

Curriculum Vitae

PERSONAL INFORMATION

Name and surname **Sandra Sobočanec**
Academic title PhD, Senior Research Associate
Year and institution 2006. Faculty of Science, University of Zagreb
of PhD obtained
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Citizenship Croatian
Date and place of birth 30.05.1975, Zagreb

WORK EXPERIENCE

(CHRONOLOGICALLY)

Date (from – until) **2015.-2019.** Project supported by Croatian Science Foundation „Sirtuin3 as a mediator of mitochondrial function in estrogen-dependent resistance to hyperoxia and high-fat diet“
Institution Rudjer Boskovic Institute
Position Senior Research Associate
Work field Biomedicine and health, basic research
Date (from – until) **2014.-2015.** Project „Neurosteroids as therapeutic opportunities in ischemic brain injury“ supported by „WWN/SFN COLLABORATIVE RESEARCH NETWORK PROGRAM (CRNP)“
Institution Rudjer Boskovic Institute
Position Senior Research Associate
Work field Neurosciences
Date (from – until) **2007-2011.** Project supported by Ministry of science RH "Cytochrome P 450 monooxygenases and tumor appearance in ageing and oxidative stress "
Institution Rudjer Boskovic Institute
Position Research Associate
Work field Biomedicine and health, basic research
Date (from – until) **2002-2006** Project supported by Ministry of science RH "The relevance of opioid/opiates application on oxidative /antioxidative status "
Institution Rudjer Boskovic Institute
Position PhD student
Work field Biomedicine and health, basic research
Date (from – until) **2005** Project with food industry «Antiinflammatory properties of sour cherry juice Prunus Cerasus cv. Maraska» Maraska GmbH, Zadar, Croatia
Institution Rudjer Boskovic Institute
Position PhD student
Work field Biomedicine and health, basic research
Date (from – until) **2004** Tehnological project "Bioactive properties of pollen from domestic plants Cistus sp. and Salix Alba»
Institution Rudjer Boskovic Institute
Position PhD student

Work field Biomedicine and health, basic research
 Date (from – until) **2003-2004** Technological project "Food supplement for animal care"
 Matros Trade Gmbh. Split, Croatia
 Institution Rudjer Boskovic Institute
 Position PhD student
 Work field Biomedicine and health, basic research
 Date (from – until) **2002-2003** Technological project "Ekopropolis natural antioxidants"
 with Hedera Gmbh. Split, Croatia
 Institution Rudjer Boskovic Institute
 Position PhD student
 Work field Biomedicine and health, basic research
 Date (from – until) **1998-2000** Basic project supported by Ministry of Science RH
 "Binding of enkephalin to human neutrophils and modulation of their
 functions".
 Institution Rudjer Boskovic Institute
 Position PhD student
 Work field Biomedicine and health, basic research

EDUCATION (CHRONOLOGICALLY)

Date **1994-1998**
 Place Zagreb, Croatia
 Institution Faculty of Science, University of Zagreb
 Title of qualification awarded Dipl.ing of molecular biology
 Date **1999-2003**
 Place Zagreb, Croatia
 Institution Postgraduate Study of Physiology and Immunobiology; Department
 of Biology, Faculty of Science, University of Zagreb
 Title of qualification awarded M.Sc.
 Date **2003-2006**
 Place Zagreb, Croatia
 Institution PhD Study Physiology and Immunobiology; Department of Biology,
 Faculty of Science, University of Zagreb
 Title of qualification awarded PhD

TRAINING (CHRONOLOGICALLY)

Date 15.2.-15.3. **2016.**
 Place Cologne, Germany
 Institution Max Planck Institute for Biology of Aging

LANGUAGES

MOTHER TONGUE croatian
ENGLISH LANGUAGE
 Speaking excellent
 Writing excellent
 Reading excellent

RESEARCH AND OTHER PROJECTS

(CHRONOLOGICALLY; LEADER AND ASSOCIATES; FUNDING SOURCE)

- 2015-2019** Project supported by Croatian Science Foundation „Sirtuin3 as a mediator of mitochondrial function in estrogen-dependent resistance to hyperoxia and high-fat diet“
- 2014-2015** Project „Neurosteroids as therapeutic opportunities in ischemic brain injury“ supported by „WWN/SFN COLLABORATIVE RESEARCH NETWORK PROGRAM (CRNP)“
- 2007-2011** Project supported by Ministry of science RH "Cytochrome P450 monooxygenases and tumor appearance in ageing and oxidative stress " - Associate
- 2002-2006** Project supported by Ministry of science RH "The relevance of opioid/opiates application on oxidative /antioxidative status " - Associate
- 2005** Project with food industry «Antiinflammatory properties of sour cherry juice Prunus Cerasus cv. Maraska» Maraska Gmbh, Zadar, Croatia - Associate
- 2004** Technological project "Bioactive properties of pollen from domestic plants Cistus sp. and Salix Alba» - Associate
- 2003-2004** Technological project "Food supplement for animal care" Matros Trade Gmbh. Split, Croatia - Associate
- 2002-2003** Technological project "Ekopropolis natural antioksidans" with Hedera Gmbh. Split, Croatia - Associate
- 1998-2000** Basic project supported by Ministry of Science RH "Binding of enkephalin to human neutrophils and modulation of their functions" - Associate

TEACHING

(CHRONOLOGICALLY; UNDERGRADUATE, GRADUATE, POSTGRADUATE STUDY PROGRAMMES)

- 2009 – 2016** Undergraduate studies of Biotechnology and Pharmaceutical Research, University of Rijeka
- 2009/2010** Doctoral study „Pharmaceutical and Biochemical Sciences“ Faculty of Pharmacy and Biochemistry, University of Zagreb
- 2006.** Doctoral study at Division of Biology, Faculty of Science, University of Zagreb

MENTORSHIP OF DEFENDED DOCTORAL AND MASTER DISSERTATIONS AND TRAINING OF YOUNG RESEARCHERS AND SCIENTISTS

(CHRONOLOGICALLY)

- 2011.** Željka M Šafranko, Faculty of Science, University of Zagreb, mentorship to doctoral thesis
- 2015.** Antonija Perović, spec. med. Biochem, comenthorship to doctoral thesis
- 2017.** Grazia Davidović, bacc. Mol. Biol., menthorship to graduate thesis
- 2019.** Dora Marčinko, bacc. Mol.Biol., menthorship to graduate thesis
- 2019.** Ivana Kučar, bacc. Mol.Biol., menthorship to graduate thesis

VISITS TO FOREIGN RESEARCH AND EDUCATION INSTITUTIONS

(CHRONOLOGICALLY; ONLY VISITS LONGER THAN 3 MONTHS)

AWARDS AND RECOGNITIONS

(CHRONOLOGICALLY)

- 1997.** Rector award for the article "The link between met-enkephalin-induced down-regulation of APN activity and the release of superoxide anion. *Neuropeptides* 34 (2); 121-128. T Marotti, T Balog, V Munić, S Sobočanec, M Abramić (2000).
- 2016.** - Invited lecturer at the HBDBM conference Split, Croatia; lecture: "Prominent role of exopeptidase DPP III in estrogen-mediated protection against hyperoxia in vivo".

2018. – Invited lecturer at the conference “3rd meeting of COST Action CA 15133”, Zagreb, Croatia; lecture: “*De novo expression of transfected Sirt3 enhances susceptibility of human MCF-7 breast cancer cell line to hyperoxia treatment*”.

2017. - Institute „Ruđer Bošković“ award for the best scientific paper (Redox Biology, 8; 149-159.)

2019. - Institute „Ruđer Bošković“ award for the best scientific papers (Aging-US, 10;9; 2407-2427.; eLife 7:e35330.).

ORGANIZATIONAL SKILLS AND COMPETENCES

(CHRONOLOGICALLY; ORGANIZATION OF HOME AND INTERNATIONAL SCIENCE EVENTS)

2001. Organisational board of Annual Meeting of Croatian Immunological Society (HID)

MEMBERSHIP IN SCIENCE ORGANIZATIONS AND BODIES

(CHRONOLOGICALLY; HOME AND INTERNATIONAL ORGANIZATIONS AND BODIES)

Membership in Societies:

- Croatian Immunological Society
- member of HNE-Club (a group of interest within the International Society for Free Radical Research)
- member of Society for Free Radical Research (SFRR)
- member of Croatian Society of Biochemistry and Molecular Biology (member of FEBS)

PAPERS

(CHRONOLOGICALLY; RESEARCH BOOKS, HOME AND INTERNATIONAL RESEARCH JOURNALS, HOME AND INTERNATIONAL CONFERENCE PROCEEDINGS; PLEASE WRITE THEIR IMPACT FACTOR)

1. Marija Pinteric, Iva I. Podgorski, Marijana Popovic Hadžija, Vedrana Filic, Mladen Paradžik, Bastien Lucien Jean Proust, Ana Dekanic, Ivan Ciganek, Denis Pleše, Dora Marcinko, Tihomir Balog, **Sandra Sobocanec**. Sirt3 Exerts Its Tumor-Suppressive Role by Increasing p53 and Attenuating Response to Estrogen in MCF-7 Cells (2020) Antioxidants 9, 294; 1. **IF: 4.52**
2. Marija Pinterić, Iva I. Podgorski, Marijana Popović Hadžija, Ivana Tartaro Bujak, Ana Dekanić, Robert Bagarić, Vladimir Farkaš, Sandra Sobočanec* and Tihomir Balog (2020) Role of Sirt3 in Differential Sex-Related Responses to a High-Fat Diet in Mice Antioxidants 9;2; 174. **IF: 4.52**
3. Marina Musa, Matea Perić, Peter Bou Dib, **Sobočanec S**, Ana Šarić, Anita Lovrić, Marina Rudan, Andrea Nikolić, Ira Milosević, Kristian Vlahoviček, Nuno Raimundo, Anita Kriško (2018) Heat-induced longevity in budding yeast requires respiratory metabolism and glutathione recycling. Aging-US 10;9; 2407-2427. **IF:5.179**
4. Marija Pinterić, Iva I. Podgorski, **Sobočanec S**, Marijana Popović Hadžija, Mladen Paradžik, Ana Dekanić, Maja Marinović, Mirna Halasz, Robert Belužić, Grazia Davidović, Andreja Ambriović Ristov, Tihomir Balog (2018) De novo expression of transfected Sirtuin 3 enhances susceptibility 1 of human MCF-7 breast cancer cells to hyperoxia treatment. Free Radical Research 52;6; 672-684. **IF:3.038**
5. Marina Rudan, Peter Bou Dib, Marina Musa, Matea Kanunnikau, **Sobočanec S**, David Rueda, Tobias Warnecke, Anita Kriško (2018) Normal mitochondrial function in Saccharomyces 1 cerevisiae has become dependent on inefficient splicing. eLife 7:e35330. **IF:7.616**
6. Maro Bujak, Ivana Tartaro Bujak, **Sobočanec S**, Martina Mihalj, Sanja Novak, Anita Čosić, Maja Tolušić Levak, Vjekoslav Kopačin, Ines Drenjančević, Branka Mihaljević, Tihomir Balog, Mirela Baus Lončar. Trefoil factor 3 deficiency affects liver metabolism. *Cellular Physiology and Biochemistry* (2018) accepted. 47:2:827-841. **IF:5.5**
7. Perovic, A; **Sobočanec, S**; Dabelić, S; Balog, T; Dumić, J (2018) "Effect of scuba diving on the oxidant / antioxidant status, SIRT1 and SIRT3 expression in recreational divers after a winter non-dive period" Free Radical Research 52;2; 188-197. **IF:3.038**
8. Perovic Antonija, Nikolac Nora, Braticevic Marina Njire, Milcic Ana, **Sobocanec S**, Balog Tihomir, Dabelic Sanja, Dumic Jerka (2017) Does recreational scuba diving have clinically significant effect on routine haematological parameters? *Biochemia Medica* 27(2), 325-331. **IF:2.93**
9. Perić Matea, Lovrić Anita, Šarić Ana, Musa Marina, Bou Dib Peter, Rudan Marina, Nikolić Andrea, **Sobočanec S**, Mikecin Ana-Matea, Dennerlein Sven, Milošević Ira, Vlahoviček Kristian, Raimundo Nuno, Kriško Anita (2017) TORC1-mediated sensing of chaperone activity alters glucose metabolism and extends lifespan. *Aging Cell* 16: 5; 994-1005 **IF 6,7**
10. Ana Šarić, Ivo Crnolatac, Frédéric Bouillaud, **Sobočanec S**, Ana-Matea Mikecin, Željka Mačak Šafranko, Todor Delgeorgiev, Ivo Piantanida, Tihomir Balog, Patrice X Petit (2017) Non-toxic fluorescent phosphonium probes to detect mitochondrial potential. *Methods Appl. Fluoresc.* 5 (2017) 015007. **IF 2.4**
11. M Perić, P Bou Dib, S Dennerlein, A Lovrić, M Musa, M Rudan, A Nikolić, A Šarić, **S Sobočanec**, Ž Mačak, N Raimundo, A Kriško, Crosstalk between cellular compartments protects against proteotoxicity and extends lifespan. *Scientific Reports* 2016. 6:No.28751. doi:10.1038/srep28751. **IF 5,2**
12. Mačak Šafranko Ž, Balog T, Musa M, Tartaro Bujak I, **Sobočanec S** (2016) The effect of 17β-estradiol on sex-dimorphic cytochrome P450 expression patterns induced by hyperoxia in liver of male CBA/H mice. *Molecular and Cellular Biochemistry*, 421(1), 183–191. **IF 2.6**

13. **Sobočanec S**, Filić V, Matovina M, Majhen D, Šafranko ŽM, Hadžija MP, Krsnik Ž, Kurilj AG, Šarić A, Abramić M, Balog T. Prominent role of DPP III in the E2-mediated protection against hyperoxia in vivo. *Redox Biology* 2016. 8:149-159. **IF 6,2**
14. **S Sobočanec**; ŽM Šafranko; A Šarić; M Korolija; MP Hadžija; T Balog. Response to hyperoxia is associated with similar ho-1 gene expression level in lungs of aging CBA mice of both sexes. *Biochemistry and Biophysics Reports*. 2016. 5:55-62.
15. A Šarić, **S Sobočanec**, Ž Mačak Šafranko, M Popović Hadžija, R Bagarić, V Farkaš, A Švarc, T Marotti, Tihomir Balog. Diminished resistance to hyperoxia in brain of reproductively senescent female CBA/H mice. *Medical Science Monitor Basic Science*. 21:191-199; 2015
16. **Sobočanec S**, Šarić A, Mačak Šafranko Ž, Popović Hadžija M, Abramić M, Balog T. The role of 17β-estradiol in the regulation of antioxidant enzymes via the Nrf2–Keap1 pathway in the livers of CBA/H mice. *Life Sciences* 2015. 130: 57-65. **IF 2,7**
17. Mačak Šafranko Z, **Sobočanec S**, Šarić A, Jajčanin-Jozić N, Krsnik Z, Aralica G, Balog T, Abramić M. "The effect of 17β-estradiol on the expression of dipeptidyl peptidase III and heme oxygenase 1 in liver of CBA/H mice". *J Endocrinol Invest* 2015. **IF 1,55**
18. A Šarić, **S Sobočanec**, Ž Mačak Šafranko, M Popović-Hadžija, G Aralica, M Korolija, B Kušić, T Balog. "Female headstart in resistance to hyperoxia-induced oxidative stress in mice" *Acta Biochimica Polonica* 2014. **IF 1,389**
19. Mačak-Šafranko, Z., **Sobočanec, S.** Šarić, A., Balog, T., Šverko, V., Kušić, B., Marotti, T. Cytochrome P450 gender-related differences in response to hyperoxia in young CBA mice *Experimental and Toxicological Pathology* 2011. **IF 3,3**
20. **Sobočanec, S.**, Balog, T., Šarić, A., Mačak-Šafranko, Z., Štroser, M., Žarković, K., Žarković, N., Stojković, R., Ivanković, S., Marotti, T. Antitumor effect of Croatian propolis as a consequence of diverse sex-related dihydropyrimidine dehydrogenase (DPD) protein expression. *Phytomedicine* 2011. **IF 2,283**
21. Šverko, A., **Sobočanec, S.**, Kušić, B., Mačak-Šafranko, Z., Šarić, A., Leniček, T., Kraus, O., Andrišić, L., Korolija, M., Balog, T., Šunjić, S.B., Marotti, M. Superoxide dismutase and cytochrome P450 isoenzymes might be associated with higher risk of renal cell carcinoma in male patients. *International Immunopharmacology* 2011 **IF 2,325**
22. T. Balog, A. Šarić, **S. Sobočanec**, B. Kušić and T. Marotti; Endomorphin-suppressed nitric oxide release from mice peritoneal macrophages. *Neuropeptides* 44:25-29 2010. **IF 1,917**
23. **S. Sobočanec**, T. Balog, A. Šarić, V. Šverko, N. Žarković, A. Čipak Gašparović, K. Žarković, G. Waeg, Ž. Mačak-Šafranko, B. Kušić and T. Marotti; Cyp4a14 overexpression induced by hyperoxia in female CBA mice as a possible contributor of increased resistance to oxidative stress. *Free Radical Research* 44:181-190 2010. **IF 2,805**
24. Šarić, **S. Sobočanec**, T. Balog*, B. Kušić, V. Šverko, V. Dragović-Uzelac, B. Levaj, Z. Čosić, Ž. Mačak Šafranko, T. Marotti Improved Antioxidant and Anti-inflammatory Potential in Mice Consuming Sour Cherry Juice (*Prunus cerasus* cv. Maraska) Plant Food for Human Nutrition 64:231-237 2009 **IF 2,463**
25. Šarić, T. Balog*, **S. Sobočanec**, B. Kušić, V. Šverko, G. Rusak, S. Likić, D. Bubalo, B. Pinto, D. Reali, T. Marotti: Antioxidant effects of flavonoid from Croatian *Cystus incanus* L. rich bee pollen. *Food and Chemical Toxicology* 47:547-554 2009 **IF 2,602**
26. **S. Sobočanec**, T. Balog, B. Kušić, V. Šverko, A. Šarić and T. Marotti; Differential response to lipid peroxidation in male and female mice with age: correlation of antioxidant enzymes matters. *Biogerontology* 9: 335-343, 2008 **IF 3,411**
27. Šarić, T. Balog*, **S. Sobočanec**, T. Marotti; Endomorphin 1 activates NOS 2 activity and downregulates NOS 2 mRNA expression *Neuroscience* 144:1454-1461, 2007 **IF 3,215**
28. I. Jasprica, A. Mornar, Ž. Debeljak, A. Smolčić-Bubalo, M. Medić-Šarić, Lj. Mayer, Ž. Romić, K. Bučan, T. Balog, **S. Sobočanec** and T. Marotti; In vivo study of prolonged propolis supplementation influence on red blood cells and antioxidative status *J. Ethnopharmacology*, 110/3: 548-554, **IF 2,466**
29. **S. Sobočanec**, V. Šverko, T. Balog, A. Šarić, G. Rusak, S. Likić, B. Kušić, V. Katalinić, S. Radić and T. Marotti; Oxidant/antioxidant properties of Croatian apiceutic of native propolis. *J. Agricultural and Food Chemistry*, 54:8018-8026, 2006 **IF 2,816**
30. **S. Sobočanec**, B. Kušić, V. Šverko, T. Balog and T. Marotti; Methionine-enkephalin modulated regulation of oxidant/antioxidant status in liver of CBA mice. *Biogerontology* 7: 53-62, 2006 **IF 3,411**
31. T. Balog, **S. Sobočanec**, V. Šverko, I. Krolo, B. Ročić, M. Marotti and T. Marotti; The influence of oxidant-antioxidant status in trained and sedentary subjects. *Life sciences* 78:1441-1447, 2006. **IF 2,451**
32. A. Šverko, **S. Sobočanec**, T. Balog, B. Kušić, V. Šverko, T. Marotti; Does long-term exercise modulate oxidant/antioxidant status in humans? Comparison between lipid peroxidation and catalase activity in fresh and stored plasma. *Croatica Chemica Acta* 2005, vol 78/3 **IF 0,713**
33. **S. Sobočanec**, T. Balog, V. Šverko, T. Marotti; Met-enkephalin modulation of age related changes in red cell antioxidant status. *Physiological Research* 54:97-104, 2005) **IF 1,646**
34. Šverko, **S. Sobočanec**, T. Balog, T. Marotti; Age and gender differences in antioxidant enzyme activity: potential relationship to liver carcinogenesis in male mice. *Biogerontology* 5:235-242, 2004. **IF 3,411**
35. T. Balog, **S. Sobočanec**, V. Šverko, T. Marotti; Met-enkephalin modulates resistance to oxidative stress in mouse brain. *Neuropeptides* 38:298-303, 2004) **IF 2,43**
36. V. Šverko, **S. Sobočanec**, T. Balog, M. Čolić, T. Marotti; Natural micronized clinoptilolite mixtures with *Urtica dioica* L. extract as possible antioxidants; *Food Technology and Biotechnology* 42:189-192, 2004 **IF 0,976**
37. S. Sobočanec, T. Balog, V. Šverko, T. Marotti; Sex-dependent antioxidant enzyme activities and lipid peroxidation in ageing mouse brain. *Free Radical Research* 37(7):743-748, 2003. **IF 2,805**
38. V. Šverko, **S. Sobočanec**, T. Balog, T. Marotti; Met-enkephalin modulates lipid peroxidation and total sialic acid level in CBA mice in age and sex-dependent manners. *Experimental Gerontology* 37(12): 1413-1421, 2002. **IF 3,811**
39. V. Šverko, T. Balog, **S. Sobočanec**, M. Gavella, T. Marotti; Age-associated alteration of lipid peroxidation and superoxide dismutase activity in CBA and AKR mice. *Experimental Gerontology* 37(8-9): 1031-1039, 2002. **IF 3,811**
40. V. Šverko, T. Balog, M. Gavella, V. Lipovac, T. Marotti, S. Sobočanec; Oxidant/antioxidant status in AKR mice. *Periodicum Biologorum* 103:3-9, 2001. **IF 0,34**
41. T. Balog, T. Marotti, V. Musani, **S. Sobočanec**, V. Šverko; The effect of methionine-enkephalin on nitric oxide release in mice is age and gender related. *Pharmacological Research* 44:287-292, 2001. **IF 3,612**

42. T. Balog, T. Marotti, M. Abramić, I. Beusan-Svoboda, **S. Sobočanec**; Neutrophil neutral endopeptidase variation and its regulation by opioid peptides. *International Immunopharmacology* 1:569-579, 2001. **IF 2.325**
43. T. Marotti, T. Balog, V. Munić, **S. Sobočanec**, M. Abramić; The link between met-enkephalin induced down regulation of APN activity and release of superoxide anion. *Neuropeptides* 34:121-128, 2000. **IF 1,917**

Poglavlja u knjigama:

1. T. Balog, **S. Sobočanec**, V. Šverko, H. Haberstock-Debić, T. Marotti, About met-enkephalin immunity and stress In: *Cytokines: Stress and Immunity* / Nicolas, P Plotnikoff; Robert, E Faith; Antony, J Murgo (ur.). London : CRC Press UK, 2007.
2. **Sobočanec S., A. Šarić, M. Marjanović, M., Kralj, J. Knežević, M. Čretnik, T. Balog, V. Šverko, B. Kušić and T. Marotti (2008)** Native propolis *in vivo*: on the oxidative/antioxidative effect and the mechanism of the action. "Scientific evidence of the use of propolis in Ethnomedicine". *Ethnopharmacology- Review Book*, Research Signpost
3. **Sobočanec S.** Antioksidativni enzimi In: *Metode u molekularnoj biologiji*, A. Ambrović Ristov (ur.) IRB, Zagreb, 2007.

OTHER IMPORTANT SKILLS AND COMPETENCES

Basic knowledge of programming language **R**