

27. April 2020
Time: 16:30 h

Department of
Chemistry and
Biochemistry (DCB)
Freiestrasse 3, 3012
Bern, Room S481

Everybody is welcome

Follow the NCCR TransCure lectures:
<http://www.nccr-transcure.ch/events>
Twitter: @NCCR_TransCure



Prof. Simon Newstead is
Tutor in Biochemistry &
Professor of Molecular
Membrane Biology,
Department of
Biochemistry, University
of Oxford (UK).

This lecture is hosted by
Prof. Dimitrios Fotiadis
(IBMM).

NCCR TransCure Lecture in Biology by Simon Newstead

Peptides and protons: How pH gradients link transport and trafficking in the cell

Recently we determined the first crystal structure for the KDEL trafficking receptor, which functions to maintain the integrity of the ER and Golgi. The receptor functions by selectively retrieving folding chaperones, which contain a C-terminal KDEL retention signal, in a pH dependent manner from the Golgi back to the ER via COPI coated vesicles. The structure and associated functional insights reveal a remarkable and somewhat unexpected similarity to membrane transporters, which in contrast to trafficking receptors, function to shuttle nutrients and small molecules across a single membrane rather than between two separate membrane environments. In this talk I will present how these insights uniquely bring together what were once considered two different themes of cell biology, transport and trafficking, and discuss how these two systems share mechanisms for peptide recognition and proton coupling in the cell.