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Lipins: Characteristics and Functional Role in the Organism

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The family of lipin proteins includes enzymes participating in the phospholipid biosynthesis pathway (Kennedy pathway) which are able to dephosphorylate phosphatidic acid to diacylglycerol. In addition, lipins may be trans-

ported from the cytoplasm to the nucleus and function as coactivators of gene expression. This dual function justifies the high interest in the study of these proteins. The purpose of this review is to give a general idea of the structure, functions, and regulation mechanisms of various lipin orthologs and isoforms in the tissues of eukaryotic organisms and to summarize the latest data obtained by researchers in this field. A separate section is devoted to human diseases caused by excess or deficiency of lipin.

Keywords: lipin, lipids, phosphatidate phosphatase, *fld* mice, lipodystrophy, transcriptional cofactor