

Associated Professor Biljana Balen

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Faculty of Science
Department of Biology, Division of Molecular Biology
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Curriculum vitae**PERSONAL DATA**

Name and Surname	Biljana Balen
Address	Department of Molecular Biology, Division of Biology, Faculty of Science, University of Zagreb, Horvatovac 102a, 10000 Zagreb, Croatia
Phone	+38514606273
Telefax	+38514606286
e-mail	bbalen@zg.biol.pmf.hr
Citizenship	Croatian
Date of birth	18.05.1971.
Marital status	Married, mother of three sons
Identification number of scientist	222686
Link to CROSBİ profil:	https://bib.irb.hr/lista-radova?autor=222686

WORK EXPERIENECE

• Dates (from – to)	From 01.06.2013. – until today
Name and address of employer	Division of Molecular Biology, Department of Biology, Faculty of Science, University of Zagreb, Horvatovac 102a, 10000 Zagreb, Croatia Tel. +38514606260; Fax. +38514606286 ; E-mail: molbio@zg.biol.pmf.hr ; Website: http://www.pmf.unizg.hr/biol
Occupation or position held	Associate Professor
Main activities and responsibilities	Teaching of course Cell Biology, Cellular and Molecular Biology, Methods of Protein Investigation at undergraduate programs, courses Introduction to Proteomics and Plant Engineering at graduate courses as well as course Cell Function and Organization at doctoral study. Research within scientific projects
Type of business or sector	Plant Physiology and Molecular Biology

• Dates (from – to)	01.12.2007. - 01.06.2013.
Name and address of employer	Division of Molecular Biology, Department of Biology, Faculty of Science, University of Zagreb, Horvatovac 102a, 10000 Zagreb, Croatia Tel. +38514606260; Fax. +38514606286 ; E-mail: molbio@zg.biol.pmf.hr ; Website: http://www.pmf.unizg.hr/biol
Occupation or position held	Assistant Professor
Main activities and responsibilities	Teaching of course Cell Biology, Cellular and Molecular Biology, Methods of Protein Investigation at undergraduate programs, courses Introduction to Proteomics and Plant Engineering at graduate courses as well as course Cell Function and Organization at doctoral study. Research within scientific projects
Type of business or sector	Plant Physiology and Molecular Biology

• Dates (from – to)	01.10.1996. - 01.12.2007.
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Name and address of employer	Division of Molecular Biology, Department of Biology, Faculty of Science, University of Zagreb, Horvatovac 102a, 10000 Zagreb, Croatia Tel. +38514606260; Fax. +38514606286 ; E-mail: molbio@zg.biol.pmf.hr ; Website: http://www.pmf.unizg.hr/biol
Occupation or position held	Researcher
Main activities and responsibilities	Keeping practical classes of the courses Cell Biology, Cellular and Molecular Biology, Methods of Protein Investigation at undergraduate programs Research within scientific projects
Type of business or sector	Plant Physiology and Molecular Biology

EDUCATION

Date	From March 2002 to July 2005
Place of education	Zagreb, Croatia
Name and type of organisation providing education	Division of Molecular Biology, Department of Biology, Faculty of Science, University of Zagreb
Title or qualification awarded	PhD of Biology - Molecular and Cellular Biology
Date	From February 1999 to March 2002
Place of education	Zagreb, Croatia
Name and type of organisation providing education	Division of Molecular Biology, Department of Biology, Faculty of Science, University of Zagreb
Title or qualification awarded	Master of Science, Biology – Molecular and Cellular Biology
Date	From October 1990 to March 1996
Place of education	Zagreb, Croatia
Name and type of organisation providing education	Division of Molecular Biology, Department of Biology, Faculty of Science, University of Zagreb
Title or qualification awarded	BSc. of Biology, Molecular Biology

TRAINING

Year	2014 (1 week)
Place	Beer-Sheva
Institution	University Ben-Gurion of Negev
Filed	Plant Physiology
Year	2012 (1 week)
Place	Beer-Sheva
Institution	University Ben-Gurion of Negev
Filed	Plant Physiology
Year	2010 (1 week)
Place	Beer-Sheva
Institution	University Ben-Gurion of Negev
Filed	Plant Physiology
Year	2008 (1 month)

Place Muenster, Germany
Institution Institute for Medical Physics and Biophysics, University of Muenster
Filed Plant Proteomics and Mass Spectrometry Analyses of Sugars

Year 2004 (3 months)
Place Muenster, Germany
Institution Institute for Medical Physics and Biophysics, University of Muenster
Filed Plant Proteomics and Mass Spectrometry Analyses of Sugars

Year 2002 (2 weeks)
Place New Delhi, India
Institution ICGEB (International center for genetic engineering and biotechnology)
Filed Molecular Plant Biology

Year 2002 (1 week)
Place Trieste, Italy
Institution ICGEB (International center for genetic engineering and biotechnology)
Filed Bioinformatics – Computational Methods in Molecular Biology

Year 2000 (1 week)
Place Trieste, Italija
Institution ICGEB (International center for genetic engineering and biotechnology)
Filed RNA Structure and Function

LANGUAGES

MOTHER TONGUE

Croatian

OTHER LANGUAGE(S)

Self-evaluation

European level ()*

	Understanding		Speaking		Writing
	Listening	Reading	Speaking interaction	Speaking production	
English	C2	C1	C2	C2	C2
Spanish	B2	B1	B2	B2	B2
German	A2	A1	A2	A2	A2

RESEARCH PROJECTS

Projects funded by Ministry of Science Education and Sports of Republic of Croatia MZOS RH

Year 2012 – until today
Project leader Associate Professor Biljana Balen
Project title Differential protein expression in plant cells

Year 2007 - 2011
Project leader Professor Marijana Krsnik-Rasol
Project title Differential protein expression in plant cells

Year 2007 - 2013
Project leader Tomislav Šmuc, PhD

Project title Machine learning of predictive models in computational biology

Year 2004-2006
Project leader Professor Marijana Krsnik-Rasol
Project title Proteins and sugars in plant development

Year 1996 - 2002
Project leader Professor Marijana Krsnik-Rasol
Project title Signal molecules in plant development

Other scientific projects

Year 2012-2013
Project leader Associate Professor Biljana Balen
Project title Mechanisms of plant defense against abiotic stress: proteome changes induced by drought and salinity
(Fund for Development of the University of Zagreb)

Godina 2012-2013
Voditeljica projekta Dr. sc. Marija Brgles, IMI
Naziv projekta Using a mass spectrometry for a detailed characterization of proteins, glycoproteins, glycoconjugates and protein associated lipids
(Croatian-Austrian bilateral project)

Godina 2010-2011
Voditeljica projekta Dr. sc. Ivana Leščić-Ašler, IRB
Naziv projekta Mass spectrometry-based proteomic analysis: characterization of horseradish esterases and snake venom proteins, and mapping of *Fusarium* parasites
(Croatian-Austrian bilateral project)

Godina 2008-2010
Voditelji projekta Prof. M. Krsnik-Rasol (Croatia) and Prof. D. Bar-Zvi (Israel)
Naziv projekta Life under stress: molecular components and mechanisms of plant response to drought and high salinity
(Croatian-Israel bilateral project)

SCIENTIFIC PUBLICATIONS

(KRONOLOŠKI, ZNANSTVENE KNJIGE, ZNANSTVENI ČASOPISI, ZBORNICI RADOVA ZNANSTVENIH SKUPOVA)

A) Books

1. **Balen, Biljana**; Pavoković, Dubravko; Peharec Štefanić, Petra; Krsnik-Rasol, Marijana. 2011. Elektroforetske tehnike istraživanja proteina. Anita Šikić (editor). Zagreb, Hrvatska sveučilišna naklada.
2. Pavoković, Dubravko; **Balen, Biljana**. Dvodimenzionalna elektroforeza u poliakrilamidnom gelu. 2007. Metode u molekularnoj biologiji. Ambriović Ristov, Andreja (editor). Zagreb, Institut Ruđer Bošković. p. 575-578.

B) Scientific papers

1. Tkalec, Mirta; Peharec Štefanić, Petra; Cvjetko Petra; Šikić Sandra; Pavlica Mirjana; **Balen, Biljana**. The effects of cadmium-zinc interactions on biochemical responses in tobacco seedlings and adult plants. PLoS ONE. 9 (2014) , 1; e87582-e87582
2. Cvjetko, Petra; **Balen, Biljana**; Peharec Štefanić, Petra; Debogović, Lea; Pavlica, Mirjana; Klobučar, Goran Igor Vinko. Dynamics of heat-shock induced DNA damage and repair in senescent tobacco plants. *Biologia plantarum*. 58 (2014) , 1; 71-79
3. Cvjetko, Petra; Zovko, Mira; **Balen, Biljana**. Proteomics studies of heavy metal toxicity in plants. *Arh. Hig. Rada Toksikol*. 65 (2014) ; 1-18.
4. **Balen, Biljana**; Tkalec, Mirta; Rogić, Tea; Šimac, Matija; Peharec Štefanić, Petra; Rončević, Sanda; Pitarević Svedružić, Lovorka; Krsnik-Rasol, Marijana. Effects of iso-osmotic NaCl and mannitol on growth, proline content, and antioxidant defense in *Mammillaria gracilis* Pfeiff. *in vitro*-grown cultures. *In vitro Cell. Dev. Biol. Plant*. 49 (2013) , 4; 421-432
5. Peharec Štefanić, Petra; Smolko, Ana; Horvatić, Anita; Cindrić, Mario; Krsnik-Rasol, Marijana; **Balen, Biljana**. Protein and glycoprotein patterns related to morphogenesis in horseradish tissue culture. *Croat. Chem. Acta*. 86 (2013) , 1; 27-37
6. **Balen, Biljana**; Tkalec, Mirta; Peharec Štefanić Petra; Vidaković-Cifrek, Željka; Krsnik-Rasol, Marijana. 2012. *In vitro* conditions affect photosynthetic performance and crassulacean acid metabolism in *Mammillaria gracilis* Pfeiff. tissues. *Acta Physiol. Plant*. 34 (2012) , 5; 1883-1893
7. Peharec Štefanić, Petra; Šikić, Sandra; Cvjetko, Petra; **Balen, Biljana**. 2012. Cadmium and zinc induced similar changes in protein and glycoprotein patterns in tobacco (*Nicotiana tabacum* L.) seedlings and plants. *Arh. Hig. Rada Toksikol*. 63 (2012) ; 321-335
8. **Balen, Biljana**; Tkalec, Mirta; Šikić, Sandra; Tolić, Sonja; Cvjetko, Petra; Pavlica, Mirjana; Vidaković-Cifrek, Željka. 2011. Biochemical responses of *Lemna minor* experimentally exposed to cadmium and zinc. *Ecotoxicology*. 20 (4), 815-826
9. **Balen, Biljana**; Peharec, Petra; Tkalec, Mirta; Krsnik-Rasol, Marijana. 2011. Oxidative stress in horseradish (*Armoracia lapathifolia* Gilib.) tissues grown *in vitro*. *Food Technol. Biotechnol*. 49 (1), 32-39
10. Peharec, Petra; Posilović, Hrvoje; **Balen, Biljana**; Krsnik-Rasol, Marijana. 2010. Spine micromorphology of normal and hyperhydric *Mammillaria gracilis* Pfeiff (Cactaceae) shoots. *J. Microsc. (Oxf)*. 239 (1), 78-86
11. Cvjetko, Petra; Tolić, Sonja; Šikić, Sandra; **Balen, Biljana**; Tkalec, Mirta; Vidaković-Cifrek, Željka; Pavlica, Mirjana. 2010. Effect of copper on the toxicity and genotoxicity of cadmium in duckweed (*Lemna minor* L.). *Arh. Hig. Rada Toksikol*. 61 (3), 287-296
12. **Balen, Biljana**; Pavoković, Dubravko; Peharec, Petra; Krsnik-Rasol, Marijana. 2009. Biochemical markers of morphogenesis in long term horseradish (*Armoracia lapathifolia* Gilib.) tissue culture. *Sci. Hort*. 119 (2), 88-97
13. **Balen, Biljana**; Tkalec, Mirta; Pavoković, Dubravko; Pevalek-Kozlina, Branka; Krsnik-Rasol, Marijana. 2009. Growth conditions in *in vitro* culture can induce oxidative stress in *Mammillaria gracilis* tissues. *J. Plant Growth Regul*. 28 (1), 36-45
14. **Balen, Biljana**; Peharec, Petra; Krsnik-Rasol, Marijana. 2008. Developmentally specific soluble and membrane proteins and glycoproteins in *Mammillaria gracilis* Pfeiff. (Cactaceae) tissue culture. *Acta Bot. Croat*. 67 (2), 221-227
15. **Balen, Biljana**; Krsnik-Rasol, Marijana. N-glycosylation of recombinant therapeutic glycoproteins in plant systems. 2007. *Food Technol. Biotechnol*. 45 (1), 1-10

16. **Balen, Biljana**; Krsnik-Rasol, Marijana; Zamfir, Alina; Zadro, Ivana; Vakhrushev Sergey; Peter-Katalinić, Jasna. 2007. Assessment of N-glycan heterogeneity of cactus glycoproteins by one dimensional gel electrophoresis and matrix assisted laser/desorption time-of-flight mass spectrometry. *J. Biomol. Tech.* 18, 162-172
17. **Balen, Biljana**; Krsnik-Rasol, Marijana; Zamfir, D. Alina; Milošević, Jadranka; Vakhrushev, Sergey Y.; Peter-Katalinić, Jasna. 2006. Glycoproteomic survey of *Mammillaria gracillis* tissues grown *in vitro*. *J. Proteome Res.* 5 (7), 1658-1666
18. **Balen, Biljana**; Zamfir, Alina; Vakhrushev, Sergey; Krsnik-Rasol, Marijana; Peter-Katalinić, Jasna. 2005. Determination of *Mammillaria gracillis* N-glycan patterns by ESI Q-TOF mass spectrometry. *Croat. Chem. Acta.* 78, 463-477
19. **Balen, Biljana**; Leljak-Levanić, Dunja; Mihaljević, Snježana; Jelenić, Srećko; Jelaska, Sibila. 2004. Formation of embryogenic callus in hairy roots of pumpkin (*Cucurbita pepo* L.). *In Vitro Cell. Dev. Biol. Plant.* 40, 182-187
20. **Balen, Biljana**; Krsnik-Rasol, Marijana; Zadro, Ivana; Simeon-Rudolf, Vera. 2004. Esterase activity and isoenzymes in relation to morphogenesis in *Mammillaria gracillis* Pfeiff. tissue culture. *Acta Bot. Croat.* 63 (2), 83-91
21. **Balen, Biljana**; Krsnik-Rasol, Marijana; Simeon-Rudolf, Vera. 2003. Isoenzymes of peroxidase and esterase related to morphogenesis in *Mammillaria gracillis* Pfeiff. tissue culture. *J. Plant Physiol.* 160 (11), 1401-1406
22. Poljuha, Danijela; **Balen, Biljana**; Bauer, Anamarija; Ljubešić, Nikola; Krsnik-Rasol, Marijana. 2003. Morphology and ultrastructure of *Mammillaria gracillis* (*Cactaceae*) in *in vitro* culture. *Plant Cell Tiss. Organ Cult.* 75, 117-123
23. **Balen, Biljana**; Tkalec, Mirta; Krsnik-Rasol, Marijana. 2003. Peroxidase activity and isoenzymes in relation to morphogenesis in *Mammillaria gracillis* tissue culture. *Period. biol.* 105 (3), 281-286
24. **Balen, Biljana**; Milošević, Jadranka; Krsnik-Rasol, Marijana. 2002. Protein and glycoprotein patterns related to morphogenesis in *Mammillaria gracillis* Pfeiff. tissue culture. *Food Technol. Biotechnol.* 40 (4), 275-28
25. Krsnik-Rasol, Marijana; **Balen, Biljana**. 2001. Electrophoretic protein patterns and peroxidase activity related to morphogenesis in *Mammillaria gracillis* tissue culture. *Acta Bot. Croat.* 60 (2), 219-226

CITATION NUMBER

Scopus: **147**, h-indeks **8**

C) Abstracts from scientific conferences

Abstract in journal cited by *Current Contents*

1. **Balen Biljana**; Tkalec Mirta; Pavoković Dubravko; Krsnik-Rasol Marijana. 2008. Oxidative stress in *Mammillaria gracillis* tissues grown *in vitro*. *Physiologia Plantarum*, 702.
2. Cvjetko, Petra; **Balen Biljana**; Peharec, Petra; Pavlica, Mirjana. 2008. The effect of heat shock on DNA integrity in leaves of *Nicotiana tabacum* L. *Environmental and Molecular Mutagenesis*, 570.
3. Peharec, Petra; **Balen, Biljana**; Lepeduš, Hrvoje; Krsnik-Rasol, Marijana. 2008. Chloroplast ultrastructure, chlorophyll levels and photosystem II efficiency in horseradish (*Armoracia lapathifolia* Gilib.) tissue culture. *Physiologia Plantarum*, 739-740.
4. Tkalec Mirta; **Balen Biljana**; Fulgosi Hrvoje; Vidaković-Cifrek Željka; Regula Ivan.,

2004. Expression of HSP70 isoforms in *Lemna minor* exposed to cadmium and salinity. *Acta Physiologiae Plantarum* 26 (supplement), 220.

5. **Balen, Biljana**; Leljak-Levanić, Dunja; Mihaljević, Snježana; Jelaska, Sibila. 2000. Spontaneous formation of somatic embryos in hairy-root lines of pumpkin (*Cucurbita pepo* L.). *Plant Physiology and Biochemistry*. 38 (supplement), 27, 29.

Invited lectures

6. Vidaković-Cifrek, Željka; Tkalec, Mirta; Šikić, Sandra; Tolić, Sonja; **Balen, Biljana**; Pavlica, Mirjana; Pevalek-Kozlina, Branka. 2010. Physiological and biochemical aspects of cadmium interaction with copper and zinc in *Lemna minor* L. 5th Slovenian Symposium on Plant Biology with international participation, Book of abstracts. Dolenc Koce, J., Vodnik, D. Pongrac, P. (urednici). Ljubljana, str. 16-17.
7. Krsnik-Rasol, Marijana; **Balen, Biljana**; Pavoković, Dubravko; Likić, Saša; Hagege, Danijel. 2003. Differential gene expression related to developmental processes in plant tissue culture. Third International Balkan Botanical Congress "Plant resources in the creation of new values". Redžić, Sulejman; Đug, Samir (urednici). Sarajevo, str. 7.

Abstracts in Books of abstract

8. Cvjetko, Petra; Milošić, Anita; Yu, Suyeon; Domijan, Ana-Marija; Vinković Vrček, Ivana; **Balen, Biljana**. Effects of three different organo-coated silver nanoparticles in *Allium cepa* roots Book of Abstracts of SEB Annual Main Meeting Manchester 2014 / Talja Dempster (ed.). Manchester: Society of Experimental Biology, 2014. 154 (poster).
9. Milošić, Anita; Žužić, Lorena; Žužić, Marta; Rogić, Tea; Cvjetko, Petra; Domijan, Ana-Marija; Vinković Vrček, Ivana; **Balen Biljana**. UTJECAJ NANOSREBRA NA RAST I POJAVU OKSIDACIJSKOG STRESA U KORJENČICIMA LUKA (*Allium cepa*) Zbornik radova X. Susreta mladih kemijskih inženjera. Zagreb: Fakultet kemijskog inženjerstva i tehnologije, 2014. 93 (poster).
10. Rogić, Tea; Horvatić, Anita; Cindrić, Mario; **Balen, Biljana**. Proteomic analysis of the response of *Mammillaria gracilis* in vitro-grown tissues to iso-osmotic NaCl and mannitol. Book of Abstracts of SEB Annual Main Meeting Manchester 2014 / Talja Dempster (ed.). Manchester: Society of Experimental Biology, 2014. 154 (poster).
11. **Balen, Biljana**; Tkalec, Mirta; Peharec Štefanić, Petra; Rogić, Tea; Šimac, Matija; Rončević, Sanda; Pitarević Svedružić, Lovorka; Krsnik-Rasol, Marijana. Effects of iso-osmotic NaCl and mannitol on growth, proline content, and antioxidant defense in *Mammillaria gracilis* Pfeiff. *in vitro*-grown cultures. SEB Valencia 2013 abstracts / Dempster, Talja (ed.). Valencia: Society of Experimental Biology, 2013. 166 (poster).
12. Cvjetko, Petra; Šikić, Sandra; Peharec Štefanić, Petra; Tolić, Sonja; Pavlica, Mirjana; **Balen, Biljana**. Oxidative stress response in tobacco experimentally exposed to cadmium and zinc. SEB Valencia 2013 abstracts / Dempster, Talja (ed.). Valencia: Society of Experimental Biology, 2013. 165 (poster).
13. Pitarević Svedružić, Lovorka; Rončević, Sanda; **Balen, Biljana**. ODREĐIVANJE SADRŽAJA ALKALIJSKIH I ZEMNOALKALIJSKIH ELEMENATA U BILJNOM MATERIJALU // XXIII. HRVATSKI SKUP KEMIČARA I KEMIJSKIH INŽENJERA - Knjiga sažetaka / Hadžiev, Andrea ; Blažeković, Zdenko (ed.). Kutina: HDKI; Kemija u industriji, 2013. 81 (poster).
14. Cvjetko, Petra; Šikić, Sandra; Peharec Štefanić, Petra; Tolić, Sonja; Pavlica, Mirjana; **Balen, Biljana**. Stress related biomarkers in tobacco experimentally exposed to cadmium and zinc // 10th ICPMB Book of Abstracts. 2012. (poster).
15. Cvjetko, Petra; Tolić, Sonja; **Balen, Biljana**; Peharec Štefanić, Petra, Šikić, Sandra; Pavlica, Mirjana. Uloga oksidacijskog stresa u klijancima duhana nakon izlaganja smjesi teških metala kadmija i bakra // Zbornik sažetaka 11. Hrvatskog biološkog kongresa/ Proceedings of Abstracts of 11th Croatian Biological Congress. Zagreb, 2012. 262 (poster).
16. Leščić Ašler, Ivana; Peharec Štefanić, Petra; **Balen, Biljana**; Marchetti-Deschmann, Martina; Krsnik-Rasol, Marijana; Kojić-Prodić, Biserka; Allmaier, Günter. Identification of esterase isoenzymes related to cell differentiation in *Armoracia lapathifolia* Gilib. tissue culture by gel electrophoresis and mass spectrometry techniques // FEBS 3+ Meeting Book of Abstracts / Dumić, Jerka ; Kovarik, Zrinka ; Varljen, Jadranka (ed.) Rijeka: Croatian Society of Biochemistry and Molecular Biology, 2012. 239 (poster)
17. Pavoković, Dubravko; Štefanić Peharec, Petra; **Balen, Biljana**; Krsnik-Rasol, Marijana. NOVEL PROTEINS INVOLVED IN DROUGHT AND SALT STRESS RESPONSE IN SUGAR

BEET REVEALED USING PROTEOMIC APPROACH. Plant Biology Congress Freiburg 2012 / Rennenberg, Heinz ; Reski, Ralf (ed.). Freiburg, 2012. 403 (poster)

18. **Balen, Biljana**; Rogić, Tea; Šimac, Matija; Peharec, Petra; Bar-Zvi, Dudy; Krsnik-Rasol, Marijana. 2010. Short-term salt and osmotic stress in *Mamillaria gracilis* Pfeiff. tissue culture. FESPB 2010 Book of Abstracts. Beltran Maria, Jose Pio; Rodriguez, Dolores. (editors).Valencia. 46 (poster).
19. Peharec, Petra; Razdorov, Genadij; **Balen, Biljana**; Krsnik-Rasol, Marijana. 2010. Plastid stromal proteome of *in vitro* grown horseradish (*Armoracia lapathifolia* Gilib.) plantlet, tumor and teratoma tissues. FESPB 2010 Book of Abstracts. Beltran Maria, Jose Pio; Rodriguez, Dolores (urednici). Valencia, 76 (poster).
20. Peharec, Petra; **Balen, Biljana**; Cvetešić, Nevena; Krsnik-Rasol, Marijana. 2009. Razvojno specifični sastav izvanstaničnih proteina i glikoproteina u kulturi tkiva hrena *Armoracia lapathifolia* Gilib. 10. Hrvatski biološki kongres s međunarodnim sudjelovanjem. Osijek, Croatia. Besendorfer, Višnja; Kopjar, Nevenka; Vidaković-Cifrek, Željka; Tkalec, Mirta; Bauer, Nataša; Lukša, Žaklin (eds.). Zagreb, 156-157 (poster).
21. Peharec, Petra; Leščić-Ašler, Ivana; **Balen, Biljana**; Kojić-Prodić, Biserka; Krsnik-Rasol, Marijana. 2008. Aktivnost i izoforme esteraze povezane sa staničnom diferencijacijom u kulturi tkiva hrena *Armoracia lapathifolia* Gilib. 50 godina molekularne biologije u Hrvatskoj. Zahradka, Ksenija; Plohl, Miroslav; Ambriović-Ristov, Andreja (eds). Zagreb, Institut Ruđer Bošković. 71 (poster).
22. **Balen, Biljana**; Krsnik-Rasol, Marijana; Zamfir, Alina D; Zadro, Ivana; Vakhrushev, Sergey Y; Peter-Katalinić, Jasna. 2007. Assessment of N-glycan Heterogeneity of Cactus Glycoproteins by One Dimensional Gel Electrophoresis and Matrix Assisted Laser/Desorption Time-of-Flight Mass Spectrometry. Book of Abstracts 2nd Summer Course on Mass Spectrometry in Biotechnology and Medicine. Peter-Katalinić, Jasna (ed.). Muenster, Germany. Institute for Medical Physics and Biophysics, 55 (lecture).
23. **Balen, Biljana**; Pavoković, Dubravko; Peharec, Petra; Krsnik-Rasol, Marijana. 2007. Biochemical markers of morphogenesis in horseradish (*Armoracia lapathifolia* Gilib.) tissue culture. 2nd Croatian Botanical Congress Book of Abstracts. Britvec, Mihaela; Škvorc, Željko (eds). Zagreb, 109 (poster).
24. **Balen, Biljana**; Peharec, Petra; Krsnik-Rasol, Marijana. 2007. Developmentally specific soluble and membrane proteins and glycoproteins in *Mamillaria gracillis* Pfeiff. (Cactaceae) tissue culture. Book of Abstracts of 5th International Conference Propagation of Ornamental Plants. Ninov, Nino (eds). Sofia, Bugarska, Sejani, University of Forestry, 93 (poster).
25. Peharec, Petra; **Balen, Biljana**; Posilović, Hrvoje; Krsnik-Rasol, Marijana. 2007. Structure and morphology of spines of *Mammillaria gracillis* Pfeiff. (Cactaceae) shoots. Book of Abstracts of 5th International Conference Propagation of Ornamental Plants. Ninov, Nino (urednik). Sofia, Bugarska, Sejani, University of Forestry, 153 (poster).
26. **Balen, Biljana**; Krsnik-Rasol, Marijana; Zamfir, Alina; Vakhrushev Sergey, Peter-Katalinić, Jasna. 2006. Sialylated Cellular Glycoproteins in *Mammillaria gracillis* Pfeiff. Tissues Grown *in vitro*. 11th IAPTC&B Congress Biotechnology and Sustainable Agriculture 2006 and Beyond Abstracts. Zhihong Xu (ed). Peking, Kina, Chinese Academy of Sciences, 86 (poster).
27. Peharec, Petra; **Balen, Biljana**; Krsnik-Rasol, Marijana. 2006. Razvojno specifični sastav proteina i glikoproteina u kulturi tkiva hrena. *Armoracia lapathifolia* Gilib. Zbornik sažetaka 9. Hrvatskog biološkog kongresa. Besendorfer, Višnja ; Goran I.V. Klobučar (eds). Zagreb, Hrvatsko biološko društvo 1885, 187-188 (lecture).
28. **Balen, Biljana**; Krsnik-Rasol, Marijana; Milošević, Jadranka; Vakhrushev, Sergey; Peter-Katalinić, Jasna. 2005. MALDI-TOF MS analysis of N-glycans released from *Mammillaria gracillis* proteins separated by two-dimensional electrophoresis. Satellite Meeting to the 30th FEBS Congress and 9th IUBMB Conference Glycoproteomics: protein modification for versatile functions. Dubrovnik, Croatia. Book of abstracts. Dumić, Jerka; Flogel, Mirna (eds). Zagreb, Faculty of Pharmacy and Biochemistry, 64 (poster).
29. **Balen, Biljana**; Krsnik-Rasol, Marijana; Zadro, Ivana; Vakhrushev, Sergey; Peter-Katalinić, Jasna. 2004. N-glycoprotein patterns related to morphogenesis in *Mammillaria gracillis* tissue culture. Congress of the Croatian Society of Biochemistry and Molecular Biology with international participation. Opatija, Croatia. Book of Abstracts. Dumić, Jerka (eds.). Zagreb, Faculty of Pharmacy and Biochemistry. 57 (poster).
30. **Balen, Biljana**; Krsnik-Rasol, Marijana; Zadro, Ivana; Vakhrushev, Sergey; Peter-Katalinić, Jasna. 2004. N-glycoprotéines de tissu de *Mammillaria gracillis* en culture *in vitro*. Biology of the cell. Daniel Locker (ed.). Francuska, Biotechnocentre pole biotechnologique de la region centre (poster).

31. Tkalec, Mirta; **Balen, Biljana**; Fulgosi, Hrvoje; Vidaković-Cifrek, Željka; Pevalek-Kozlina, Branka. 2004. Expression of HSP70 isoforms in *Lemna minor* exposed to cadmium. CROTOX 2004 - Final Program and Abstract Book. Kniewald, Jasna (ed.). Zagreb, Croatian Toxicological Society, 113 (poster).
32. **Balen, Biljana**; Milošević, Jadranka; Maček, Boris; Krsnik-Rasol, Marijana; Peter-Katalinić, Jasna. 2003. Developmentally specific protein and glycoprotein patterns in *Mammillaria gracillis* tissue culture. Eight International summer school on biophysics. Supramolecular structure and function. Book of abstracts. Rovinj, Croatia. Pifat-Mrzljak, Greta (ed.). Zagreb, Croatia, Ruđer Bošković Institute 107 (poster).
33. **Balen, Biljana**; Zadro, Ivana; Krsnik-Rasol, Marijana; Simeon-Rudolf, Vera. 2003. Identifikacija i karakterizacija esteraza vezanih uz morfogenezu u kulturi tkiva kaktusa *Mammillaria gracillis*. 8. Hrvatski biološki kongres s međunarodnim sudjelovanjem, Zagreb Zbornik. Besendorfer, Višnja; Kopjar, Nevenka (ed). Zagreb, Hrvatsko biološko društvo. 171-172 (lecture).
34. **Balen, Biljana**; Milošević, Jadranka; Krsnik-Rasol, Marijana. 2002. Protein and glycoprotein patterns related to morphogenesis in *Mammillaria gracillis* Pfeiff. tissue culture. Abstracts of First Croatian Congress on Molecular Life Sciences. Zagreb, 129 (poster).
35. Poljuha, Danijela; **Balen, Biljana**; Bauer, Anamarija; Ljubešić, Nikola; Krsnik-Rasol, Marijana. 2002. Morphology na ultrastructure of *Mammillaria gracillis* Pfeiff. (*Cactaceae*) in *in vitro* culture. 13th Congress of the federation of European societies of plant physiology. Book of abstracts. Roubelakis-Angelakis, Kalliopi A. (ed). Kreta, Greece, FESPP. 274 (poster).
36. Krsnik-Rasol, Marijana; **Balen, Biljana**; Poljuha, Danijela. 2000. Morfogeneza u kulturi prilagođenoga i tumorskoga tkiva kaktusa (*Mammillaria gracillis*). Zbornik sažetaka priopćenja Sedmog hrvatskog biološkog kongresa. Ljubešić, Nikola (ed). Zagreb, Hrvatsko biološko društvo. 111-112 (poster).
37. Krsnik-Rasol, Marijana; Čipčić, Hana; **Balen, Biljana**. 1997 Proteinski biljezi u transformaciji stanica gomolja krumpira. Zbornik sažetaka priopćenja. Huber, Đuro (ed). Zagreb, Hrvatsko biološko društvo. 72-73 (poster).

Unpublished participations at Summer Schools:

38. **Balen, Biljana**, Peharec, Petra, Krsnik-Rasol, Marijana. 2009. Characterization of developmentally specific cactus proteins. Summer School on Polarity and Asymmetric Cell Division in Plants, Rovinj.

TEACHING (UNDERGRADUATE, GRADUATE, AND DOCTORAL)**A) Undergraduate studies****Lectures and seminars**

Year	2008/09. - today
Course	Obligatory course <u>Cell Biology</u> , undergraduate study of Molecular Biology
Teacher(s)	Associate Professor B. Balen and Professor V. Besendorfer
Year	2011/12.
Course	Obligatory course <u>Cell Biology</u> , intergraded undergraduate and graduate study of Biology and Chemistry
Teacher(s)	Associate Professor B. Balen and Professor V. Besendorfer
Year	2007/08. - today
Course	Obligatory course <u>Cellular and Molecular Biology</u> , undergraduate study of Biology
Teacher(s)	Associate Professor B. Balen and Professor V. Besendorfer
Year	2008/09. - today
Course	Elective course <u>Cellular and Molecular Biology</u> , undergraduate study of Environmental Studies
Teacher(s)	Associate Professor B. Balen and Professor V. Besendorfer
Year	2008/09. – 2011/12.
Course	Elective course <u>Cellular and Molecular Biology</u> , undergraduate study of Chemistry
Teacher(s)	Associate Professor B. Balen and Professor V. Besendorfer
Year	2007/08. - today
Course	Elective course <u>Methods of protein investigations</u> , undergraduate study of Molecular Biology
Teacher(s)	Associate Professor B. Balen
Year	2013/14. – course given in English
Course	Elective course <u>Methods of protein investigations</u> , undergraduate study of Molecular Biology
Teacher(s)	Associate Professor B. Balen

Practicals

Year	1996/97. - 2007/08.
Course	Obligatory course <u>Cell Biology</u> : - undergraduate studies of Molecular Biology, Ecology, Professor of Biology, Professor of Biology and Chemistry - intergraded undergraduate and graduate study of Biology and Chemistry
Teacher(s)	Professor M. Krsnik-Rasol Professor M. Krsnik-Rasol and Professor V. Besendorfer
Year	2005/06. - 2007/08.
Course	Obligatory course <u>Cellular and Molecular Biology</u> , undergraduate study of Biology Elective course <u>Cellular and Molecular Biology</u> , undergraduate study of Chemistry
Teacher(s)	Professor M. Krsnik-Rasol and Professor V. Besendorfer
Year	1996/97. - today
Course	Elective course <u>Methods of protein investigations</u> , undergraduate study of Molecular Biology
Teacher(s)	Associate Professor B. Balen
Year	2013/14. – course given in English
Course	Elective course <u>Methods of protein investigations</u> , undergraduate study of Molecular Biology
Teacher(s)	Associate Professor B. Balen

B) Graduate studies

Lectures and seminars

Year	2011/12. and 2013/14 – course given in English
Course	Elective course <u>Introduction to proteomics</u> , graduate study of Molecular Biology
Teacher(s)	Associate Professor B. Balen and Assistant Professor M. Cindrić
Year	2008/09. - 2010/11.
Course	Elective course <u>Introduction to proteomics</u> , graduate study of Molecular Biology
Teacher(s)	Associate Professor B. Balen and Assistant Professor M. Cindrić
Year	2009/10. - today
Course	Obligatory course <u>Plant engineering</u> , graduate study of Bioindustrial techniques
Teacher(s)	Assistant Professor N. Bauer and Associate Professor B. Balen

Practicals

Year	2011/12. and 2013/14. – course given in English
Course	Elective course <u>Introduction to proteomics</u> , graduate study of Molecular Biology
Teacher(s)	Associate Professor B. Balen and Assistant Professor M. Cindrić
Year	2008/09. - 2010/11.
Course	Elective course <u>Introduction to proteomics</u> , graduate study of Molecular Biology
Teacher(s)	Associate Professor B. Balen and Assistant Professor M. Cindrić
Year	2009/10. - today
Course	Obligatory course <u>Plant engineering</u> , graduate study of Bioindustrial techniques
Teacher(s)	Assistant Professor N. Bauer and Associate Professor B. Balen

C) Doctoral studies

Year	2008/09. - today
Course	course <u>Cell Organization and Function</u>
Teacher(s)	Associate Professor B. Balen and Professor V. Besendorfer

D) Other teaching activities

Year	2008/09. and 2013/14.
Activity	Work with students within Laboratory practice
Teacher(s)	Associate Professor B. Balen
Year	2009/10. and 2013/14
Activity	IEASTE Supervisor within IEASTE program of student exchange
Teacher(s)	Associate Professor B. Balen

MENTORING

Year	2011
Thesis	doctoral
Name and title	Sandra Šikić, Učinak kadmija i cinka te njihova međudjelovanja na ekspresiju proteina u duhanu (<i>Nicotiana tabacum</i>) (in Croatian)
Menthor(s)	Assistant Professor B. Balen
Year	2014
Thesis	graduate
Name and title	Anita Milošić, Utjecaj nanočestica srebra na rast i pojavu oksidacijskog stresa u korjenčićima luka (<i>Allium cepa</i>) (in Croatian)
Menthor(s)	Associate Professor B. Balen
Year	2013
Thesis	graduate

Name and title	Tea Rogić, Utjecaj solnog i osmotskog stresa na diferencijalnu ekspresiju proteina kaktusa <i>Mammillaria gracilis</i> Pfeiff. u kulturi <i>in vitro</i> (in Croatian)
Menthor(s)	Associate Professor B. Balen
Year	2012
Thesis	graduate
Name and title	Iva Janković, Učinak biljnih hormona stresa na klijance kineskog kupusa (<i>Brassica rapa</i> L. <i>ssp. pekinensis</i>) (in Croatian)
Menthor(s)	Branka Salopek Sondi, PhD and Associate Professor B. Balen
Year	2008
Thesis	graduate
Name and title	Janko Gospočić, Glikozilacija proteina u endoplazmatskom retikulumu tijekom diferencijacije stanica hrena (<i>Armoracia lapathifolia</i> Gilib.) u kulturi <i>in vitro</i> (in Croatian)
Menthor(s)	Assistant Professor B. Balen
Year	2012
Thesis	baccalaureus graduate
Name and title	Ivan Faraho, Proizvodnja monoklonalnih protutijela u biljkama (in Croatian)
Menthor(s)	Assistant Professor B. Balen
Year	2010
Thesis	baccalaureus graduate
Name and title	Anita Čarija, O-glikozilacija proteina u biljaka (in Croatian)
Menthor(s)	Assistant Professor B. Balen
Year	2010
Thesis	baccalaureus graduate
Name and title	Zrinko Kozić, Posttranslacijske modifikacije biljnih proteina (in Croatian)
Menthor(s)	Assistant Professor B. Balen
Year	2010
Thesis	baccalaureus graduate
Name and title	Sandi Paulišić, Utjecaj solnog stresa na vrstu <i>Opuntia streptacantha</i> Lem. (in Croatian)
Menthor(s)	Assistant Professor B. Balen
Year	2010
Thesis	baccalaureus graduate
Name and title	Tea Rogić, Utjecaj proteina ASR1 na solni i osmotski stres kod biljaka (in Croatian)
Menthor(s)	Assistant Professor B. Balen
Year	2010
Thesis	baccalaureus graduate
Name and title	Matija Šimac, Fosforilacija proteina u biljaka (in Croatian)
Menthor(s)	Assistant Professor B. Balen
Year	2009/2010
Thesis	Student work rewarded by the Prize of Rector of the University of Zagreb
Name and title	Tea Rogić i Matija Šimac, Utjecaj solnog i osmotskog stresa na kaktus <i>Mammillaria gracilis</i> Pfeiff. u kulturi <i>in vitro</i> (in Croatian)
Menthor(s)	Assistant Professor B. Balen

FELLOWSHIPS

Year	2006
Purpose	Travel Grant for Young Scientists for IAPTC&B Congress Biotechnology and Sustainable Agriculture 2006 and Beyond (Beijing, China)
Year	2004
Purpose	FEBS Short term fellowship – from 1 st of February up to the 1 st of May 2004 - research guest at the Institute for Medical Physics and Biophysics, University of Muenster, Germany
Year	2000
Purpose	Travel Grant for Students for 12 th FESSP Congress (Budapest, Hungary)

ORGANIZATIONAL SKILLS AND COMPETENCIES

A) INSTITUTIONAL RESPONSIBILITIES

2012-2014 – Deputy of the Head of the Department of Biology for international affairs and Bologna process

2012-2014 – Member of the Comity for graduation thesis of the Department of Biology

2009-2010 – Member of the Comity for classification exams of the Department of Biology

2007-2009 – Schedule coordinator of the Department of Biology

2007-2010 – Member of the Comity for evaluation of Biochemistry exams for all undergraduate studies of the Department of Biology

B) OTHER ACTIVITIES

2006 -2014 – Member of the State Comity of the Competition of young biologists organized by Agency of Education of the Ministry of Science Education and Sports of the Republic of Croatia Department of Biology and Croatian Biological Society

2009 – Member of the Expert Comity of the Ministry of Science Education and Sports for evaluation of elementary and high school Biology lecture books

2007-2009 – Secretary of the Croatian Society of Plant Biologists

- Reviewer of international scientific journals

- African Journal of Biotechnology
- BMC Plant Biology
- Journal of Plant Physiology
- Rapid Communications in Mass Spectrometry
- Plant Physiology and Biochemistry
- Scientia Horticulturae
- Journal of Arid Environments
- Journal of Horticultural Science and Biotechnology

- Reviewer of Croatian scientific journals

- Acta Botanica Croatica
- Food Technology and Biotechnology

MEMBERSHIPS

Memberships of the scientific associations:

- 2013 - today – Society of Experimental Biology (SEB)
- 2006 - today – Federation of European Societies of Plant Biology (FESPB)
- 2005 - today – Croatian Society of Plant Biologists
- 2006 – today – Croatian Society for Biochemistry and Molecular Biology
- 2000 – today – Croatian Biological Society

Functions:

- 2007 - 2009 – Secretary of the Croatian Society of Plant Biologists

COMPUTATIONAL SKILLS

Active user of the following computer software and databases:

- Microsoft Office (Windows, Excel, PowerPoint)
- Software for graphical design (Photoshop, Corel, PaintShopPro, Adobe Photoshop CS2)
- Program for statistical data analysis (Statistica)
- Program for 2D-gel analysis (Image QUANT)
- Bioinformatics (Database SweetDB – for glycan profiling, SwissProt – protein and peptide sequences)

TECHNICAL SKILLS AND COMPETENCIES

- Technical skills in techniques of plant cell and tissue culture, light microscopy, UV/VIS spectrophotometry, 1D- and 2D- protein electrophoresis and transfer of proteins onto membrane by wet or semi-dry blotting acquired through work in the in the Laboratory of protein electrophoresis and Laboratory for plant cell and tissue culture.
- Bioinformatics skills which were acquired at the practical course Bioinformatics: Computer Methods in Molecular Biology.
- Plant molecular biology techniques acquired at the practical course Molecular Approaches for Crop Improvement.
- Techniques of plant proteomics and glycomics (MALDI and ESI mass spectrometry) acquired while spending three months at the Institute of Medical Physics and Biophysics, University of Muenster

Zagreb, 20th of August 2014.

SIGNATURE

Biljana Balen