are made of the combination of lipids (fats) and the mineral phosphorus. These lipids are fundamental components of the cell membranes which are essential for growth, maturing and proper functioning of cells. Structure and function of the cell membranes are of essential importance for human health. Feelings of general indisposition, disturbed functions and even diseases of the human and animal organism can often be traced back to membrane damage or imbalance.

By administering phospholipids it is possible to improve membrane functions associated with membrane proteins and lipids. There are evidences from clinical studies that show a number of cases of metabolic imbalances can be cured by intake of special polar lipids and phospholipids.

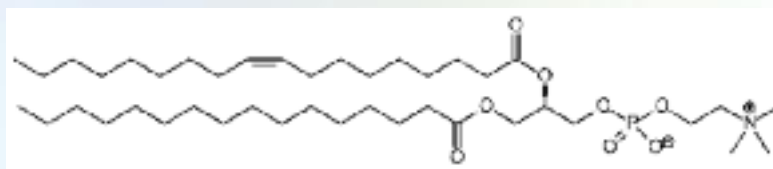
Although present in many foods, phospholipids are found in higher concentrations in soy, eggs, marine sources and the brain tissue of animals. Phospholipids are the most important, nutritionally important constituents of soya lecithin.



Acid (PA). Lecithin with phospholipids can support a general reduction of the serum plasma cholesterol levels. The liquefying effect of this cholesterol reduction rejuvenates cell membranes. Mixed phospholipids in powdered or granulated form are used orally since many years. With the EC regulations in Europe non-GMO Certified IP phospholipids are in demand from the food supplement industry in the interest of the consumers.

Soya phospholipids are regarded as versatile and functional ingredients of food. Powdered Lecithin (LECIVA S25P) is used mainly for the production of food

supplements in the form of tablets, hard gelatin capsules or nutritional premixes. Granular



## NATURAL SOYA-PHOSPHOLIPIDS

Soya phospholipids are the naturally occurring complex mixture of phospholipids of soya. The main phospholipids present in soya lecithin are phosphatidylcholine (PC), phosphatidylethanolamine (PE), phosphatidylinositol (PI) and phosphatidic

Lecithin (LECIVA S25G) has also proved to be an effective and convenient form of administration around the world for many years since it can be consumed directly as a supplement or sprinkled on salads.

A health claim has been formulated for de-oiled lecithin (mixed phospholipids): "De-oiled soy lecithin may help to maintain a

healthy cholesterol level from foods providing 6 g/day."

## PHOSPHATIDYLCHOLINE

Phosphatidylcholine has been used successfully to treat liver diseases supported by various clinical studies. The most frequent of these are acute and chronic cirrhosis of the liver, fatty degeneration of the liver (steatosis, fatty liver) and liver damage from alcohol, chlorinated hydrocarbons, medicines etc. In cases of previous liver damage phosphatidylcholine has brought about a marked improvement in the speed of recovery by repairing the cell membrane, renewal or regeneration of liver parenchyma.

The beneficial effect of phosphatidyl-



choline on the liver is connected with its role as a central building block in the cell membrane. Phosphatidylcholine is of great importance for the structure and the functioning of the membrane systems of all body cells. Without PC, the cell membranes would harden, prohibiting important nutrients from entering and wastes from leaving the cell.

Neurological disorders arising from a deficiency of the neurotransmitter acetylcholine can be treated by increasing the plasma choline level by oral administration of phosphatidylcholine in capsule or tonic forms. Soya phosphatidylcholine (LECIVA-S35) is a natural precursor of choline and thus of the synthesis of the neurotransmitter acetylcholine. An increased rate of synthesis is generally associated with an improvement of memory and muscle function.

In 1998, the Institute of Medicine (IOM) of the US National Academy of Sciences identified choline as an essential nutrient and recommended daily intake amounts. And, in 2001, the US Food and Drug Administration (FDA) approved a nutrient content claim for choline, enabling

food manufacturers to inform their consumers via the food label.

The recommended Average Intake (AI) for adults is 550 mg/day of choline for men and 425 mg/day for women. Choline in the diet could be available as free choline or bound as esters such as glycerophosphocholine, sphingomyelin, or phosphatidylcholine. Also in Europe health claims have been formulated especially for phosphatidylcholine:

- "Soya Phosphatidylcholine supports liver metabolism and may help detoxification from foods providing 1.2 g/day."
- "Soya Phosphatidylcholine helps maintaining a healthy cholesterol level from foods providing 1.2 g/day"

The bioavailability of phosphatidylcholine is excellent and is suitable for raising the choline level in blood. Oral administration of choline salts has undesirable side effects which may even increase the severity of existing liver damages. Phosphatidylcholine is safe to take without any problems, also in combination with other nutrients even due to the good emulsifying properties improving the adsorption of other nutrients administered with it. Natural phospholipids enriched with phosphatidylcholine are available as liquid or waxy products suitable for formulations. Liquid phosphatidylcholine (LECIVA-35) is used mainly in soft gelatin capsules, whereas waxy materials like LECIVA-S50 and LECIVA S70 can be used for pharmaceuticals or liposomal drug delivery systems.

## EGG PHOSPHOLIPIDS

In addition to significantly higher content of phosphatidylcholine, egg phospholipids provide egg proteins which are the most balanced and complete set of amino acids found in nature and often missing from other protein sources. LIPOVA E-100 is a fat and cholesterol free powder suitable for tablets or hard shell encapsulation and proves to be an ideal nutritional aid for growing children/teenagers and sportsmen with needs for protein supplements. However, this product is not



suitable for people allergic to eggs (anaphylaxis) or strict vegetarians/vegans.

## GLYCEROPHOSPHORYLCHOLINE

L-Alpha glycerylphosphorylcholine (Alpha GPC, choline alfoscerate) derived from highly purified soya lecithin is a natural choline compound found in the brain and in milk. It is used as dietary supplement to enhance memory and cognition. In an Italian multicentre clinical trial on patients suffering from recent stroke, they were supplemented GPC for five months. The trial confirmed the therapeutic role of alpha-GPC on the cognitive recovery of patients based on four measurement scales. GPC is extremely well absorbed and crosses the blood brain barrier where it supports brain function and learning processes by directly increasing the synthesis and secretion of acetylcholine. GPC also protects neurons and improves signal transmission by serving as a precursor to membrane phospholipids.

Commonly used doses are 300-500 mg daily, delivered through soft gel capsules.

"PHOSPHOLIPIDS THE ESSENCE OF HEALTHY LIFE"