

学位論文の要旨

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主論文の題名

Altered neuronal activity in the auditory brainstem following sound stimulation in thalidomide-induced autism model rats

主論文の要旨

Auditory hypersensitivity in autism is frequently observed in clinics. Dysfunction in the auditory brainstem has been suspected. We have established autism model rats using prenatal thalidomide exposure. Here we investigated whether abnormal response occurs in the brainstem following sound stimulus in autism model rats. Autism model rats were prepared by prenatal exposure to thalidomide on embryonic days 9 and 10 in pregnant rats. Then, the animals were exposed to 16-kHz pure tone auditory stimulus and c-Fos immunostaining was performed to examine the neuronal activity on postnatal day 49 to 51. Following sound stimulus, increased number of c-Fos-positive neurons was observed in the medial nucleus of the trapezoid body of autism model rats compared with the control rats. These results suggest that prenatal thalidomide might cause altered processing of auditory stimulus, leading to the characteristics of auditory hypersensitivity in autism.