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発表題目（※学会発表の場合のみ記載）	The coordination of two purine synthetic pathways regulates spatiotemporally brain development 二つのプリン合成経路の協調は時空間的に脳発生を制御する

発表の概要と成果（抄録を公開している URL がある場合、「概要・成果」を記載した上で、URL を末尾に記してください。また、抄録 PDF は別途ご提出ください。なお、抄録 PDF は Web 上には公開されません。）

The levels of purines, essential molecules to sustain eukaryotic cell homeostasis, are regulated by the cooperation of the *de novo* and salvage synthesis pathways. Impairment in purine metabolism leads to various neurological diseases such as Lesch-Nyhan syndrome. In the developing central nervous system (CNS), the de novo purine synthetic pathway is presumed to be mainly utilized because neural stem/progenitor cells (NSPCs) require large amounts of purines for abundant proliferation and neuron production. However, it is not fully understood how these purine synthetic pathways are balanced or separately utilized during brain development. In this study, we revealed that the spatiotemporal regulation of two purine synthetic pathways is essential for proper CNS development. Along with brain development, there is a shift of utilization for purine synthetic pathways, with a greater reliance on the de novo pathway in the embryonic stages and a greater reliance on the salvage pathway in the postnatal and adult stages. Inhibition of de novo pathway downregulated mTORC1/S6K/S6 signaling pathway and caused characteristic brain malformation which deficit the frontal cortex. This phenotype is rescued by the upregulation of mTOR activator. These findings indicate that strict spatiotemporal regulation of purine synthetic pathways in cooperation with mTORC1 signaling are crucial for the proper brain development. Our findings will contribute to better understanding of neurological diseases caused by abnormalities in purine metabolism.