

# Effects of long-term adrenalectomy on apoptosis and neuroprotection in the rat hippocampus

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Reduction in corticosterone by acute adrenalectomy (5 d) promotes apoptosis in dentate gyrus (DG) granular neurons, an effect concomitant with variations in the expression of the Bcl-2 gene family implicated in apoptotic regulation. However, no studies exist correlating the effect of long-term adrenalectomy (30 d) on the hippocampus in terms of extent of apoptosis and the levels of proteins related to an apoptotic cascade. After 5 d of adrenalectomy, we found an increase in apoptosis of the DG granular region, correlated with an increase in the processing of caspase-9. The magnitude of apoptosis 30 d after adrenalectomy was reduced in the DG granular layer compared with 5 d after adrenalectomy, in close relation to a reduction in the level of processed caspase-9. To understand how the increase in cell survival long after adrenalectomy occurs, we analyzed changes in the expression of genes and proteins related to apoptosis. Long-term adrenalectomy did not change hippocampal pro-apoptoti