CURRICULUM VITAE

Hana Čipčić Paljetak, PhD, research associate

ADDRESS: University of Zagreb School of Medicine, Šalata 2, Zagreb
TELEPHONE: +385 1 4590069
E-MAIL: hana.paljetak@mef.hr

SUMMARY

More than 20 years of scientific research experience, nine (2000-2008) in pharmaceutical research (PLIVA and GSK) on various compound classes and projects in the anti-infective and anti-inflammatory therapeutic areas. Training and expertise in molecular and cellular biology techniques and molecular epidemiology. Within PLIVA actively involved in microbiology, biochemistry, molecular biology research and assay development in discovery of new anti-infective and anti-inflammatory agents. From 2005 to 2008 senior scientist and biology coordinator for new antibacterial macrolides in PLIVA and GSK Research Centre Zagreb. The project included collaboration with different segments of GSK R&D, advancing knowledge in pre-clinical drug development. Since 2009 employed at University of Zagreb School of Medicine, currently as research associate, working on collaborative projects with industry and academic institutions on evaluation of new compound classes, intercellular communication, host-pathogen interactions, regenerative medicine, microbiota and translational research. Team member of numerous past and several on-going projects: Bilateral project Austria-Croatia, PROBITECT, CERRM. Involved in teaching on graduate programme within School of Medicine. Acts as an expert panels' member and vice-chair in evaluation of project proposals for a number of research funding initiatives within H2020 framework and national founding agencies of European countries. So far published 37 international and four Croatian peer-reviewed publications, one book chapter (h-index 14). Actively participated at numerous international and national conferences and workshops, held a number of invited lectures in Croatia and abroad. Peer reviewer for many distinguished scientific journals.

PROFFESIONAL EXPERIENCE

2017 – Research associate

Center for translational and clinical research, University of Zagreb School of medicine (UZSM) Department for intercellular communication

Major areas of interest include gut and skin microbiota research and its role in maintenance of health and disease development; antimicrobial drug resistance and drug discovery; bacterial biofilms and intercellular communication; molecular epidemiology. Within the MINUTE for IBD project, she was actively involved in the project preparation, experimental design, microbiota assessment (DNA isolation and NGS protocol optimisation), data analysis, reporting and publication of the project results.

2014 – 2017. Postdoctoral researcher

Center for translational and clinical research, University of Zagreb School of medicine (UZSM) Department for intercellular communication

2009 – 2014. Researcher

University of Zagreb School of Medicine, Center for translational and clinical research, Department for intercellular communication

2000 – 2008. Senior scientist – microbiologist

Scientist - biochemist

PLIVA, PLIVA research center (from 2006. GSK Research Centre Zagreb)

Actively involved in microbiology, biochemistry and molecular biology research and assay development for testing of new anti-infective and anti-inflammatory agents. Responsible for the biological activities on the programme, coordinating both in vitro and in vivo investigations, collaborating closely with scientists throughout GSK R&D (from UK, USA and Italy).

1998 – 1999. Qualified associate

University of Zagreb Faculty of Science, Department for molecular biology

Volunteered and worked in plant tissue culture, 2-D gel electrophoresis, isoelectric focusing.

RESEARCH PROJECTS

Ongoing project coordination

2020 – 2021. Bilateral project Austria-Croatia 2020-2021: Biological profiling of polyoxometalates

Ongoing projects

2014 – 2022. Scientific Center of Excellence for Reproductive and Regenerative Medicine (CERRM) funded by EU regional and cohesion funds through Croatian Ministry of science and education

2020-2023. PROBITECT Synergistic innovative combination of microbiota components as a basis for the development of innovative topical products for the treatment and prevention of inflammatory conditions of human skin HAMAG-BICRO, IRI project

Previous projects

2014 – 2018. MINUTE for IBD (Assessment of Microbiota, Inflammatory Markers, Nutritional and Endocrinological Status in IBD Patients) funded by Croatian science foundation (CSF)

2016 – 2018. Newly discovered BMP1 circulating isoforms as biomarkers and therapeutic targets for human diseases BMP1 – IsoFor (CSF).

2014-2020. University of Zagreb supported projects (seven projects led by Mihaela Perić, PhD)

2006-2010. Uloga TSH u modelu osteoporoze i u bolesnica sa smanjenom koštanom masom, MZOŠ RH project number 108-1080327-0320, leader prof. Slobodan Vukičević

EDUCATION

2010. PhD in the field of biochemistry and molecular biology

University of Zagreb Faculty of Science, thesis: “The new antibiotic class – 4’’-ester derivatives of macrolides with quinolone subunit”

2008. Master’s Degree in the field of biochemistry and molecular biology

University of Zagreb Faculty of Science, thesis "Characterization of clinical isolates of *Streptococcus pneumoniae* and their resistance to macrolide antibiotics"

1997. BSc in molecular biology

University of Zagreb, Faculty of Science, graduated with excellent marks

SCHOLARSHIPS AND AWARDS

2011. Two months at the University of Orléans, France, at CNRS Molecular and Experimental Immunology and Neurogenetics with prof. Bernhard Riffel. Research on innate immune responses on biofilm-forming *Pseudomonas aeruginosa* lung infection in mice

1999. ICGEB fellowship (1 week) for course participation „RNA Structure and Function“ Treste, Italy.

CIES French government fellowship (2 months), with prof. Daniel Hagège at the University of Orléans Faculty of Science, developing skills in plant tissue culture and 2-D gel electrophoresis.

1997. CEEPUS fellowship (1 month), at the University of Katowice, Poland, with prof. Jolanta Maluszynska, expanding skills in plant cytogenetics.

1992-97. The Split city council scholarship for excellent students.

TEACHING

2011– Biologically active compounds in food, UZSM, graduate course UZ School of Medicine

Lectures at Master TBI program, double master of UZ and University of Orleans, France

1997-2000. Practical courses in Cell biology, Genetics and Electrophoresis of plant proteins at the University of Zagreb Faculty of Science

1993-1997. Demonstrator at practical course in Cell biology

STUDENT SUPERVISION

2020. Marina Kučica, Određivanje antibakterijske aktivnosti derivata itakonske kiseline. University of Zagreb Faculty of Pharmacy and Biochemistry, graduate thesis

LIST OF PUBLICATIONS

International peer-reviewed publications

1. E. Tanuhadi, N.I. Gumerova, A. Prado-Roller, M. Galanski, **H. Čipčić-Paljetak**, D. Verbanac, A. Rompel Aluminum-substituted Keggin germanotungstate $[HAl(H_2O)GeW_{11}O_{39}]^{4-}$: Synthesis, Characterization and Antibacterial Activity. Inorg. Chem. 60 (2021) 28-31. doi: 10.1021/acs.inorgchem.0c03311

2. E. Tanuhadi, E. Al-Sayed, A. Roller, **H. Čipčić-Paljetak**, D. Verbanac, A. Rompel Synthesis, characterization and phosphoesterase activity of a series of 4f- and 4d- sandwich-type germanotungstates $[(n\text{-}C_4H_9)_4N]_{l/m}H_2[(M(H_2O)_3)(\gamma\text{-}GeW_{10}O_{35})_2]$ ($M = Ce^{III}$, Nd^{III}, Gd^{III}, Er^{III}, l = 7; Zr^{IV}, m = 6). Inorg. Chem. 59 (2020), 14078–14084. doi: 10.1021/acs.inorgchem.0c01852

3. Meštrović T, Matijašić M, Perić M, **Čipčić Paljetak H**, Barešić A, Verbanac D. The Role of Gut, Vaginal, and Urinary Microbiome in Urinary Tract Infections: From Bench to Bedside. Diagnostics (Basel). 2020 Dec 22;11(1):E7. doi: 10.3390/diagnostics11010007.

4. Matijašić, M.; Meštrović, T.; **Čipčić Paljetak, H**.; Perić, M.; Barešić, A.; Verbanac, D. Gut Microbiota beyond Bacteria—Mycobiome, Virome, Archaeome, and Eukaryotic Parasites in IBD. Int. J. Mol. Sci. 2020, 21, 2668. doi: 10.3390/ijms21082668

5. Racané, L.; Ptiček, L.; Fajdetić, G.; Tralić-Kulenović, V.; Klobučar, M.; Kraljević Pavelić, S.; Perić, M.; **Čipčić Paljetak, H**.; Verbanac, D.; Starčević, K. Green synthesis and biological evaluation of 6-substituted-2-(2-hydroxy/methoxy phenyl)benzothiazole derivatives as potential antioxidant, antibacterial and antitumor agents. Bioorganic Chemistry 2020,95,103537. doi:10.1016/j.bioorg.2019.103537

6. Leskovar D, Meštrović T, Barešić A, Kraljević I, Panek M, **Čipčić Paljetak H**, Perić M, Matijašić M, Rogić D, Barišić A, Kelečić DL, Bender DV, Krznarić Ž, Verbanac D. The Role of Vitamin D in Inflammatory Bowel Disease - Assessing Therapeutic and Preventive Potential of Supplementation and Food Fortification. Food Tech Biotech 2018, 56(4), 455-463, DOI: 10.17113/ftb.56.04.18.5805

7. Gumerova NI, Al-Sayed E, Krivosudský L, **Čipčić -Paljetak H**, Verbanac D and Rompel A. Antibacterial Activity of Polyoxometalates Against Moraxella catarrhalis. Front. Chem. 2018 6:336. doi: 10.3389/fchem.2018.00336

8. Mašek T, Perin N, Racané L, Cindrić M, **Čipčić Paljetak H**, Perić M, Matijašić M, Verbanac D, Radić B, Šuran J, Starčević K. Chemical Composition, Antioxidant and Antibacterial Activity of Different Extracts of Poplar Type Propolis. Croat. Chem. Acta 2018, 91(1), 81–88 DOI: 10.5562/cca3298

9. Panek M*, **Čipčić Paljetak H***, Barešić A*, Perić M, Matijašić M, Lojkić I, Vranešić Bender D, Krznarić Ž, and Verbanac D. Methodology challenges in studying human gut microbiota – effects of collection, storage, DNA extraction and next generation sequencing technologies. Sci Rep. 2018. DOI: 10.1038/s41598-018-23296-4 *equal contribution

10. Cindrić M, Perić M, Kralj M, Martin-Kleiner I, David-Cordonnier M-H, **Čipčić Paljetak H**, Matijašić M, Verbanac D, Karminski-Zamola G and Hranjec M. Antibacterial and antiproliferative activity of novel 2-benzimidazolyl- and 2-benzothiazolyl-substituted benzo[b]thieno-2-carboxamides. Mol Divers 2018. DOI: 10.1007/s11030-018-9822-7 [Epub ahead of print]

11. Grgurević L, Erjavec I, Grgurević I, Dumic-Čule I, Brkljačić J, Verbanac D, Matijašić M, **Čipčić Paljetak H**, Novak R, Plečko M, Bubić-Špoljar J, Rogić D, Kufner V, Pauk M, Bordukalo-Nikšić T, Vukičević S. Systemic inhibition of BMP1-3 decreases progression of CCl4-induced liver fibrosis in rats. Growth Factors. 2018 Feb 27:1-15. doi: 10.1080/08977194.2018.1428966. [Epub ahead of print]

12. Perin N, Starčević K, Perić M, **Čipčić Paljetak H**, Matijašić M, Stepanić V, Verbanac D, Karminski-Zamola G, Hranjec M. Synthesis and SAR Study of Novel Amidino 2-substituted Benzimidazoles as Potential Antibacterial Agents. Croat. Chem. Acta 2017, 90(2) DOI: 10.5562/cca3147

13. **Čipčić Paljetak, H.**; Tomasković, L.; Matijasić, M.; Bukvić, M.; Fajdetić, A.; Verbanac, D.; Perić, M. Macrolide Hybrid Compounds: Drug Discovery Opportunities in Anti-Infective and Anti-Inflammatory Area. Curr. Top. Med. Chem., 2017, 17(8):919-940. doi:10.2174/1568026616666160927160036

14. **Čipčić Paljetak, H**., D. Verbanac, J. Padovan, M. Dominis-Kramarić, Ż. Kelnerić, M. Perić, M. Banjanac, G. Ergović, N. Simon, J. Broskey, D. J. Holmes, and V. Eraković Haber. 2016. Macrolones - novel class of macrolide antibiotics active against key resistant respiratory pathogens in vitro and in vivo. Antimicrob.Agents Chemother. 2016, 60(9):5337-48. doi: 10.1128/AAC.00524-16

15. Verbanac D, Malik R, Chand M, Kushwaha K, Vashist M, Matijašić M, Stepanić V, Perić M, **Čipčić Paljetak H**, Saso L, Jain SC. Synthesis and evaluation of antibacterial and antioxidant activity of novel 2-phenyl-quinoline analogs derivatized at position 4 with aromatically substituted 4H-1,2,4-triazoles. J Enzyme Inhib Med Chem. 2016, doi: 10.1080/14756366.2016.1190714

16. Matijašić M, Meštrović T, Perić M, **Čipčić Paljetak H**, Panek M, Vranešić Bender D, Ljubas Kelečić D, Krznarić Ž, Verbanac D. Modulating Composition and Metabolic Activity of the Gut Microbiota in IBD Patients. Int. J. Mol. Sci. 2016, 17, 578; doi:10.3390/ijms17040578

17. Maračić S, Kraljević TG**, Čipčić Paljetak H**, Perić M, Matijašić M, Verbanac D, Cetina M, Raić-Malić S. 1,2,3-Triazole pharmacophore-based benzofused nitrogen/sulfur heterocycles with potential anti-Moraxella catarrhalis activity. Bioorg Med Chem. 2015 23(23):7448-63.

18. Stolić I*, **Čipčić Paljetak H***, Perić M, Matijašić M, Stepanić V, Verbanac D, Bajić M. Synthesis and structure–activity relationship of amidine derivatives of 3, 4-ethylenedioxythiophene as novel antibacterial agents. Eur J Med Chem. 90 (2015);68-81. *equal contribution

19. Tomasković, L., M. Komac, O. Makaruha Stegić, V. Munić, J. Ralić, B. Stanić, M. Banjanac, S. Marković, B. Hrvačić, **H. Čipčić Paljetak**, J. Padovan, I. Glojnarić, V. Eraković Haber, M. Mesić, and M. Merčep. 2013. Macrolactonolides: A novel class of anti-inflammatory compounds. Bioorganic and Medicinal Chemistry 21:321-332.

20. Verbanac D, S.C. Jain, N. Jain, M. Chand, **H. Čipčić Paljetak**, M. Matijašić, M. Perić, V. Stepanić, L. Sasso. An efficient and convenient microwave-assisted chemical synthesis of (thio)xanthones with additional in vitro and in silico characterization. Bioorg Med Chem, 2012, 20:3180-3185.

21. Palej Jakopovic, I., M. Bukvic Krajacic, M. Matanovic Skugor, V. Stimac, D. Pesic, I. Vujasinovic, S. Alihodzic, **H. Cipcic Paljetak**, and G. Kragol. 2012. Novel desosamine-modified 14- and 15-membered macrolides without antibacterial activity. Bioorg.Med.Chem.Lett. 22:3527-3530.

22. Fajdetic, A., A. Vinter, **H. Cipcic Paljetak**, J. Padovan, I. Palej Jakopovic, S. Kapic, S. Alihodzic, D. Filic, M. Modric, N. Kosutic-Hulita, R. Antolovic, Z. Ivezic Schoenfeld, S. Mutak, V. Erakovic Haber, and R. Spaventi. 2011. Synthesis, activity and pharmacokinetics of novel antibacterial 15-membered ring macrolones. European Journal of Medicinal Chemistry 46:3388-3397.

23. Leljak-Levanić, D., **H. Čipčić Paljetak**, L. Uzelac, S. Mihaljević, N. Bauer, M. Krsnik-Rasol, and S. Jelaska. 2011. Extracellular Glycoproteins in Embryogeni-c Culture of Pumpkin *(Cucurbita pepo* L.). Food Technology and Biotechnology 49:156-161.

24. Kapic, S., **H. Cipcic Paljetak**, I. Palej Jakopovic, A. Fajdetic, M. Ilijas, V. Stimac, K. Brajsa, D. J. Holmes, J. Berge, and S. Alihodzic. 2011. Synthesis of macrolones with central piperazine ring in the

linker and its influence on antibacterial activity. Bioorganic & Medicinal Chemistry 19(23). 7281-7298.

25. Kapic, S., A. Fajdetic, S. Kostrun, A. Cikos, **H. Cipcic Paljetak**, R. Antolovic, D. J. Holmes, and S. Alihodzic. 2011. Synthesis and Activity of New Macrolones: Conjugates Between 6(7)-(2'-Aminoethyl)-amino-1-cyclopropyl-3-carboxylic acid (2'-hydroxyethyl) amides and 4''-Propenoyl-azithromycin. Bioorganic & Medicinal Chemistry 19(23):7270-7280.

26. Fajdetic, A., **H. Cipcic Paljetak**, G. Lazarevski, A. Hutinec, S. Alihodzic, M. Djerek, V. Stimac, D. Andreotti, V. Sunjic, J. M. Berge, S. Mutak, M. Dumic, S. Lociuro, D. J. Holmes, N. Marsic, V. Erakovic Haber, and R. Spaventi. 2010. 4''-O-([omega]-Quinolylamino-alkylamino)propionyl derivatives of selected macrolides with the activity against the key erythromycin resistant respiratory pathogens. Bioorganic & Medicinal Chemistry 18:6559-6568.

27. Kapic, S., **H. Cipcic Paljetak**, S. Alihodzic, R. Antolovic, V. Erakovic Haber, R. L. Jarvest, D. J. Holmes, J. P. Broskey, and E. Hunt. 2010. 6-Alkylquinolone-3-carboxylic acid tethered to macrolides synthesis and antimicrobial profile. Bioorganic & Medicinal Chemistry 18:6569-6577.

28. Matanovic Skugor, M., V. Stimac, I. Palej, D. Lugaric, **H. Cipcic Paljetak**, D. Filic, M. Modric, I. Djilovic, D. Gembarovski, S. Mutak, V. Erakovic Haber, D. J. Holmes, Z. Ivezic-Schoenfeld, and S. Alihodzic. 2010. Synthesis and biological activity of 4''-O-acyl derivatives of 14- and 15-membered macrolides linked to [omega]-quinolone-carboxylic unit. Bioorganic & Medicinal Chemistry 18:6547-6558.

29. Palej Jakopovic, I., G. Kragol, A. K. Forrest, C. S. V. Frydrych, V. Stimac, S. Kapic, M. Matanovic Skugor, M. Ilijas, **H. Cipcpc Paljetak**, D. Jelic, D. J. Holmes, D. M. B. Hickey, D. Verbanac, V. Erakovic Haber, and S. Alihodzic. 2010. Synthesis and properties of macrolones characterized by two ether bonds in the linker. Bioorganic & Medicinal Chemistry 18:6578-6588.

30. Hutinec, A., M. Djerek, G. Lazarevski, V. Sunjic, **H. Cipcic Paljetak**, S. Alihodzic, V. Erakovic Haber, M. Dumic, N. Marsic, and S. Mutak. 2010. Novel 8a-aza-8a-homoerythromycin--4''-(3-substituted-amino)propionates with broad spectrum antibacterial activity. Bioorganic & Medicinal Chemistry Letters 20:3244-3249.

31. Bukvic Krajacic, M., P. Novak, M. Dumic, M. Cindric, **H. Cipcic Paljetak**, and N. Kujundzic. 2009. Novel ureas and thioureas of 15-membered azalides with antibacterial activity against key respiratory pathogens. European Journal of Medicinal Chemistry 44:3459-3470.

32. Stimac, V., S. Alihodzic, G. Lazarevski, S. Mutak, Z. Marusic Istuk, A. Fajdetic, I. Palej, **H. Cipcic Paljetak,** J. Padovan, B. Tavcar, and V. Erakovic Haber. 2009. Synthesis and biological properties of 4''-O-acyl derivatives of 8a-Aza-8a-homoerythromycin. J.Antibiot.(Tokyo) 62:133-144.

33. Krstic, V., Z. Maglica, **H. Cipcic Paljetak**, B. Podobnik, and N. Pavin. 2007. Min-protein oscillations in *E. coli*: three-dimensional off-lattice stochastic reaction-diffusion model. Journal of Statistical Physics 128:5-20.

34. Pavin, N., **H. Cipcic Paljetak**, and V. Krstic. 2006. Min-protein oscillations in Escherichia coli with spontaneous formation of two-stranded filaments in a three-dimensional stochastic reaction-diffusion model. Phys.Rev.E.Stat.Nonlin.Soft.Matter Phys. 73:021904.

35. Alihodzic, S., A. Fajdetic, G. Kobrehel, G. Lazarevski, S. Mutak, D. Pavlovic, V. Stimac, **H. Cipcic**, M. Dominis Kramaric, V. Erakovic, A. Hasenohrl, N. Marsic, and W. Schoenfeld. 2006. Synthesis and antibacterial activity of isomeric 15-membered azalides. J.Antibiot.(Tokyo) 59:753-769.

36. Krsnik Rasol, M., **H. Cipcic**, D. Poljuha, and D. Hagege. 2001. Electrophoretic protein patterns of sugar beet tissue lines. Phyton: Annales Rei Botanicae 41:13-20.

37. Krsnik Rasol, M., **H. Cipcic**, and D. Hagege. 1999. Isoesterases related to cell differentiation in plant tissue culture. Chem.Biol.Interact. 119-120:587-592.

Book chapter

1. Couillin, I.; Togbe, D.; Sedhom, M.; Bert, M. L.; **Čipčić Paljetak, H**.; Erard, F.; Moser, R.; Ryffel, B. Inflammasome: IL-1/IL-17 Response in Lung Inflammation. In IL-17, IL-22 and Their Producing Cells: Role in Inflammation and Autoimmunity, Quesniaux, V., Ryffel, B., Padova, F., Eds.; Springer Basel: Basel, 2013; pp 157-164.

Croatian peer-reviewed publications

1. Leskovar D, Kraljević I, Panek M, Kunović A, Meštrović T, Perić M, **Čipčić Paljetak H**, Matijašić M, Barešić A, Vranešić Bender D, Čuković Čavka S, Brinar M, Turk N, Crnčević Urek M, Kalauz M, Kufner V, Brajša K, Ergović G, Ljubas Kelečić D, Grgić D, Karas I, Rogić D, Banić M, Krznarić Ž, Verbanac D. Vitamin D u bolesnika sa sindromom iritabilnog crijeva- status i modulatorni čimbenici. Medix 2018 (God 24, Br 132)

2. Verbanac D, Perić M, **Čipčić Paljetak H**, Matijašić M, Jurković S. Prehrana i zdravlje respiratornog sustava. Medicus, 2013, 22(1):115-124.

3. Perić, M., **H. Čipčić Paljetak**, M. Matijašić, and D. Verbanac. 2011. Debljina, mikrobiote i imunomodulacija. Infektološki glasnik 31:49-58.

4. Parish, J., M. Perić, **H. Čipčić Paljetak**, M. Matijašić, and D. Verbanac. 2011. Translating the mediterranean diet: from chemistry to kitchen. Periodicum Biologorum 113.