CURRICULUM VITAE
HALYNA SEMCHYSHYN

Associate Professor: Department of Biochemistry and Biotechnology,
Vasyl Stefanyk Precarpathian National University

I. ADDRESS

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II. ACADEMIC EDUCATION

Field of study – Analytical Chemistry
1985-1990, Chernivtsi State University (Ukraine, USSR)

MSc Thesis: "Peculiarities of Ti^{2+} and Ni^{2+}adsorbtion on SiO_2, TiO_2-SiO_2 and NiO_2-SiO_2 nano-oxides", (in Ukrainian). *Advisors*: Prof., D.Sci. Yaroslav S. Mazurkevych and Dr. Anatolij H. Voloshchuk, Dept. of Analitycal Chemistry, Faculty of Chemistry, Chernivtsy State University (Ukraine, USSR)

III. SCIENTIFIC DEGREES

Field of study – Biochemistry
2011-2014, D.Sc. Scholarship, Dept. of Biochemistry and Biotechnology, Precarpathian National University (Ukraine)

D.Sc. Thesis: "Molecular mechanisms of the yeast *Saccharomyces cerevisiae* adaptation to stressful factors" (in Ukrainian). *Defence*: November 4, 2015, Yuriy Fedkovych Chernivtsi National University (Ukraine). *Advisor*: Prof., D.Sci. Volodymyr I. Lushchak, Dept. of Biochemistry, Precarpathian National University (Ukraine).

Field of study – Biochemistry
1993-1999 (1995-1998 child care period), PhD Scholarship, Dept. of Biological and Medical Chemistry, Ivano-Frankivsk Medical State Academy (Ukraine)

PhD Thesis: "Biochemical peculiarities of antioxidant systems of *Escherichia coli* strains with different sensitivity to oxygen" (in Ukrainian). *Defence*: December 4, 2002, Yuriy Fedkovych Chernivtsi National University (Ukraine). *Advisors*: Prof., D.Sci. Volodymyr I. Lushchak, Dept. of Biochemistry, Precarpathian National University (Ukraine) and Prof., D.Sci. Anatolij O. Klymenko, Dept. of Biological and Medical Chemistry, Ivano-Frankivsk Medical State Academy (Ukraine).

IV. Languages

Ukrainian, English, Polish, Russian

V. PROFESSIONAL EXPERIENCE

6, 8/2011	Visiting Professor, Dept. of Biology, Lund University, Lund, Sweden.
2, 8/2010	Visiting Professor, Dept. of Biology, Lund University, Lund, Sweden.
3-5/2010	Visiting Professor, Dept. of Immunology, Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Cracow, Poland.
6/2009	Visiting Professor, Dept. of Microbiology, Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Cracow, Poland.
5-6/2008	Visiting Researcher Fellowship, Dept. of Microbiology, Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Cracow, Poland.

5-6/2007	Visiting Researcher, Dept. of Microbiology, Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Cracow, Poland.
6/2006	Visiting Researcher, Dept. of Microbiology, Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Cracow, Poland.
2/2006	Visiting lecturer, XXXIII Winter School of Biotechnology, Jagiellonian University, Krynica, Poland.
2006- pres	Associated Professor, Dept. of Biochemistry and Biotechnology, Precarpathian University, Ivano-Frankivsk, Ukraine.
2003-2006	Senior Teacher, Dept. of Biochemistry, Precarpathian University, Ivano-Frankivsk, Ukraine.
2002-2003	Teacher, Dept. of Biochemistry and Biotechnology, Precarpathian University, Ivano-Frankivsk, Ukraine.
1999-2002	Teacher (part time), Dept. of Biology, Precarpathian University, Ivano-Frankivsk, Ukraine.
1999-2002	Teacher (part time), Dept. of Biochemistry, Ivano-Frankivsk Medical State Academy, Ivano-Frankivsk, Ukraine.
1999-2002	Technician, Dept. of Biology, Precarpathian University, Ivano-Frankivsk, Ukraine.
1993-1999	(1995-1998 child care period) PhD. Student, Dept. of Biological and Medical Chemistry, Ivano-Frankivsk Medical State Academy, Ivano-Frankivsk, Ukraine.
1991-1993	Technician, Dept. of Biological and Medical Chemistry, Ivano-Frankivsk Medical State Academy, Ivano-Frankivsk, Ukraine.
1990-1991	Technician, Dept. of Medical Biology and Genetics, Ivano-Frankivsk Medical State Academy, Ivano-Frankivsk, Ukraine.

VI. AWARDS AND GRANTS

12. D.Sc. Scholarship, Dept. of Biochemistry and Biotechnology, Precarpathian University, Ivano-Frankivsk, Ukraine. December 2011-November 2014.
11. District's Premium for Scientific Achievements, Ivano-Frankivsk, September, 2012.
10. Study a novel nutrient assimilation factor (NAF) with potential to influence obesity, VISBY Programme, Lund Univesity, Sweden, 2010-2012 (co-leader of the project).
9. Functional analysis of new acute phase proteins, Marie Curie transfer of knowledge MTKD-CT-2006-042586 (ACUP), Dept. of Immunology, Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Cracow, Poland, (visiting Professor, 15/03/2010 – 15/05/2010).
8. Regulation of free radical processes in living organisms, grant of Ministry of Education and Science of Ukraine, 2009-2011.
7. Adaptative response of the yeast *Saccharomyces cerevisiae* to free radicals, grant of Fundamental Researches State Fund, Ukraine, 2008-2009.
6. Scholarship from the Queen Jadwiga Fund of the Jagiellonian University, Cracow, Poland, May-June, 2008.
5. Adaptative response of the yeast *Saccharomyces cerevisiae* to carbonic radical effect, grant of Fundamental Researches State Fund, Ukraine, 2007.
4. Investigations of oxidative stress in animals and microorganisms in order to diminish its harmful action, grant of Ministry of Education and Science of Ukraine, 2006-2008.
3. Yeast *Saccharomyces cerevisiae* as a model system to study carbonic radical influence on the eukaryotic cells, grant of Fundamental Researches State Fund, Ukraine, October-December, 2006.
2. Regulation by iron ions of free radical processes in living organisms, grant of Ministry of Education and Science of Ukraine, 2002-2004
1. PhD. Scholarship, Dept. of Biological and Medical Chemistry, Ivano-Frankivsk Medical State Academy, Ivano-Frankivsk, Ukraine. 1993-1999 (1995-1998 child care period).

VII. CURRENT AREAS OF INTEREST

- Reactive species in biology and medicine
- Biochemical aspects of aging and stress resistance (role of non-enzymatic processes)
- Interplay between carbonyl and oxidative stresses (role of dietary carbohydrates)

VIII. CURRENT RESEARCH WORK

- *Saccharomyces cerevisiae* adaptation to oxidative, acid and carbonyl stresses
- Non-enzymatic processes *in vitro* and *in vivo* (baker's yeast)
- Yeast aging, starvation and calorie restriction
- Mechanisms of hormesis and cross-adaptation in yeast

IX. CONFERENCE ORAL PRESENTATIONS, INVITED SEMINARS AND LECTURES

- "Free radicals and reactive oxygen species and their interaction with cells" and **"**Protection mechanisms against reactive oxygen species", The Third Carpathian Biochemical Summer School, "Stress, Aging, and Free Radicals", Precarpathian National University, Ivano-Frankivsk, Ukraine, 29 June-4 July, 2015.
- " Involvement of reducing monosaccharides in non-enzymatic processes *in vitro* and *in vivo*", XI Ukrainian Biochemical Congress, Kyiv, Ukraine, October 6-10, 2014.
- "Free radicals and reactive oxygen species and their interaction with cells"**, "**Protection mechanisms against reactive oxygen species", and "Beneficial functions of reactive oxygen species". The Second Carpathian Biochemical Summer School, "Investigation of Free Radical Processes in Living Organisms", Precarpathian National University, Ivano-Frankivsk, Ukraine, 31 June-7 July, 2014.
- "Relationship between oxidative and carbonyl stresses", International Conference "Environmentally Induced Oxidative Stress in Nature and Experiment", Delmenhorst, Germany, July 9-10, 2012.
- "Yeast as a model to study age-related metabolic disorders", International Conference on Advances in Microbiology and Biotechnology for Human and Animal Health, Malmo & Lund, Sweden, 21-22 June 2011.
- "Involvement of carbohydrates in free radical processes", X Ukrainian Biochemical Congress, Odesa, Ukraine, September 13-17, 2010.
- "Yeast as a model to study human disorders", Lund University, Sweden, August 20, 2010.
- "Free radicals, antioxidants and immune system" (special lecture course for MS. and Ph.D. students), Jagiellonian University, Cracow, Poland, 03-05/2010.
- "Evaluation of NO and ROS concentration in human and murine materials", Jagiellonian University, Cracow, Poland, April 21, 2010.
- "*Saccharomyces cerevisiae* as a model to study molecular mechanisms of cross-adaptation and response to environmental stresses", 3rd International Ukrainian-Polish Weigl Conference, Odessa, Ukraine, 2009.
- "Relation between carbohydrate metabolism and free radical processes in baker's yeast", XII Congress of Ukrainian Microbiology Society, Uzhorod, Ukraine, 2009.
- "Glucose and fructose differently affect baker's yeast aging", Jagiellonian University, Cracow, Poland, June 3, 2008.
- "*Escherichia coli* and *Saccharomyces cerevisiae* response to oxidative stress", Jagiellonian University, Cracow, Poland, May 17, 2007.
- "Coordination of superoxide dismutases and catalases in bacteria *Escherichia coli* and yeast *Saccharomyces cerevisiae*", IX Ukrainian Biochemical Congress, Kharkiv, Ukraine, October 24-27, 2006.
- "*SoxRS* regulon in *E. coli* response to H_2O_2-induced stress", V International Conference "Factors of experimental evolution of organisms", September 10-16, 2006.

X. JOURNAL REFEREE

BMC Biochemistry
Central European Journal of Biology
Ukrainian Biochemical Journal
Advances in Research
Nutrition Research
Journal of Pharmacy and Pharmacology
International Journal of Biochemistry Research & Review

XI. TEACHING EXPERIENCE

General theoretical and practical courses

11. "Non-enzymatic processes in biology**",** lectures, Dept. of Biochemistry and Biotechnology, Precarpathian University, 2006- pres, Ivano-Frankivsk, Ukraine.
10. "Free radicals, antioxidants and immune system" (special lecture course for Ms. and Ph.D. students), Jagiellonian University, Cracow, Poland, 03-05/2010.
9. "Phys-Chemical methods in biology" – lectures, Dept. of Biochemistry and Biotechnology, Precarpathian University, 2006- pres, Ivano-Frankivsk, Ukraine.
8. "Biochemistry", general course – lectures & practice, Dept. of Biochemistry and Biotechnology, Precarpathian University, 2006- pres, Ivano-Frankivsk, Ukraine.
7. "Free radical process in biology", general course – lectures & seminars, Dept. of Biochemistry and Biotechnology, Precarpathian University, 2005- pres, Ivano-Frankivsk, Ukraine.
6. "Bioorganic Chemistry" general course – lectures & practice, Dept. of Biochemistry and Biotechnology, Precarpathian University, 2004-, Ivano-Frankivsk, Ukraine.
5. "Microbiology", general course – lectures & practice, Dept. of Biochemistry and Biotechnology, Precarpathian University, 2002- pres, Ivano-Frankivsk, Ukraine.
4. "English for Biochemists", seminars, Dept. of Biochemistry and Biotechnology, Precarpathian University, 2002-pres, Ivano-Frankivsk, Ukraine.
3. "Biochemistry of plants", general course – lectures & seminars, Dept. of Biochemistry, Precarpathian University, 2002-2004, Ivano-Frankivsk, Ukraine.
2. "Biochemistry of Adaptations", seminars, Dept. of Soil Science, Precarpathian University, 2002-2004, Ivano-Frankivsk, Ukraine.
1. "Medical biochemistry", practice, Ivano-Frankivsk Medical State Academy, September 1999 – 2002, Ivano-Frankivsk, Ukraine.

Ph.D. students

2013-pres. Ruslana Vasylkovska – Dept. of Biochemistry and Biotechnology, Precarpathian National University, Ivano-Frankivsk, Ukraine.
2011-2014 Bohdana Valishkevych (Homza) – Dept. of Biochemistry and Biotechnology, Precarpathian National University, Ivano-Frankivsk, Ukraine.
2008−2011 Liudmyla Lozinska (Morhulets) - Dept. of Biochemistry and Biotechnology, Precarpathian National University, Ivano-Frankivsk, Ukraine (*Defence*: February 11, 2013).

XII. PROFESSIONAL SOCIETIES

Ukrainian Biochemical Society
Society of Microbiologists of Ukraine

XIII. PUBLICATIONS
MONOGRAPH CHAPTERS – 4
REVIEWS – 6
EXPERIMENTAL ARTICLES – 38
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List of publications of Halyna Semchyshyn

REVIEWS & MONOGRAPH CHAPTERS

4. **Semchyshyn H.M**., Lushchak V.I. Interplay between oxidative and carbonyl stresses: molecular mechanisms, biological effects and therapeutic strategies of protection, in book: Oxidative Stress - Molecular Mechanisms and Biological Effects, editors: Lushchak V.I. & Semchyshyn H.M., InTech, 2012, 15-46.

3. Lushchak V.I., **Semchyshyn H.M.** Introductory chapter, in book: Oxidative Stress - Molecular Mechanisms and Biological Effects, editors: Lushchak V.I. & Semchyshyn H.M., InTech, 2012, 3-12.

2. Lushchak V.I., **Semchyshyn H.M**., Lushchak O.V. "Classic" methods for measuring of oxidative damage: TBARS, xylenol orange, and protein carbonyls, in textbook: Oxidative Stress in Aquatic Ecosystems, editors: D. Abele, T. Zenteno-Savin, J. Vazquez-Medina, Blackwell Publishing Ltd., 2012, 420-431.

1. **Semchyshyn H.M.,** Bayliak M.M, Lushchak V.I. Starvation in yeasts: biochemical aspects, in book: Biology of Starvation in Humans and Other Organisms, editor: T. C. Merkin, 2011, 103-150.

REVIEWS

6. **Semchyshyn H.M.** Reactive carbonyl species *in vivo*: generation and dual biological effects, ScientificWorldJournal – 2014; 2014:417842 (11 pages). *IF 1.73*

5. **Semchyshyn H.** Fructation *in vivo*: detrimental and protective effects of fructose, Biomed Res Int., 2013, 2013:343914 (9 pages). *IF 2.706*

4. Lozinska L., **Semchyshyn H.** Biological aspects of non-enzymatic glycosylation, Ukrainian Biochem. J. (Ukrainian), 2012, **84(5)**, 16-37.

3. **Semchyshyn H.** Hydrogen peroxide-induced response in *E. coli* and *S. cerevisiae*: different stages of the flow of the genetic information, Cent. Eur. J. Biol., 2009, **4(2)**, 142–153. *IF 0.915*

2. Abrat O., **Semchyshyn H.**, Lushchak V. Acid stress in the yeast *Sacccharomyces cerevisiae*, Ukrainian Biochem. J. (Ukrainian), 2008, **80(6)**, 19-31.

1. **Semchyshyn H.M.,** Lushchak V.I. Oxidative stress and control of catalase activity in *Escherichia coli*, Ukrainian Biochem. J. (Ukrainian), 2004, **76(2)**, 31-42.

EXPERIMENTAL ARTICLES

38. **Semchyshyn H.M.,** Valishkevych B.V. Hormetic effect of H_2O_2 in *S. cerevisiae*: involvement of TOR and glutathione reductase, Dose Response, 2016, in press. *IF 1.217*

37. Valishkevych B.V., Vasylkovska R.A., Lozinska L.M., **Semchyshyn H.M.** Fructose-induced carbonyl/oxidative stress in *S. cerevisiae*: involvement of TOR, Biochem. Res. Int., 2016; 2016: 120583 (9 pages).

36. Vasylkovska R., Petriv N., **Semchyshyn H.** Carbon sources for yeast growth as a precondition of hydrogen peroxide induced hormetic phenotype, Int. J. Microbiol., 2015; 2015: 697813 (8 pages).

35. Vasylkovska R., Burdyliuk N., **Semchyshyn H.** Involvement of catalase in *Saccharomyces cerevisiae* hormetic response to hydrogen peroxide, Journal of Vasyl Stefanyk Precarpathian National University, 2015, **2(1)**, 107-114.

34. Homza B., Vasylkovska R., **Semchyshyn H**. Defects in TOR regulatory complexes retard aging and carbonyl/oxidative stress development in yeast *Saccharomyces cerevisiae*, Ukrainian Biochem. J. (Ukrainian), 2014, **86(1)**, 85-92.

33. **Semchyshyn H**., Miedzobrodzki J., Bayliak M., Lozinska L., Homza B. Fructose compared with glucose is more a potent glycoxidation agent *in vitro*, but not under carbohydrate-induced stress *in vivo*: potential role of antioxidant and antiglycation enzymes, Carbohydr. Res., 2014, **384**, 61-69. *IF 2.332*

32. **Semchyshyn H**. Hormetic concentrations of hydrogen peroxide but not ethanol induce cross-adaptation to different stresses in budding yeast, Int. J. Microbiol. – 2014; 2014: 485792 (5 pages).

31. **Semchyshyn H**. Defects in antioxidant defence enhance glyoxal toxicity in the yeast *Saccharomyces cerevisiae*, Ukrainian Biochem. J. (Ukrainian), 2013, **85(5)**, 50-60.

30. **Semchyshyn H**., Lozinska L. Fructose protects baker's yeast against peroxide stress: potential role of catalase and superoxide dismutase, FEMS Yeast Res., 2012, **12(7)**, 761-773. *IF 2.818*

29. Lozinska L., **Semchyshyn H.** Fructose as a factor of carbonyl/oxidative stress development and accelerated aging in the yeast *Saccharomyces cerevisiae*, Ukrainian Biochem. J. (Ukrainian), 2011, **83(4)**, 67-76.

28. **Semchyshyn H**., Lozinska L., Miedzobrodzki J., Lushchak V. Fructose and glucose differentially affect aging, carbonyl and oxidative stress parameters in *Saccharomyces cerevisiae* cells, Carbohydr. Res., 2011, **346(7)**, 933-938. *IF 2.332*

27. **Semchyshyn H**., Abrat O., Inoue Y., Miedzobrodzki J., Lushchak V. Acetate but not propionate induces oxidative stress in bakers' yeast *Saccharomyces cerevisiae*, Redox Report, 2011, **16(1)**, 15-23. *IF 1.732*

26. Lushchak V., Abrat O., Miedzobrodzki J., **Semchyshyn H**. Pdr12p-dependent and -independent fluorescein extrusion from baker's yeast cells, Acta Biochim. Pol. 2008, **55(3)**, 595-601. *IF 1.448*

25. Abrat O., **Semchyshyn H**., Miedzobrodzki J., Lushchak V. Fluorescein transport and antioxidant systems in the yeast *Saccharomyces cerevisiae* under acid stress, Ukrainian Biochem. J. (Ukrainian), 2008, **80(3)**, 70-77

24. Bayliak M., Gospodaryov D., **Semchyshyn H**., Lushchak V. Inhibition of catalase by aminotriazole *in vivo* results in reduction of glucose-6-phosphate dehydrogenase activity in *Saccharomyces cerevisiae* cells. Biochemistry (Moscow), 2008, **73(4),** 420-426. *IF 1.308*

23. Lushchak O., **Semchyshyn H**., Lushchak V. Growth on ethanol results in coordinated *S. cerevisiae* response to inactivation of gene encoding superoxide dismutases, Redox Report, 2007, **4**, 181-188. *IF 1.6*

22. Bayliak M., **Semchyshyn H.,** Lushchak V. Possible accumulation of non-active molecules of catalase and superoxide dismutase in *S. cerevisiae* cells under hydrogen peroxide induced stress, Central European Journal of Biology, 2007, **2(3)**, 326-336. *IF 0.25*

21. Abrat O., **Semchyshyn H.,** Lushchak V. Acid stress increases the activity of superoxide dismutase and catalase in the yeast *Saccharomyces cerevisiae*, Ukrainian Biochem. J. (Ukrainian), 2007, **79(2)**, 18-24.

20. Mandryk S., Lushchak O., **Semchyshyn H**., Lushchak V. The role of Cu,Zn - and Mn-containg SODs in the yeast *Saccharomyces cerevisiae* growing on ethanol or glycerol, Microbiol. J. (Ukrainian), 2007, **69(1)**, 35-42.

19. Bayliak M., **Semchyshyn H.**, Lushchak V. Effect of hydrogen peroxide on antioxidant enzyme activities in *Saccharomyces cerevisiae* is strain-specific, Biochemistry (Moscow), 2006, **71(9),** 1243-1252. *IF 1.368*

18. **Semchyshyn H**. *oxyR* and *soxRS* regulons are responsible for *Escherichia coli* protection against H_2O_2–induced stress // Factors of experimental evolution, -Kyiv: Logos, 2006, **3**, 429-432.

17. Bayliak M., **Semchyshyn H.,** Lushchak V. Role of catalase and superoxide dismutase in the yeast *Saccharomyces cerevisiae* response to hydrogen peroxide in exponential phase, Ukrainian Biochem. J., 2006 (Ukrainian), **78(2)**, 66-72.

16. Lushchak V., **Semchyshyn H.,** Mandryk S., Lushchak O. Diethyldithiocarbamate inhibits *in vivo* Cu,Zn-superoxide dismutase and perturbs free radical processes in the yeast *Saccharomyces cerevisiae* cells, Biochem. Biophys. Res. Commun. 2005**, 338,** 1739-1744. *IF 2.749*

15. **Semchyshyn H.M.,** Bagnyukova T.V., Storey K.**,** Lushchak V.I. Hydrogen peroxide increases the activities of *soxRS* regulon enzymes and the levels of oxidized proteins and lipids in *Escherichia coli*, Cell. Biol. Intern, 2005, **29**, 898-902 *IF 1.933*

14. **Semchyshyn H.M.,** Bagnyukova T.V., LushchakV.I. Involvement of *soxRS* regulon in response of *Escherichia coli* to oxidative stress induced by hydrogen peroxide, Biochemistry (Moscow), 2005, 70(11), 1238-1244. *IF 0.858*

13. Bayliak M., Abrat O., **Semchyshyn H.,** Lushchak V. Survival and antioxidant defense of the yeast *Saccharomyces cerevisiae* under starvation and oxidative stress, Ukrainian Biochem. J., 2005 (Ukrainian), **77(4)**, 97-102.

12. Lushchak V., **Semchyshyn H**., Mandryk S., Lushchak O. Possible role of superoxide dismutases in the yeast *Saccharomyces cerevisiae* under respiratory conditions, Arch. Biochem. Biophys., 2005, **441**, 35-40. *IF 2.386*

11. **Semchyshyn H.M**., LushchakV.I.**,** Storey K. Possible reasons for difference in sensitivity to oxygen of two *Escherichia coli* strains**,** Biochemistry (Moscow), 2005, **70(4**), 424-431. *IF 0.858*

10. Abrat O.B., **Semchyshyn H.M.,** Lushchak V.I. Survival and antioxidant defense of *Escherichia coli* in response to alloxan exposure, Ukrainian Biochem. J. (Ukrainian), 2005, **77(2)**, 122-128.

9. **Semchyshyn H.M**., Lushchak V.I. Effect of protonofore 2,4-dinitrophenol on catalase activity of intact *Escherichia coli* bacteria, Ukrainian Biochem. J. (Ukrainian), 2004, **76(3)**, 42-48.

8. **Semchyshyn H.M.,** Bagnyukova T.V. Oxidative stress effect on catalase activity with two pH-optimums in *Escherichia coli*, Proceedings of Precarpathian University: Biology (Ukrainian), 2003, **3**, 124-130.

7. **Semchyshyn H.M**., Dyljovyj M.V., Lushchak V.I. pH-dependency of *Escherichia coli* catalase activity under cultivation conditions modification, Ukrainian Biochem. J. (Ukrainian), 2002, **74(5)**, 34-41.

6. **Semchyshyn H.M.,** Dyljovyj M.V., Lushchak V.I. Distribution of the activity of two catalase forms in *Escherichia coli* cells, Experimental and Clinical Physiology and Biochemistry (Ukrainian), 2002,
1, 20-23.

5. **Semchyshyn H.M.,** Lushchak V.I. Characteristics of two peaks of catalase activity in *Escherichia coli,* Medical Chemistry (Ukrainian), 2002, **4(3)**, 34-37.

4. **Semchyshyn H.M.** Effect of different oxygen levels on *Escherichia coli* growth, Proceedings of Precarpathian University: Biology (Ukrainian), 2001, **1**, 112-117.

3. **Semchyshyn H.M.,** Dyljovyj M.V., Klymenko A.O., Lushchak V.I. Effect of *Escherichia coli* cell desintegration on some biochemical properties of catalase, Ukrainian Biochem. J. (Ukrainian), 2001, **73(1)**, 24-28.

2. **Semchyshyn H.M**. Antioxidant enzymes of *Escherichia coli* strains with different sensitivity to oxygen, Bulletin of agricultural microbiology (Ukrainian), 2000, **7**, 74-75.

1. **Semchyshyn H.M.,** Klymenko A.O., Lushchak V.I. Effect of oxidative stress on pH-sensitivity of *Escherichia coli* catalase, Medical Chemistry (Ukrainian), 2000, **2(2)**, 59-61.