

Astrocytic receptor

Astrogliosis in epileptic brain is a peculiar condition showing **epileptogenesis** and is thought to be different from the other pathological conditions. The aim of a study was to investigate the altered expression of **astrocytic receptors**, which contribute to **neurotransmission** in the **synapse**, and channels in **hippocampal sclerosis** (HS) lesions.

Aoki et al., performed immunohistochemical and immunoblotting analyses of the **P2RY1**, P2RY2, P2RY4, Kir4.1, Kv4.2, mGluR1, and mGluR5 receptors and channels with the brain samples of 20 HS patients and 4 controls and evaluated the ratio of immunopositive cells and those expression levels.

The ratio of each immunopositive cell per glial fibrillary acidic protein-positive astrocytes and the expression levels of all 7 astrocytic receptors and channels in HS lesions were significantly increased. We previously described unique astrogliosis in epileptic lesions similar to what was observed in this study.

This phenomenon is considered to trigger activation of the related signaling pathways and then contribute to epileptogenesis. Thus, astrocytes in epileptic lesion may show self-hyperexcitability and contribute to epileptogenesis through the endogenous astrocytic receptors and channels. These findings may suggest novel astrocytic receptor-related targets for the pharmacological treatment of epilepsy. ¹⁾.

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