

Effect of GDNF on Morphology, Proliferation, and Phagocytic Activity of Rat Neonatal Cortex Isolated Microglia

Zhuravleva M., Rizvanov A., Mukhamedshina Y.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© 2016, Springer Science+Business Media New York. Microglia are the main defenders of the central nervous system and at the same time are involved in the pathogenesis of various neurological disorders. Microglia hyperactivity or phagocytic impairment exacerbates degenerative processes in nervous tissue leading to further loss of function. A variety of factors and cytokines may modify microglia function. In our study, it was shown that glial cell line-derived neurotrophic factor (GDNF), a well-known neuroprotective molecule, decreases phagocytic activity of microglia in vitro model of spinal cord injury. Recombinant adenovirus encoding GDNF (Ad5-GDNF) transfected microglia have shown the same effect and can be potentially used as a therapeutic agent in case of neurotrauma due to its debris phagocytic and GDNF-associated neuroprotective role.

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Keywords

Glial cell line-derived neurotrophic factor, Microglia, Recombinant adenovirus