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Cholesterol Effect on Physical Properties of Niosome Bilayers: A Molecular Dynamics Study

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Molecular dynamics simulations were employed to investigate the cholesterol concentration effect on the physical properties of niosome bilayers such as area per molecule, membrane thickness, hydration structure, fluidity and diffusion coefficient. All simulations were carried out at a constant temperature of 300 K by using Gromacs package 5.1.2. We found that increase in cholesterol numbers to form niosome bilayers results increase in area per molecule and compressibility, but decrease in the membrane thickness. These results suggest that the cholesterol concentrations cause significant change in the phase formation of niosome bilayers.

Keywords: Niosome Bilayer, Molecular Dynamics, Cholesterol Concentration, Membrane Thickness, Diffusion

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