

# Séminaire



CONFÉRENCIER  
INVITÉ

Vendredi 21 Septembre 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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## Unfolding of a Temperature-Sensitive Domain Controls Voltage-Gated Channel Activation

Voltage-gated ion channels are outfitted with diverse cytoplasmic domains that impact function. To examine how such elements may affect VGIC behavior, we addressed how the bacterial voltage-gated sodium channel (BacNaV) C-terminal cytoplasmic domain (CTD) affects function. Our studies show that the BacNaV CTD exerts a profound influence on gating through a temperature-dependent unfolding transition in a discrete cytoplasmic domain, the neck domain, proximal to the pore. Structural and functional studies establish that the BacNaV CTD comprises a bi-partite four-helix bundle that bears an unusual hydrophilic core whose integrity is central to the unfolding mechanism and that couples directly to the channel activation gate. Together, our findings define a general principle for how the widespread four-helix bundle cytoplasmic domain architecture can control VGIC responses, uncover a mechanism underlying the diverse BacNaV voltage dependencies, and demonstrate that a discrete domain can encode the temperature-dependent response of a channel.

Hôte : *Eva Pebay-Peyroula (IBS/Membre) & Cécile Breyton (IBS/Groupe M&P)*

L'accès au campus EPN nécessite un avis de rendez-vous  
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