

14th International Conference on **Generic Drugs and Biosimilars**
&
9th Global Experts Meeting on **Neuropharmacology**

November 15-16, 2018 | Berlin, Germany

To a question of participation of Src-kinase in carrying out the nervous signals

Tatiana Yavisheva and Sergey Shcherbakov
R-Pharm, Russian Federation

High content of inactive Src-kinase is characteristic for brain, because it develops from an ectoderm. The action of neurotransmitters is directed to strengthening of inactive Src content in nervous tissue. When the nervous signal transfer, a part of inactive Src-kinase passes into the active form which changes the functional activity of neurocytes. Excessive increase of inactive Src inhibits activity of nervous cells due to a contraction of cells. For signal initiation it is necessary to reduce the inactive Src amount in a cell-target which decreases the neurotransmitters synthesis and strengthens an exocytosis. Such primary signal can be considered as exciting. The inhibitory signal, on the contrary, carries the information on increase of inactive Src in cells- targets. Thus, glucocorticoids slows down the further synthesis of AKTH because unlike AKTH they increase the inactive Src-kinase in tissues. During glucocorticoids accumulation the portion of active Src participating in AKTH production falls that blocks this hormone synthesis. Unlike glucocorticoids, estrogens carry the exciting signal because they directly activate Src-kinase and reduce a reserve of inactive form in a brain. Because the inactive Src participates in cytoskeleton formation, decrease in its quantity causes shortening of the processes and deterioration in cells communication with aging. The general weakening of inactive Src activates the exocytosis in the hypothalamus neurocytes and reinforces the synthesis of AKTH and glucocorticoids. Chronic stresses or congenital low level of inactive Src can increase the production of glucocorticoids even more. Because the receptors to glucocorticoids are most presented in CA₁₋₂ fields of a hippocampus their excess content in this area causes the exocytosis block in neurocytes and their processes, that inhibits transfer of a nervous impulse. This can lead to development of neurodegenerative diseases, including Alzheimer's disease at which the greatest pathological changes are found in the field CA₁.

Recent Publications:

1. Razandi M et al. (2003) Proximal events in signaling by plasma membrane estrogen receptors. *Journal of Biological Chemistry*. 14:2701-2712.
2. Yavisheva T M and Shcherbakov S D (2012) Participation of the morphofunctional zones in aging process. *Advances in Aging Research*. 3:72-78.
3. Yavisheva T M and Shcherbakov S D (2016) Participation of an inactive and active Src-kinase in formation of a cytoskeleton and melanogenesis in Hep2 cells. *International Journal of Current Microbiology and Applied Sciences*. 5(12):583-593
4. Yavisheva T M, Shcherbakov S D and Golubeva I S (2017) Some aspects of morphofunctional organization of germinal regions of the hippocampus and the olfactory bulb in young and old mice. *International Journal of Innovative Studies in Medical Sciences*. 1(1):4-11.
5. Yavisheva T M and Shcherbakov S D (2018) To a question of structural and functional organization of the morphofunctional zones in age aspect. Participation of Src-kinase in the work of morphofunctional zones *International Journal of Current Medical and Pharmaceutical Research*. 4(6):3336-3344.

Biography

Tatiana Yavisheva graduated from the Moscow State University of Medicine and Dentistry in 1980. She holds a PhD and ScD in Medicine; defended the thesis on the topic of morphofunctional zones and stem cell proliferation and differentiation. She has been working at N N Blokhin Cancer Research Center, Russia. She has written over 130 articles and 3 monographs devoted to this problem. In 2015 she was offered to set up a scientific laboratory for the study of the mechanisms of stem cells regulation in Joint Stock Company "R-Pharm". She is currently working on a problem of the structural organization of brain tissue and its change in age aspect.

javisheva@rambler.ru