



筑波大学若手イニシアティブセミナー Wakate Initiative Seminar

平成 23 年 2 月 17 日(木) 17:00～ 筑波大学・医学系棟 2階272室
17th February 2011 (Thursday) 17:00- @School of Medicine Room 272

Dr. Lotta Borgius

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Excitatory components in the locomotor CPG

Locomotion in mammals is to a large degree controlled directly by local neuronal networks, called central pattern generators, CPGs. In mammals, the CPG for walking is located within the spinal cord and generates the rhythm as well as the coordination of muscular activity, leading to the precise locomotor pattern. The overall organization of the locomotor networks is beginning to be unraveled, and the function of the network depends on a mixture of inhibitory and excitatory neurons. The excitatory neurons play a critical role in the generation of the locomotor rhythm as well as being important for the locomotor pattern. However, many aspects of the organization principles of these excitatory interneurons within the network are still unknown. In the spinal CPG, the main excitatory drive appears to be glutamatergic and the majority of the spinal excitatory glutamatergic neurons express the vesicular glutamate transporter 2, Vglut2. Here I will show you, by using different transgenic mice engineered in our lab, that the glutamatergic neurons in the mammalian spinal CPG are critical for both the coordination of the locomotor output as well as for the initiating and maintaining of the rhythmic locomotor pattern.

(Reference)

Borgius L et al. *Mol Cell Neurosci.* 45:245-57,2010

Häggglund M, Borgius L, Dougherty KJ, Kiehn O. *Nat Neurosci.* 13:246-52, 2010

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