Uros Andjelkovic

Principal Research Fellow

Institute of Chemistry Technology & Metallurgy

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Education:
1998-2004 Graduated Biochemist (M.Sc.) (Faculty of Chemistry, University of Belgrade)
2007-2011 Ph.D. in Biochemistry (Faculty of Chemistry, University of Belgrade)
Postdoc:
2012-2013 Laboratory for biomolecular thermodynamics, Department of Physical Chemistry, Faculty of Chemistry and Chemical Technology, University of Ljubljana, research group of Prof. Jurij Lah.
2013-2014 Proteomics group, Department of Biochemistry, Molecular and Structural Biology, Institute Jozef Stefan, research group of Prof. Boris Turk and Prof. Marko Fonovic.
2014-2016 Proteomics group, Department of Biotechnology, University of Rijeka, research group of Prof. Djuro Josic.

Research Ranks:

University of Belgrade - Serbia
Institute of Chemistry, Technology and Metallurgy
2022 - Principal Research Fellow
2017 - 2021 Senior Research Associate
2012 - 2016 Research Associate
2004 - 2011 Research Assistant

University of Rijeka - Croatia
Department of Biotechnology
2019 - Visiting Assistant Professor
2018 - Senior Research Associate

Research Interests:
Protein-based antiviral drugs.
The role of glyco-component in stability of glycoproteins and transfer of biological information.
Protein and glycan structure determination by mass spectrometry.
Proteomics and glycomics.
Clinical proteomics.
Thermodynamics of conformational transitions and recognition of proteins with small molecules in correlation with their structure and function (carbohydrate binding proteins - carbohydrate).

Additional Professional Experience:
2022 Steering committee member in Charity Fund the Fund for Chemical Sciences Nenad M. Kostic
02-05 2010 Visiting researcher at the Department of physical chemistry Faculty of Chemistry and Chemical Technology University of Ljubljana, Slovenia. Research group of Prof. Jurij Lah.
05-08 2009 Visiting researcher at the Institute for Medical Physics and Biophysics, University of Leipzig, Germany. Research group of Prof. Daniel Huster.
05-07 2007 Visiting scholar at the Strathclyde Institute of Pharmacy and Biomedical Sciences, University of Strathclyde, Glasgow, UK. Food science research group of Prof. Alistair Paterson and Prof. John Piggott.

Teaching activities:
Department of Biotechnology - University of Rijeka - Croatia
University courses: OMICS in Biotechnology, Introduction to Chromatography of Biomolecules

Awards and Honors:
2007 BST (The British Scholarship Trust) – two months scholarship for research in UK;
2009 DAAD (German Academic Exchange Service) – three months scholarship for research in Germany;
2010 University of Ljubljana – three months scholarship for research at the University of Ljubljana, Slovenia;
2013 Serbian Ministry of Education, Science and Technol. Development - six months scholarship for postdoc;
2013 European Commission, Erasmus Mundus - scholarship for postdoc at the University of Ljubljana;

Projects:
2022-2023 The Innovation Fund of the R. Serbia - MG project: ”New antiviral agent“.
2019-2021 The Innovation Fund of the R. Serbia - TTF project: ”New antiviral agent“.
2017-2019 Industrial: “Improvement of purification strategy of clothing factors IX and X from human plasma”.
2014 - 2017 FP7 programme Marie Sklodowska Curie Actions Industry Academia Partnerships and Pathways (IAPP): “Methods for high-throughput glycoproteomic analysis” (HTP-GlycoMet).
2014 - 2017 COST action FA1402 “Improving Allergy Risk Assessment Strategy for new food proteins”
2016 - 2017 Bilateral scientific cooperation Croatia - Serbia: “Proteomic and glycoproteomic approaches in food protease allergens characterization and identification of protease substrates on epithelial cells: correlation between protease activity and allergenicity”.
2015 - 2017 CSF project “Clinical proteomics of microorganisms”
2012 - 2013 Bilateral scientific cooperation Slovenia - Serbia: “Structural transitions of proteins and their recognition by small molecules: Thermodynamics in correlation with functionality”.

2011-2014, 2016-2019 „Production, isolation and characterization of enzymes and small molecules and their

application in soluble and immobilized form in food biotechnology, biofuel technology and environmental protection".
2011-2014, 2016-2019 „Interactions of natural products, their derivatives and complex compound with proteins and nucleic acids".

Publications: **Book chapters:**

1. Dj. Josić, U. Andjelković. **The Role of Proteomics in Personalized Medicine**. In book: Personalized medicine: A New Medical and Social Challenge. Edited by N. Bodiroga-Vukobrat, D. Rukavina, K. Pavelić, G.G. Sander. Springer (2016), pp. 179-218. ISBN 978-3-319-39349-0
2. D. Rešetar, T. Martinović, S. Kraljević Pavelić, U. Andjelković, Dj. Josić. **Proteomics and Peptidomics as Tools for Detection of Food Contamination by Bacteria**. In book: Advances in Food Diagnostics, 2nd Edition. Edited by F. Toldra, L.M.L. Nollet. Wiley-Blackwell (2017), pp. 97-137. ISBN 978-1-119-10588-6
3. U. Andjelković, J. Giacometti, Dj. Josić. **Protein and Peptide Separations**. In book: Liquid Chromatography: Applications. Edited by S. Fanali, P.R. Haddad, C.F. Poole, M.L. Riekkola. Elsevier (2017), vol. 2, pp. 107-157. ISBN 9780128053928
4. U. Andjelkovic. **Food Allergy & Food Allergens**. doi: 10.1016/B978-0-08-100596-5.22844-8 In book: Comprehensive Foodomics. Edited by A. Cifuentes. Elsevier (2021), vol. 3, pp. 157–174. ISBN: 9780128163955

Scientific papers:

2021

31. Z. Lopandić, L. Dragačević, D. Popović, U. Adjelkovic, R. Minić, M. Gavrović-Jankulović. **BanLec-eGFP chimera as a tool for evaluation of lectin binding to high-mannose glycans on microorganisms.** Biomolecules 11 (2021) 180 doi: 10.3390/biom11020180
30. U. Andjelković, I. Gudelj, T. Klarić, H. Hinneburg, M. Vinković, K. Wittine, N. Dovezenski, D. Vikić-Topić, G. Lauc, Z. Vujčić, Dj. Josić. **Increased Yield of Enzymatic Synthesis by Chromatographic Selection of Different N-Glycoforms of Yeast Invertase.** Electrophoresis 42 (2021) 2626-2636 doi: 10.1002/elps.202000092

2020

29. K. Wittine, R. Antolović, D. Jelić, S. Bracanović, M. Cetina, U. Andjelkovic, O. Wittine, S. Kraljević Pavelić, A. Vinter. **Thienochromene derivatives inhibit pSTAT1 and pSTAT5 expression induced by cytokines.** Bioorganic & Medicinal Chemistry Letters 30 (2020) 127415 doi: 10.1016/j.bmcl.2020.127415
28. M. Šrajer Gajdošik, U. Andjelković, D. Gašo-Sokač, H. Pavlović, O. Shevchuk, T. Martinović, J. Clifton, M. Begić, Dj. Josić. **Proteomic analysis of pyridoxal oxime derivatives treated Listeria monocytogenes reveals down-regulation of the main virulence factor, Listeriolysin O.** Food Research International 131 (2020) 108951 doi: 10.1016/j.foodres.2019.108951

2018

27. U. Andjelković, Dj. Josić. **Mass spectrometry based proteomics as foodomics tool in research and assurance of food quality and safety.** Trends in Food Science and Technology 77 (2018) 100-119 doi: 10.1016/j.tifs.2018.04.008

2017

26. U. Andjelković, S. Tufegdžić, M. Popović. **Use of monolithic supports for high-throughput protein and peptide separation in proteomics.** Electrophoresis 38 (2017) 2851-2869 doi: 10.1002/elps.201700260
25. T. Martinović, U. Andjelković, M. Klobučar, U. Černigoj, J. Vidič, M. Lučić, K. Pavelić, Dj. Josić. **Affinity chromatography on monolithic supports for simultaneous and high-throughput isolation of immunoglobulins from human serum.** Electrophoresis 38 (2017) 2909-2913 doi: 10.1002/elps.201700216
24. U. Andjelković, M. Gavrović-Jankulović, T. Martinović, Dj. Josić. **Omics methods as a tool for investigation of food allergies.** Trends in Analytical Chemistry 96 (2017) 107-115 doi: 10.1016/j.foodres.2017.06.016
23. M. Šrajer Gajdošik, U. Andjelković, D. Gašo Sokač, H. Pavlović, O. Shevchuk, T. Martinović, J. Clifton, Dj. Josić. **Proteomic analysis of food borne pathogens following the mode of action of the disinfectants based on pyridoxal oxime derivatives.** Food Research International 99 (2017) 560-570 doi: 10.1016/j.foodres.2017.06.016
22. U. Andjelković, M. Šrajer-Gajdošik, D. Gašo-Sokač, T. Martinović, Dj. Josić. **Foodomics and food safety: Where we are.** Food Technology and Biotechnology 55 (2017) 290-307 doi: 10.17113/ftb.55.03.17.5044
21. J. Nikolić, A. Nešić, M. Čavić, N. Đorđević, U. Anđelković, M. Atanasković-Marković, B. Drakulić, M. Gavrović-Jankulović. **Effect of malondialdehyde on the ovalbumin structure and its interactions with T84 epithelial cells.** Biochimica et Biophysica Acta - General Subjects 1861 (2017) 126-134 doi: 10.1016/j.bbagen.2016.11.021

2016

20. N. Malatesti, A. Harej, S. Kraljević Pavelić, M. Lončarić, H. Zorc, K. Wittine, U. Andjelković, Dj. Josić. **Synthesis, characterisation and *in vitro* investigation of photodynamic activity of 5-(4-octadecanamidophenyl)-10,15,20-tris(N-methylpyridinium-3-yl)porphyrin trichloride on HeLa cells using low light fluence rate.** Photodiagnosis and Photodynamic Therapy 15 (2016) 115-126 doi: 10.1016/j.pdpdt.2016.07.003
19. T. Martinović, U. Andjelković, M. Srajer-Gajdošik, D. Rešetar, Dj. Josić. **Foodborne pathogens and their toxins.** Journal of Proteomics 147 (2016) 226-235 doi: 10.1016/j.jprot.2016.04.029
18. L.D. Breen, M. Pučić-Baković, F. Vučković, K.R. Reiding, I. Trbojević-Akmačić, M. Srajer-Gajdošik, M.I. Cook, M.J. Lopez, M. Wuhrer, L.M. Camara, U. Andjelković, D.E. Dupuy, Dj. Josić. **IgG and IgM glycosylation patterns in patients undergoing image-guided tumor ablation.** Biochimica et Biophysica Acta - General Subjects 1860 (2016) 1786-1794 doi: 10.1016/j.bbagen.2016.01.011
17. M.M. Grozdanović, M. Čavić, A. Nešić, U. Andjelković, P. Akbari, J.J. Smit, M. Gavrović-Jankulović. **Kiwifruit cysteine protease actinidin compromises the intestinal barrier by disrupting tight junctions.** Biochimica et Biophysica Acta - General Subjects 1860 (2016) 516-526 doi: 10.1016/j.bbagen.2015.12.005

2015

16. U. Andjelković, T. Martinović, Dj. Josić. **Foodomic investigations of food allergies.** Current Opinion in Food

Science 4 (2015) 92-98 doi: 10.1016/j.cofs.2015.06.003

15. M. Vizovišek, R. Vidmar, E. Van Quickelbergh, F. Impens, U. Andjelković, B. Sobotič, V. Stoka, K. Gevaert, B. Turk, M. Fonović. **Fast profiling of protease specificity reveals similar substrate specificities for cathepsins K, L and S.** Proteomics 15 (2015) 2479-2490 doi: 10.1002/pmic.201400460

14. U. Andjelković, A. Milutinović-Nikolić, N. Jović-Jovičić, P. Banković, T. Bajt, Z. Mojović, Z. Vujčić, D. Jovanović. **Efficient stabilization of *Saccharomyces cerevisiae* external invertase by immobilization on modified beidellite nanoclays.** Food Chemistry 168 (2015) 262-269 doi: 10.1016/j.foodchem.2014.07.055

2014

13. M. Grozdanović, S. Ostojić, I. Aleksić, U. Andjelković, A. Petersen, M. Gavrović-Jankulović. **Active actinidin retains function upon gastrointestinal digestion and is more thermostabile than the E-64 inhibited counterpart.** Journal of The Science of Food and Agriculture 94 (2014) 3046-3052 doi: 10.1002/jsfa.6656

12. Z. Milićević, V. Bajić, L. Živković, J. Kasapović, U. Andjelković, B. Spremo-Potparević. **Identification of p53 and Its Isoforms in Human Breast Carcinoma Cells.** The Scientific World Journal (2014), Article ID 618698, doi: 10.1155/2014/618698

11. V. Prokopović, M. Popović, U. Andjelković, A. Marsavelski, B. Rasković, M. Gavrović-Jankulović, N. Polović. **Isolation, biochemical characterization and anti-bacterial activity of BPIFA2 protein.** Archives of Oral Biology 59 (2014) 302-309 doi: 10.1016/j.archoralbio.2013.12.005

10. I. Mrkić, M. Abughren, J. Nikolić, U. Andjelković, E. Vassilopoulou, A. Sinaniotis, A. Petersen, N.G. Papadopoulos, M. Gavrović-Jankulović. **Molecular Characterization of Recombinant Mus a 5 Allergen from Banana Fruit.** Molecular Biotechnology 56 (2014) 498-506 doi: 10.1007/s12033-013-9719-8

2013

9. M. Popović, U. Andjelković, L. Burazer, B. Lindner, A. Petersen, M. Gavrović-Jankulović. **Biochemical and immunological characterization of a recombinantly- produced antifungal cysteine protease inhibitor from green kiwifruit (Actinidia deliciosa).** Phytochemistry 94 (2013) 53-59 doi: 10.1016/j.phytochem.2013.06.006

8. M. Popović, U. Andjelković, M. Grozdanović, I. Aleksić, M. Gavrović-Jankulović. ***In Vitro* Antibacterial Activity of Cysteine Protease Inhibitor from Kiwifruit (*Actinidia deliciosa*).** Indian Journal of Microbiology 53 (2013) 100-105 doi: 10.1007/s12088-012-0319-2

2012

7. U. Andjelković, S. Theisgen, H.A. Scheidt, M. Petković, D. Huster, Z. Vujčić. **The thermal stability of the external invertase isoforms from *Saccharomyces Cerevisiae* correlates with the surface charge density.** Biochimie 94 (2012) 510-515 doi: 10.1016/j.biochi.2011.08.020

6. I. Novaković, U. Anđelković, M. Zlatović, M.J. Gašić, D. Sladić. **Bioconjugates of lysozyme and the antibacterial marine sesquiterpene quinone avarone and its derivatives.** Bioconjugate Chemistry 23 (2012) 57-65 doi: 10.1021/bc200330m

5. A. Mernik, U. Andjelković, I. Drobnak, J. Lah. **Differences in unfolding energetics of CcdB toxins from *V. fischeri* and *E. coli*.** Acta Chimica Slovenica 59 (2012) 548-553 doi:

4. I. Aleksić, M. Popović, R. Dimitrijević, U. Andjelković, E. Vassilopoulou, A. Sinaniotis, M. Atanasković-Marković, B. Lindner, A. Petersen, N.G. Papadopoulos, M. Gavrović-Jankulović. **Molecular and immunological characterization of Mus a 5 allergen from banana fruit.** Molecular Nutrition and Food Research 56 (2012) 446-453 doi: 10.1002/mnfr.201100541

2011

3. U. Andjelković, J. Lah. **Thermodynamics and structural features of the Yeast *Saccharomyces cerevisiae* External Invertase Isoforms in Guanidinium-Chloride Solutions.** Journal of Agricultural and Food Chemistry 59 (2011) 727-732 doi: 10.1021/jf103441p

2010

2. Z. Vujčić, A. Milovanović, N. Božić, B. Dojnov, M. Vujčić, U. Andjelković, N. Lončar. **Immobilization of cell wall invertase modified with glutaraldehyde for continuous production of invert sugar.** Journal of Agricultural and Food Chemistry 58 (2010) 11896-11900 doi: 10.1021/jf101836r

1. U. Andjelković, S. Pićurić, Z. Vujčić. **Purification and Characterisation of *Saccharomyces cerevisiae* External Invertase Isoforms.** Food Chemistry 120 (2010) 799-804 doi: 10.1016/j.foodchem.2009.11.013

Patents: 2021 PCT WO2023/055250A1 "Carbohydrate binding polypeptide" Leading inventor
2021 PCT WO/2022/023431 "A process for the purification of prothrombin complex concentrate (PCC) and FIX from complete plasma or cryo-poor plasma" Co-inventor

Start-up: **SavAntiVir ltd. Belgrade**

Ad hoc reviewer in SCI journals:

- Bioactive Materials
- Food Chemistry
- Journal of Chromatography A
- Bioresource Technology
- Current Opinion in Food Science
- Electrophoresis
- Food Research International
- Applied Microbiology and Biotechnology
- Cells
- Phytomedicine
- Food Technology and Biotechnology
- Journal of Functional Foods
- Biocatalysis and Biotransformation
- Frontiers in Microbiology
- Food Bioscience
- Journal of the Science of Food and Agriculture
- International Journal of Proteomics
- Chromatographia
- Current Protein & Peptide Science
- Journal of Polymer Engineering
- Current Nanoscience
- Microscopy Research and Technique
- Acta Chimica Slovenica
- Journal of Food Biochemistry