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Short communication

Specificity of 192 IgG-saporin for NGF receptor-positive cholinergic basal forebrain neurons in the rat $\hat{\sim} \dagger$

Adam A. Book ^{a, $\hat{\sim}$} ... John B. Schweitzer ^{a, b, $\hat{\sim}$}

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Abstract

A monoclonal antibody to the rat nerve growth factor (NGF) receptor, 192 IgG, accumulates bilaterally and specifically in cholinergic basal forebrain (CBF) cells following intraventricular injection. An immunotoxin composed of 192 IgG linked to saporin (192 IgG-saporin) has been shown to destroy cholinergic neurons in the basal forebrain. We sought to determine if intraventricular 192 IgG-saporin affected choline acetyltransferase (ChAT) enzyme activity in the CBF terminal projection fields. ChAT assays from 192 IgG-saporin-treated animals showed significant time-dependent decreases in ChAT activity in the neocortex, olfactory bulb and hippocampus, compared to PBS- or OKT1-saporin-injected controls. ChAT and tyrosine hydroxylase activity in the striatum was always unchanged by 192 IgG-saporin. ChAT immunohistochemistry was

confirmative of major cell loss in the CBF, while other cholinergic nuclei appeared unremarkable. The data provide further evidence of the selectivity of 192 IgG-saporin in abolishing cholinergic, NGF receptor-positive CNS neurons.



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Keywords

Nerve growth factor receptor; Immunotoxin; Choline acetyltransferase; Tyrosine hydroxylase; Immunohistochemistry; Radioenzymatic assay

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