

Ph.D. Stipend Available

Aarhus University, Denmark

Controlling and Characterizing the Behavior of Reactive Oxygen Species in Mammalian Cells

Issues pertinent to the roles played by reactive oxygen species (ROS) in live cells will be studied. For example, singlet oxygen is one ROS that is important in processes that range from cell death to cell proliferation. It can diffuse over a finite distance in a cell and, as such, is a unique signaling agent. Messages are sent, for example, through its reactions with cellular proteins.

This project focusses on methods to (1) spatially control ROS production using optogenetic photosensitizers, and (2) monitor cell response using microscope-based imaging techniques.

This specifically includes (1) the design, characterization, and incorporation of optogenetic proteins in live cells, and (2) the use of super-resolution microscopes to monitor cell response using a range of fluorescent probes.

Those interested in this project are encouraged to contact us for further information.

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