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Lipids: Are these the Potential Contributor

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Editorial

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Editorial

Lipids are the class of organic compounds that are categorized into simple, compound and derived lipids. Simple lipids includes fat and waxes while compound lipids are ester of fatty acid and alcohol while derived lipid contains hydrocarbon ring and long hydrocarbon side chain. Dietary lipids for humans and other animals are animal and plant triglycerides, sterols, and membrane phospholipids.

Primarily lipids are used as potential source of energy as these are the storage compound and potential reservoir of energy in an organism. Besides its regulatory function it also play structural role in the body. Lipids are important part of cell membrane and regulate cell permeability. Lipid has the structural and functional benefits. Among the structural functions they are the important part of the biological membranes cellular plasma membrane and the intracellular membranes of internal cell organelle. Spingomylin and sterol found in biological membrane in animal cell and in plants and algae, the galactosyldiacylglycerols, and sulfoquinovosyl diacylglycerol, lacking phosphate group, are important components of membranes of chloroplasts and related organelles and are the most abundant lipids in photosynthetic tissues, including those of higher plants, algae and certain bacteria.

Lipids ate the potential energy reservoir in both animal and plant cell. Adipose tissue is the major storage reservoir of lipid in animal body while in plant these are present in seed and fruits. Triglycerides are the compounds present in adipose tissue give more energy as compared to the carbohydrate. Carbohydrate (Glycogen) on reduction gives only half of energy of its pure mass. Cellular oxidation of lipid gives9 Kcal/g while carbohydrate and protein gives only 4 K Cal/g. Birds also uses lipids are energy source during their flights.

In cell signaling lipid signaling play important role by activation of G protein-coupled/nuclear receptors, and members containing different lipids act as signaling molecules and cellular messengers. Calcium mobilization is carried out by the sphingolipid, apoptosis and cell growth. Protein kinase is activated by the triacylglycerol and the phosphatidylinositol phosphates. Prostaglandins play its potential role in inflammation and immunity. Lipids are also structural part of steroidal hormones including estrogen, testosterone and cortisol. These hormones play important role in the reproduction, metabolism and blood pressure. Enzymes involved in the oxidative phosphorylation are also activated by lipids. Fat soluble vitamins (A, D, E and K) are the isoprene lipids stored in liver and fatty tissue have wide range of functions.

Lipid has predominant perspective in nutritional studies. They not only source of energy but also play the structural role and regulate various metabolic processes. Recently the health effect of EPA and DHA widely understood. Our journal will focus on the recent advances in the field of lipids and their health benefits. Journal will encourage the researchers and scientists exploring the molecular understanding of lipids role.