

Lucia Račková Dipl-Ing PhD

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PERSONAL INFORMATION

Place of Birth	Bratislava, Slovak Republic
Citizenship	Slovak
Gender	Female

EMPLOYMENT

2004 -	Institute of Experimental Pharmacology & Toxicology Slovak Academy of Sciences (IEPT SAS), Bratislava
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OCCUPATION OR POSITION HELD

2018 -	Field Editor of Editorial Office Journal Interdisciplinary Toxicology (Slovak Toxicology Society SETOX, Bratislava, Slovakia)
2016 - 2018	Member of Scientific Board, IEPT SAS
2016 -	Member of Biochemical Division Committee, Faculty of Natural Sciences of Comenius University in Bratislava
2013 -	Head of Laboratory of Cell Cultures, IEPT SAS
2012 -	University Lecturer (Faculty of Chemical and Food Technology, STU)
2012 - 2015	Member of Scientific Board, IEPT SAS
2012 -	1 st Assistant of Project Manager of the project Centre of Excellence for Glycomics, Institute of Chemistry, Slovak Academy of Sciences
2008 -	Independent Scientist, Laboratory of Cell Cultures, IEPT SAS

EDUCATION

2004	PhD - Biochemistry, Institute of Experimental Pharmacology & Toxicology Slovak Academy of Sciences, Bratislava
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1999	MSc (Dipl-Ing), <i>cum laude</i> - Organic Chemistry, Faculty of Chemical Technology, Slovak Technical University
1997	Bc - Organic Chemistry & Technology, Faculty of Chemical Technology, Slovak Technical University
1995	Gymnasium of Ladislav Novomesky Bratislava, graduation <i>cum laude</i>

AWARDS

2011	DAAD scholarship for "Research Stays for University Academics and Scientists", Friedrich-Schiller-Universität Jena, Germany
2008	"Young Investigator Award" – In Recognition of Extraordinary Scientific Achievements; SFRR-E Free Radical Summer School, September 3rd 2008, Spetses, Greece
2004 - 2006	"The Best Young Investigator", "The Best Publication", "The Best PhD Student" – diplomas awarded by the Scientific Board of the IEPT SAS for the contribution to the development of the research institute

RESEARCH STAYS

2012	Ankara, Gazi University, Medical Faculty, Dept. of Medical Pharmacology, Cellular Stress Response & Signal Transduction Research Laboratory, Turkey
2011	Friedrich-Schiller-Universität Jena, Germany
2009, 2010	Stuttgart, University of Hohenheim, Stuttgart, Germany
2006, 2007	Ankara, Gazi University, Medical Faculty, Dept. of Medical Pharmacology, Turkey

CERTIFICATIONS AND ACCREDITATIONS

2005	Certificate LSH-ACC-Mentor Multiplier The document allowing the researcher's organization: to write the proposals for the EU Framework Programmes.
2005	Certificate Biobiz TM "Linking Science to Business", Prague
2005	Certificate of the Training course in Economy, Management and Marketing
2001	English language certificate

PROFESSIONAL MEMBERSHIPS

2007 -	Member of Society for Free Radical Research Europe
2010 -	Member of Slovak Toxicology Society

PROJECT LEADERSHIPS

2004 - 2006	"Inhibition of a peroxidative damage of cell membranes in a model of human skin in the presence of natural polyphenolic antioxidants. Structure-activity relationships."- PI, Slovak Grant Agency Ministry of Education and Slovak Academy of Sciences SR
2012 - 2015	"Brain Aging and Neuroprotective Antioxidants: Influence of Glia as Therapeutic Strategy?" - PI, Slovak Grant Agency Ministry of Education and Slovak Academy of Sciences
2017 – 2020	"Redox Homeostasis, Proteostasis and Inflammation as Potential Targets for Influencing Ageing and Age-Related Diseases: Modulation by the compounds of natural and synthetic origin." - PI, Slovak Grant Agency Ministry of Education and Slovak Academy of Sciences

PEDAGOGICAL SKILLS

2013 -	Supervisor of 2 PhD students, 1 of them has successfully accomplished PhD studies (2016). The other (2 nd year PhD student) has successfully accomplished dissertation exam. Supervisor-consultant of 1 PhD student (year of graduation 2014).
2012 -	Lecturer of the subject Biomolecular Design (436B0_4I) WS/SS Institute of Biotechnology, Faculty of Chemical and Food Technology, Slovak Technical University in Bratislava
2003 – 2016	Supervisor or supervisor-consultant of 7 graduate students.

BOOKS & BOOK CHAPTERS

D. Košťálová, S. Fialová, L. Račková: Phytotherapy in Current Medicine (In Slovak, *Fytoterapia v súčasnej medicíne*), Ed. Osveta, Martin, 2012, ISBN 9788080633844.

I. Juránek, L. Račková, M. Štefek: Stobadine - an indole type alternative to the phenolic antioxidant reference trolox: chapter 19. In Biochemistry. Edited by Deniz Ekinci. - Rijeka: InTech, 2012, p. 443-452. ISBN 978-953-51-0076-8.

PUBLICATIONS

1. MRVOVÁ N, ŠKANDÍK M, BEZEK Š, SEDLÁČKOVÁ N, MACH M, GÁSPÁROVÁ Z, LUPTÁKOVÁ D, PÁDEJ I, RAČKOVÁ L. Pyridoindole SMe1EC2 as cognition enhancer in ageing-related cognitive decline. *Interdisciplinary Toxicology* 2017; 10: 11-19.

2. VISKUPIČOVÁ J, ŽIŽKOVÁ P, RAČKOVÁ L, HORÁKOVÁ E. Pycnogenol cytotoxicity in pancreatic INS-1E β cells induced by calcium dysregulation. *Phytotherapy Research* 2017; 31: 1702-1707.

3. ŽIŽKOVÁ P, ŠTEFEK M, RAČKOVÁ L, ŠOLTÉSOVÁ-PRNOVÁ M, HORÁKOVÁ Ľ. Novel quercetin derivatives: From redox properties to promising treatment of oxidative stress related diseases. *Chemico-Biological Interactions* 2017; 265: 36-46.
4. PONIST S, DRAFI F, KUNCIROVA V, MIHALOVA D, RACKOVA L, DANISOVIC L, ONDREJICKOVA O, TUMOVA I, TRUNOVA O, FEDOROVA T, BAUEROVA K. Effect of Carnosine in Experimental Arthritis and on Primary Culture Chondrocytes. *Oxid Med Cell Longev.* 2016; 2016: 8470589.
5. MRVOVÁ N, ŠKANDÍK M, KUNIAKOVÁ M, RAČKOVÁ L. Modulation of BV-2 microglia functions by novel quercetin pivaloyl ester. *Neurochem Int.* 2015; 90: 246-54.
6. KUNIAKOVÁ M, MRVOVÁ N, KNEZL V, RAČKOVÁ L. Effect of novel quercetin pivaloyl ester on functions of adult rat microglia. *Biologia* 2015; 70: 690-702.
7. RACKOVA L, KUNIAKOVA M. Acidotropic properties of synthetic hexahydropyridoindole antioxidants. *General Physiology and Biophysics* 2015, accepted manuscript
8. MILACKOVA I, RACKOVA L, MAJEKOVA M, MRVOVA N, STEFEK M. Protection or cytotoxicity mediated by a novel quinonoid-polyphenol compound? *Gen Physiol Biophys.* 2015; 34(1): 51-64.
9. RAČKOVÁ L, ERGIN V, BALI EB, KUNIAKOVÁ M, KARASU Ç. Pomegranate Seed Oil Modulates Functions and Survival of BV-2 Microglial Cells in vitro. *International Journal for Vitamin and Nutrition Research* 2014; 84: 295-309.
10. DUBOVICKÝ M, CSÁSZÁR E, MELICHERČÍKOVÁ K, KUNIAKOVÁ M, RAČKOVÁ L. Modulation of microglial function by the antidepressant drug venlafaxine. *Interdisciplinary toxicology* 2014; 7(4): 201-207.
11. BALI EB, ERGIN V, RAČKOVÁ L, BAYRAKTAR O, KUCUKBOYACI N, KARASU Ç. Olive leaf extracts protect cardiomyocytes against 4-hydroxynonenal-induced toxicity in vitro: comparison with oleuropein, hydroxytyrosol, and quercetin. *Planta Medica* 2014; 80(12): 984-992.
12. ŽIŽKOVÁ P, BLAŠKOVIČ D, MÁJEKOVÁ M, ŠVORC Ľ, RAČKOVÁ L, RATKOVSKÁ Ľ, VEVERKA M, HORÁKOVÁ Ľ. Novel quercetin derivatives in treatment of peroxynitrite-oxidized SERCA1. *Mol Cell Biochem* 2014, 386(1-2), 1-14.
13. RAČKOVÁ L. Cholesterol load of microglia: contribution of membrane architecture changes to neurotoxic power? *Arch Biochem Biophys.* 2013; 537(1): 91-103.
14. RACKOVÁ L, CUMAUGLU A, BAGRIACIK EU, STEFEK M, MAECHLER P, KARASU Ç. Novel Hexahydropyridoindole Derivative as Prospective Agent Against Oxidative Damage in Pancreatic β Cells. *Med Chem.* 2011; 7(6): 711-717.
15. CUMAUGLU A, RACKOVA L, STEFEK M, KARTAL M, MAECHLER P, KARASU C. Effects of olive leaf polyphenols against H₂O₂ toxicity in insulin secreting β -cells. *Acta Biochim Pol* 2011; 58: 45-50.

16. PERECKO T, DRABIKOVA K, RACKOVA L, CIZ M, PODBORSKA M, LOJEK A, HARMATHA J, SMIDRKAL J, NOSAL R, JANCINOVA V. Molecular targets of the natural antioxidant pterostilbene: effect on protein kinase C, caspase-3 and apoptosis in human neutrophils in vitro. *Neuro Endocrinol Lett.* 2010; 31 Suppl 2: 84-90.
17. DRABIKOVA K, PERECKO T, NOSAL R, RACKOVA L, AMBROZOVA G, LOJEK A, SMIDRKAL J, HARMATHA J, JANCINOVA V. Different effect of two synthetic coumarin-stilbene hybrid compounds on phagocyte activity. *Neuro Endocrinol Lett.* 2010; 31 Suppl 2: 73-78.
18. AUGUSTYNIAK A, BARTOSZ G, ČIPAK A, DUBURS G, HORÁKOVÁ E, ŁUCZAJ W, MAJEKOVA M, ODYSSEOS AD, RACKOVA L, SKRZYDLEWSKA E, STEFEK M, ŠTROSOVÁ M, TIRZITIS G, RIMANTAS VENSKUTONIS P, VISKUPICOVA J, VRAKA PS, ŽARKOVIĆ N. Natural and synthetic antioxidants - an updated overview. *Free Radic Res.* 2010; 44: 1216-1262.
19. JURANEK I, HORAKOVA L, RACKOVA L, STEFEK M. Antioxidants in Treating Pathologies Involving Oxidative Damage: An Update on Medicinal Chemistry and Biological Activity of Stobadine and Related Pyridoindoles. *Current Medicinal Chemistry* 2010; 17: 552-570.
20. RAČKOVÁ L, ŠNIRC V, JUNG T, ŠTEFEK M, KARASU Ç, GRUNE T. Metabolism Induced Oxidative Stress is a Mediator of Glucose Toxicity in HT22 Neuronal Cells. *Free Radical Research* 2009; 24: 1-11.
21. KRÁLOVÁ J, RACKOVÁ L, PEKAROVÁ M, KUBALA L, NOSÁL R, JANCINOVÁ V, CÍZ M, LOJEK A. The effects of H1-antihistamines on the nitric oxide production by RAW 264.7 cells with respect to their lipophilicity. *Int Immunopharmacol.* 2009; 9: 990-995.
22. RAČKOVÁ L, KOŠŤÁLOVÁ D, BEZÁKOVÁ L, FIALOVÁ S, BAUEROVÁ K, TÓTH J, ŠTEFEK M, VANKO M, HOLKOVÁ I, OBLOŽINSKÝ M. Comparative study of two natural antioxidants, curcumin and Curcuma longa extract. *J Food Nutrition Res* 2009; 48: 148-152.
23. SYKOROVA M, JANOŠOVA V, ŠTROFFEKOVA O, KOŠŤALOVA D, HAVRANEK E, RAČKOVÁ L. Determination of selected elements by XRF and total phenolics in leaves and crude Methanol extract of leaves of arctostaphylos uva-ursi *Acta Facultatis Pharmaceuticae Universitatis Comeniana* 2009; Tomus LVI: 13545.
24. STEFEK M, SNIRC V, DJOUBISSIE P-O, MAJEKOVA M, DEMOPOULOS V, RACKOVA L, BEZAKOVA Z, KARASU C, CARBONE V, EL-KABBANI O. Carboxymethylated pyridoindole antioxidants as aldose reductase inhibitors: Synthesis, activity, partitioning, and molecular modeling. *Bioorg Med Chem* 2008; 16: 4908-4920.
25. KOŠŤÁLOVÁ D, TÓTH J, CZIGLE S, BAUEROVÁ K, RAČKOVÁ L. Prírodné liečivá pri doplnkovej liečbe reumatických chorôb. Farmaceutický obzor: odborný časopis Ministerstva zdravotníctva SR a Slovenskej zdravotníckej univerzity v Bratislave (In Slovak, Natural compounds in the complementary therapy of rheumatoid diseases. Pharmaceutical horizon: scientific journal of Ministry of Health SR and Slovak Sanitary University in Bratislava), 2008; 77: 283-293.

26. CUMAOĞLU A, ÇEVIK C, RACKOVA L, ARI N, KARASU Ç. Effects of antioxidant stobadine on protein carbonylation, advanced oxidation protein products and reductive capacity of liver in streptozotocin-diabetic rats: Role of oxidative/nitrosative stress. *BioFactors* 2007; 30: 171-178.
27. RACKOVA L, JANCINOVA V, PETRIKOVA M, DRABIKOVA K, NOSAL R, STEFEK M, KOSTÁLOVÁ D, PRÓNAYOVÁ N, KOVÁCOVÁ M. Mechanism of anti-inflammatory action of liquorice extract and glycyrrhizin. *Nat Prod Res* 2007; 21: 1234-1241.
28. RACKOVA L, OBLOZINSKY M, KOSTALOVA D, KETTMANN V, BEZAKOVA L. Free radical scavenging activity and lipoxygenase inhibition of *Mahonia aquifolium* extract and isoquinoline alkaloids. *J Inflamm* 2007; 16: 4, 15.
29. JANCINOVA V, DRABIKOVA K, NOSAL R, RACKOVA L, MAJEKOVA M, HOLOMANOVA D. The combined luminol/isoluminol chemiluminescence method for differentiating between extracellular and intracellular oxidant production by neutrophils. *Redox Report* 2006; 11: 110-116.
30. RACKOVA L, SNIRC V, MAJEKOVA M, MAJEK P, STEFEK M. Free radical scavenging and antioxidant activities of substituted hexahydropyridoindoles. Quantitative structure - Activity relationships. *Journal of Medicinal Chemistry* 2006; 49: 2543-2548.
31. JANCINOVA V, DRABIKOVA K, NOSAL R, MAJEKOVA M, RACKOVA L, HOLOMANOVA D. Antiradical effects of antihistamines in human blood. Structure-activity relationship. *Inflammation Research* 2006; 55 Suppl. 1: S85-S86.
32. RACKOVA L, FIRAKOVA S, KOSTALOVA D, STEFEK M, STURDIK E, MAJEKOVA M. Oxidation of liposomal membrane suppressed by flavonoids: Quantitative structure-activity relationship. *Bioorganic and Medicinal Chemistry* 2005; 13: 6477-6484.
33. STEFEK M, KYSELOVA Z, RACKOVA L, KRIZANOVA L. Oxidative modification of rat eye lens proteins by peroxy radicals in vitro: Protection by the chain-breaking antioxidants stobadine and Trolox. *Biochimica et Biophysica Acta - Molecular Basis of Disease* 2005; 1741: 183-190.
34. JANCINOVA V, DRABIKOVA K, NOSAL R, RACKOVA L, MAJEKOVA M, FABRYOVA V. Chemiluminescence – A sensitive method to detect extra- and intracellular oxidants. *Biologia - Section Cellular and Molecular Biology* 2005; 60 Suppl. 17: 133-135.
35. RACKOVA L, MAJEKOVA M, KOST'ALOVA D, STEFEK M. Antiradical and antioxidant activities of alkaloids isolated from *Mahonia aquifolium*. Structural aspects. *Bioorganic and Medicinal Chemistry* 2004; 12: 4709-4715.
36. KYSELOVA Z, RACKOVA L, STEFEK M. Pyridoindole antioxidant stobadine protected bovine serum albumin against the hydroxyl radical mediated cross-linking in vitro. *Arch Gerontol Geriatrics* 2003; 36: 221-229.
37. MACHOVA J, STEFEK M, KUKAN M, SINSKY M, ONDRIAS K, RACKOVA L, NAVAROVA J, BAUER V. Involvement of L-arginine-nitric oxide system in the response of isolated trachea to reactive oxygen species. *Methods and Findings in Experimental and Clinical Pharmacology* 2003; 25: 287-296.

38. RACKOVA L, STEFEK M, MAJEKOVA M. Structural aspects of antioxidant activity of substituted pyridoindoles. *Redox Report* 2002; 7: 207-214.

PATENTS

1. Patent Appl. PP 1321-2003: Stolec, S., Povazanec, F., Bauer V., Majekova M., Wilcox, A.L., Snirc, V., Rackova, L., Sotnikova, R., Stefek, M., Gasparova, Z., Gajdosikova, A., Mihalova, D., Alfoldi, J. (2003) "Pyridoindole derivatives with antioxidant features, the procedures of their preparations and use in therapeutic practice".

2. Patent Appl. PP 98-2005. Stefek, M.; Snirc, V.; Demopoulos, V.; Djoubissie, P.; Rackova, L.; Majekova, M.; Karasu, C. (2005) "Carboxymethylated pyridoindoles, preparation and utilization in therapy as aldose reductase inhibitors and antioxidants".

INTERNATIONAL CONFERENCES

1. ŠKANDÍK, Martin – RAČKOVÁ, Lucia. Protective effect of quercetin-quinone derivative in senescent human fibroblasts. May 2018. In *Free Radical Biology and Medicine* 120: S80, Biennial Meeting of Society for Free Radical Research International, Lisbon.

2. UJHÁZY, Eduard - RAČKOVÁ, Lucia - ŠKANDÍK, Martin - DANIHEL, Ľudovít - BRUCKNEROVÁ, Ingrid - MACH, Mojmir. Early gestational intermittent hypoxia in rats induces delayed changes in immune and redox homeostasis with lasting perivascular placental edema. In *Toxicology Letters: official journal of EUROTOX*. - Amsterdam: Elsevier, 2017, vol. 280, suppl. 1, p. S163-164. EUROTOX 2017: Congress of the European Societies of Toxicology.

3. ŽIŽKOVÁ, Petronela - RAČKOVÁ, Lucia - ŠKANDÍK, Martin - HORÁKOVÁ, Ľubica. Novel quercetin derivatives with improved biological properties in non-cellular and cellular systems. In 10th European Conference on Marine Natural Products: book of abstracts. - Athens, 2017, p. 150-151, PP13.

4. MRVOVÁ, Nataša - ŠKANDÍK, Martin - BEZEK, Štefan - SEDLÁČKOVÁ, Natália - GÁSPÁROVÁ, Zdenka - LUPTÁKOVÁ, Dominika - PÁDEJ, Ivan - RAČKOVÁ, Lucia. Pyridoindole SMe1EC2 as promising agent for treating cognitive dysfunction during ageing. In *Free Radical Biology and Medicine*, 2016, vol. 96, suppl. 1, p. S40. (2016 - Current Contents). Conference of the Society-for-Free-Radical-Research-Europe (SFRR-E), Jun 8-11, 2016, Budapest.

5. MRVOVÁ N, KUNIAKOVÁ M, KNEZL V, VEVERKA V, NAVAROVÁ J, NOSÁL R, RACKOVÁ L. Can semi-synthetic flavonoids return old microglia to their youthful state? *Free Radical Biology and Medicine* Volume 75, Supplement 1, October 2014, Pages S45; SFRR-Meeting Paris 2014 Free radicals: insights in signaling and adaptative homeostasis. September 5th-7th, 2014.

6. RAČKOVÁ L. Membrane proteins in microglia and exposure to cholesterol: manifold paths of influence. 16th Biennial Meeting of Society for Free Radical Research International (SFRR2012) 6-9 September 2012, Imperial College London.

7. RAČKOVÁ L, ERGİN V, BALI EB, KARASU Ç. Immunomodulation and cytoprotection of brain microglia by pomegranate seed oil. 3rd European Congress on Preventative Regenerative and Anti-Aging Medicine (ECOPRAM) in Istanbul, 29-31st May 2012.

8. RAČKOVÁ L. Lysosomal stability in isolated rat primary microglia. SFRR-E Meeting, Istanbul 7-10 September 2011.

9. RAČKOVÁ L, DRÁBIKOVÁ K, JANČINOVÁ V, PEREČKO T, ŠMIDRKAL J, HARMATHA J et al. Structural aspects of antioxidant action of selected natural polyphenols. SFRR-E Meeting, Young Investigator Session, Rome 26-29 August, 2009 = invited presentation
10. RAČKOVÁ L, CUMAĞLU A, MAECHLER P, ŠTEFEK M, KARASU Ç. (+)-8-methoxy-1,3,4,4A,5,9B-hexahydro-pyridol[4,3-B]indole-2-carboxylic acid ethyl ester as a protective agent against H₂O₂ induced oxidative damage in pancreas beta cell lines. In Türkiye Klinikleri Tip Bilimleri Dergisi, 2009, vol. 29, suppl., p. S129.
11. CUMAĞLU A, RAČKOVÁ L, MAECHLER P, ŠTEFEK M, KARASU Ç. Can olive extracts protect insulinoma cells against cytokines-induced cytotoxicity? In Türkiye Klinikleri Tip Bilimleri Dergisi, 2009, vol. 29, suppl., p. S126.
12. RAČKOVÁ L, ŠNIRC V, KRÁLOVÁ J, MORAVCOVÁ A, CUMAĞLU A, MÁJEKOVÁ M, BAĞRIACIK EÜ, KARASU Ç, GRUNE T, ŠTEFEK M. Oxidative Stress as a Central Mechanism in Diabetes: (±)-8-Methoxy-1,3,4,4a,5,9b-hexahydro-pyrido[4,3-b]indole-2-carboxylic Acid Ethyl Ester as Prospective Antidiabetic Agent. SFRR-E Free Radical Summer School "Lipid peroxidation and free radical signaling: role in pathophysiology" Hotel Spetses, Spetses, Greece 30 August-September 2008
13. RACKOVA L, JUNG T, STEFEK M, KARASU C, GRUNE T. Is oxidative stress a central mechanism for glucose toxicity in pancreatic beta cells? SFRR-E Meeting, Young Investigator Session, Berlin 5-9 July, 2008
14. RACKOVA L, CUMAĞLU A, KARTAL M, STEFEK M, KARASU C. Protection of insulin-producing INS-1 cells from H₂O₂-induced oxidative stress by phenolic extracts from *Olea europaea* L. SFRR-E Meeting, Berlin 5-9 July, 2008
15. CUMAĞLU A, RACKOVA L, KARTAL M, KARASU C. Effects of olive extracts on free radical metabolism and glucose stimulated insulin release in INS-1E cell line exposed to H₂O₂. 33rd FEBS Congress & 11th IUBMB Conference, Megaron Athens International Conference Center, 28 June - 3 July 2008

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May, 2018