



令和6年度第1回 神経研究所所内セミナー



日時：2024年4月3日(水)16:00～18:00

場所：中央館3階 コスモホール

演者：Fumito Endo M.D., Ph.D.

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遠藤 史人

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演題：Unraveling molecular basis of astrocyte diversity and morphology: implications for Alzheimer's disease

講演要旨

Astrocytes, the most abundant glial cells in the CNS, are crucial for its homeostasis. Traditionally viewed as homogeneous, our research across 13 brain regions using RNA sequencing has unveiled region-specific characteristics of astrocytes and the underlying mechanisms. Notably, we have identified genes correlated with astrocytic morphological complexity, including *Fermt2*, an Alzheimer's disease (AD) risk gene. Since morphological complexity is crucial for astrocyte-neuron interactions, *Fermt2* knockout in hippocampal astrocytes in wild-type mice reduced their complexity and impaired cognitive functions. Additionally, AD model mice and postmortem brain analyses showed reduced expression of morphology-related genes in astrocytes, highlighting their importance in AD pathology. Our findings suggest targeting astrocyte morphological complexity as a novel therapeutic approach in neurological diseases, emphasizing the diverse roles of astrocytes in disease pathology. I will also introduce our ongoing therapeutic research targeting astrocyte morphological complexity and discuss the diverse roles of astrocytes in the pathology of neurological diseases (Endo et al. *Science*. 2022;378: 6619).

担当・連絡先：遺伝子疾患治療研究部(青木 内線 5221)