

OLEKSANDRA B. ABRAT

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Vasyl Stefanyk Precarpathian National University (PNU)

I. ADDRESS

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II. PERSONAL INFORMATION

Ukrainian, married, born May 16, 1983

Languages: Ukrainian, Russian, English (professional working proficiency)

III. EDUCATION

Ph.D. thesis

Mechanisms of defense of yeast *Saccharomyces cerevisiae* against weak acid stress [in Ukrainian], defended in Scientific Council D 76.06.051 at Yuriy Fed'kovich Chernivtsi National University, Ukraine (October, 2009). Supervisor – D. Sc., Ph.D., Prof Lushchak V.I., Head of Department of Biochemistry PNU.

M.Sc. Thesis

Role catalases in protection of yeast *Saccharomyces cerevisiae* from oxidative stress [in Ukrainian], September 2004-May 2005. Supervisor – D. Sc., Ph.D., Prof Lushchak V.I., Head of Department of Biochemistry PNU.

IV. TEACHING EXPERIENCE

2018-present Associate Professor, Biochemistry and Biotechnology Dept., PNU.

2007-2017 Assistant of Professor, Biochemistry Dept., PNU.

Courses:

Immunology, general course (lectures & practice, 2018– present, PNU);

Immune mechanisms, special course for masters in biochemistry (lectures & practice, 2015–2017, PNU);

Molecular endocrinology, special course for bachelors in biochemistry (lectures & practice, 2014– present, PNU);

Biochemistry, general course (lectures & practice, 2008– present, PNU);

Microbiology, general course (lectures & practice, 2008– present, PNU);

Virology, general course (lectures & seminars, 2008–2011 2016– present, PNU);

Biochemistry of adaptations, masters in biology (seminars, 2007–2008, PNU);

Molecular biology, general course (seminars, 2007–2008, PNU)

V. PROFESSIONAL EXPERIENCE / TRAINING / SCHOLARSHIP:

2019: Research Assistant, Kielanowski Institute of Animal Physiology and Nutrition, Jablonna, Poland.

2009–present: Research Assistant, Department of Biochemistry and Biotechnology PNU;

2005–2008: Postgraduate student, Department of Biochemistry, PNU;

2007: Laboratory of Microbiology, Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Krakow, Poland.

Training / scholarship

1. Internship: “*Testing the stability of enteric coating delay release ALLN-346 tablets along gastrointestinal tract in fed and fasted state, ALLN-346 PK study in the gut*” (2019, Lund University, Lund, Sweden);
2. PolLASA courses on proper breeding, maintenance, and usage of laboratory animals (2019, Polish laboratory animal science association, Warsaw, Poland);
3. Theoretical training (total credits 2 ECTS) “*Perspectives in Biomedicine with a Focus on Cancer Immunotherapy*” (2019, DAAD, Ivano-Frankivsk, Ukraine);
4. The Queen Jadwiga Fund (2013, Jagiellonian University, Krakow, Poland);
5. The Queen Jadwiga Fund (2007, Jagiellonian University, Krakow, Poland)

VI. CURRENT AREAS OF INTEREST

Metabolic syndrome and obesity

Antioxidant, adaptogenic, antiglycemic, stress-protective, and geroprotective effects of natural products and drugs

Oxidative stress and antioxidants

VII. SKILLS

Preparation of tissue and cell extracts, enzyme activities assays, measurement of content of proteins, carbohydrates and lipids; measurement of major marker of oxidative stress, blood chemistry and blood enzymes tests; leukocyte formula and enzyme-linked immunosorbent assay (ELISA); fluorometric analysis of fluorescein extrusion; light microscopy, cultivation of microorganisms, isolation of microbial cultures, study of physiologic-biochemical properties of microorganisms.

VIII. PROFESSIONAL SOCIETIES

Ukrainian Biochemical Society

Ukrainian Society of Cell Biology

Society of Microbiologists of Ukraine

IX. OTHER ACTIVITIES

Jury member of National Biological Olympiads

Jury member of National Tournament for Young Biologists

Activity manager of Organizing Committee and Lecturer at Carpathian Summer School in Biochemistry held annually at Department of Biochemistry and Biotechnology, PNU

Member of Organizing Committee and Lecturer at Autumn School for Young Biochemists held annually at Department of Biochemistry and Biotechnology, PNU.

X. PUBLICATIONS

Articles – 13

Abstracts – 23

Teaching works – 16

Articles:

13. Interplay between diet-induced obesity and oxidative stress: Comparison between *Drosophila* and mammals / Bayliak, M. M., **Abrat, O. B.**, Storey, J. M., Storey, K. B., & Lushchak, V. I. // Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology. – 2019. – Vol. 228, P. 12–18.

12. High amylose starch consumption induces obesity in *Drosophila melanogaster* and metformin partially prevents accumulation of storage lipids and shortens lifespan of the insects / **Abrat Oleksandra B.**, Storey Janet M., Storey Kenneth B., Lushchak Volodymyr I. // Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology. – 2018. – Vol. 215, P. 55–62.

11. **Abrat O.**, Diduch J. Influence of dietary yeast restriction on pathological changes in the body of the fruit fly under high consumption of amylose starch // Ukrainian journal of medicine, biology and sport – 2017. – Vol. 4, N 6. – P. 148–154.

10. **Abrat O.** Influence of amylose starch on development and lifespan of fruit fly *Drosophila melanogaster* // Journal of Vasyl Stefanyk Precarpathian National University. Vol. 2, No. 1 (2015), 100–106.

9. Acetate but not propionate induces oxidative stress in bakers' yeast *Saccharomyces cerevisiae* / Semchyshyn H., **Abrat O.**, Miedzobrodzki J., Inoue Y., Lushchak V. // Red. Report. – 2011. – Vol. 16, N 1. – P. 1–9.

8. Pdr12p-dependent and -independent fluorescein extrusion from baker's yeast cells / V. Lushchak, **O. Abrat**, J. Międzobrodzki, H. Semchyshyn // Acta biochimica polonica. – 2008. – Vol. 55, N 3. – P. 595–601.

7. Acid stress in yeast *Saccharomyces cerevisiae* / **Abrat O.B.**, Semchyshyn H.M., Lushchak V.I. [in Ukrainian] // Ukr. Biochem. J. 2008. 80 (6), P. 19–31.

6. Fluorescein transport and antioxidant systems in the yeast *Saccharomyces cerevisiae* under acid stress / **Abrat O.B.**, Semchyshyn H.M., Międzobrodzki J., Lushchak V.I. [in Ukrainian] // Ukr. Biochem. J. 2008. 80 (3), P. 70–77.

5. Acid stress increases the activity of superoxide dismutase and catalase in the yeast *Saccharomyces cerevisiae* / **Abrat O.**, Semchyshyn H., Lushchak V. [in Ukrainian] // Ukr. Biochem. J. 2007. 79 (2), P. 17-23.
4. Survival and antioxidant defense of the yeast *Saccharomyces cerevisiae* under starvation and oxidative stress / Bailyak M., **Abrat O.**, Semchyshyn H., Lushchak V. [in Ukrainian] // Ukr. Biochem. J. 2005. 77 (2), P. 162-165.
3. Survival and antioxidant defense of *Esherichia coli* in response to alloxan exposure / **Abrat O.**, Semchyshyn H., Lushchak V. [in Ukrainian] // Ukr. Biochem. J. 2005. 77 (2), P. 123-129.
2. Effect of alloxan and hydrogen peroxide on yeast *Saccharomyces cerevisiae* survival / Abrat O., Markovych O., Lohaza L. [in Ukrainian] // Newsletter of Precarpathian University. Ivano-Frankivsk. 2004. P. 5-9.
1. Effect of different oxygen levels on the growth of *Esherichia coli* strains MC4100, GS071 and GS047 / Demyanchuk Yu., **Abrat O.** [in Ukrainian] // Newsletter of Precarpathian University. Ivano-Frankivsk. 2003. P. 130-137.