CURRICULUM VITAE
LEJLA PAŠIĆ, PHD

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Biotechnical faculty, Department of Biology,
Večna pot 111, 1000 Ljubljana, Slovenia

EDUCATION

PhD University of Ljubljana, Medical Faculty, Biomedicine — October 2007
Dissertation: 'Biochemical characterization of halocins and phylogenetic analysis of halophilic Archaea inhabiting Sečovlje salterns'
Advisers: prof. dr. Blagajana Herzog Velikonja, prof. dr. Nataša Poklar Ulrih
Committee: Prof. dr. Miklavž Grabnar, prof. dr. Ana Plemenitaš, prof.dr. Gorazd Avguštin

BSc University of Ljubljana, Biotechnical Faculty, Department of Biology — September 1999
Dissertation:'Interactions of parazoanthoxantin A with DNA'
Advisers: prof. dr. Tom Turk, prof. dr. Nataša Poklar Ulrih

HONORS AND AWARDS

Best teacher award at Interdisciplinary study of Microbiology 2006

EMBO short term fellowship 2007
Fellowship ASTF 366.00-2007 awarded for project 'Mechanisms of phage evasion in prokaryotes: modification of targets by intragenomic recombination'

FEMS short term fellowship 2006
Fellowship 2006-1 awarded for project 'Metagenomic analysis of genetic diversity of the hyper-halophilic archaeon *Haloquadratum walsbyi* and hyperhalophilic bacterium *Salinibacter ruber*'

RESEARCH INTERESTS

I am interested in exploration of diversity and ecological function of prokaryotes in natural environments of aquatic (groundwater and hypersaline waters of marine origin) and subterranean origin. Understanding microbial complexity is extraordinarily difficult, but essential to predict issues of paramount importance for the Mankind such as the emergence of new pathogens.
To achieve these goals my colleagues and I are using nucleic acid sequence information that is extracted directly from the environment through metagenomics, metatranscriptomics and single cell genomics. My colleagues and I combine our findings to gain insight into structure of microbial communities, their biotechnological potential and patterns of horizontal genetic exchange (e.g. spread of antibiotic resistances).

The exploration of environments considered 'extreme' by most organisms enables us to gain insight into how extremes of environment shape the genomes of organisms that inhabit it. Besides, knowing the extent and the nature of microbial diversity in these systems allows us to look for non-destructive and environmentally friendly approaches for protection of natural and cultural heritage (e.g. prehistoric cave paintings).
Last but not least, I firmly believe in pure culture and implementation of novel cultivation approaches in order to obtain and characterize ecologically important microorganisms.

INTERESTS RELATED TO EDUCATION

I am interested in defining and implementing quality in higher education as well as in methods to improve teacher competence and efficiency. As a teacher, I am highly motivated and dynamic. I am further devoted to helping students achieve their academic maximum by overcoming obstacles and imposed by social and family background, poor school bonding, changes in self-esteem, difficulties in regulating emotions, relationships with peers, intergroup attitudes and stereotyping. I also believe in bridging formal and informal education and promoting bioscience literacy.

RESEARCH EXPERIENCE

University of Ljubljana, Faculty of Chemistry and Chemical Technology/ Biotechnical Faculty 1999-1999

- Undergraduate thesis project completed at Chair of Physical chemistry and Chair of Biochemistry

University of Ljubljana, Biotechnical faculty, Department of Biology
Position

- Teaching assistant at Chair for Molecular biology and Biology of Microorganisms 2000-2010
- Assistant professor at Chair for Molecular biology and Biology of Microorganisms 2010-present

Research fellow/Visiting researcher
University Miguel Hernandez, Department of Microbiology Oct-Nov 2004
Nov 2006-Feb 2007
Nov 2007–Feb 2008
Aug 2008
Sep 2010-Feb 2011

TEACHING EXPERIENCE

University of Ljubljana, Biotechnical Faculty, Department of Biology 2000 -present
Teaching assistant,

- Taught Molecular biology, Molecular genetics, Molecular microbiology, Genetics of Eukaryotes and Applied Genetics

TECHNIQUES

Microbiology

Sampling techniques (aquatic, soil-like environments), sample analysis and preservation, axenic culture, isolation of viruses, phenotypic characterization of microbes, light, fluorescence and phase-contrast microscopy, MLST

Molecular biology

DNA isolation, RNA isolation, electrophoresis (agarose, PFGE, DGGE, TGGE), recombinant DNA technology (plasmid, fosmid, phage vectors), PCR (single, multiplex, RT-PCR), cDNA preparation, Sanger sequencing, hybridization (Southern and Northern blot), random and site-directed mutagenesis, DNAi, heterologous expression, electrophoretic mobility shift assay.

Biochemistry

Gel chromatography, affinity chromatography, HPLC, spectrophotometry, fluorimetry, CD spectroscopy, SDS-PAGE, Western blotting.

Bioinformatics

Analysis of Sanger and next generation sequencing data: sequence quality control, sequence assembly, sequence statistics, gene detection, functional annotation, comparative genomics, genome recruitment, phylogenetic analysis.

PRINCIPAL INVESTIGATOR

- J1-6741 Employing the recent advances in metagenomics to explore the karst groundwater microbiome (basic research project) financed by Slovenian Research Agency 2014-2017

- Temporal and spatial dynamics of prokaryotic communities inhabiting Adriatic solar salterns, financed by Slovenian Research Agency 2011-2013

PROJECT PARTICIPATION

- J7-4208 Microbiological and structural investigations of biologically damaged textiles ffrom Slovenian museums, financed by Slovenian Research Agency 2011-2014
- J3-3624 Virulence factors as potential targets of vaccines, financed by Slovenian Research Agency 2010-2013
- J4-2111 Molecular mechanism of initiation of protease activity of bacterial repressor LexA, financed by Slovenian Research Agency 2009-2012
- P1-0198 Molecular Biology of Microorganisms……..2000-today

PUBLICATIONS

Books and other study material

PAŠIĆ, Lejla, RODRIGUEZ-VALERA, Francisco. *Ecology and evolution of Haloquadratum walsbyi through the lens of genomics and metagenomics*. V: PAPKE, R. Thane (ur.), OREN, Aharon (ur.). Halophiles : genetics and genomes. Norfolk: Caister Academic Press, cop. 2014, str. 1-36. [COBISS.SI-ID 3134031]

PAŠIĆ, Lejla, MULAOMEROVIĆ, Jasminko. *Microorganisms and the natural heritage of Dinaric karst - a review.* V: SAIZ-JIMENEZ, Cesareo (ur.). The conservation of subterranean cultural heritage. Leiden: CRC Press, Balkema, 2014, p. 257-264. [COBISS.SI-ID 3262543]

PAŠIĆ, Lejla. *Trenutno stanje istraživanja mikrobnih zajednica koje se razvijaju na zidovima špilja = Current progress on microbiology of cave-wall communities*. V: Znanstveno-stručni skup Čovjek i krš, 11.-14. 10. 2012, Bijakovići, Međugorje = International Scientific Symposium "Man and Karst", 11th-14th October 2012, Bijakovići, Međugorje. MULAOMEROVIĆ, Jasminko (ur.). Čovjek i krš 2012 : zbornik radova = Man and Karst 2012 : proceedings, (Naš krš, ISSN 0351-1502, Vol. 33, no. 43). Sarajevo: Speleološko društvo Bosansko-hercegovački krš: Centar za krš i speleologiju, 2013, vol. 33, no. 43, p. 111-125. [COBISS.SI-ID 2945615]

HERZOG-VELIKONJA, Blagajana, GRUDEN, Kristina, **PAŠIĆ, Lejla**. *Praktikum iz molekularne biologije*, (Zbirka Scripta). Dopolnjena izd. Ljubljana: Študentska založba, 2001. 78 p., ilup. ISBN 961-6356-18-6. [COBISS.SI-ID 110715392]

PAŠIĆ, Lejla, STARČIČ ERJAVEC, Marjanca. *Učno gradivo za program iz molekulskega kloniranja in bioinformatike : laboratorijske vaje in delavnice*. Ljubljana: [s. n.], 2015. 49 str., ilustr. [COBISS.SI-ID 3470671]

PAŠIĆ, Lejla. *Učno gradivo pri predmetu Genetika evkariontov : laboratorijske vaje*. Ljubljana: [s. n.], 2013. 43 f., ilustr. [COBISS.SI-ID 3105359]

PAŠIĆ, Lejla, IVANČIČ, Tina. *Učno gradivo pri predmetu Molekularna mikrobiologija : laboratorijske vaje*. Ljubljana: [s. n.], 2012. 20 f., ilup. [COBISS.SI-ID 2748495]

AMBROŽIČ, Jerneja, **PAŠIĆ, Lejla**, STARČIČ ERJAVEC, Marjanca. *Učno gradivo za program iz molekulske genetike : laboratorijske vaje in delavice*. Ljubljana: [s. n.], 2008. 1 optični disk (CD-ROM). [COBISS.SI-ID 2322255]

AMBROŽIČ, Jerneja, **PAŠIĆ, Lejla**, STARČIČ ERJAVEC, Marjanca. *Učno gradivo za program iz molekulske genetike : laboratorijske vaje in delavnice*. Ljubljana: [J. Ambrožič Avguštin, L. Pašić, M. Starčič Erjavec], 2008. 42. str, ilup. [COBISS.SI-ID 1950543]

Journal Publications

MARTIN-CUADRADO, Ana-Belen*, **PAŠIĆ Lejla*** (*equal contributor), RODRIGUEZ-VALERA, Francisco. Diversity of the cell-wall associated genomic island of the archaeon *Haloquadratum walsbyi*. BMC genomics, 2015, *in press*.

MANIKANDAN, Muthu, KANNAN, Vijayaraghavan, MENDOZA, Ordetta Hannah, **PAŠIĆ Lejla.** The Contribution of endophytic bacteria to Albizia lebbeck-mediated phytoremediation of tannery effluent contaminated soil. International Journal of Phytoremediation, 2015, *in press*.

PAŠIĆ, Lejla, AMBROŽIČ, Jerneja, STARČIČ ERJAVEC, Marjanca, HERZOG-VELIKONJA, Blagajana, PODLESEK, Zdravko, ŽGUR-BERTOK, Darja. Two tales of prokaryotic genomic diversity : *Escherichia coli* and halophiles. Food technology and biotechnology, ISSN 1330-9862, 2014, vol. 52, no. 2, str. 158-169. [COBISS.SI-ID 3178575]

HERZOG-VELIKONJA, Blagajana, TKAVC, Rok, **PAŠIĆ, Lejla**. Diversity of cultivable bacteria involved in the formation of macroscopic microbial colonies (cave silver) on the walls of a cave in Slovenia. International journal of speleology, ISSN 0392-6672, 2014, vol. 43, no. 1, str. 45-56, http://scholarcommons.usf.edu/ijs/vol43/iss1/5/, doi: 10.5038/1827-806X.43.1.5. [COBISS.SI-ID 3063375

ŠANTL TEMKIV, Tina, FINSTER, Kai, HANSEN, Bjarne Munk, **PAŠIĆ, Lejla**, KARLSON, Ulrich Gosewinkel. Viable methanotrophic bacteria enriched from air and rain can oxidize methane at cloud-like conditions. *Aerobiologia*, 2013, 12 p., [in press]. http://download.springer.com/static/pdf/947/art%253A10.1007%252Fs10453-013-9287-1.pdf?auth66=1363765749_2802430fe05fdee88fd4a381541e9cac&ext=.pdf, doi: 10.1007/s10453-013-9287-1. [COBISS.SI-ID 2744143]

KOSTANJŠEK, Rok, **PAŠIĆ, Lejla**, DAIMS, Holger, SKET, Boris. Structure and community composition of sprout-like bacterial aggregates in a Dinaric Karst subterranean stream. *Microb. ecol.*, 2013, vol. , no. , 14 p., [in press], ilup. http://link.springer.com/content/pdf/10.1007%2Fs00248-012-0172-1, doi: 10.1007/s00248-012-0172-1. [COBISS.SI-ID 2711375]

PORCA, Estefania, JURADO, Valme, ŽGUR-BERTOK, Darja, SAIZ-JIMENEZ, Cesareo, **PAŠIĆ, Lejla**. Comparative analysis of yellow microbial communities growing on the walls of geographically distinct caves indicates a common core of microorganisms involved in their formation. *FEMS microbiol. ecol.*, 2012, vol. 81, iss. 1, p. 255-266, doi: 10.1111/j.1574-6941.2012.01383.x. [COBISS.SI-ID 2555727]

CUEZVA, Soledad, FERNANDEZ-CORTES Angel, PORCA, Estefania, **PAŠIĆ, Lejla,** JURADO, Valme, HERNANDEZ-MARINE, Mariona, SERRANO-ORTIZ, Penelope, HERMOSIN, Bernardo, CANAVERAS, Juan Carlos, SANCHEZ-MORAL, Sergio, SAIZ-JIMENEZ, Cesareo. The biogeochemical role of Actinobacteria in Altamira Cave, Spain. *FEMS microbiol. ecol.*, 2012, vol. 81, issue 1, p. 281-290. http://dx.doi.org/10.1111/j.1574-6941.2012.01391.x, doi: 10.1111/j.1574-6941.2012.01391.x. [COBISS.SI-ID 2625359]

MAKHDOUMI-KAKHKI, Ali, AMOOZEGAR, Mohammad Ali, KAZEMI, Bahram, **PAŠIĆ, Lejla**, VENTOSA, Antonio. Prokaryotic diversity in Aran-Bidgol salt lake, the largest hypersaline playa in Iran.*Microbes*

environ., 2012, vol. 27, no. 1, p. 87-93. http://dx.doi.org/10.1264/jsme2.ME11267, doi: 10.1264/jsme2.ME11267. [COBISS.SI-ID 2624847]

MANIKANDAN, Muthu, KANNAN, Vijayaraghavan, HERZOG-VELIKONJA, Blagajana, **PAŠIĆ, Lejla**. Optimization of growth medium for protease production by Haloferax lucentensis VKMM 007 by response surface methodology. *Braz. j. microbiol. (Impresso)*, 2011, vol. 42, no. 2, p. 818-824. http://dx.doi.org/10.1590/S1517-83822011000200050, doi: 10.1590/S1517-83822011000200050. [COBISS.SI-ID 2625103]

MANIKANDAN, Muthu, KANNAN, Vijayaraghavan, **PAŠIĆ, Lejla**. Extraction, purification and characterization of a protease from Micrococcus sp. VKMM 037. *Environ. technol.*, 2011, vol. 32, no. 13, p. 1487-1495. http://dx.doi.org/10.1080/09593330.2010.540718, doi: 10.1080/09593330.2010.540718. [COBISS.SI-ID 2624335]

GHAI, Rohit, **PAŠIĆ, Lejla**, BEATRIZ FERNÁNDEZ, Ana, MARTIN-CUADRADO, Ana-Belen, MEGUMI MIZUNO, Carolina, MCMAHON, Katherine D., PAPKE, Robertson Thane, STEPANAUSKAS, Ramunas, RODRIGUEZ-BRITO, Beltran, ROHWER, Forest, SANCHEZ-PORRO, Cristina, VENTOSA, Antonio, RODRIGUEZ-VALERA, Francisco. New abundant microbial groups in aquatic hypersaline environments. *Scientific reports*, 2011, vol. 1, p. 135-144, tabele, graf. prikazi, doi: 10.1038/srep00135. [COBISS.SI-ID 30112473]

PAŠIĆ, Lejla, KOVČE, Barbara, SKET, Boris, HERZOG-VELIKONJA, Blagajana. Diversity of microbial communities colonizing the walls of a Karstic cave in Slovenia. *FEMS microbiol. ecol.*, 2010, issue 1, vol. 71, p. 50-60. http://dx.doi.org/10.1111/j.1574-6941.2009.00789.x, doi: 10.1111/j.1574-6941.2009.00789.x. [COBISS.SI-ID 2120783]

RODRIGUEZ-BRITO, Beltran, LI, LinLin, WEGLEY, Linda, FURLAN, Mike, ANGLY, Florent, BREITBART, Mia, BUCHANAN, John, DESNUES, Christelle, DINSDALE, Elisabeth, EDWARDS, Robert, FELTS, Ben, HAYNES, Matthew, LIU, Hong, LIPSON, Daid, MAHAFFY Joseph, MARTIN-CUADRADO, Ana-Belen, MIRA, Alex, NULTON, Jim, **PAŠIĆ, Lejla**, RAYHAWK, Steve, RODRIGUEZ-MUELLER; Jennifer, RODRIGUEZ-VALERA, Francisco, SALAMON, Peter, SRINAGESH Shailaya, THINGSTAD FREDE, Tron, TRAN Tuong, THURBER, Rebecca Vega, WILLNER, Dana, YOULE Merry, ROHWER Forest. Viral and microbial community dynamics in four aquatic environments. *ISME j. (Print)*, 2010, vol. 4, no. 6, p. 739-751. http://dx.doi.org/10.1038/ismej.2010.1, doi:10.1038/ismej.2010.1. [COBISS.SI-ID 2365007]

MANIKANDAN, Muthu, **PAŠIĆ, Lejla**, KANNAN, Vijayaraghavan. Optimization of growth media for obtaining high-cell density cultures of halophilic archaea (family Halobacteriaceae) by response surface methodology. *Bioresour. technol.*. [Print ed.], 2009, letn. 100, št. 12, p. 3107-3112, doi: 10.1016/j.biortech.2009.01.033. [COBISS.SI-ID 25551065]

PAŠIĆ, Lejla, RODRIGUEZ-MUELLER, Belltran, MARTIN-CUADRADO, Ana-Belen, MIRA, Alex, ROHWER, Forest, RODRIGUEZ-VALERA, Francisco. Metagenomic islands of hyperhalophiles: the case of Salinibacter ruber. *BMC Genomics*, 1. dec. 2009, vol. 10, no. 570, p. 1-11, ilup. http://www.biomedcentral.com/content/pdf/1471-2164-10-570.pdf, doi: 10.1186/1471-2164-10-570. [COBISS.SI-ID 516235289]

RODRIGUEZ-VALERA, Francisco, MARTIN-CUADRADO, Ana-Belen, RODRIGUEZ-BRITO, Beltran, **PAŠIĆ, Lejla**, FREDE THINGSTAD, Tron, ROHWER, Forest, MIRA, Alex. Explaining microbial population genomics through phage predation. *Nat Rev Microbiol (Print)*, 2009, issue 11, vol. 7, p. 828-836. http://dx.doi.org/10.1038/nrmicro2235, doi: 10.1038/nrmicro2235. [COBISS.SI-ID 2120015]

MANIKANDAN, Muthu, **PAŠIĆ, Lejla**, KANNAN, Vijayaraghavan. Purification and biological characterization of a halophilic thermostable protease from Haloferax lucentensis VKMM 007. *World j. microbiol. biotechnol.*, 2009, 10 p., [in press]. http://dx.doi.org/10.1007/s11274-009-0132-1, doi: 10.1007/s11274-009-0132-1. [COBISS.SI-ID 2060879]

MANIKANDAN, Muthu, KANNAN, Vijayaraghavan, **PAŠIĆ, Lejla**. Diversity of microorganisms in solar salterns of Tamil Nadu, India. *World j. microbiol. biotechnol.*, 2009, issue 6, vol. 25, p. 1007-1017.http://dx.doi.org/10.1007/s11274-009-9980-y, doi: 10.1007/s11274-009-9980-y. [COBISS.SI-ID 1959759]

PAŠIĆ, Lejla, HERZOG-VELIKONJA, Blagajana, POKLAR ULRIH, Nataša. Optimization of the culture conditions for the production of a bacteriocin from halophilic archaeon Sech7a. *Prep. biochem. biotechnol.*, 2008, vol. 38, iss. 3, p. 229-245. [COBISS.SI-ID 3415160]

SANCHEZ-PEREZ, Gabino, MIRA, Alex, NYIRÖ, Gábor, **PAŠIĆ, Lejla**, RODRIGUEZ-VALERA, Francisco. Adapting to environmental changes using specialized paralogs. *Trends genet. (Regul. ed.)*. Regular ed., 2008, no. 4, vol. 24, p. 154-158. [COBISS.SI-ID 1863247]

PAŠIĆ, Lejla, POKLAR ULRIH, Nataša, ČRNIGOJ, Miha, GRABNAR, Miklavž, HERZOG-VELIKONJA, Blagajana. Haloarchaeal communities in the crystallizer of two Adriatic solar salterns. *Can. j. microbiol.*, 2007, issue 1, vol. 53, p. 8-18. [COBISS.SI-ID 3208568]

PAŠIĆ, Lejla, GALÁN BARTUAL, Sergio, POKLAR ULRIH, Nataša, GRABNAR, Miklavž, HERZOG-VELIKONJA, Blagajana. Diversity of halophilic archaea in the crystallizers of an Adriatic solar saltern.*FEMS microbiol. ecol.*, 2005, vol. 54, p. 491-498. [COBISS.SI-ID 3059832]

PAŠIĆ, Lejla, SEPČIĆ, Kristina, TURK, Tom, MAČEK, Peter, POKLAR ULRIH, Nataša. Characterization of parazoanthoxanthin A binding to a series of natural and synthetic host DNA duplexes. *Arch. biochem. biophys.*, 2001, vol. 393, no. 1, p. 132-142. [COBISS.SI-ID 2540408]

MEMBERSHIPS

Slovenian Biochemical Society (Member of FEBS)
Slovenian Microbiological Society (Member of FEMS)
Microbiology Society of Bosnia and Herzegovina (Member of FEMS)
International Society for Subterranean Biology

PROFESSIONAL AFFILIATIONS

University of Ljubljana, Biotechnical faculty, Department of Biology, 2000-Present
Teaching assistant, responsible for laboratory exercises and research

PROFESSIONAL SERVICE

Local organizing committee

Halophiles 2004 –International Congress on Halophilic Microorganisms

Peer-Reviewed Articles for:

- PloS ONE
- Extremophiles
- Microbial Ecology
- Environmental Technology
- International journal of Speleology
- Archaea
- ISRN Microbiology
- Environmental Science and Pollution Research
- Open Microbiology

LANGUAGES (CEF LEVELS)

Slovenian: Native Language (C2)
Bosnian/Croatian/Serbian/Montenegrin: Native Language (C2)
English: Very advanced (C1)
Spanish: Intermediate (B2)
French: Intermediate (B1)
German: Elementary (A2)

REFERENCES

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