

## ZRINKA KARAČIĆ, PhD

Assistant

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- Personal information Date and place of birth: September 2, 1986, Zagreb  
Citizenship: Croatian
- Work experience since December 2012: assistant, Laboratory for Protein Biochemistry and Molecular Modelling (was Laboratory for Cellular Biochemistry until March 2016), Division of Organic Chemistry and Biochemistry, „Ruđer Bošković“ Institute
- July 2012 – October 2012: associate, Laboratory for Chemical Biology, Division of Molecular Biology, „Ruđer Bošković“ Institute
- April 2011 – December 2011: volunteer/associate, Laboratory for Cellular Biochemistry, Division of Organic Chemistry and Biochemistry, „Ruđer Bošković“ Institute
- Education 2018: Doctoral thesis „Biochemical characterization of a dual enzymatic activity hydrolase from moss *Physcomitrella patens*“, supervisor: Dr. Branka Salopek Sondi (Senior Scientist), Laboratory for Protein Biochemistry and Molecular Modelling, Division of Organic Chemistry and Biochemistry, „Ruđer Bošković“ Institute
- 2013– 2018: postgraduate (doctoral) university study program: Biochemistry, Faculty of Science, University of Zagreb
- 2010: Diploma thesis „The role of Cys176 and Cys509 in the inactivation of human dipeptidyl peptidase III by thiol reagents“, supervisor: Dr. Marija Abramić (Senior Scientist), Laboratory for Cellular Biochemistry, Division of Organic Chemistry and Biochemistry, „Ruđer Bošković“ Institute
- 2008 – 2010: Master of Chemistry, graduate university study program, Faculty of Science, University of Zagreb
- 2005 – 2008: Bachelor of Chemistry, undergraduate university study program, Faculty of Science, University of Zagreb
- Training October 2016 (1 month): stay at the Institute of Biochemistry, Graz University of Technology (Austria) as a part of the Croatian-Austrian bilateral project „An Interdisciplinary study on atypical dipeptidyl peptidases III structure and dynamics“

March 2015 – April 2015 (2 months): stay at the Faculty of Biology, University of Freiburg (Germany) conducting „Investigation of function of dipeptidyl peptidases III in moss *Physcomitrella patens* using targeted gene knockouts“ as FEBS Short-Term Fellowship

February 2013 – March 2013 (6 weeks): stay at the Institute of Botany, Technical University Dresden (Germany) as a part of the Alexander von Humboldt project „Study of plant metallopeptidase families M20 and M49“

November 2012 (9 days): stay at the Institute of Molecular Biosciences, University of Graz (Austria) as a part of the Croatian-Austrian bilateral project „Diversity of metallopeptidase family M49“

November 2011 (5 weeks): stay at the Institute of Molecular Biosciences, University of Graz (Austria) as a part of the Croatian-Austrian bilateral project „Structure-function relationship in metallopeptidase family M49“

## Publications

1. S. Kazazić, Z. Karačić, I. Sabljčić, D. Agić, M. Tomin, M. Abramić, M. Dadlez, A. Tomić, S. Tomić, Conservation of the conformational dynamics and ligand binding within M49 enzyme family. *RSC Advances* **8** (2018), 24; 13310-13322
2. T. Šmidlehner, Z. Karačić, S. Tomić, C. Schmuck, I. Piantanida, Fluorescent cyanine-guanidiniocarbonyl-pyrrole conjugate with pH-dependent DNA/RNA recognition and DPP III fluorescent labelling and inhibition properties. *Monatshefte für Chemie* **149** (2018) 7; 1307-1313
3. Z. Karačić, Ž. Ban, P. Macheroux, A novel member of the dipeptidyl peptidase III family from *Armillariella tabescens*. *Current Topics in Peptide & Protein Research*, **18** (2017), 41-48
4. A. Hromić-Jahjefendić, N. Jajčanin Jozić, S. Kazazić, M. Grabar Branilović, Z. Karačić, J. H. Schrittwieser, K. M. P. Das, M. Tomin, M. Oberer, K. Gruber, M. Abramić, S. Tomić, A novel *Porphyromonas gingivalis* enzyme: An atypical dipeptidyl peptidase III with an ARM repeat domain. *PLoS One*, **12** (2017), 11; e0188915
5. M. Matovina, D. Agić, M. Abramić, S. Matić, Z. Karačić, S. Tomić, New findings about human dipeptidyl peptidase III based on mutations found in cancer. *RSC Advances* **7** (2017) 58; 36326-36334
6. Z. Karačić, B. Vukelić, G. H. Ho, I. Jozić, I. Sućec, B. Salopek-Sondi, M. Kozlović, S.E. Brenner, J. Ludwig-Müller, M. Abramić, A novel plant enzyme with dual activity: an atypical Nudix hydrolase and a dipeptidyl peptidase III. *Biol Chem* **398** (2017) 1; 101-112
7. D. Agić, H. Brkić, S. Tomić, Z. Karačić, M. Špoljarević, M. Lisjak, D. Bešlo, M. Abramić, Validation of flavonoids as potential dipeptidyl peptidase III inhibitors: experimental and computational approach. *Chem Biol Drug Des* **89** (2017) 4; 619-627

8. M. Gundić, A. Tomić, R. C. Wade, M. Matovina, Z. Karačić, S. Kazazić, S. Tomić, Human DPP III – Keap1 Interactions: A Combined Experimental And Computational study. *Croat chem acta* **89** (2016), 2; 217-228
9. M. Abramić, Z. Karačić, M. Šemanjski, B. Vukelić, N. Jajčanin Jozić, Aspartate 496 from the subsite S2 drives specificity of human dipeptidyl peptidase III, *Biol Chem* **396** (2015) 4:359-366
10. Z. Karačić, J. Špoljarić, M. Rožman, M. Abramić, Molecular determinants of human dipeptidyl peptidase III sensitivity to thiol modifying reagents, *Biol Chem* **393** (2012) 12:1523-1532

Conferences	<p>October 2016: poster presentation at the „Novel enzymes“ conference, Groningen, The Netherlands: „A bifunctional plant enzyme: an isopentenyl diphosphate hydrolase fused to a dipeptidyl peptidase III“, <u>Z. Karačić</u>, B. Vukelić, G. H. Ho, I. Jozić, I. Sućec, B. Salopek-Sondi, M. Kozlović, S.E. Brenner, J. Ludwig-Müller, M. Abramić</p> <p>September 2015: poster presentation at the FEBS3+ Meeting „Molecules of Life“, Portorož, Slovenia: „Characterization of plant dipeptidyl-peptidases III from <i>Physcomitrella patens</i> and <i>Arabidopsis thaliana</i>“, <u>Z. Karačić</u>, M. Abramić</p> <p>September 2013: poster presentation at the 6th Central European Conference „Chemistry towards Biology“, Trieste, Italy: „Molecular basis of human dipeptidyl peptidase III susceptibility to sulfhydryl reagents“, <u>Z. Karačić</u>, J. Špoljarić, M. Rožman, M. Abramić</p>
Courses	<p>October 2017: EuPA School on Practical Proteomics, Split, Croatia</p> <p>September 2014: EMBO Practical course „Protein expression, purification, and characterization (PEPC9)“, Hamburg, Germany</p> <p>June 2014: ICGEB Theoretical and practical course „Bioinformatics: Computer methods in molecular and systems biology“, Trieste, Italy</p>
Teaching	<p>since 2013 assistant lecturer, undergraduate courses „Cellular biophysics“ and „Biomembranes“, practical module „Protein purification“, Faculty of Science, Zagreb</p>
Honours and awards	<p>2015 FEBS Short-Term Fellowship, for project „Investigation of function of dipeptidyl peptidases III in moss <i>Physcomitrella patens</i> using targeted gene knockouts“</p> <p>2010 Commendation for excellence, Faculty of Science, Zagreb</p> <p>2010 Medal for excellence, Department of Chemistry, Faculty of Science, Zagreb</p>
Memberships	<p>2013 – Croatian Society of Biochemistry and Molecular Biology</p> <p>2013 – Croatian Chemical Society</p> <p>2018 – Croatian Society of Plant Biologists</p>

Languages

English: advanced (C2 level)  
Spanish: intermediate (B2 level)  
German: basic (A2 level)