

OLEKSANDRA B. ABRAT

Assistant professor, Ph.D., Department of Biochemistry and Biotechnology,
Vasyl Stefanyk Precarpathian National University (PNU)

I. ADDRESS

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II. PERSONAL INFORMATION

Ukrainian, married, born May 16, 1983

Languages: Ukrainian, Russian (fluently), English (pre-intermediate)

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. SCIENTIFIC DEGREES

Doctor of Philosophy, Speciality – Biochemistry

V. TEACHING EXPERIENCE

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

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

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

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

Immunology, general course (practice, 2014– present, PNU);

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

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

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

VI. RESEARCH EXPERIENCE

2009–present: Research fellow, 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.

VII. AWARDS AND GRANTS

The Queen Jadwiga Fund (2013, Jagiellonian University, Krakow, Poland)

The Queen Jadwiga Fund (2007, Jagiellonian University, Krakow, Poland)

VIII. CURRENT AREAS OF INTEREST

Using natural products and drugs to counteract the effects high-calorie foods
Oxidative stress and antioxidants in microorganisms (bacteria *Echerichia coli*, yeast *Saccharomyces cerevisiae*).

Acid stress in yeast *Saccharomyces cerevisiae*.

Fluorescein extrusion from baker's yeast cells.

IX. SKILLS

Biochemical methods: preparation of tissue and cell extracts, enzyme activities assays, measurement of content of proteins, carbohydrates and lipids; measurement of major marker of oxidative stress (protein carbonyls, products of lipid oxidation, glutathione level), blood chemistry and blood enzymes tests; urine analysis, fluorometric analysis of fluorescein extrusion.

Microbiological methods: light microscopy, cultivation of microorganisms, isolation of microbial cultures, study of physiologic-biochemical properties of microorganisms, determination of life span of yeast cells.

Physiological methods: fruit fly *D. melanogaster* maintaining and lifespan assay.

X. PROFESSIONAL SOCIETIES

Ukrainian Biochemical Society

Ukrainian Society of Cell Biology

Society of Microbiologists of Ukraine

XI. PUBLICATIONS

Articles – 10

Abstracts – 18

Teaching works – 8

Articles:

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. Miedzobrodzki, 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., Miedzobrodzki 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.