Series GSE107725 UPDATE Query DataSets for GSE107725

Status	Public on Dec 06, 2017
Title	Estrogen protects neurotransmission transcriptome during status epilepticus
Organism	Rattus norvegicus
Experiment type	Expression profiling by array
Summary	Epilepsy in women is often accompanied by hormonal disturbances including irregular cycles and premature onset of menopause. Decline in estrogen levels results in increased risk for neurodegenerative diseases, with strong participation of chronic inflammation. We have shown that estradiol (EB) has neuroprotective effects against seizure-induced damage in the sensitive hilar region of hippocampal dentate gyrus associated with neuropeptide Y (NPY) upregulation. Here, we quantify the alterations caused by kainic acid-induced status epilepticus in the glutamatergic, GABAergic, dopaminergic, cholinergic and serotonergic synapse transcriptomes of dentate gyrus of ovariectomized female rats and the recovery effects of the EB replacement. Our data indicate that the EB replacement reduces the number of significantly regulated genes in seizured ovariectomized female rats by about 45%. The new measure Pathway Restoration Efficiency (PRE) indicates the dopaminergic synapse to be the most protected (65%) and the GABAergic synapse the least protected (37%) by the EB replacement.
Overall design	Two-conditions (AE = beta-estradiol replacement vs AO = oil) in seizured ovariectomized female rats experiment. Biological replicates: 4AE, 4AO.
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