

CURRICULUM VITAE

Slawomir Orzechowski

Nationality: Polish
Present address: Department of Biochemistry and Microbiology
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Academic education:

- Ph.D.: Department of Biochemistry, Faculty of Agriculture and Biology, Warsaw University of Life Sciences - SGGW, Warsaw, 2000
- M.Sc.: Department of Biochemistry, Faculty of Agriculture and Biology, Warsaw University of Life Sciences - SGGW, Warsaw, 1996

Employment:

- 2000 - present, assistant professor, Department of Biochemistry and Microbiology, Institute of Biology, Warsaw University of Life Sciences - SGGW, Warsaw
- Germany Institute of Biology and Biochemistry, Plant Physiology at University of Potsdam, Post-Doc 2002-2004

Scientific experience – short-term:

- Germany Mass spectrometry unit and Biopolymers Analytics at University of Potsdam, Scholarship 3 month. in 2015
- Poland, Gdańsk University of Technology, a course in molecular biology, February 2001
- Germany Institute of Biology and Biochemistry, Plant Physiology at University of Potsdam, Scholarship 3 month. in 2000
- Germany Institute of Biology and Biochemistry, Plant Physiology at University of Potsdam, Scholarship 3 month. in 1999

Research projects:

- Grant of Ministry of Science and Higher Education, N302061134 “Starch phosphorylation and its role in starch degradation in potato”, leader of the project, 2008-2010
- Grant of Warsaw University of Life Sciences-SGGW, SGGW 50401130015, "Gene expression analysis of α -phosphoglucan, water dikinase (StPWD) from *Solanum tuberosum* L.", main contractor of the project, 2006
- Grant of Warsaw University of Life Sciences-SGGW, SGGW 50401130011 "Purification, antibody production and protein expression analysis of α -phosphoglucan, water dikinase (StPWD) from *Solanum tuberosum* L.", main contractor of the project, 2005

Supervision: 4 Master, 15 Bachelor theses

Ad Hoc Reviewing Manuscripts for:

PLoS One, Plant Growth Regulation, Acta Physiologiae Plantarum, BMC Biology

Selected Publications:

1. Michalska K., Tomczyk A., Łotocka B., **Orzechowski S.**, Studnicki M. (2019) Oviposition by the vagrant eriophyoid mite *Aculops allotrichus* on leaves of black locust tree, *Robinia pseudoacacia*. *Experimental and Applied Acarology* 79: 1-19
<https://doi.org/10.1007/s10493-019-00412-1>

2. Prabucka B., Mielecki M., Chojnacka M., Bielawski W., Czarnocki-Cieciura M., **Orzechowski S.** (2017) Structural and functional characterization of the triticale phytocystatin TrcC-8 and its dimerization-dependent inhibitory activity. *Phytochemistry* 142: 1-10.
3. Gietler M., Nykiel M., **Orzechowski S.**, Fettke J., Zagdańska B. (2017) Protein carbonylation linked to the wheat seedlings tolerance to the water deficiency. *Environmental and Experimental Botany* 137: 84–95.
4. Gietler M., Nykiel M., **Orzechowski S.**, Fettke J., Zagdańska B. (2016) Proteomic analysis of S-nitrosylated and S-glutathionylated proteins in wheat seedlings with different dehydration tolerances. *Plant Physiology and Biochemistry* 108: 507-518.
5. Krasuska U., Ciacka K., **Orzechowski S.**, Bogatek R., Fettke J., Gniazdowska A. (2016) Modification of the endogenous NO level influences apple embryos dormancy by alterations of nitrated and biotinylated protein patterns *Planta* 244: 877-891.
6. Mahlow S., **Orzechowski S.**, Fettke J. (2016) Starch phosphorylation: insights and perspectives. *Cellular and Molecular Life Sciences* 73: 2753–2764.
7. Orawetz T., Malinova I., **Orzechowski S.**, Fettke J., (2016) Reduction of the plastidial phosphorylase in potato (*Solanum tuberosum* L. cv. Desiree) reveals impact on storage starch structure during growth at low temperature. *Plant Physiology and Biochemistry* 100: 141-149.
8. Simińska J., **Orzechowski S.**, Bielawski W. (2015) Analysis of expression and inhibitory activity of a novel phytocystatin TrcC-6 present in developing and germinating seeds of triticale (*×Triticosecale* Wittm.) *Plant Physiology and Biochemistry* 96: 209-216.
9. Chojnacka M.; Szewińska J.; Mielecki M.; Nykiel M.; Imai R.; Bielawski W.; **Orzechowski S.** (2015) A triticale water-deficit-inducible phytocystatin inhibits endogenous cysteine proteinases in vitro. *Journal of Plant Physiology* 174: 161-165.
10. Sitnicka D., **Orzechowski S.** (2014) Cold-induced starch degradation in potato leaves – intercultural differences in the gene expression profile and activity of key enzymes. *Biologia Plantarum* 58(4): 659-666.
11. **Orzechowski S.**, Grabowska A., Sitnicka D., Simińska J., Feluś M., Dudkiewicz M., Fudali S., Sobczak M. (2013) Analysis of the expression, subcellular and tissue localisation of glucan, water dikinase (GWD3) in *Solanum tuberosum* L.: A bioinformatics approach for the comparative analysis of two α -glucan, water dikinases (GWDs) from *Solanum tuberosum* L. *Acta Physiologiae Plantarum* 35:483–500.
12. Brust H, **Orzechowski S.**, Fettke J., Steup M. (2013) Starch synthesizing reactions and paths: in vitro and in vivo studies. *Journal of Applied Glycoscience* 60: 3-20
doi:10.5458/jag.jag.JAG-2012_018.
13. Szkop M., Sikora P., **Orzechowski S.** (2012) A novel, simple and sensitive colorimetric method to determine aromatic amino acid aminotransferase activity using the Salkowski reagent. *Folia Microbiologica* 57(1): 1-4.
14. Kiełkiewicz M., Czarnecka M., **Orzechowski S.**, Szwacka M. (2009) The role of thaumatin II in cucumber resistance against *Tetranychus urticae* Koch: laboratory and greenhouse evaluation. *Biological Letters* 46: 77-88.
15. Dudkiewicz M., Simińska J., Pawłowski K., **Orzechowski S.** (2008) Bioinformatics analysis of oligosaccharide phosphorylation effect on the stabilization of the β -amylase-ligand complex. *Journal of Carbohydrate Chemistry* 27: 479-495.
16. **Orzechowski S.** (2008) Starch metabolism in leaves. *Acta Biochimica Polonica*, 55: 435–445.
17. Samojedny D., **Orzechowski S.** (2007) Nowe spojrzenie na proces degradacji ziaren skrobi w chloroplastach *Arabidopsis thaliana* L. *Postępy Biochemii*. 53/1: 74-83.

18. Macewicz J., **Orzechowski S.**, Dobrzyńska U., Haebel S. (2006) Is quantity of protein in barley forms determined by proteins localized in the subaleurone layer? *Acta Physiologiae Plantarum*, 28/6: 409-416.
19. Dobrzyńska U., **Orzechowski S.** (2004) Enzymy biorące udział w biosyntezie i rozkładzie skrobi w roślinach. *Postępy Nauk Rolniczych* 5: 57-70.
20. **Orzechowski S.**, Socha-Hanc J., Paszkowski A. (1999), Alanine aminotransferase and glycine aminotransferase from maize (*Zea mays* L.) leaves., *Acta Biochimica Polonica*, 46: 447-457.
21. **Orzechowski S.**, Socha-Hanc J., Paszkowski A. (1999) Purification and properties of alanine aminotransferase from maize (*Zea mays* L.) leaves. *Acta Physiologiae Plantarum*, 21: 323-330.
22. **Orzechowski S.**, Socha-Hanc J., Paszkowski A. (1999) Subcellular distribution of alanine aminotransferase activity in maize (*Zea mays* L.) leaves. *Acta Physiologiae Plantarum*, 21: 331-334.
23. **Orzechowski S.**, Kwinta J., Gworek B., Bielawski W. (1997), Biochemical indicators of environmental contamination with heavy metals., *Polish Journal of Environmental Studies* 6: 47-50.
24. **Orzechowski S.**, Bielawski W. (1997) Heavy metals and ammonium assimilation in triticale. *Journal of Applied Genetics* 38B: 265-270.

List of selected conferences:

1. **Orzechowski S.**, Cisowska I., Cania J., Chądzyńska M., Marecka D., Rybarczyk-Płońska A., Jasnos J., Sitnicka D. (2018) The effect of drought on the content and degradation of soluble sugars and starch in *Solanum tuberosum* L. leaves. Congress BIO 2018 Gdańsk, Poland September 18th-21th 2018 *Acta Biochim. Pol*, Suppl 2/2018: 117
2. **Gietler M.**, Nykiel M., **Orzechowski S.**, Fettke J., Zagdańska B. (2017) Proteomic analysis of S-nitrosylated proteins in wheat seedlings with different dehydration tolerances. 8th Conference of Polish Society of Experimental Plant Biology - Communication in plants: from cell to environment Tom 1 (OP6.3): 72
3. **Orzechowski S.**, Marecka D. Józwiak A., Sitnicka D. (2016) Changes in sugar content in leaves of two potato cultivars Desiree and Russet Burbank in response to cold Bio 2016 – 2nd Congress of Polish Biochemistry, Cell biology, Biotechnology and Bioinformatics. Wrocław 13-16 wrzesień *Acta Biochim. Pol*, Suppl 2/2016: pp: 20
4. Sitnicka D, **Simińska J.**, **Orzechowski S.** (2012) Alteration of GWD genes expression during low temperature exposure in potato leaves. The First Polish-German Biochemical Societies Joint Meeting Poznań wrzesień *Acta Biochim. Pol*, Suppl 59/3/2012: 171
5. **Dudkiewicz M.**, **Orzechowski S.**, Pawłowski K. (2010) Protein-protein interactions between starch related enzymes in potato. Conference “Experimental approaches to protein: protein interactions” 11—12 Styczeń, University of Sheffield, UK
6. **Orzechowski S.**, Simińska J., Grabowska A., Sobczak M. (2008) Analysis of expression and tissue localization of phosphoglucan water dikinase (PWD) gene from *Solanum tuberosum* L. XLIII Zjazd PTBioch Olsztyn 7-11 wrzesień *Acta Biochem. Pol. Suppl.* 55/3/2008: 213
7. **Dudkiewicz M.**, **Orzechowski S.** Pawłowski K. (2008) Bioinformatics analysis of oligosaccharide phosphorylation effect on the stabilization of the beta-amylase-ligand complex. *Bioinformatics 2008*, 24 - 27 of April Warsaw University, Faculty of Biology
8. **Orzechowski S.**, **Dudkiewicz M.** (2008) Bioinformatics analysis of oligosaccharides phosphorylation influence on the stabilization of the beta-amylase-ligand complex 33rd

FEBS & 11rd IUBMB Congress, 28 of June- 4 of July Athens, Greece FEBS J 275 Suppl 1: 216

9. Grabowska A., Samojedny D., Simińska J., Dudkiewicz M. **Orzechowski S.** (2007) Cloning and sequence analysis of phosphoglucan water dikinase gene (PWD) from *Solanum tuberosum* L. 3rd Conference of Polish Society of Experimental Plant Biology Warsaw, Poland August
10. **Orzechowski S.**, Sobczak M., Feluś M., Simińska J., Grabowska A. (2007) Analysis of expression and subcellular localization of phosphoglucan water dikinase (PWD) from *Solanum tuberosum* L. 3rd Conference of Polish Society of Experimental Plant Biology Warsaw, Poland August
11. Feluś M., **Orzechowski S.** (2006) Identification and partly purification a novel homologue of glucan, water dikinase (GWD) from *Solanum tuberosum* L. 41st Meeting of the Polish Biochemical Society Białystok September Acta Biochem. Pol. Suppl. 53/1: 61
12. Macewicz J.B., **Orzechowski S.R.**, Dobrzynska U., Haebel S. (2003) Is quantity and quality of barley grain protein determined by the proportion of kernels with subaleurone tissue? 1st Conference of Polish Society of Experimental Plant Biology Olsztyn, Poland September - Polish Journal of Natural Sciences. Suppl. 1: 179
13. **Orzechowski S.**, Socha-Hanz J., Paszkowski A. (1998) Alanine: 2-oksoglutarate aminotransferase from maize (*Zea Mays* L.) seedlings. 5th International Symposium on Inorganic Nitrogen Assimilation 3rd Fohs Biostress Symposium July 13-17 Luso, Portugal
14. **Orzechowski S.**, Bielawski W. (1997) Heavy metals and ammonium assimilation in triticale. 5th International Symposium on Cereals-pathogens and stress factors interaction. September 15-17, 1997, Poznań