

**CEREBELLAR CORTEX NEURONS AND MICROGLIA REACTION
TO SEVOFLURANE ANESTHESIA****G. Yu. Yukina^{a, *}, E. G. Sukhorukova^a, I. V. Belozertseva^a, Yu. S. Polushin^a,
V. V. Tomson^a, and A. Yu. Polushin^a**^a*First Pavlov State Medical University, St. Petersburg, 197376 Russia***E-mail: pipson@inbox.ru*

Cerebellum is one of the brain department the most sensitive to toxic general anesthetics effects. The aim of this work was to assess the cerebellar cortex neurons and microglia morphological response to prolonged (6 h) sevoflurane exposure. Histological analysis revealed morphofunctional reorganization of all ($n = 15$) rat cortex layers after long sevofluran exposition. Total neurons density in the molecular and ganglionic layers decreases and the number of morphologically modified neurons significantly increases to 250% and 300%, respectively, that both explained by direct toxic anesthetic influence and disruption of neuronal connections. In the granular layer, the neurons population density does not change and the number of morphologically changed neurons increases not significantly. Immunohistochemistry shows microglia activation. But the degree of microglia activation is low and their number does not increase.

Keywords: cerebellum, neurons, interneural communications, microglia, neuroinflammation, immunohistochemistry, sevoflurane anesthesia