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NEUROFILAMENT GENE EXPRESSION IN ALZHEIMER'S DISEASE

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In order to investigate the role of cytoskeletal genes in Alzheimer's disease (AD), we studied the expression of genes coding for actin, tubulin and neurofilament genes in brain tissues from Alzheimer's disease patients and normal controls using northern blot analysis. Analysis of neurofilament genes was performed by southern blot analysis. Our results show a more than 95% decrease in the expression of gene coding for the medium size subunit (160Kd) of neurofilament protein in the brain tissues of AD patients compared to the control individuals. We observe an 86% decrease in the expression of the small subunit (68Kd) of neurofilament gene in AD patients where as the expression of other cytoskeletal genes Actin and tubulin did not show any significant decrease. No major alterations of the gene coding for neurofilament M subunit were seen on Southern blot analysis. We conclude that an abnormality of neurofilament gene expression may explain some of the pathological features seen in AD.