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8th World Congress and Expo on

Cell & Stem Cell Research

March 20-22, 2017 Orlando, USA

Hippocampal neurogenesis in rats genetically prone to audiogenic seizure

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The hippocampal formation is one of the most affected areas, where epileptogenesis is usually associated with dramatic pathological changes in morphology and functions. It is known that epilepsy progression is tightly connected with aberrant neurogenesis in the hippocampus. Animal models of audiogenic epilepsy are useful tools to understand the mechanisms underlying human reflex epilepsies. In our work, we have analysed hippocampal neurogenesis in Krushinsky-Molodkina rats genetically prone to audiogenic seizure (AGS). Our data demonstrated that several AGS stimulated proliferation of neural stem cells. On the other hand, audiogenic kindling led to elimination of the proliferated cells in the hippocampus. Moreover, AGS was accompanied with changing in activity of MAPK cascade, glutamate neurotransmission and expression of exocytosis proteins.

Biography

Margarita Glazova has received her PhD in 1997 from Sechenov Institute of Evolutionary Physiology and Biochemistry Russian Academy of Science. She has performed her Post-doctoral studies at Turku Centre for Biotechnology, University of Turku/Åbo Akademi, Finland and then at East Carolina University Brody School of Medicine, Department of Physiology, Greenville NC, USA. Currently, she is Head of Lab at the Sechenov Institute of Evolutionary Physiology and Biochemistry, Russian Academy of Sciences, St. Petersburg, Russia. Her main interests concern the study of adult neurogenesis and neural stem cells differentiation at normal and under neuropathology disease, such as epilepsy. She has published more than 30 articles in peer-reviewed scientific journals.

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