

CHEMISTRY DEPARTMENT SEMINAR

Student Seminar Talk



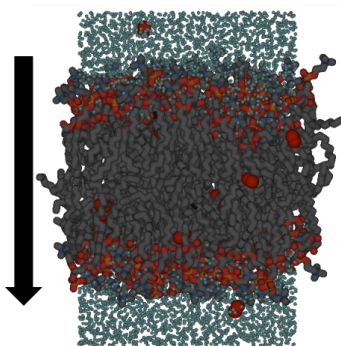
How does cell membrane composition affect tissue oxygenation?

Qi Wang

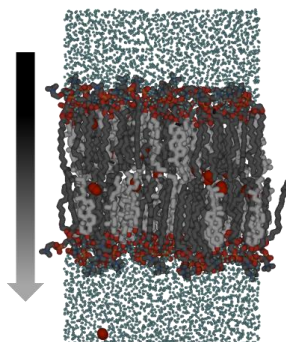
Graduate Student

Department of Chemistry

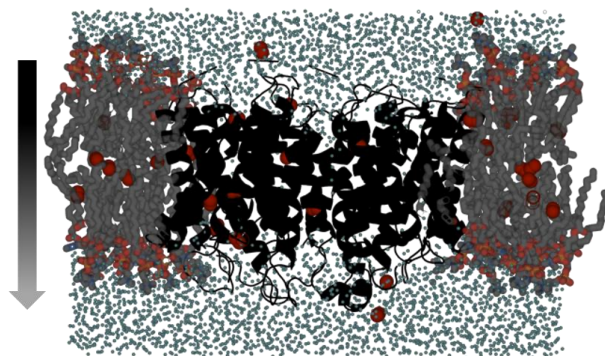
Tissue oxygenation plays a critical role in energy metabolism and anticancer therapeutic strategies. More investigation is needed to understand how physical parameters of the cell membrane influence intracellular oxygen (O_2). Tumor tissues often experience hypoxia (low oxygen), and many tumors incorporate elevated levels of cholesterol and unusual phospholipids in their cell membranes. Specifically, lipids apparently produced by de novo (“new”) lipid biosynthesis are abundant in the cell membranes of some relatively aggressive breast tumors. These lipids have unusual tail lengths and headgroup-tail combinations. My presentation will focus on tail-length, headgroup size, and cholesterol effects on oxygen permeability, as studied using molecular dynamics simulations. Although the model membranes studied here are highly simplified, they provide useful insight into permeability effects that might influence tumor oxygenation.



Reference system



Smaller headgroup or
adding cholesterol



Adding one protein

March 31st @ 2.00 p.m. – Lopez 106

Meeting ID: 955 4454 2732 <https://zoom.us/j/95544542732>