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ω-3 fatty acids in phospholipids: Incorporation and investigation through enzymatic approach

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Abstract: Functional and nutritional foods are becoming more and more important for the benefit of human health and reduction of prevalent diseases. Phospholipids (PLs) modification using Omega-3 fatty acids like eicosapentaenoic acid (EPA) or docosahexaenoic acid (DHA) is significantly important for this purposetoobtain structured foods by altering the nutritional, physiological and functional properties. Modification processimproves their oxidative stability, emulsification properties, reduces the risk of early death, exhibits various psychological functions in human systems and significantly provides systemic benefits throughout the body. Biotechnological advancement helps the process modification and product characterization.

In the present research investigation, soybean phospholipids (SBPLs), a cheap raw material obtained from soybean oil refinery industry were modified by the introduction of EPA (C20:5) in hexane medium. The bioprocess was conducted using 1, 3- specific Lipozyme TL IM immobilized lipase (*Thermomyceslanuginosus*) at 40^0C and the process continued upto 48 hours. The modified PLs prepared by this bioprocess contain 28.36% EPA along with other fatty acids. The properties of the modified PLs have been analyzed which showed satisfactory results.

Keywords: Phospholipids, Modified Phospholipids, TL IM enzyme,Eicosapentaenoic acid.

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