**The role of CRH signaling pathway in mammalian brain development**

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**Abstract**

Neurogenesis during embryonic and adult stages is tightly regulated by a network of transcriptional, growth and hormonal factors. Corticotrophin-releasing hormone (CRH) is one of the major mediators of adaptive response to stressors and its main function is the stimulation of the pituitary synthesis of ACTH in the adult brain. Interestingly, CRH is also expressed early in the developing mouse brain, such as on E13.5 in forebrain and on E10 in the cerebellum. Here, we provide the evidence that CRH signaling pathway is required for efficient neurosphere formation and for the expression of neural stem cell markers *in vitro*. Consistent with this, introduction of CRH receptor gene into the mouse embryonic brain *in utero* increased the fraction of cells expressing Sox2 in the ventricular zone. These data indicate that CRH plays an important role in neural stem cell regulation during mammalian brain development. In this talk, I am going to present a brief overview on our previous works first and then the mechanism of how CRH regulates neural stem cells in detail.