

NADIIA M. MOSIICHUK
PhD

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II. PERSONAL

Ukrainian, female, married, born March 27, 1983 (Ukraine)

Languages: English, Ukrainian, Russian, Polish

III. EDUCATION

2000-2005: Student, Department of Chemistry, Precarpathian National University. M.Sc. thesis (in Chemistry): “Effect of SiO₂ supplementation on rheological and electrophysical properties of system”.

2004: Bachelor’s degree in Chemistry

2005: Master’s degree in Chemistry, Department of Organic and Analytical Chemistry, Precarpathian National University. M.Sc. thesis “Effect of SiO₂ supplementation on rheological and electrophysical properties of system”.

2005-2008: Ph.D. student, Department of Biochemistry and Biotechnology. Ph.D. thesis “Antioxidant mechanisms in *Arabidopsis thaliana* lines impaired in tocopherol biosynthesis genes in response to stress factors”, defended at Yuriy Fed’kovych Chernivtsi National University, Ukraine (December 12, 2012). Supervisor: Prof. Volodymyr Lushchak, Head of Department of Biochemistry, PNU.

2013: PhD degree in Biochemistry (decision of Attestation commission from March 28, 2013).

IV. EMPLOYMENT HISTORY

09/2018 – present: Associate Professor, Department of Biochemistry and Biotechnology, Precarpathian National University, Ukraine.

2011–2018: Lecturer (part-time), Department of Biochemistry and Biotechnology, Precarpathian National University, Ukraine.

2009-2018: Technician, Department of Biochemistry and Biotechnology, Precarpathian National University, Ukraine.

V. RESEARCH EXPERIENCE, PRACTICAL TRAININGS, SCHOLARSHIPS

12/12/2018-25/12/2018: Visiting researcher, The Kielanowski Institute of Animal Physiology and Nutrition, Jablonna near Warsaw, Poland. Research project “Testing the stability of different formulations of ALLN-346 immediate release capsules along gastrointestinal tract in fed state in pigs”.

20/09/2018-01/10/2018: Visiting researcher, The Kielanowski Institute of Animal Physiology and Nutrition, Jablonna near Warsaw, Poland.

- 06/06/2018-05/07/2018:** Visiting researcher, Department of Biology, Faculty of Science, Lund University, Lund, Sweden. Research project: "Treatment of hyperuricemia and hyperuricosuria in nephropathic Uox knockout mice".
- 18/04/2018-25/04/2018:** Visiting researcher, Institute of Physiology, Department of Neurophysiology, University of Tübingen, Tübingen, Germany. Research project: "Cellular mechanisms of healthy brain ageing under caloric restriction".
- 05/02/2018-25/02/2018:** Visiting researcher, Department of Biology, Faculty of Science, Lund University, Lund, Sweden. Research work devoted to treatment of hyperuricemia and hyperuricosuria in nephropathic Uox knockout mice.
- 05/02/2018-25/02/2018:** Visiting researcher, Department of Biology, Faculty of Science, Lund University, Lund, Sweden. Research work devoted to studying of hyperuricemia and hyperuricosuria in nephropathic Uox knockout mice.
- 01/04/2017-30/04/2017:** Visiting researcher, The Kielanowski Institute of Animal Physiology and Nutrition, Jablonna near Warsaw, Poland. Research work related with immunoglobulins purification.
- 04/12/2016-03/01/2017:** Visiting researcher, The Kielanowski Institute of Animal Physiology and Nutrition, Jablonna near Warsaw, Poland. Research work related with oxalate assay in plasma and urine samples by ion chromatography (IC HPLC).
- 11/02/2016-17/02/2016:** PoLLASA course, which allows obtaining the rights working with laboratory animals. International Institute of Molecular and Cell Biology, Warsaw, Poland.
- 01/02/2016-30/06/2016:** Scholarship from Department of Biology, Lund University (Lund, Sweden).
- 16/08/2015-23/09/2015:** Visiting researcher, The Kielanowski Institute of Animal Physiology and Nutrition, Jablonna near Warsaw, Poland. Research work related with investigation of dependence of exocrine pancreatic insufficiency from alpha ketoglutarate and chronic kidney diseases.
- 07/06/2015-28/07/2015:** Visiting researcher, Department of Biology, Faculty of Science, Lund University, Lund, Sweden. Research work devoted to studying of relation between diet and chronic kidney dysfunction development in pigs.
- 15/09/2014-20/10/2014:** Visiting researcher, Department of Biology, Faculty of Science, Lund University, Lund, Sweden. Research work related with studying of fat absorption in young pigs with exocrine pancreatic insufficiency.

VI. TEACHING

Courses: Analytical Chemistry, Bioorganic Chemistry, Biochemistry, Basic Principles of Scientific Research

VII. CURRENT AREAS OF INTEREST

- Effects of environmental pollutants and xenobiotics on living organisms;
- Metabolic syndrome and its corrections in animal model.
- Hyperuricemia and kidney dysfunction in animals.

VIII. SKILLS

General

- Experience in scientific report and article writing, analysis of literature;

- Experimental designing;
- Individual work or in the group;
- Teaching of younger colleagues;

Biochemistry

- Blood and tissue sampling;
- Preparation of tissue extracts;
- Blood hematology and chemistry tests;
- Assay of enzyme activities (superoxide dismutase, catalase, guaiacol peroxidase, ascorbate peroxidase, dehydroascorbate reductase, glutathion peroxidase, glutathione reductase, glutathione-S-transferase, ascorbate oxidase, lactate dehydrogenase, glucose-6-phosphate dehydrogenase, acetylcholine esterase, alanine aminotransferase, aspartate aminotransferase);
- Enzyme-linked immunosorbent assay (ELISA);
- Determination of oxidative stress markers (thiobarbituric acid reactive substances, carbonyl proteins, lipid peroxides, thiols, glutathione);
- Metabolomics (glucose, glycogen, TAG, lactate, uric acid, creatinine, protein, lipaemic index).
- Spectrophotometric measurement of chlorophylls, carotenoids and anthocyanins content;
- Protein purification, protein and DNA electrophoresis;
- Ion chromatography (Dionex ICS-900).

IX. PUBLICATIONS

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Notice: the Last Name **Semchuk** has been changed with **Mosiichuk** after the marriage.

Articles

1. **Mosiichuk N.M.**, Maksymiv I.V., Husak V.V., Storey J.M., Storey K.B., Lushchak, V.I. (2018). Effect of Prometryn-Containing Herbicide Gesagard on Hematological Profiles and Biochemical Parameters in Goldfish Liver and Plasma. *Turkish Journal of Fisheries and Aquatic Sciences*, 18, 1177-1185. (IF 0.5)
2. Husak V.V., **Mosiichuk N.M.**, Kubrak O.I., Matviishyn T.M., Storey J.M., Storey K.B., Lushchak, V.I. (2018). Acute exposure to copper induces variable intensity of oxidative stress in goldfish tissues. *Fish physiology and biochemistry*, Vol.44, N3 pp.1-12.(IF 1.74)
3. Szczurek P., **Mosiichuk N.**, Woliński J., Yatsenko T., Grujic D., Lozinska L., Pieszka M., Święch E., Pierzynowski S.G., Goncharova K. Oral uricase eliminates blood uric acid in the hyperuricemic pig model. *PloS one*, 2017, 12(6), p.e0179195. (IF 2.76)
4. Husak V.V., **Mosiichuk N.M.**, Storey J.M., Storey K.B., Lushchak V.I. Acute exposure to the penconazole-containing fungicide Topas partially augments antioxidant potential in goldfish tissues. *Comp Biochem Physiol C Toxicol Pharmacol*, 2017, Vol. 193, P. 1-8. (IF 2.4)
5. Husak V.V., **Mosiichuk N.M.**, Maksymiv I.V., Storey J.M., Storey K.B., Lushchak V.I. Oxidative stress responses in gills of goldfish, *Carassius auratus*, exposed to the metribuzin-containing herbicide Sencor. *Environmental Toxicology and Pharmacology*, 2016, Vol. 45, P. 163-169.(IF 2.8)
6. **Mosiichuk N.M.**, Husak V.V., Maksymiv I.V., Hlodan O.Y., Storey J.M., Storey K.B., Lushchak V.I. Toxicity of environmental Gesagard to goldfish may be connected with induction of low intensity oxidative stress in concentration- and tissue-related manners. *Aquatic Toxicology*, 2015, Vol. 165, P. 249-258. (IF 3.88)
7. Maksymiv I.V., Husak V.V., **Mosiichuk N.M.**, Matviishyn T.M., Sluchyuk I.Y., Storey J.M., Storey K.B., Lushchak V.I. Hepatotoxicity of herbicide Sencor in goldfish may result from

- induction of mild oxidative stress. *Pesticide Biochemistry and Physiology*, 2015, Vol. 122, P. 67-75. (IF 3.44)
8. **Mosiichuk N.M.** Effects of sodium nitroprusside on salt stress tolerance of tocopherol-deficient *Arabidopsis thaliana* plants. *Journal of Vasyl Stefanyk Precarpathian National University*, 2015. Vol. 2(1). P. 122-131.
 9. Husak V.V., **Mosiichuk N.M.**, Maksymiv I.V., Sluchyk I.Y., Storey J.M., Storey K.B., Lushchak V.I. Histopathological and biochemical changes in goldfish kidney due to exposure to the herbicide Sencor may be related to induction of oxidative stress. *Aquatic Toxicology*, 2014, Vol. 155, P. 181-189. (IF 3.88)
 10. Vasylyk Y.V., **Semchuk N.M.**, Lushchak O.V. Effect of sodium nitroprusside on activities of antioxidant and glutathione-related enzymes in leaves of maize seedlings. *Scientific Herald of Chernivtsi University. Biology (Biological System)*, 2014, Vol. 6(2), P. 167-172.
 11. Lushchak V.I., **Semchuk N.M.** Tocopherol biosynthesis: chemistry, regulation and effects of environmental factors. *Acta Physiologiae Plantarum*, 2012, Vol. 34(5), P. 1607-1628. (IF 1.4)
 12. **Semchuk N.M.**, Vasylyk Y.V., Lushchak O.V., Lushchak V.I. Effect of short-term salt stress on oxidative stress markers and antioxidant enzymes activity in tocopherol-deficient *Arabidopsis thaliana* plants. *The Ukrainian Biochemical Journal*, 2012, Vol. 84(4), P. 41-48.
 13. Vasylyk Y.V., **Semchuk N.M.**, Lushchak O.V., Lushchak V.I. Effect of sodium chloride and nitroprusside on protein carbonyl groups content and antioxidant enzyme activity in leaves of corn seedlings *Zea mays L.* *The Ukrainian Biochemical Journal*, 2012, Vol. 84(3), P. 82-87.
 14. **Semchuk N.M.**, Vasylyk Iu.V., Kubrak O.I., Lushchak V.I. Effect of sodium nitroprusside and S-nitrosoglutathione on pigment content and antioxidant system of tocopherol-deficient plants of *Arabidopsis thaliana*. *The Ukrainian Biochemical Journal*, 2011, Vol. 83(6), P. 69-79.
 15. **Semchuk N.M.**, Lushchak O.V., Falk J., Krupinska K., Lushchak V.I. Inactivation of genes, encoding tocopherol biosynthetic pathway enzymes, results in oxidative stress in outdoor grown *Arabidopsis thaliana*. *Plant Physiology and Biochemistry*, 2009, Vol. 47(5), P. 384-390. (IF 2.7)
 16. **Semchuk N.**, Lushchak O.V., Falk J., Krupinska K., Lushchak V.I. Effect of VTE1 and VTE4 gene inactivation on salt stress response in *Arabidopsis thaliana*. *The Ukrainian Biochemical Journal*, 2008, Vol. 80(3), P. 48-54.

Abstracts

1. Grujic D, Desphande A, Terkeltaub R, **Mosiichuk N**, Goncharva K, Pirzynowski S. A Novel Recombinant Oral Urate Oxidase (UrOx) Alln-346 Reduces Severe Hyperuricemia and Normalizes Hyperuricosuria in Nephropathic Urox Knockout (UrOxKO) Mice [abstract]. *Arthritis Rheumatol.* 2018; 70 (suppl 10).
2. **Mosiichuk N**, Goncharova K, Podprietov SE, Podprietov SS, Szczurek P, Yatsenko T, Grujic D, Wolinski J, Lozinska L, Vasylyk Y, Święch E, Kirko S, Kovalenko T, Osadchenko I, Pierzynowski SG. An attempt to create uricemia in a pig model. Abstract of the 4th international scientific conference "Modern aspects of biochemistry and cell biology", 05-06 October 2017 Dnipro, Ukraine. P163-165.
3. Grujic D., Szczurek P., **Mosiichuk N.**, Lozinska L., Pierzynowski S.G. ALLN-177, a Novel oral enzyme therapy, reduces urinary oxalate excretion and plasma oxalate in porcine dietary model of severe hyperoxaluria. Abstract TH-PO1071 of the Kidney week 2017, October 31-November 5, New Orleans, LA, USA.
4. Szczurek P., Goncharova K., Pierzynowski S.G., Grujic D., Jaźwiec R., **Mosiejchuk N.**, Kirko S., Nikandrova E., Kovalenko T., Osadchenko I., Woliński J., Gąsior R., Pieszka M. The effect of exogenous lipase pre-hydrolyzed formula on plasma fatty acid profile in pig model with exocrine pancreatic insufficiency. Abstracts of the XLV Scientific Session of Group of Animal Nutrition KNZiA PAN (21-22 June 2016, Olsztyn, Poland). P. 174
5. Szczurek P., Goncharova K., **Mosiejchuk N.**, Yacenko T., Grujic D., Święch E., Woliński J., Pieszka M., Pierzynowski S. The oral uricase treatment enhance intestinal elimination of uric

- acid in young pigs hyperuricemia model developed by surgical elimination 95% of the kidneys. Abstracts of the XLV Scientific Session of Group of Animal Nutrition KNZiA PAN (21-22 June 2016, Olsztyn, Poland). P. 190.
6. Goncharova K., Weström B., Lozinska L., **Mosiichuk N.**, Prykhodko O., Arevalo Sureda E., Wolinski J., Socha-Banasiak A., Pierzynowski S. Synaptic maturation in newborn piglets is dependent on immunoglobulins. Abstracts of the 49th annual meeting of the ESPGHAN (25-28 May 2016, Athens, Greece). P. 715
 7. Grujic D., Fedkiv O., Nikandrova E., **Mosiejchuk N.**, Kirko S., Osadchenko I., Kovalenko T., Drahanchuk O., Parshykov O., Goncharova E., Freedman S., Martin C., Pierzynowski S. ePS05.1 Nutritional formula pre-hydrolyzed by novel point of care lipase device (EFICTM) leads to increased fat absorption in young pigs with exocrine pancreatic insufficiency (EPI). Abstracts of the 38th European Cystic Fibrosis Conference //Journal of Cystic Fibrosis. – 2015. – Vol. 14. – P. S50.
 8. Maksymiv I. Oxidative stress development in goldfish kidney after exposure to metribuzin-containing herbicide “Sencor”/ I. Maksymiv, V. Husak, **N. Mosiichuk** // Abstracts book the X International Scientific Conference for Students and PhD [“Youth and Progress of Biology”] (Lviv, 8 – 11 April 2014). – Lviv, 2014. – P. 54-55.
 9. Kindrat I. Tocopherol deficiency may influence oxidative stress response in *Arabidopsis thaliana* towards short-term salt stress / I. Kindrat, **N. Semchuk** // Materials of 5d International young scientists conference [Biodiversity. Ecology. Adaptation. Evolution.], (Odesa, 13-17 June 2011). – Odesa: Odesa National I.I. Mechnykov University, 2011. – P. 148.
 10. Semanyk U. Pigment concentration in corn seedlings exposed to potassium dichromate/ U. Semanyk, **N. Semchuk** // Materials of 5d International young scientists conference [Biodiversity. Ecology. Adaptation. Evolution.], (Odesa, 13-17 June 2011). – Odesa: Odesa National I.I. Mechnykov University, 2011. – P. 170.
 11. **Semchuk N.** Salt stress induces oxidative stress in *Arabidopsis thaliana* plants: possible involvement of tocopherols / N. Semchuk // Materials of 3rd International young scientists conference [Biodiversity. Ecology. Adaptation. Evolution.], (Odesa, 15-18 May 2007). – Odesa: Odesa National I.I. Mechnykov University, 2007. – P. 221.