

グローバル COE 「生体シグナルを基盤とする統合生命学」

セミナーのお知らせ

日時：平成 21 年 6 月 23 日（火）午後 3 時 30 分～4 時 30 分

場所：大学院第 7 セミナー室（教育研究棟 1 3 階）

講師：Dr. Zu-Hang Sheng

Chief, Synaptic Function Section,
NINDS (National Institute of Neurological Disorders and Stroke),
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演題：**Control of axonal mitochondrial mobility and its impact
on axonal homeostasis and synaptic function**

要旨：Proper transport and distribution of mitochondria within axons and at synapses is critical for neuronal function. While one-third of axonal mitochondria are mobile, a large proportion remains in a stationary phase in mature neurons. Mitochondrial recruitment between motile and stationary phase is a possible target of regulation by intracellular signals and synaptic activity. Our recent study elucidated a molecular mechanism for controlling axonal mitochondrial docking. Syntaphilin is newly identified neuronal specific and axonal-targeted protein and acts as a receptor for docking/retaining mitochondria through an interaction with the microtubule-based cytoskeleton. Such a mechanism enables neurons to maintain proper densities of stationary mitochondria within axons and in the proximity of synapses. We further provide cellular and genetic evidence that the mobility and density of inter-bouton mitochondria play a critical role in short-term facilitation during high frequency stimulation. Identification of syntaphilin as a docking protein for axonal mitochondria provides a unique genetic mouse model to address whether the change of axonal mitochondrial mobility has any impact on axonal homeostasis and degeneration.

皆様の御来聴歓迎いたします。

主催：医学系大学院 細胞生物学・解剖学教室

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