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Protein Phosphatase 2A α Gene Knock-out Results in Cortical Atrophy through Activating Hippo Cascade in Neuronal Progenitor Cells

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Highlights:

- PP2A α gene knock-out results in cerebral cortical atrophy
- PP2A α gene knock-out activates Hippo cascade in cortical NPCs
- Hippo cascade targets p73 in NPCs
- P73 directly binds to the promoter of GLS2 at transcriptional level
- PP2A α indirectly modulates glutamine synthesis through targeting p73

Abstract

Protein phosphatase 2A α (PP2A α), a vital member of the protein phosphatase family, has been studied primarily as a regulator for the development, growth and protein synthesis of a lot of cell types. Dysfunction of PP2A α protein results in neurodegenerative disease; however, this finding has not been directly confirmed in the mouse model with PP2A α gene knock-out. Therefore, in this study presented here, we generated the PP2A α gene knock-out mouse model by the Cre-loxP targeting gene system, with the purpose to directly observe the regulatory role of PP2A α gene in the development of mouse's cerebral cortex. We observe that knocking-out PP2A α gene in the central nervous system

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