

Ksenija Zahradka, Ph. D.

CURRICULUM VITAE

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Personal data:

Date of Birth: December 7th, 1967
Place of Birth: Zagreb, Croatia
Citizenship: Croatian
Maiden Name: Vlahović
Family Status: married to Davor Zahradka Ph.D., one child (Juraj)

Education:

1986 - 1991 B.Sc. in Molecular Biology, Faculty of Science, University of Zagreb, Zagreb, Croatia
1991 - 1994 M.Sc. in Molecular and Cellular Biology, University of Zagreb, Zagreb, Croatia
1994 - 1999 Ph.D. in Biology, University of Zagreb, Zagreb, Croatia
Thesis: "Genetic analysis of lambda prophage recombinogenicity in irradiated *Escherichia coli* cells"
2002 Postdoctoral fellow in the group of Prof. Miroslav Radman, Faculté de Médecine Necker, Université de Paris-Descartes, Paris, France

Positions held:

1991 - 1999 Research Assistant, Department of Molecular Genetics, Ruđer Bošković Institute, Zagreb, Croatia
1999 - 2002 Senior Research Assistant, Department of Molecular Genetics, Ruđer Bošković Institute, Zagreb, Croatia
2003 - present Research Associate, Department of Molecular Biology, Ruđer Bošković Institute, Zagreb, Croatia

Research interests:

- bacterial and phage molecular genetics
- DNA recombination, replication and repair in prokaryotes
- molecular mechanisms of radiation and desiccation resistance in extremophiles

Teaching activities:

1999 - 2004 Participation in several graduate courses at the University of Zagreb

2004 - present Participation in "Methodological Courses in Biology and Medicine", Ruđer Bošković Institute, Zagreb

2004 - 2007 Postgraduate course "Genetic Recombination", Faculty of Science, University of Zagreb

2005 - 2008 Graduate course "Human Genetics", Faculty of Pharmacy and Biochemistry, University of Zagreb

2008 - present Postgraduate course "Genetic Recombination and DNA Repair", Faculty of Science, University of Zagreb

2008 - present Postgraduate course "Mechanisms of DNA Damage and Repair", Interdisciplinary doctoral study Molecular Bioscience, University of Osijek, University of Dubrovnik and Ruđer Bošković Institute, Zagreb

Mentor of several B.Sc. theses and student works

Mentor of two Ph.D. students (in progress)

Memberships:

Croatian Genetic Society

Croatian Society for Biochemistry and Molecular Biology

Croatian Society for Microbiology

Fellowships and Awards:

2002 Postdoctoral fellowship from Necker Institute, Paris, France

2006 Croatian Annual Science Award

Invited lectures:

2004 3rd Croatian Congress of Microbiology with International Participation, Poreč, Croatia, title: Reconstitution of *Deinococcus radiodurans* genome after gamma irradiation

2005 1st Central European Forum for Microbiology (CEFOM), Keszthely, Hungary, title: *Deinococcus radiodurans*: the most efficient DNA repair involves coupled replication and recombination processes

2006 9th Croatian Biological Congress with International Participation, Rovinj, Croatia, title: DNA repair in *Deinococcus radiodurans*: from hundreds of fragments to the functional chromosome

2007 MedILS Summer School 2007 "Surviving death – an interdisciplinary approach workshop", Split, Croatia, title: DNA repair in *Deinococcus radiodurans*: surviving extreme life conditions

2007 Power of Microbes in Industry and Environment 2007 - Central European Symposium on Industrial Microbiology and Microbial Ecology, Zadar, Croatia, title: Survival of *Deinococcus radiodurans* in extreme conditions: Genome restoration by recombination

- 2008 7th Symposium of the Croatian Radiation Protection Association with International Participation, Opatija, Croatia, title: *Deinococcus radiodurans* - a radiation resistant bacterium
- 2008 MedILS Summer School 2008 "Life in Extreme Conditions", Split, Croatia, title: Survival of *Deinococcus radiodurans* in extreme environments
- 2008 HDBMB2008 Congress of the Croatian Society of Biochemistry and Molecular Biology with International Participation, Osijek, Croatia, title: DNA repair in radiation resistant bacterium *Deinococcus radiodurans*

Other activities:

- 2003 Member of the Organizing Committee, Scientific Symposium "45 Years of Molecular Biology in Croatia", Zagreb, Croatia
- 2006 Member of the Scientific Committee, 9th Croatian Biological Congress, Rovinj, Croatia
- 2006 Member of the Committee, National Fellowship Programme UNESCO-L'Oreal "For Women in Science"
- 2006 - Moderator of seminars, Croatian Genetic Society (Molecular Biology Group)
- 2007 - Vice-chair of the Knowledge and Invention Board, Adris Group Foundation, Croatia
- 2008 - Reviewer for several scientific journals
- 2008 President of the Organizing Committee, Scientific Symposium "50 Years of Molecular Biology in Croatia", Zagreb, Croatia
- 2009 Member of the Organizing Committee, 10th International Summer School on Biophysics "Supramolecular Structure and Function", Rovinj, Croatia
- 2009 Member of the Organizing and Scientific Committees, 10th Croatian Biological Congress with International Participation, Osijek, Croatia

List of publications:

1. **Vlahović, K.**, Petranović, M., Zahradka, D., Petranović, D. (1998) Effects of *ruv* and *recG* mutations on λ prophage thermoinducibility in UV-irradiated *Escherichia coli*. *Period. Biol.* 100: 383-388.
2. Zahradka, D., **Vlahović, K.**, Petranović, M., Petranović, D. (1999) Chromosome segregation and cell division defects in *recBC sbcBC ruvC* mutants of *Escherichia coli*. *J. Bacteriol.* 181: 6179-6183.
3. **Vlahović, K.**, Petranović, M., Zahradka, D., Petranović, D. (2000) Progressive loss of λ prophage recombinogenicity in UV-irradiated *Escherichia coli*: the role of RecBCD enzyme. *Res. Microbiol.* 151: 727-738.
4. Petranović, M., **Vlahović, K.**, Zahradka, D., Džidić, S., Radman, M. (2000) Mismatch repair in *Xenopus* egg extracts is not strand-directed by DNA methylation. *Neoplasma* 47: 375-381.
5. **Zahradka, K.**, Zahradka, D., Petranović, M. (2001) Loss of λ prophage recombinogenicity in UV-irradiated *Escherichia coli*: the role of host genes *ruvA*, *ruvB*, *ruvC*, and *recG*. *Res. Microbiol.* 152: 873-881.

6. Petranović, M., **Zahradka, K.**, Zahradka, D., Petranović, D., Nagy, B., Salaj-Šmic, E., Petranović, D. (2001) Genetic evidence that the elevated levels of *Escherichia coli* helicase II antagonize recombinational DNA repair. *Biochimie* 83: 1041-1047.
7. Paškvan, I., Salaj-Šmic, E., Ivančić-Baće, I., **Zahradka, K.**, Trgovčević, Ž., Brčić-Kostić, K. (2001) The genetic dependence of RecBCD-Gam mediated double strand end repair in *Escherichia coli*. *FEMS Microbiol. Lett.* 205: 299-303.
8. Zahradka, D., **Zahradka, K.**, Petranović, M., Đermić, D., Brčić-Kostić, K. (2002) The RuvABC resolvase is indispensable for recombinational repair in *sbcB15* mutants of *Escherichia coli*. *J. Bacteriol.* 184: 4141-4147.
9. **Zahradka, K.**, Zahradka, D., Đermić, D., Džidić, S., Petranović, M. (2002) The inactivation of free phages in UV-irradiated *Escherichia coli*. *Period. Biol.* 104: 399-403.
10. Zahradka, D., **Zahradka, K.**, Džidić, S., Đermić, D., Petranović, M. (2002) The *rus-1* mutation suppresses cytological defects in *recBC sbcBC ruv* mutants of *Escherichia coli*. *Period. Biol.* 104: 389-397.
11. **Zahradka, K.**, Šimić, S., Buljubašić, M., Petranović, M., Đermić, D., Zahradka, D. (2006) *sbcB15* and $\Delta sbcB$ mutations activate two types of RecF recombination pathway in *Escherichia coli*. *J. Bacteriol.* 188: 7562-7571.
12. **Zahradka, K.**, Slade, D., Bailone, A., Sommer, S., Averbeck, D., Petranovic, M., Lindner, A. B., Radman, M. (2006) Reassembly of shattered chromosomes in *Deinococcus radiodurans*. *Nature* 443: 569-573.
13. Petranovic, D., Michelsen, O., **Zahradka, K.**, Silva, C., Petranovic, M., Jensen, P. R., Mijakovic, I. (2007) *Bacillus subtilis* strain deficient for the protein-tyrosine kinase PtkA exhibits impaired DNA replication. *Mol. Microbiol.* 63: 1797-1805.
14. **Zahradka, K.**, Buljubašić, M., Petranović, M., Zahradka, D. (2009) Roles of ExoI and SbcCD nucleases in "reckless" DNA degradation in *recA* mutants of *Escherichia coli*. *J. Bacteriol.* 191: 1677-1687.
15. Repar, J., Cvjetan, S., Slade, D., Radman, M., Zahradka, D., **Zahradka, K.** (2010) RecA protein assures fidelity of DNA repair and genome stability in *Deinococcus radiodurans*. *DNA Repair* 9: 1151-1161.