

Curriculum Vitae

PERSONAL DATA

Name and surname	Silvana Raić-Malić
Academic title	Full professor
Year and institution of PhD obtained	1998, Faculty of Chemical Engineering and Technology, University of Zagreb
Address	Vrhovec 142, 10000 Zagreb
Phone	4597 281
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E-mail	sraic@fkit.hr
Citizenship	www.fkit.hr
Date and place of birth	16th March 1967

WORK EXPERIENCE

Date (from – until)	1993 – 2004
Institution	Faculty of Chemical Engineering and Technology, University of Zagreb
Position	Scientific novice
Work field	Synthesis, structural characterization of new acyclic purine and pyrimidine nucleoside analogues and L-ascorbic acid derivatives
Date (from – until)	1. 09. 1999 – 30. 11. 1999
Institution	Center for radiopharmacy, Paul Scherrer Institut, Villigen, Switzerland
Position	Postdoctoral fellow
Work field	¹⁸ F radiolabeling and phosphorylation of 'fraudulent' substrates by viral and human TK
Date (from – until)	2000 – 2001
Institution	Department for pharmacy, ETH, Zürich, Switzerland
Position	Postdoctoral fellow
Work field	Development of a PET-tracer for monitoring Graft-versus-tumor therapy
Date (from – until)	2004 – 2007
Institution	Faculty of Chemical Engineering and Technology, University of Zagreb
Position	Assistant professor
Work field	Development of new heterocyclic compounds with cytostatic and antiviral activity
Date (from – until)	2007 – 2012
Institution	Faculty of Chemical Engineering and Technology, University of Zagreb
Position	Associate professor
Work field	Development of biologically active compounds and PET-tracers in tumor diagnostics
Date (from – until)	2012 – today
Institution	Faculty of Chemical Engineering and Technology, University of Zagreb
Position	Full professor
Work field	Development of biologically active compounds and PET-tracers in

tumor diagnostics

Date (from – until) 2019 – 2013
Institution Faculty of Chemical Engineering and Technology
Position Vice dean of science and international affairs
Work field -

EDUCATION

Date 25. 06. 1991
Place Zagreb
Institution Faculty of Food Technology and Biotechnology, University of Zagreb
Title of qualification awarded BSc
Date 7. 10. 1996.
Place Zagreb
Institution Faculty of Chemical Engineering and Technology, University of Zagreb
Title of qualification awarded MSc in chemistry
Date 26. 10. 1998
Place Zagreb
Institution Faculty of Chemical Engineering and Technology, University of Zagreb
Title of qualification awarded PhD in chemistry

RESEARCH AND OTHER PROJECTS

Principal investigator of domestic scientific projects:

1. *"Synthesis and cytostatic evaluations of novel nitrogen heterocyclic library"*, SCIEncENTRY, 5596, 2014 – 2018, Croatian science foundation.
2. *"Development of new tracer molecules for positron emission tomography (PET)"*, 125-0982464-2925, 2007–2014 PI, Ministry of science, education and sports.
3. *"Development of new nucleoside mimetic as PET tracer molecule"*, 1. 1. 2012 - 31.12. 2012, PI, Foundation for development of University of Zagreb.
4. *"New inhibitors of HSV-1 thymidine kinase"*, (125032), 1997–2000, PI, incentive project for young researchers, Ministry of science and technology, Republic of Croatia

Principal investigator of international scientific project:

1. *"Development of novel C-5 fluoroalkyl N-acyclic pyrimidine nucleoside analogs as PET tracer for in situ monitoring of gene and cell-based therapies using HSV1-TK as a reporter gene"*, 01.11.2009 – 01.07.2013, PI from croatian side, SCOPES (Swiss National Science Foundation).

BOOKS

1. Mladen Mintas, **Silvana Raić-Malić**, *Medicinal Chemistry*, Medicinska naklada, Zagreb, 2009, book written in Croatian.
2. Nenad Raos, **Silvana Raić-Malić**, Mladen Mintas, *Stereochemistry of Drugs: Pharmacophores and Receptors*, Školska knjiga, 2005, book written in Croatian.
3. Mladen Mintas, **Silvana Raić-Malić**, Nenad Raos, *Principles of Drug Design*, Zagreb, Hinus, 2000, book written in Croatian.

TEACHING

- **Undergraduate courses:** Organic chemistry I, Organic Chemistry, Chemistry of natural and synthetic polymers
- **Graduate courses:** Chemistry of natural compounds, Antivirotics and cytostatics
- **Doctoral courses:** Stereochemistry and drug activity, Medicinal chemistry at Doctoral study of FCET, Development of the most successful drugs at Doctoral study of Faculty of Science

MENTORSHIPS OF DOCTORAL DISSERTATIONS

1. S. Jurmanović, *In vitro* characterization of ADME properties for macrolide and steroidal conjugates as novel class in antiinflammatory drug development, 8. 12. 2011.
2. B. Borovička, *Isolation and structural characterization of new polyketides, anthrone derivatives obtained by biosynthesis*, 29. 10. 2012.
3. A. Meščić, *Synthesis of novel acyclic pyrimidine nucleoside analogues with potential application in positron emission*, 14. 03. 2014.
4. S. Maračić, *1,2,3-triazole and heterocycle conjugates: synthesis, antimicrobial and cytostatic evaluations*, in process.

MENTORSHIPS OF BACHELOR'S DEGREE WORKS AND FINAL MASTER WORKS

- 28 Bachelor's degree works and (12 joint papers with students)

MEMBERSHIP AT EDITORIAL BOARD OF INTERNATIONAL SCIENTIFIC JOURNALS

- 2010 – : **Editorial board** of *ISRN Pharmaceutics*
- 2011 – : **Editorial board** of *American Journal of Organic Chemistry*

COMMISSIONS, COMMITTEES, BOARDS AND WORK GROUPS

1. Commission for Action plan to promote investment into science and research (2006-2007.), Ministry of science, education and sports, Republic of Croatia.
2. Commission for scientific equipment (2007.-2009.), Ministry of science, education and sports, Republic of Croatia.
3. Commission for international university cooperation for 2005/2006 and 2006/2007 academic year,
4. Commission for evaluation and creation of self-analysis of Faculty of Chemical Engineering and Technology, 2008.
5. Commission for creation of Regulation of FCET for scientific election (2008.)
6. Work group for creation of National strategy innovations of Republic Croatia (2013.-2020.), 2013.
7. Work group for Strategy for development of student support University of Zagreb, 2013.
8. Member of Master Board for Natural Sciences, field – Chemistry, 2009.-2013.
9. Member of Committee for Natural Sciences University of Zagreb, 2009.-2013.

SELECTED INVITED LECTURES:

• **International scientific conferences:**

1. S. Raić-Malić, *Challenges in positron emission tomography application: from synthesis to testing on mice*, 15th Ružička Days, Today science – tomorrow industry, Vukovar, Hrvatska, 11. – 12. 9. 2014.
2. S. Raić-Malić, *Non-natural nucleoside analogues for noninvasive monitoring of tumor cells using positron emission tomography*, Symposium on Nucleic Acid Chemistry, Structure and Interactions, Nova Gorica, Slovenia, 29. – 31. 5. 2010.

• **Domestic scientific conference:**

1. S. Raić-Malić, *Development of Non-Natural Nucleoside Analogues for Monitoring Gene Therapy with Positron Emission Tomography (PET)*, XXI. Croatian Meeting of Chemists and Chemical Engineers, Trogir, 19. – 22. 04. 2009.

• **International universities:**

1. S. Raić-Malić, *Acyclic pyrimidine and purine nucleoside analogues as PET-tracers for monitoring gene therapy*, Center for Radiopharmaceutical Sciences, ETH Zurich (Swiss Federal Institute of Technology), Switzerland, 2009.
2. S. Raić-Malić, *Development of acyclic pyrimidine and purine nucleoside analogues as PET-tracer molecules*, Pharmaceutical Biochemistry, School of Pharmaceutical Sciences, University of Geneva, Switzerland, 2009.

PATENTS

1. M. Merćep, K. Benci, K. Wittine, **S. Raić-Malić**, A. Cezmi Akdis, *Novel anti-inflammatory compounds*, US application number 61/817,494, 2013.
2. M. Merćep, K. Benci, K. Wittine, **S. Raić-Malić**, A. Cezmi Akdis, *Immunomodulatory compounds*, US application number 61/817,477, 2013.
3. **S. Raić-Malić**, T. Gazivoda, S. Krištafor, S. M. Ametamey, *New 6-substituted pyrimidine derivatives*, PCT/HR2010/000033, 2010.
4. **S. Raić-Malić**, T. Gazivoda Kraljević, S. Krištafor, *New 6-substituted pyrimidine derivatives*, HR 18446744073709551615, 2009, written in Croatian.
5. **S. Raić-Malić**, V. Vela, B. Šušković, M. Grdiša, K. Pavelić, E. De Clercq, M. Mintas. *Novel pyrimidine and purine derivatives of L-ascorbic acid with antitumor and antiviral activities*, HR5990035A, 2001, written in Croatian.

SELECTED SCIENTIFIC PAPERS (FROM TOTAL 48)

Number of papers in CC journals: **48** (<http://bib.irb.hr/lista-radova?autor=203323>), **1** paper in Medline journal and **3** review papers. Total citations: **490**. Cumulative Impact Factor: **96.02**. h-index: 13.

1. T. Gazivoda, M. Šokčević, M. Kralj, L. Šuman, K. Pavelić, E. De Clercq, G. Andrei, R. Snoeck, J. Balzarini, M. Mintas, **S. Raić-Malić***, *Synthesis, Antiviral and Cytostatic Evaluations of the New C-5 Substituted Pyrimidine and Furo[2,3-d]pyrimidine 4,5-Didehydro-L-ascorbic Acid Derivatives*, *J. Med. Chem.* **50** (2007) 4105-4112. IF = 4.9; Q1; cit. 19
2. S. Prekupec, D. Makuc, J. Plavec, L. Šuman, M. Kralj, K. Pavelić, J. Balzarini, E. De Clercq, M. Mintas, **S. Raić-Malić***, *Novel C-6 Fluorinated Acyclic Side Chain Pyrimidine Derivatives: Synthesis, H-1 and C-13 NMR Conformational Studies, and Antiviral and Cytostatic Evaluations*, *J. Med. Chem.* **50** (2007) 3037-3045. IF = 4.9; Q1; cit. 22
3. T. Gazivoda, **S. Raić-Malić**, M. Marjanović, M. Kralj, K. Pavelić, J. Balzarini, E. De Clercq, M. Mintas, *The Novel C-5 Aryl, Alkenyl and Alkynyl Substituted Uracil Derivatives of L-Ascorbic Acid: Synthesis, Cytostatic and Antiviral Activity Evaluations*, *Bioorg. Med. Chem.* **15** (2007) 749-758. IF = 2.66; Q2; cit. 27
4. T. Gazivoda, K. Wittine, I. Lovrić, D. Makuc, J. Plavec, M. Cetina, D. Mrvoš-Sermek, L. Šuman, M. Kralj, K. Pavelić, M. Mintas, **S. Raić-Malić***, *Synthesis, Structural Studies and Cytostatic Evaluation of 5, 6-di-O-Modified L-Ascorbic Acid Derivatives*, *Carbohydr. Res.* **341** (2006) 433-442. IF = 1.70; Q2; cit. 9
5. V. Krištafor, **S. Raić-Malić**, M. Cetina, M. Kralj, L. Šuman, K. Pavelić, J. Balzarini, Jan, E. De Clercq, M. Mintas, *Synthesis, X-ray Crystal Structural Study, Antiviral and Cytostatic Evaluations of the Novel Unsaturated Acyclic and Epoxide Nucleoside Analogues*, *Bioorg. Med. Chem.* **14** (2006) 8126-8138. IF = 2.62; Q2; cit. 13
6. A. Johayem, **S. Raić-Malić**, K. Lazzati, P. Schubiger, L. Scapozza, S. Ametamey, *Synthesis and Characterization of a C(6) Nucleoside Analogue for the in vivo Imaging of the Gene Expression of Herpes Simplex Virus Type 1 Thymidine Kinase (HSV1 TK)*, *Chem. & Biodiver.* **3** (2006) 274-283. IF = 1.62; Q2; cit. 13
7. T. Gazivoda, M. Plevnik, J. Plavec, S. Kraljević, M. Kralj, K. Pavelić, J. Balzarini, E. De Clercq, M. Mintas, **S. Raić-Malić***, *The Novel Pyrimidine and Purine Derivatives of L-ascorbic Acid: Synthesis, One- and Two-Dimensional ¹H and ¹³C NMR Study, Cytostatic and Antiviral Evaluation*, *Bioorg. Med. Chem.* **13** (2005) 131-139. IF = 2.29; Q2; cit. 22
8. N. Opačić, M. Barbarić, B. Zorc, M. Cetina, A. Nagl, D. Frković, M. Kralj, K. Pavelić, J. Balzarini, G. Andrei, E. De Clercq, **S. Raić-Malić**, M. Mintas, *The Novel L- and D-Amino*

- Acid Derivatives of Hydroxyurea and Hydantoins: Synthesis, X-Ray Crystal Structure Study, Cytostatic and Antiviral Evaluations, J. Med. Chem.* **48** (2005) 475-482. IF = 4.93; Q1; cit. 32
9. **S. Raić-Malić**, L. Tomašković, D. Mrvoš-Sermek, B. Prugovečki, M. Cetina, M. Grdiša, K. Pavelić, A. Mannschreck, J. Balzarini, E. De Clercq, M. Mintas, *Spirobipyridopyrans, Spirobinaphthopyrans, Indolinospiropyridopyrans, Indolinospironaphthopyrans and Indolinospironaphtho-1,4-oxazines: Synthesis, Study of X-Ray Crystal Structure and Antitumor Activities, Bioorg. Med. Chem.* **12** (2004) 1037-1045. IF = 2.02; Q2; cit. 6
 10. S. Prekupec, D. Svedružić, T. Gazivoda, D. Mrvoš-Sermek, A. Nagl, M. Grdiša, K. Pavelić, J. Balzarini, E. De Clercq, G. Folkers, L. Scapozza, M. Mintas, **S. Raić-Malić***, *Synthesis and Biological Evaluation of Iodinated and Fluorinated 9-(2-Hydroxypropyl) and 9-(2-Hydroxyethoxy)methyl Purine Nucleoside Analogues, J. Med. Chem.* **46** (2003) 5763-5772. IF = 4.82; Q1; cit. 16
 11. P. Pospišil, B. D. Pilger, S. Marveggio, P. Schelling, C. Wurth, L. Scapozza, G. Folkers, M. Pongračić, M. Mintas, **S. Raić-Malić**, *Synthesis, Kinetics and Molecular Docking of Novel 9-Hydroxypropyl Purine Nucleoside Analogues as Ligands of Herpesviral Thymidine Kinases, Helv. Chim. Acta* **85** (2002) 3237-3250. IF = 1.95; Q2; cit. 13
 12. **S. Raić-Malić***, D. Svedružić, T. Gazivoda, A. Marunović, A. Hergold-Brundić, A. Nagl, J. Balzarini, E. De Clercq, M. Mintas, *Synthesis and Biological Activities of Novel Pyrimidine Derivatives of 4,5-Didehydro-5,6-dideoxy-L-Ascorbic Acid, J. Med. Chem.* **43** (2000) 4806-4811. IF = 4.13; Q1; cit. 49
 13. **S. Raić-Malić***, A. Hergold-Brundić, A. Nagl, M. Grdiša, K. Pavelić, E. De Clercq, M. Mintas, *Novel Pyrimidine and Purine Derivatives of L-Ascorbic Acid: Synthesis and Biological Evaluation, J. Med. Chem.* **42** (1999) 2673-2678. IF = 4.08; Q1; cit. 35

REVIEWING OF SCIENTIFIC PAPERS

- **international journals:** *J. Med. Chem., Eur. J. Med. Chem., Bioorg. Med. Chem., Acta Pharmaceutica, Molecules, Monatshefte für Chemie, Croat. Chem. Acta, Struct. Chem., ISRN Pharmaceutics, ISRN Org. Chem., Amer. J. Org. Chem., Org. Chem. Insights, Letters in Drug Design & Discovery*
- **domestic journal:** *Chemistry in Industry*

OTHER IMPORTANT SKILLS AND COMPETENCES

- ISO trening za HR 9001 i HR 14001, *Environment Management System*, Lead Auditor Course (IRCA), 2007-2008.