

GLUTAMATE-ASPARTATE TRANSPORTER (GLAST) mRNA IN HIPPOCAMPUS AND FRONTAL CORTEX FOLLOWING KINATE-INDUCED SEIZURES. *Doi T., Ueda Y., Tokumaru J. and Mitsuyama Y.*

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Extracellular levels of glutamate increase in the hippocampus during kinate-induced seizure. In epilepsy, glutamate transporter is important in the regulation of extracellular glutamate concentration. We used Northern blots to examine the levels of glutamate-aspartate transporter (GLAST) mRNA in the rat hippocampus and frontal cortex during kinate-induced epileptogenesis. GLAST mRNA expression increased following acute seizures caused by intraperitoneal administration of kainic acid. To evaluate chronic seizures we observed GLAST mRNA expression at 1 day, 7 days and 30 days after unilateral microinjection of kainic acid into amigdaloid body. The level of the expression was increased compared to that of control rats. In most cases, the level was highest 7 days after kainic acid injection. We speculate that GLAST mRNA expression is induced by simple and/or repetitive seizure activity, and that GLAST is important in the regulation of extracellular glutamate. We suggest that the molecular and cellular events responsible for the selective vulnerability of neurons during the process of KA-induced epileptogenic ability is related to induction of GLAST mRNA.