EFFECT OF LITHIUM ON VIABILITY AND PROTEIN SYNTHESIS IN ASTROCYTES

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The translational machinery is an important target for the development of antiproliferative drugs. In an earliest study we have shown that lithium inhibits protein synthesis in the eukaryotic cell, *Saccharomyces cerevisiae*. The goal of this study is to investigate the effect of lithium on protein synthesis in primary culture and glioma cells lines (U87 and C6). The effect of lithium on cell viability was fist investigated through the MTT cell proliferation assay and lactate dehydrogenase released to the medium during treatment. We observed no significant difference after treatment for three days with different concentrations of LiCl (0, 1, 5, 20mM). Total protein synthesis was examined by [^{35}S}-metionine incorporation into protein. We observed a significant reduction in primary astrocytes (25% with 1 and 5mM LiCl and 70% in 20mM LiCl). Interestingly no inhibition was observed in glioma cell lines. These results suggest that protein synthesis is regulated in a different manner in glioma cells and in primary astrocytes. In order to clarify the mechanism of action of lithium in astrocytes protein synthesis the phosphorylation state of crucial regulatory proteins such as p70S6K and 4EBP1 is being studied.