

The Sixteenth iCeMS SEMINAR

講演者： 永楽 元次 博士

理化学研究所 発生・再生科学総合研究センター

演題： Self-organized Formation of
Cortical Tissue from ESCs

日時： 2009. 2. 27. (金) 16:00-17:00

場所： iCeMS コンプレックス2 研究棟1号館
1階 会議室 (119号室)

The mammalian cortex is a highly polarized structure that is patterned in a region-specific manner. We demonstrated self-organized formation of apico-basally polarized cortical tissues from ES cells using an efficient three-dimensional aggregation culture (SFEBq culture). The generated cortical neurons are functional, transplantable and capable of forming proper long-range connections in vivo and in vitro. The regional identity of the generated pallial tissues can be selectively controlled (into olfactory bulb, rostral and caudal cortices, hem and choroid plexus) by secreted patterning factors such as Fgf, Wnt and BMP. In addition, the in vivo-mimicking birth order of distinct cortical neurons permits the selective generation of particular layer-specific neurons by timed induction of cell cycle exit. Importantly, cortical tissues generated from mouse and human ES cells form a self-organized structure that includes four distinct zones (ventricular, early and late cortical-plate and Cajal-Retzius cell zones) along the apico-basal direction. Thus, spatial and temporal aspects of early corticogenesis are recapitulated and manipulatable in this ES cell culture.

主催：京都大学 物質-細胞統合システム拠点 (iCeMS = アイセムス)

連絡先：見学グループ e-mail: kengaku-g@icems.kyoto-u.ac.jp / Fax: 751-9820