



CURRICULUM VITAE OLGA KRESTININA

ADDRESS: Institute of Theoretical and Experimental Biophysics Russian Academy of Science, 142290, Pushchino City, Moscow region, Russia

PHONE: (495)9239668 (ext 267)

FAX: (495)9240493

DATE AND PLACE OF BIRTH: 24.09.1967,
Moscow region, Russia

EDUCATION:

1986-1991, graduated from Chemical-Biological Department of Tula Pedagogical State Institute;

1999-2003 – Post-graduated Student of the Institute of

Theoretical and Experimental Biophysics of Russian Academy of Sciences

2005 – PhD Thesis “Phosphorylation of rat brain mitochondrial proteins”,

(Certificate of Degree # 158017).

POSITION HELD:

1991-1999 - school teacher

1999-2005 – Junior Scientist of the Institute of Theoretical and Experimental Biophysics, RAS;

2005-2008 - Scientist of the Institute of Theoretical and Experimental Biophysics, RAS.

2008-present – Senior Scientist of the Institute of Theoretical and Experimental Biophysics, RAS.

RESEARCH INTERESTS:

Processes of transformation of energy in mitochondria (brain), permeability transition pore, Ca-transporting system of mitochondria, ATP synthase/hydrolase complex (subunit c of ATPase), Ca-binding proteins, phosphorylation /dephosphorylation of mitochondrial proteins, aging.

FELLOWSHIP:

2002-2012 - Otto-von-Guericke University, Institute of Neurochemistry, Magdeburg, Germany.

RESERCH PROJECTS:

1. 2005-2007: “Regulation of mitochondrial function by second messenger system. The role of 43 kDa and 17 kDa phosphoproteins in the induction of apoptosis in mitochondria” – supported by the Russian Foundation for Fundamental Research (RFBR) Fund, # 05-04-49487 to Prof. Yu.V Evtodienko.

2. 2006-2008: “New mechanisms of involvement of peripheral benzodiazepine receptor and its selective ligands in the initial stages of programmed cell death in brain mitochondria” – supported by the RFBR # 06-04-48763 to Dr. T.S. Azarashvili.
3. 2008-2010: “Regulation of mitochondrial functions by cyclic nucleotides. Role of 46 kDa phosphodiesterase (CNP) in the initial stages of apoptosis in mitochondria” – supported by the RFBR # 08-04-00723 to Dr. O.V. Krestinina.
4. 2009-2011: “Mechanisms of regulation of cytochrome c release from pancreatic mitochondria as a determining factor of induction of acinar cell apoptosis during pancreatitis” – supported by the RFBR # 09-04-00739 to Dr. I.V. Odinkova.
5. 2011-2013: “Investigation of antioxidants effects on the oxidative stress in rat brain mitochondria for elucidating a novel protective mechanism in aging” – supported by the RFBR #11-04-01321 to Dr. O.V. Krestinina.
6. 2012-2014: “The role of post-translational modification (phosphorylation) of 2', 3'-cyclic nucleotide 3'-phosphodiesterase(CNP) in regulation of mitochondrial functions and the initial stages of programmed cell death under neurodegeneration”- supported by the RFBR #12-04-00671 to Dr. Yu.L. Baburina
7. 2013-2015: “Identification of the new protein-targets for neuroprotection in brain mitochondria, initiating induction of the programmed cell death (apoptosis)” supported by the RFBR #13-04-00935 to Dr. T.S. Azarashvili.
8. 2014-2016: “ Investigation of melatonin role in TSPO-modulated regulation of mPTP in rat liver and brain mitochondria in aging” supported by the RFBR #14-04-00625 to Dr. O.V. Krestinina.

PUBLICATIONS:

1. Saris N.-E. L., Krestinina O.V., Azarashvili T.S., Odinkova I.V., Tyynela J., Evtodienko Yu.V. Regulation of ATP synthase by Ca^{2+} and Mg^{2+} dependent phosphorylation of subunit c. *Advances in Magnesium Research: Nutrition and Health*, pp. 101-106, 2001.
2. T. Azarashvili, O. Krestinina, I. Odinkova, Yu. Evtodienko, G. Reiser. Physiological Ca^{2+} level and Ca^{2+} -induced Permeability Transition Pore control protein phosphorylation in brain mitochondria. *Cell Calcium*, 34; pp. 253-259, 2003. PMID: 12887972
3. Azarashvili T., Krestinina O., Yurkov I., Evtodienko Y., Reiser G. High-affinity peripheral benzodiazepine receptor ligand, PK11195, regulates protein phosphorylation in rat brain mitochondria under control of $Ca(2+)$. *Journal of Neurochemistry*. 2005. T. 94. № 4. C. 1054-1062. PMID: 16092946
4. Azarashvili T., Grachev D., Krestinina O., Evtodienko Y., Yurkov I., Papadopoulos V., Reiser G. The peripheral-type benzodiazepine receptor is

involved in control of Ca²⁺-induced permeability transition pore opening in rat brain mitochondria. *Cell Calcium*. 2007. T. 42. № 1. C. 27-39. PMID: 17174393

5. Krestinina O.V., Grachev D.E., Odinkova I.V., Evtodienko Y.V., Azarashvili T.S., Reiser G. Effect of peripheral benzodiazepine receptor (PBR/TSPO) ligands on opening of Ca²⁺-induced pore and phosphorylation of 3.5-kDa polypeptide in rat brain mitochondria. *Biochemistry (Moscow)*. 2009. T. 74. № 4. C. 421-429. PMID: 19463096
6. Galvita A, Grachev D., Azarashvili T., Baburina Y., Krestinina O., Stricker R., Reiser G. The brain-specific protein, p42(IP4) (ADAP 1) is localized in mitochondria and involved in regulation of mitochondrial Ca²⁺. *Journal of Neurochemistry*. 2009. T. 109. № 6. C. 1701-1713. PMID: 19383085
7. Azarashvili T., Krestinina O., Galvita A., Grachev D., Stricker R., Reiser G., Baburina Y., Evtodienko Y. Ca²⁺-dependent permeability transition regulation in rat brain mitochondria by 2',3'-cyclic nucleotides and 2',3'-cyclic nucleotide 3'-phosphodiesterase. *American Journal of Physiology - Cell Physiology*. 2009. T. 296. № 6. PMID: 19357238
8. D. E. Grachev, O. V. Krestinina, Y. L. Baburina, G. Reiser, T. S. Azarashvili Effect of Ro 5-4864 and PK11195 on protein phosphorylation in mitochondria isolated from primary cultures of rat astrocytes *Biochemistry (Moscow) Supplement Series A: Membrane and Cell Biology*, 2010, V.4 (1), p. 43-49
9. O. V. Krestinina, A. G. Kruglov, D. E. Grachev, Yu. L. Baburina, Yu. V. Evtodienko, D. A. Moshkov, I. M. Santalova, T. S. Azarashvili Age-dependent changes of mitochondrial functions in Ca²⁺-induced opening of permeability transition pore *Biochemistry (Moscow) Supplement Series A: Membrane and Cell Biology*, 2010, V. 4 (2) , p. 180-186
10. Azarashvili T., Baburina Y., Grachev D., Krestinina O., Stricker R., Reiser G., Evtodienko Y. Calcium-induced permeability transition in rat brain mitochondria is promoted by carbenoxolone through targeting connexin43. *American Journal of Physiology - Cell Physiology*. 2011. T. 300. № 3. C. C707-C720. PMID: 21148408
11. T. S. Azarashvili, I. V. Odinkova, O. V. Krestinina, Y. L. Baburina, D. E. Grachev, V. V. Teplova, E. L. Holmuhamedov. Role of phosphorylation of porin (VDAC) in regulation of mitochondrial outer membrane under normal conditions and alcohol intoxication. *Biochemistry (Moscow) Supplement Series A: Membrane and Cell Biology*, 2011, V. 5 (1), p. 11-20

12. Y. L. Baburina, O. V. Krestinina, T. S. Azarashvili 2',3'-cyclic nucleotide phosphodiesterase (CNPase) as a target in neurodegenerative diseases *Neurochemical Journal*, 2013, V. 7 (1), p. 1-15
13. O. V. Krestinina, P. R. Makarov, Yu. L. Baburina, A. E. Gordeeva, T. S. Azarashvili The identification of phosphorylated forms of myelin basic protein associated with mitochondria, *Neurochemical Journal*, 2013, V. 7 (4), p 284-290
14. O. V. Krestinina, I. V. Odinokova, Yu. L. Baburina, T. S. Azarashvili Age-related effect of melatonin on permeability transition pore opening in rat brain mitochondria, *Biochemistry (Moscow) Supplement Series A: Membrane and Cell Biology*, 2013, V. 7 (4), p. 286-293
15. Yu. L. Baburina, A. E. Gordeeva, D. A. Moshkov, O. V. Krestinina, A. A. Azarashvili, I. V. Odinokova, T. S. Azarashvili. Interaction of myelin basic protein and 2',3'-cyclic nucleotide phosphodiesterase with mitochondria, *Biochemistry (Moscow)*, 2014, V. 79 (6), p. 555-565
16. Azarashvili T, Odinokova I, Bakunts A, Ternovsky V, Krestinina O, Tyynelä J, Saris NE. Potential role of subunit c of F0F1-ATPase and subunit c of storage body in the mitochondrial permeability transition. Effect of the phosphorylation status of subunit c on pore opening. *Cell Calcium*. 2014;55(2):69-77. PMID: 24380588
17. Azarashvili T, Krestinina O, Galvita A, Grachev D, Baburina Y, Stricker R, Reiser G. Identification of phosphorylated form of 2', 3'-cyclic nucleotide 3'-phosphodiesterase (CNPase) as 46 kDa phosphoprotein in brain non-synaptic mitochondria overloaded by calcium. *J Bioenerg Biomembr*. 2014, 46(2):135-45. PMID: 24532135.
18. Azarashvili T, Baburina Y, Grachev D, Krestinina O, Papadopoulos V, Lemasters JJ, Odinokova I, Reiser G. Carbenoxolone induces permeability transition pore opening in rat mitochondria via the translocator protein TSPO and connexin43. *Arch Biochem Biophys*. 2014 PMID: 24995971