Phosphatidylserine, a naturally occurring phospholipid nutrient, is a component of cell membranes. As such it serves as an essential constituent to the functioning of all cells in the body. In addition to its primary role as a structural component of cell membranes, it also plays a significant role in the biological processes of apoptosis and cell signaling. In most cells phosphatidylserine is restricted to the inner leaflet of the plasma membrane; however it appears on the surface of apoptotic lymphocytes at the initiation of phagocytosis by activated macrophages, and is believed to be a recognition signal for the phagocytic removal of apoptotic cells.

The cell surface exposure of phosphatidylserine also occurs in coordination with other cellular functions, for example in platelet initiation of the blood clotting cascade, as well as in sperm maturation.

Phosphatidylserine comprises only a small percentage of the total phospholipids, accounting for less than 10% of the phospholipid total. However, as a component of myelin it makes up a major part of the phospholipid concentration of the brain, and as such may offer a supportive aspect in regard to brain function. It is also present in high concentrations in the retina, and is thought to play an important role in both vision and the nervous system.

Functionally, phosphatidylserine serves as an essential cofactor for the binding and activation of protein kinase C, a key enzyme in signal transduction, as well as a required component for the activity of other essential enzymes, including Na+/K+ ATPase and neutral sphingomyelinase.

In blood coagulation, it is transported to the membrane surface, where it serves to enhance the activation of prothrombin to thrombin. Its importance in apoptosis is demonstrated by the fact that in its absence, the ingestion and clearing of apoptotic cells does not occur. Additionally, Bleijerveld OB, et al. have hypothesized its essentiality in mitochonrdial functioning as a component in the phosphatidylserine decarboxylation pathway.

Due to the ability of phosphatidylserine to be converted into key lipid secondary messengers, it participates in important cellular regulatory mechanisms. In platelets the translocation of phosphatidylserine from the inner to the outer leaflet of the plasma membrane marks the initiation of the blood clotting cascade, thus implicating its importance in this function. The exposure of phosphatidylserine on the cell surface, a characteristic of dying cells, allows for the safe clearance of apoptotic waste without induction of the inflammatory cascade. A defect in this clearance mechanism has been associated with autoimmune pathologies. Cumulatively, phosphatidylserine plays a key role in many biochemical and physiological processes in mammalian cells, including immunity.

Phosphatidylserine is supplied in 100 mg softgel caplets. As with all products from Biotics Research Corporation, the product it tested to ensure quality and purity.

Product #: 1430 Contains: 90 Capsules

References:

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.