

SSN Abstracts 2005

Result

1 abstract was found. Search by abstract "J27"

Summary

A - Development of the nervous system (0)

B - Molecular and cellular mechanisms: cell-cell interaction (0)

C - Molecular and cellular mechanisms: signalling (0)

D - Molecular and cellular mechanisms: learning and memory (0)

E - Neural Excitability, Synapses: Functional aspects (0)

F - Brain metabolism and homeostasis (0)

G - Cognitive and behavioural neuroscience (0)

H - System neuroscience and neuroinformatics (0)

I - Brain imaging (0)

J - Disorders of the nervous systems: Basic mechanisms (1)

- **J27 MINERALOCORTICOID AND GLUCOCORTICOID RECEPTORS IN THE HIPPOCAMPUS OF MARMOSET MONKEYS EXPOSED TO EARLY LIFE STRESS**

K - Disorders of the nervous systems: Clinical aspects (0)

Abstracts

J27 MINERALOCORTICOID AND GLUCOCORTICOID RECEPTORS IN THE HIPPOCAMPUS OF MARMOSET MONKEYS EXPOSED TO EARLY LIFE STRESS [WWW](#)

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Corticosteroid hormones have two transcription factor receptors, the mineralocorticoid, and glucocorticoid receptors (MR and GR, respectively). Both MR and GR are expressed in the hippocampal formation, with moderate corticosteroid concentrations in rest leading to a predominant MR activation and stress-induced increases in corticosteroid resulting in GR occupancy. The relative balance of MR versus GR occupancy modulates a number of hippocampal functions, including synaptic activity and neurotrophin synthesis. Corticosteroids are often elevated in depression and an imbalance between the activities of MR and GR is implicated; specifically, increased MR and decreased GR function have been reported. The postnatal environment has a significant impact on neurobiological, physiological and behavioral development in mammals. Early deprivation of parental care (ED) in marmoset monkeys is an early-life stressor that induces endocrinological (e.g. increased basal corticosteroid levels) and behavioral (e.g. anhedonia) alterations similar to those exhibited in stress-related psychiatric disorders such as depression. Therefore, we investigated the mRNA-expression levels of MR and GR with radioactive in situ hybridization in the hippocampal formation of 12-month-old

(sub-adult) marmoset monkeys that were exposed to ED between their age of 2 and 28 days (infant) for 30-120 minutes per day or the control (handling) procedure. Our results show a significant decrease in both MR and GR mRNA-expression in the CA1 area of the hippocampus, specifically, in ED animals. These results add neurobiological evidence to the existing in vivo data for the validity of marmoset ED as a primate model of stress-related psychiatric disorders. Funded by the Swiss National Science Foundation (31-067791.02 and 31-110010.05) and the SNF NCCR Swiss Etiological Study of Adjustment and Mental Health

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