

화학고 세미나

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Membrane mimetic chemistry in synthetic and living cells

Lipid membranes in cells are fluid structures that undergo constant synthesis, remodeling, fission, and fusion. The dynamic nature of lipid membranes enables their use as adaptive compartments, making them indispensable for all life on Earth. Efforts to create life-like artificial cells will likely involve mimicking the structure and function of lipid membranes to recapitulate fundamental cellular processes such as growth, transport, and signal transduction. As such, there is considerable interest in chemistry that mimics the functional properties of membranes, with the express intent of recapitulating biological phenomena. I will discuss recent efforts from our lab that leverage advances in chemical biology and systems chemistry to mimic the remarkable properties of living membranes. Inspired by our ongoing work on developing lipid bioconjugation strategies to generate artificial cell membranes, we have also developed new tools for manipulating membranes in living cells or in the presence of membrane proteins, and I will discuss progress on developing new tools for selective bioconjugation within living cells.

Date : 2023년 11월 16일 (목) 오후 5시

Location : 과학관 B131호

Host : 연세대학교 화학과

