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TESTING OF THE NEW HEAT SHOCK PROTEIN INDUCTOR IN THE CELLULAR MODEL OF REACTION TO THE TRAUMATIC BRAIN INJURY

V. F. Lazarev^{a, *}, E. A. Dutysheva^a, M. A. Trestsova^b, M. A. Mikeladze^a, I. A. Utepova^{b, c},
O. N. Chupakhin^{b, c}, I. V. Guzhova^a, and B. A. Margulis^a

^aInstitute of Cytology Russian Academy of Sciences, St. Petersburg, 194064 Russia

^bUral Federal University, Ekaterinburg, 620002 Russia

^cPostovsky Institute of Organic Synthesis, Ural Branch of the Russian Academy of Sciences, Ekaterinburg, 620990 Russia

*E-mail: vl.lazarev@gmail.com

Traumatic brain injury (TBI) leads to multiple pathological processes at the cellular level. One of the results of TBI and massive cell death can be accumulation in interstitial and cerebrospinal fluids of toxic factors. Such process causing secondary damage is not transient and often lasts over days and weeks. We suggest that the Hsp70 protein can play an important role in the reduction of post-traumatic pathologic complications. Chaperone Hsp70 is known by its cytoprotective activity, and therefore the approach suggesting the elevation of the protein concentration in cells responding to apoptotic or inflammatory stimuli may be promising. To prove that, we tested the effect of the low molecular weight substance KD-29 inducing Hsp70 synthesis on the C6 rat glioma cells reaction to the cytotoxicity of cerebrospinal fluid from rats after TBI. KD-29 significantly reduced apoptosis and increased the proliferative activity of cells under the conditions of post-traumatic process modeling.

Keywords: traumatic brain injury, Hsp70, chaperone, therapy, rat glioma C6