

# **The Effects of Cholesterol on the Release of Free Lipids and the Physical Stability of Lecithin Liposome**

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## **Abstract**

This study demonstrates that the addition of cholesterol enhances the physical stability of liposome illustrated via the structure of the bilayer and the interaction force between the liposomes. Experimental results indicate that the addition of cholesterol increases the absolute zeta-potential and the electrostatic repulsive interaction or forces between phosphatidylcholine (PC) liposomes. From a structural perspective, the incorporation of cholesterol can increase the rigidity of the bilayer. Additionally, the concentration of free PC lipids was decreased when the cholesterol was incorporated into the PC liposomal bilayer, indicating that the addition of cholesterol can enhance the intravesicle attractive interaction. Moreover, regarding the impact of shear force on liposomal stability, we found that higher shear force applied to the liposome suspension increases the concentration of free lipids. However, the impact of shear force on liposomal stability is minimized with the addition of cholesterol. [References: 31]