

Effects of retinal lesions upon the distribution of nicotinic acetylcholine receptor subunits in the chick visual system

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Immunohistochemistry was used in this study to evaluate the effects of retinal lesions upon the distribution of neuronal nicotinic acetylcholine receptor subunits in the chick visual system.

Following unilateral retinal lesions, the neuropil staining with an antibody against the $\alpha 2$ receptor subunit, a major component of α -bungarotoxin-insensitive nicotinic receptors, was dramatically reduced or completely eliminated in all of the contralateral retinorecipient structures. On the other hand, neuropil staining with antibodies against two α -bungarotoxin-insensitive receptor subunits, $\alpha 7$ and $\alpha 8$, was only slightly affected after retinal lesions. Decreased neuropil staining for $\alpha 7$ -like immunoreactivity was only observed in the nucleus of the basal optic root and layers 2-4 and 7 of the optic tectum. For $\alpha 8$ -like immunoreactivity, slight reduction of neuropil staining could be observed in the ventral geniculate complex, griseum tecti, nucleus lateralis anterior, nucleus lentiformis mesencephali,