

Changes in EP3 Receptor mRNA Expression in the Brain of Mice ASD Model

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Autism spectrum disorder (ASD) is one of neurodevelopment disorders, with impairment of social behaviors as a major hallmark. Cumulating body of evidence has implicated the neuroinflammatory system as a contributing factor in the pathology of ASD. The objective of this study was to investigate the expression of prostaglandin EP3 receptor mRNA in the brain of mice ASD model. The litters born to valproic acid-treated mothers were tested for their social interaction at the age of 5-6 weeks old. Upon completion of behavioral observation, the mice were sacrificed and assessed for the expression of brain EP3 receptor mRNA. Behavioral results showed shorter duration of sniffing behavior in mice born to VPA-treated mothers. Further examination in this group of mice revealed significantly lower expression of EP3 receptor mRNA in the area prefrontal cortex and hippocampus. The present study suggests that the molecular brain mechanism involved in the arachidonic acid cascade is essential to the pathophysiology of ASD.