

## John Cuppoletti, PhD

Professor

Department of Molecular and Cell Physiology

### Description of Research:

Dr. Cuppoletti's research is focused on ion channels, transport proteins, and transport processes of the gastrointestinal tract and the lung. In recent years, potassium and chloride channel regulation, pharmacology, and molecular engineering have become increasingly important as tools to study the mechanisms by which these proteins function. More recently, as the X-ray crystal structures of these proteins have become available, Dr. Cuppoletti combined these types of studies with animal models and computational chemistry approaches in attempts to understand the fundamental processes of protein gating that underlie function and gating of these channels. In addition, he has undertaken studies where-in these transport proteins are placed in synthetic membranes in order to obtain more detailed information regarding function of these proteins that cannot be obtained from purely biological membranes.

### Collaborations:

Dr. Cuppoletti collaborates with Dr. Matthews on areas related to chloride transport in secretory epithelia and with Dr. Shull in the analysis of gastric acid secretory defect in chloride channel knockout mouse model.

### Representative Figure:

