

Curriculum vitae

1. Name: Lysenko Liudmila Alexandrovna
2. DOB: 31.12.1976
3. Work address: Petrozavodsk, Alexander Nevsky pr., 50, room 203
4. Work phone: (8142) 571879
5. E-mail: l-lysenko@yandex.ru
6. Position: Senior researcher, PhD in Biochemistry
9. Key words: intracellular proteases, calpains, cathepsins, proteasome, proteolytic regulation, adaptation, molecular evolution, neurodegeneration, molecular pathology
10. Number of publications: 2 monographs, 2 book chapters, 1 manual, 40 papers, 72 abstracts (total 116)
11. Main publications of Lysenko (Bondareva) L.A.:

Monographs:

Bondareva L.A., Nemova N.N. & Kaivarainen E.I. Intracellular Ca²⁺-dependent proteolytic system of animals. M.: Nauka, 2006. 294 p. [in Russian]

Lysenko L.A., Nemova N.N. & Kantserova N.P. Proteolytic regulation of biological processes. Petrozavodsk: KarRC RAS, 2010. 482 c. [in Russian]

Lysenko Liudmila & Nemova Nina. Molecular Evolution within Protease Family C2, or Calpains. In: Protein Engineering (Pravin T.P. Kaumaya, ed.), ISBN 978-953-307-830-4. Croatia: InTech, 2011. Pp. 17-43. <http://www.intechopen.com/articles/show/title/molecular-evolution-within-protease-family-c2-or-calpains>

Manual:

Nemova N.N. & Bondareva L.A. Proteolytic enzymes: manual. Petrozavodsk: KarRC RAS, 2005. 92 p. [in Russian]

Papers in regular issues [in English]:

Kaivarainen E., Nemova N., Krupnova M. & Bondareva L. The effect of toxic factors on intracellular proteinase activity in freshwater fish. Acta Vet. Brno. 1998. 67:306-16.

Nemova N.N., Kaivarainen E.I. & Bondareva L.A. Ca²⁺-activated neutral proteinase in some fish erythrocytes. Vestnik moskovskogo Universiteta. Khimia. 2000. 41(6 Suppl.):106-8.

Bondareva L.A., Nemova N.N., Kaivarainen E.I., Krupnova M.Yu. & Ostashkova V.V. Effect of dietary intoxication by mercury salts on cysteine proteinase activity in rat tissues. Izv. AN. Ser. Biol. 2003. 1:37-40.

Kaivarainen E.I., Nefedova Z.A., Bondareva L.A., Alexeeva N.N. & Nemova N.N. Correlation of intracellular Ca²⁺-activated proteinase activity and cholesterol content in White Sea mussel (*Mytilus edulis*) membranes at different water saltness. Bull. Exper. Biol. Med. 2005. 140(4):455-8.

Sharova N.P., Astakhova T.M., Bondareva L.A., Dmitrieva S.B. & Erokhov P.A. Peculiarities of proteasome pool formation in rat spleen and liver during postnatal development. Biochemistry (Moscow). 2006. 71:1035-41.

Sharova N.P., Astakhova T.M., Bondareva L.A., Dmitrieva S.B. & Stoliarov S.D. Formation of immune proteasomes and development of the immune system in mammalian ontogenesis. Rus. J. Dev. Biol. 2007 Sep-Oct; 38(5):265-71.

Nemova N.N. & Bondareva L.A. To the problem of proteolytic enzyme evolution. Biochemistry. Series B: Biomed. Chem. 2008. 2(2):115-25.

Bondareva L.A. & Nemova N.N. Molecular evolution of intracellular Ca²⁺-dependent proteases. Rus. J. Bioorg. Chem. 2008. 34(3):266-73.

Altaeva E.G., Lysenko L.A., Kantserova N.P., Nemova N.N. & Shenkman B.S. The basal calcium level in fibers of the rat soleus muscle under gravitational unloading: the mechanisms of its increase and the role in calpain activation. Dokl. Biol. Sci. 2010. Jul-Aug; 433:241-3.

Kantserova N.P., Ushakova N.V., Lysenko L.A. & Nemova N.N. Calcium-dependent proteinases of some invertebrates and fish. J. Evol. Biochem. Physiol. 2010. 46(6):481-94.

Kantserova N.P., Lysenko L.A. & Nemova N.N. Effect of Waterborne Copper and Cadmium on Calcium-dependent Proteases in Blue Mussel, *Mytilus edulis* L. // Fourth International scientific conference BALWOIS 2010, Ohrid, Rep. Macedonia 25–29.05.2010. Free access: http://www.balwois.com/balwois/administration/full_paper/ffp-1539.pdf

Nemova N.N., Lysenko L.A. & Kantserova N.P. Proteases of the calpain family: structure and functions. Rus. J. Dev. Biol. 2010. 41(5):318-25.

Lysenko L.A., Kantserova N.P., Ushakova N.V. & Nemova N.N. Proteases of calpain family in water invertebrates and fish. Rus. J. Bioorg. Chem. 2012. 38(3):282-9.

Kantserova N.P., Fokina N.N., Lysenko L.A. & Nemova N.N. Correlation of Ca²⁺-dependent proteinase activity and lipid membrane composition in mussels, *Mytilus edulis*, at heavy metal accumulation. Rus. J. Bioorg. Chem. 2012. 38(1):71-6.

Bakhmet I.N., Kantserova N.P., Lysenko L.A., Nemova N.N. Effect of copper and cadmium ions on heart function and calpain activity in blue mussel *Mytilus edulis*. J. Environ. Sci. Health A Tox. Hazard Subst. Environ. Eng. 2012 Sep.;47(11):1528-35. <http://www.ncbi.nlm.nih.gov/pubmed/22702812>

12. Participant of the scientific meetings:

5th Ichthyohaematolog. conf. «Ichthyohaematology», Protivin, Czech Republic, 1998;

6th European symp. «Calcium binding proteins in normal and transformed cells», Paris, France, 2000;

9th, 10th, 11th Workshops «The Biological Essentiality of Macro and Trace Elements», Jena, Germany, 2000, 2002, 2004;

3rd, 4th Intern. Symp. «Trace Elements in Human: New Perspectives», Athens, Greece, 2001, 2003;

11th Intern. Symp. on Trace Elements in Man and Animals (TEMA 11), Berkeley, CA, USA, 2002;

2nd AMAP Intern. Symp. on Environmental Pollution of the Arctic, Rovaniemi, Finland. 2002;

2nd Intern. Conf. «Enzymes in the Environment: Activity, Ecology and Applications», Prague, Czech Republic, 2003;

9th Meeting of PhD Students in Evolutionary Biology, Fiesch, Switzerland, 2003;

10th Meeting of PhD Students in Evolutionary Biology, Shrewsbury, Great Britain, 2004;

15th Intern. Society of Developmental Biologists Congress, Sydney, Australia, 2005;

1st, 2nd, 3rd Physiologists meetings, Ukraine, 2005-2007;

EUROTOX 2006 – 6 CTDC Congress, Cavtat/Dubrovnik, Croatia, 2006;

44th Congress of the European Societies of Toxicology, Amsterdam, The Netherlands, 2007;

Intern. conf. «Proteolysis, mechanisms of regulation and the role in cell physiology and pathology», Minsk, Belarus, 2007;

Intern. conf. «Arctic marine ecosystems in an era of rapid climate change». Arctic Frontiers 2009. Tromse, Norway, 2009;

14th Intern. Conf. «Biochemistry of Exercise», Guelph, Canada, 2009;

4th Intern. scientific conf. BALWOIS-2010, Ohrid, Republic of Macedonia, 2010;

36th FEBS Congress, Torino (Turin), Italy, 2011;

20th Intern. Symp. «ECOLOGY & SAFETY», Sunny Beach Resort, Bulgaria, 2011;

III Intern. conf. «Biosphere origin and evolution» (BOE-III), Rethymno, Crete, Greece, 2011;

EMBO Workshop on Intracellular Proteolysis and Cancer «From basic research to patient care», Valencia, Spain, 2011;

EMBO Workshop «Evolution in the Time of Genomics», Venice, Italy, 2012;

28th ESCPB Congress «Cellular and molecular mechanisms for physiological adaptation to multiple stress», Bilbao, Spain, 2012.

13. Methods used:

spectrofluorimetry, Western-blot analysis, SDS-PAGE-electrophoresis, zymography, ion-exchange, hydrophobic & size-exclusion chromatography

14. Experienced in: (1) protease separation, purification, identification, structure and heterogenicity study by the methods of Western-blot, PAGE-electrophoresis, ion-exchange, hydrophobic, size-exclusion chromatography; (2) spectrofluorimetry assay of protease enzymatic activity; (3) the study of protease functional activity regulation on the levels of transcription (mRNA content by RT-PCR), synthesis (immunoblotting), activation/inactivation (enzymatic assay by the hydrolysis of protein and oligopeptide substrates by spectrometry, fluorimetry, zymography, endogenic proteinaceous inhibitor content), and posttranslational modification (autolysis, dissociation, chemical modification of native proteases).

15. Languages: English, spoken Spanish