



BiophysTO Lunchtime Seminar Series

Date

Thursday, April 6, 2017
12:00 pm (noon)

Location

McLennan Physical Laboratories,
Room MP606, 60 St. George Street

Streaming

Seminar live streamed to
DV3129 @ UTM

**Pizza & refreshments
provided**

Dr. Oliver P. Ernst

Departments of Biochemistry and Molecular
Genetics, University of Toronto

Structure and Dynamics of GPCRs: Insights from X-ray and EPR

Rhodopsin is the eponym of the largest class of G protein-coupled receptors (GPCRs), the rhodopsin-like GPCRs (class A), and serves as a GPCR model system. Activation of rhodopsin is triggered by cis/trans isomerization of its retinal chromophore and culminates in an equilibrium of metarhodopsin states for which structural insight is available from X-ray and electron crystallography. Double electron-electron resonance (DEER) EPR spectroscopy on rhodopsin in the inactive dark state, after light activation and after metarhodopsin II decay is suitable to provide structural information on the receptor in solution. By site-directed spin labeling, rhodopsin pigments with pairs of spin labels can be generated which report on the movements of the transmembrane helices upon light-induced activation of rhodopsin and upon decay of the activated receptor into the apo protein opsin and all-trans-retinal. The DEER method is generally applicable to GPCRs as shown also for the adenosine A2A receptor.

Host: Dr. Anton Zilman



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