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Expression of the 210 kDa neurofilament subunit in cultured central nervous system from normal and trisomy 16 mice: regulation by interferon

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SUMMARY

When applied to central nervous system (CNS) cultures taken from normal fetal mice, interferon increases the immunohistochemical expression of the highly phosphorylated 210 kDa neurofilament subunit. This effect can be blocked by the application of an agent which inhibits interferon-mediated metabolic pathways.

Murine trisomy 16 is an excellent model for human Down's Syndrome. CNS cultures taken from trisomy 16 fetal mice express greater intensity of 210 kDa neurofilament subunit immunohistochemical staining than do normals. Application of an interferon inhibitor normalizes trisomy 16 CNS neurofilament expression.

Key words: Alzheimer's disease; Down's syndrome; Interferon; Neurofilaments; Tissue culture; Trisomy 16

INTRODUCTION

The author has hypothesized that cytoskeletal abnormalities may underlie the mental deficiency seen in Down's syndrome (DS) and may predispose to the eventual development of Alzheimer's disease (AD) in DS individuals (Plioplys 1987a,b). Results