

# Séminaire



CONFÉRENCIER  
INVITÉ

Vendredi 05 Octobre 2018 à 11h

Salle des  
séminaires

Institut de biologie structurale - 71 avenue des Martyrs CS 10090 38044 Grenoble Cedex 9 - T.+33 (0)4 57 42 85 00

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## Structure and Chemical Biology of Mechanosensitive Ion Channels

Polymodal thermo- and mechanosensitive two-pore domain potassium (K<sub>2</sub>P) channels of the TREK subfamily generate 'leak' currents that regulate neuronal excitability, respond to lipids, temperature and mechanical stretch, and influence pain, temperature perception and anaesthetic responses. These dimeric voltage-gated ion channel (VGIC) superfamily members have a unique topology comprising two pore-forming regions per subunit. In contrast to other potassium channels, K<sub>2</sub>P channels use a selectivity filter 'C-type' gate as the principal gating site. We have studied the molecular basis of selectivity and gating in the mechanosensitive members of the K<sub>2</sub>P family, TREK-1 and TRAAK, unraveling the mechanism of channel activation by gain-of-function mutants or small molecule binding. Our data suggest that the activation of these channels depends on concerted conformational changes both at the level of the selectivity filter and in the transmembrane region.

Hôtes : *Eva Pebay-Peyroula (IBS/Membrane) & Cécile Breyton (IBS/M&P)*