

Curriculum Vitae

Name: Natalia V. Belosludtseva

Date and place of birth: July 20, 1982; Yoshkar-Ola, Russia

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Education:

- 2004 – graduated with honors from the Department of Biochemistry and Molecular Biology (the Biological-Chemical Faculty of Mari State University, Yoshkar-Ola, Russia);
- 2008 – completed the post-graduate study at Russian Academy of Science (Institute of Theoretical and Experimental Biophysics of Russian Academy of Science (ITEB RAS), Pushchino, Moscow Region, Russia);
- 2008 – received a PhD degree in Biochemistry (Russian Academy of Science, ITEB RAS, Pushchino, Moscow Region, Russia).

Ph.D. Thesis: Mitochondrial palmitate/Ca²⁺-induced cyclosporin A-insensitive pore: the key features and possible physiological significance.

Advisor: Prof. Galina D. Mironova.

Research training and experience:

- Bioenergetics of mitochondria (methods of electrochemistry: potentiometry, amperometry, polarography; spectroscopy techniques: spectrophotometry, fluorometry; methods of protein biochemistry: gel-filtration, gel-electrophoresis etc.);
- Techniques making use of artificial membranes (methods of preparation and working with multilamellar and unilamellar liposomes; column chromatography, fluorescence techniques, etc.);
- Methods of computer science (application of standard software packages for analysis of experimental data).

Professional appointments:

- since 2004 to 2008 – junior researcher (Laboratory of Mitochondrial Transport, Institute of Theoretical and Experimental Biophysics RAS, Pushchino, Moscow Region, Russia)
- since 2008 to 20013 – staff scientist (Laboratory of Mitochondrial Transport, ITEB RAS, Pushchino, Moscow Region, Russia)

- since 2013 to 2014 – senior staff scientist (Laboratory of Mitochondrial Transport, ITEB RAS, Pushchino, Moscow Region, Russia)
- since 2014 to present – senior staff scientist (Laboratory of pharmacological regulation of cell resistance, ITEB RAS, Pushchino, Moscow Region, Russia)

Fellowships:

- May, 2014 - Visiting scientist of Helsinki University, Finland, Department of Applied Chemistry and Microbiology, prof. N-E. L. Saris.

Honours:

- 2013 – Scholarship for Beginner Scientists from the RF President.

Scientific interests:

Mitochondria; mitochondrial permeability transition pore; free fatty acids; palmitate/Ca²⁺-induced pore; ion transport; apoptosis; membrane biology; membrane bioenergetics; structure and functions of coupling membranes.

List of major publications:

1. K.N. Belosludtsev, N.V. Belosludtseva, and G.D. Mironova (2005) Possible mechanism for formation and regulation of the palmitate-induced cyclosporin A-insensitive Mitochondrial Pore *Biochemistry (Moscow)*, **70**, pp. 815-821.
2. Konstantin Belosludtsev, Nils-Erik L. Saris, Leif C. Andersson, Natalia Belosludtseva, Alexey Agafonov, Ankit Sharma, Dmitry A. Moshkov, Galina D. Mironova (2006) On the mechanism of palmitic acid-induced apoptosis: the role of a pore induced by palmitic acid and Ca²⁺ in mitochondria. *J. Bioenerg Biomembr*, **38**, p. 113-120.
3. Galina D. Mironova, Konstantin N. Belosludtsev, Natalia V. Belosludtseva, Elena N. Gritsenko, Boris I. Khodorov, Nils-Erik L. Saris (2007) Mitochondrial Ca²⁺ cycle mediated by the palmitate-activated cyclosporin A-insensitive pore. *J. Bioenerg. Biomembr.*, **39**, p. 167-174.
4. Agafonov A.V., Gritsenko E.N., Shlyapnikova E.A., Kharakoz D.P., Belosludtseva N.V., Lezhnev E.I., Saris N.E., Mironova G.D. (2007) Ca²⁺-induced phase separation in the membrane of palmitate-containing liposomes and its possible relation to membrane permeabilization. *J Membr Biol*. **215**(1), 57-68.
5. Murzaeva S.V., Belosludtseva N.V., Gavrovskaja L., Mironova G.D. (2008) Effect of taurine on the ion transport system in mitochondria. *Biofizika* (Russian). **53**(6), 962-6.
6. Mironova G.D., Shigaeva M.I., Belosludtseva N.V., Gritsenko E.N., Belosludtsev K.N., Germanova E.L., Lukyanova L.D. (2008) Effect of several flavonoid-containing plant preparations on activity of mitochondrial ATP-dependent potassium channel. *Bull. Exp. Biol. and Med.* (Russian), **8**, pp. 195-199.
7. Belosludtsev K.N., Belosludtseva N.V., Mironova G.D. (2008) The role of mitochondrial palmitate/Ca²⁺-activated pore in palmitate-induced apoptosis. *Biofizika* (Russian), **6**, pp. 6-11.
8. K. N. Belosludtsev, N.-E.L. Saris, N.V. Belosludtseva, A.S. Trudovishnikov, L.D. Lukyanova, G.D. Mironova (2009) Physiological aspects of the

- mitochondrial cyclosporin A-insensitive palmitate/Ca²⁺-induced pore: tissue specificity, age profile and dependence on the animal adaptation to hypoxia. *J. Bioenerg. Biomembr.*, **41**(4):395-401.
9. Belosludtseva N.V., Belosludtsev K.N., Agafonov A.V., Mironova G.D. (2009) Effect of cholesterol on the formation of palmitate/Ca²⁺-induced pore in mitochondria and liposomes. *Biofizika* (Russian), **54**(3), 464-470.
 10. K. N. Belosludtsev, A.S. Trudovishnikov, N.V. Belosludtseva, A.V. Agafonov, G.D. Mironova (2010) Palmitic acid induces the opening of a Ca²⁺-dependent pore in the plasma membrane of red blood cells: the possible role of the pore in erythrocyte lysis *J. Membr. Biol.* **237**(1), стр. 9-13.
 11. Teplova V.V., Belosludtsev K.N., Belosludtseva N.V., E.L. Holmukhamedov (2010) Mitochondria and hepatotoxicity of ethanol. *Biofizika* (Russian), **55**(6), pp. 1038-1047.
 12. Belosludtseva N.V., Mironova G.D. (2011) Mitochondrial lipid pore induced by palmitate and calcium: features and physiological aspects of functioning. / LAP Lambert academic publishing. - 148. ISBN978-3-8465-4245-3. (Russian).
 13. Mironova G.D., Belosludtsev K.N., Surin A.M., Trudovishnikov A.S., Belosludtseva N.V., Pinelis V.G., Krasil'nikova I.A., Khodorov B.I. (2011) Mitochondrial lipid pore in the mechanism of glutamate-induced calcium disturbance of neurons. *Biological membranes* (Russian), **28**(6), 483-494.
 14. Belosludtsev K.N., Garmash S.A., Belosludtseva N.V., Belova S.P., Berezhnov A.V., Gudkov S.V. (2012) Study of the mechanisms of cytotoxic effect of uranyl nitrate. *Biofizika* (Russian), **57**(5), 789-795.
 15. Venediktova N., Shigaeva M., Belova S., Belosludtsev K., Belosludtseva N., Gorbacheva O., Lezhnev E., Lukyanova L., Mironova G. (2013) Oxidative phosphorylation and ion transport in the mitochondria of two strains of rats varying in their resistance to stress and hypoxia *Molecular and cellular biochemistry*, **383**(1-2), 261-269.
 16. Talanov E.Yu; Pavlik L.L.; Shigaeva M.I.; Belosludtseva N.V.; Moshkov D.A., Mironova G.D. (2013) Detection of KIR6 family protein in rat heart and liver mitochondria by immunoelectron microscopy. *Biologicheskie Membrany* (Russian), 30 (5-6), p. 474-478.
 17. Belosludtsev K.N., Belosludtseva N.V., Kondratyev M.S., Agafonov A.V., Purtov Y.A. (2014) Interaction of phospholipase A of the E. coli outer membrane with the inhibitors of eucaryotic phospholipases A₂ and their effect on the Ca²⁺-induced permeabilization of the bacterial membrane. *J. Membr. Biol.* **247**(3), 281-288.
 18. Belosludtsev K.N., Belosludtseva N.V., Agafonov A.V., Astashev M.E., Kazakov A.S., Saris N.-E.L., Mironova G.D. (2014) Ca²⁺-dependent permeabilization of mitochondria and liposomes by palmitic and oleic acids: a comparative study. *Biochem. Biophys. Acta*
DOI:10.1016/j.bbamem.2014.06.017 (in press).

And more than 50 theses in the Conference Proceedings.