

大学院特別講義のご案内

- ◆ 日時： 2019年8月21日（水） 17:30～19:00
- ◆ 場所： E棟2階 臨床研修・臨床実習セミナー室
- ◆ 講師： School of Dental Science, New Castle University, UK
Dr. Vsevolod Telezhkin, PhD （日本学術振興会外国人招へい研究者）

- ◆ 演題： Kv7 channels:

Regulation by phospholipids and role in constraining neurodegeneration

- ◆ 要旨： Kv7 (M) channels are voltage-gated potassium channels that regulate cell excitability. Neuronal Kv7 channels are heterotetrameric assemblies of Kv7.2 and Kv7.3 subunits. Their opening requires the presence of the membrane phospholipid phosphatidylinositol 4,5-bisphosphate (PI(4,5)P₂). However, the specificity of PI(4,5)P₂ as a binding and activating ligand is unknown. We tested the ability of different phosphoinositides and lipid phosphates to activate Kv7 channel proteins.

Kv7 channels critically contribute to regulation of resting membrane potential in all types of neurons, therefore normal function of Kv7 channels optimizes neuronal excitability. Recent studies underline reduced function of Kv7 channels in Huntington's Disease (HD), a neurodegenerative syndrome models, in the same time pharmacological activation of Kv7 channels effectively augmented functional profile and rescued from neurodegeneration at adult HD onset.

Our identification of the key role that Kv7 channels play in neuronal development, their importance for neuronal health and their misregulation in HD, suggests about potential for repurposing of Kv7 channel openers anticonvulsants for therapy of neurodegeneration morbidity.

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