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### APP intracellular domain suppress neuronal differentiation through transcriptional regulation of mir663

Amyloid precursor protein (APP) is best known for its involvement in the pathogenesis of Alzheimer's disease. We have previously demonstrated that APP intracellular domain (AICD) regulates neurogenesis; however, the mechanisms underlying AICD-mediated regulation of neuronal differentiation are not yet fully characterized. Using genome-wide chromatin immunoprecipitation approaches, we found that AICD is specifically recruited to the regulatory regions of several microRNA genes, and acts as a transcriptional regulator for miR-663, miR-3648 and miR-3687 in human neural stem cells. Functional assays show that AICD negatively modulates neuronal differentiation through miR-663, a primate-specific microRNA. Microarray data further demonstrate that miR-663 suppresses the expression of multiple genes implicated in neurogenesis, including FBXL18 and CDK6. Our results indicate that AICD has a novel role in suppression of neuronal differentiation via transcriptional regulation of miR-663 in human neural stem cells.

#### Biography

Zhi-cheng Xiao received a Doctor of Natural Science Degree from Swiss Federal Institute of Technology, Zurich. He is current Professor in Monash University. He is the CEO & CFO of iNovaFarm, a premier Bio-Tech company. He has published more than 100 papers in reputed journals and serving as editorial board members of more than 10 journals.

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