

In this thesis I examine neurogenesis in the adult brain. Neurogenesis takes place in two main neurogenic areas. One area is located at the side of the forebrain ventricle and the other in dentate gyrus of the hippocampus. The forebrain ventricle neurogenesis is important for olfactory discrimination and olfactory memory. In the hippocampus, its function is unclear, but there are several hypotheses about its possible significance. We assume it might function in pattern separation and also be involved in preventing interference between memory traces. The last chapter I dedicate to the positive and negative regulation of neurogenesis. The manipulations enhancing neurogenesis include voluntary physical activity, enriched environment and SSRI antidepressants. The negative impact on neurogenesis is exerted among other factors by stress, irradiation and a cytostatic Temodal, which is used methodologically to block neurogenesis.