

عنوان مقاله:

The Effects of Sensory Deprivation of Barrel Cortex on the Morphology of Hippocampal CA1 Neurons in Adolescent Rats

محل انتشار:

اولین کنگره بین المللی علوم اعصاب (نوروتکنولوژی و نقشه برداری مغزی) (سال: 1397)

تعداد صفحات اصل مقاله: 1

نویسندگان:

Parisa Yarmohamadi-Samani - *Department of Biology, College of Science, University of Shiraz, Shiraz, Iran*

Jafar Vatanparast - *Department of Biology, College of Science, University of Shiraz, Shiraz, Iran*

خلاصه مقاله:

The maturation of neuronal circuits is strongly dependent on experience and activity. The rodent barrel cortex offers an excellent model system to investigate such experience-dependent changes in cortical development. Sensory deprivation may induce structural and functional changes not only in the primary sensory cortex but also in the cerebral regions that process other sensory modalities and even in non- sensory regions. In this study the effects of postnatal sensory deprivation of rat barrel cortex, by bilateral whisker trimming, on the morphology of pyramidal neurons in hippocampus were assessed. Wistar rats were randomly allocated into the treatment, sham and control groups. Rats in treatment group had their whiskers trimmed bilaterally to less than 1mm every other day from postnatal day 3(PND3) to PND40. Animals in sham group were gently brushed with scissors to mimic the stimulation that rats received during whisker trimming. Rats in the control group were only handled in the same time period. On PND 40 male and female rats were sacrificed for histological procedures of Golgi-Cox staining. Statistical analysis of collected data showed a significant decrease in Sholl intersections, branch point, terminal point and total cable length of the dendrites of hippocampal CA1 neurons in male and female rats of treatment group compared to sham and control rats. Rats in sham group also showed a significant decrease in the number of intersections and total cable length of the dendrites in CA1 neurons compared to control group. These results suggest that morphological alterations of hippocampal neurons in sensory-deprived rats may contribute to impairment of cognitive and affective .functions that are dependent on hippocampal circuits

کلمات کلیدی:

Barrel cortex, Sensory deprivation, Hippocampus, Sholl analysis, CA1 neurons

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/802614>

