

Accepted Manuscript

Title: Neurochemical correlates of functional plasticity in the mature cortex of the brain of rodents

Author: Ewa Siucinska

PII: S0166-4328(17)30210-3
DOI: <http://dx.doi.org/doi:10.1016/j.bbr.2017.05.034>
Reference: BBR 10883

To appear in: *Behavioural Brain Research*

Received date: 1-2-2017
Revised date: 5-5-2017
Accepted date: 10-5-2017

Please cite this article as: Siucinska E, Neurochemical correlates of functional plasticity in the mature cortex of the brain of rodents, *Behavioural Brain Research* (2017), <http://dx.doi.org/10.1016/j.bbr.2017.05.034>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Neurochemical correlates of functional plasticity in the mature cortex of the brain of rodents

Ewa Siucinska

Laboratory of Neuroplasticity, Department of Molecular & Cellular Neurobiology, Nencki Institute of Experimental Biology of Polish Academy of Sciences, 3 Pasteur Str., 02-093, Warsaw, Poland

Corresponding author:

Ewa Siucinska, PhD

Laboratory of Neuroplasticity,

Department of Molecular & Cellular Neurobiology,

Nencki Institute of Experimental Biology of Polish Academy of Sciences,

3 Pasteur Str., 02-093, Warsaw, Poland

Phone: +48225892371

Fax: (4822) 8225342

e.siucinska@nencki.gov.pl

HIGHLIGHTS

- Classical conditioning duration is involved in synaptic connections of S1 cortex.
- Aversive and appetitive training differently contribute in synaptic connections of S1 cortex.
- Associative changes promote cortically regulated GABA-ergic inhibition in S1 cortex.

ABSTRACT

It is commonly accepted that increase of input to sensory structures in mammals is known to produce marked changes in cortical recipient areas. This paper reviews the data concerning manifestations of changes in primary somatosensory cortex of adult animals caused by classical conditioning with reinforcement: aversive (whisker-shock) and appetitive (whisker-water) trainings. These include: anatomical, electrophysiological responses, receptor autoradiography, expression of GABA, GAD at mRNA and protein levels, expression of neuronal and astroglial GAT-1 puncta and inhibitory synaptogenesis in the hollows of “trained” barrels of the adult mouse. Here we have quoted the discovery in an earlier work of the creation of a picture of the extended perimeter of the neuronal mechanisms of coding and mediating in experience-dependent changes in the barrel cortex.

Keywords: barrel cortex; classical conditioning, plasticity

Download English Version:

<https://daneshyari.com/en/article/5735315>

Download Persian Version:

<https://daneshyari.com/article/5735315>

[Daneshyari.com](https://daneshyari.com)