

Maria Kolympadi Markovic
Organic Chemist, Ph.D.



Post-Doctoral Researcher
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Education:

2004- **Ph.D.** in Organic Chemistry, Swiss Federal Institute of Technology in Lausanne (EPFL).

2010: Ph.D.'s title: '*Synthesis of C-linked Disaccharides and Analogues as Biomimetics of the TF epitope*'.

2001- **M.Sc.** in Organic Chemistry, University of Athens

2003: Master's project: semisynthesis of terpenoid marine natural products.

Scholarship for postgraduate studies from the 'Greek State Scholarships Foundation'.

1997- **B.Sc.** in Chemistry, University of Athens

2001: Diploma project: synthesis of insect pheromones, substances useful for environment friendly crop protection.

Working experience:

2018- **Post-Doctoral Researcher**, Department of Physics, University of Rijeka

now: Participation in a multi-disciplinary research project of Croatian Science Foundation under the direction of Assistant Prof.: Gabriela Ambrožić: '*Preparation of porous thin-film materials for water purification using atomic layer deposition (ALD)*'.

2014: **Pharmaceutical R&D Collaborator** (8 months), LISAPHARM Laboratoires, Paris, France, in collaboration with the Faculty of Pharmacy, University Paris Descartes

Development: Improving the physical and organoleptic properties of a pharmaceutical gel-cream. Reformulation and preliminary stability studies. The project furnished positive results for further product development.

2010- **Post-Doctoral Researcher**, University of Neuchâtel, Switzerland,

2012: Prof. Reinhard Neier's group

Participation in a multi-disciplinary research project aiming at the development of an optical biosensor detecting early protein aggregation stages in Alzheimer's disease. Collaboration with scientists from Microcity, EPFL in Neuchâtel.

Chemical modification studies of the sensor surface.

Teaching assistant for laboratory classes of general chemistry.

- 2004- **Doctoral Assistant**, Swiss Federal Institute of Technology in Lausanne (EPFL), Switzerland
2010: Prof. Pierre Vogel's group
Research project on the synthesis of sugar mimics for the preparation of anti-cancer vaccines. Synthesis of fluorinated carbohydrates, NMR conformational studies and interactions with carbohydrate recognizing proteins. Collaboration with a Spanish research group.
Supervision of undergraduate and master's students.
2004-2006: Teaching assistant for laboratory classes of organic chemistry.
- 2001- **Teaching assistant**, University of Athens, Greece
2003: Laboratory classes of organic chemistry. Supervision of undergraduate students.

Skills:

- **Synthetic Organic Chemistry:** Experience with different classes of compounds, multistep syntheses, parallel syntheses of analogues, H-Cube flow reactions, chemical functionalisation of silicon oxide / silicon nitride surfaces.
- **Analytical Chemistry:** Bruker's and Varian's NMR (1D/2D spectra, structure elucidation), UV, FT-IR, mass spectrometry, GC, HPLC, Karl-Fischer water determination.
- **Formulation:** Preparation of oil-in-water emulsions and gels, particle-size analysis by laser diffraction, stability studies.
- **Laboratory Safety and Organization:** Safety officer for a laboratory unit of 4-6 researchers at EPFL.
- **Searching Scientific literature:** SciFinder, Reaxys, ISI Web of Knowledge, PubMed, European Pharmacopoeia, USP.
- **Computer skills:** MS-Office (Word, PowerPoint, Outlook, Excel), EndNote, ChemOffice, ISIS/Draw, ChemSketch, Mestrec.

List of Publications:

- G. Ambrožić, **M. Kolypadi Markovic**, R. Peter, I. Kavre Piltaver, I. Jelovica Badovinac, D. Čakara, D. Marković, M. Knez, 'Building organosilica hybrid nanohemispheres via thiol-ene click reaction on alumina thin films deposited by atomic layer deposition (ALD)', *J. Colloid Interface Sci.* **2020**, 560, 303-311.
- I. Saric, R. Peter, **M. Kolypadi Markovic**, I. Jelovica Badovinac, C. Rogero, M. Ilyn, M. Knez, G. Ambrožić, 'Introducing the concept of pulsed vapor phase copper-free surface click-chemistry using the ALD technique', *Chem. Comm.* **2019**, 55, 3109-3112.
- K. Cottet, **M. Kolypadi**, D. Marković, M.-C. Lallemand, 'Natural Products Biosynthesis involving a Putative DielsAlder Reaction', *Curr. Org. Chem.* **2016**, 20, 2421-2442.
- K. Cottet, **M. Kolypadi**, M.-C. Lallemand, D. Marković, 'Artificial Enzyme-Catalyzed Diels-Alder Cycloadditions', *Curr. Org. Chem.* **2016**, 20, 2254-2281.

- I. Mierina, E. Gudelis, D. Stepanovs, M. Jure, A. Mishnev, **M. Kolympadi**, D. Marković, 'Crystal structure of 3-(4-hydroxy-3-methoxyphenyl)-N-phenylpropanamide, $C_{16}H_{17}NO_3$ ', *Z. Kristallogr. NCS* **2016**, 231(2), 657-659.
- D. Marković, **M. Kolympadi**, B. Deguin, F.-H. Porée, M. Turks, 'The isolation and synthesis of neodolastane diterpenoids', *Nat. Prod. Rep.* **2015**, 32, 230-255.
- L. Awad, R. Madani, A. Gillig, **M. Kolympadi**, M. Philgren, A. Muhs, C. Gérard, P. Vogel, 'A C-Linked Disaccharide Analogue of Thomsen-Friedenreich Epitope Induces a Strong Immune Response in Mice', *Chem. Eur. J.* **2012**, 18, 8578-8582.
- **M. Kolympadi**, M. Fontanella, C. Venturi, S. André, H.-J. Gabius, J. Jiménez-Barbero, P. Vogel, 'Synthesis and conformational analysis of (*α*-D-galactosyl)phenyl methane and *α*-,*β*- difluoromethane analogues. Interactions with the plant lectin viscumin', *Chem. Eur. J.* **2009**, 15, 2861-2873.
- **M. Kolympadi**, M. Liapis, V. Ragoussis, 'Synthesis of the marine furanoditerpene (-)-marginatone', *Tetrahedron* **2005**, 61, 2003-2010.
- V. Ragoussis, Ek. Vamvaka, **M. Kolympadi**, 'Short and stereoselective synthesis of (*E*)-3-alkenyl acetates, insect sex pheromone constituents of *Lepidoptera*; *Gelechiidae*', *J. Chem. Res. (S)* **2002**, 398-399.