

Supported lipid layers prepared on hydrophobic silica sphere surfaces for phospholipase D reaction

박진원*

서울산업대학교 화학공학과

(jwpark@snut.ac.kr*)

Phospholipase D (PLD) catalyzes to hydrolysis of phosphatidylcholine into phosphatidic acid. The reaction triggered by PLD is known not only to cause the change in the curvature of biological membranes but also to lead to variation in the compositions of the membranes. This process is relevant to in a variety of cellular function, including membrane/vesicle trafficking, actin cytoskeleton rearrangements, glucose transport, superoxide production, secretion, cellular proliferation, and apoptosis. In this research, the physical properties are investigated for the effect of the PLD on the lipid layers prepared on silica sphere surfaces. The hydrophobic surfaces were made with the silane chemistry, and the lipid layers were formed on the surfaces through the liposome fusion. For the further research, more experiments will be performed to find out the changes in electrostatic properties and mechanical properties, which are caused by the PLD reaction.