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Molecular Regulation of Adult Hippocampal Neurogenesis

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Neurogenesis persists throughout adulthood in two restricted regions of the mammalian central nervous system: the subventricular zone of the lateral ventricles and the subgranular zone of the hippocampal dentate gyrus. The generation of new neurons from neural stem cells is controlled by signals derived from the local microenvironment. We previously showed that Wnt-proteins are key regulators of adult hippocampal neurogenesis. Specifically, we found that Wnt-signaling stimulates neuronal fate determination and proliferation of neuronally committed precursor cells. We have now identified several transcription factors, which are prominently expressed in immature newborn neurons of the adult dentate gyrus. In this presentation, we will discuss the potential function of these transcription factors as well as their potential interaction with Wnt-signaling in adult hippocampal neurogenesis.