



Wednesday, February 16, 2022  
4:00 P.M.

Ackert Hall, Room 120

Biochemistry  
&  
Molecular  
Biophysics

Seminar

**Linear Amphipathic Oligopeptides Stably Encase Low Dielectric Solvents: A New Platform Vehicle for Hydrophobic Therapeutics**

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This study describes an amphipathic peptide (FLIVIKKKKK) that stably encapsulates oils and low dielectric solvent droplets in water. The amphipathic peptide corrals these liquids during self-assembly, yielding monodispersed ~20-2000 nm colloids that can be resized. The peptides remain unstructured with the lysyl-residues fully solvent exposed. The hydrophobic portion of the peptide requires Beta-substituted hydrophobic residues for assembly. The colloids are stable for long periods of time and over a temperature range of 04 -90 °C. The cationic colloids possess Zeta potentials ranging from -6.1 to +50 mV. Encapsulated coconut oil retains its principle phase transition indicating that the oil remains in the liquid state. Lastly capsules containing active ingredients are rapidly taken up by multiple cell types in culture show “proof of concept” that these oil filled colloids are able to facilitate the delivery of hydrophobic therapeutics.

