

Curriculum Vitae

Dr. Maria-Patapia Zafeiriou

Dep. of Pharmacology and Toxicology,
University Medical Center Göttingen
Robert-Koch-Str. 40
37075 Göttingen
Germany

Tel: +49 (0) 551 5775

E-mail: patapia.zafeiriou@med.uni-goettingen.de



Academic Education

1997–2002 Undergraduate studies in Chemistry, National and Kapodistrian University of Athens

Scientific Degrees

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| 2008 | Doctor of Philosophy (PhD) in Biochemistry, Center of Exp. Gynecology & Eicosanoid research, Charité, Berlin (Prof. Dr. mult. Santosh Nigam) and Biochemistry, National and Kapodistrian University of Athens (Prof. Sifaka-Kapadai) |
| 2004 | Master of Science (MSc) in Biochemistry, National and Kapodistrian University of Athens (Prof. Sifaka-Kapadai) |
| 2002 | Bachelor of Science (BSc) in Chemistry/Biochemistry, National and Kapodistrian University of Athens (Prof. Sifaka-Kapadai) |

Professional Career

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| Since 2020 | Group leader “3D networks of electrically excitable cells”, Institute of Pharmacology and Toxicology, University Medical Center Göttingen, Germany |
| Since 2019 | Application Specialist “Stem cells and organoids” in the cluster of excellence „Multiscale Bioimaging: from molecular machines to electrically excitable cells”, Institute of Pharmacology and Toxicology, University Medical Center Göttingen, Germany |
| 2010 - 2019 | Post doctoral fellow, Institute of Pharmacology and Toxicology, University Medical Center Göttingen, Germany |
| 2008 - 2010 | Post doctoral fellow, Experimental Cardiology, Max Delbrück Center (MDC), Berlin-Buch, Germany |

MISCELLANEOUS

Fellowships, Awards and Honors (Selected)

2020	ISSCR Zhongmei Chen Yong Award for Scientific Excellence
2020	Gö-VIP: Very Important Publications- Developmental GABA polarity switch and neuronal plasticity in Bioengineered Neuronal Organoids. Nature Comm 2020
2014	Best oral presentation-Basic science (DZHK)
2012	Post-doc fellowship, Deutsches Zentrum für Herz-Kreislauf-Forschung (DZHK)
2006	Poster prize, International symposium on cell signaling, Taiwan
2005	PhD fellowship, Charite Berlin

Further Scientific Activities (Selected)

Since 2020	Lecturer at the Hertha Sponer college
2020	Public outreach: Invited speaker at the International Scientific festival "Pint of Science"
Since 2019	Board member of the Cluster of Excellence EXC 2067
Since 2016	Lecturer at the Cardiovascular Science MSc program at the University Medical Center Göttingen
Since 2010	Lecturer at the Molecular Medicine MSc program at the University Medical Center Göttingen
2018	Public outreach: Invited speaker at Wesley College (Melbourne, Australia)

Parental Leave

2010-2011	Total duration 8 months
2014-2015	Total duration 10 months

Publications

Orcid ID: 0000-0003-4604-4175

Original Publications

*Corresponding author

Islam, M.R., Kaurani, L., Berulava, T., Heilbronner, U., Budde, M., Centeno, P.T., Elerdashvili, V., **Zafeiriou, M.P.**, Benito, E., Sertel SM., Goldberg, M., Senner, F., Kalman, JK., Burkhardt S., Oepen, OS., Sakib, MS., Kerimolgu, CM., Wirths, O., Bickeböller H., Bartels, C., Brosseron, F., Buerger, K., Cosma, N., Fliessbach K., Heneka M., Janowitz D., Kilimann, I., Kleinedam E., Laske, C., Metzger C., Munk, M., Perneczky, R., Peters O., Priller J., Rauchmann BS., Roy N., Schneider, A., Spottke, A., Spruth EJ., Teipel, S., Tscheuschler M., Wagner M., Wiltfang J., Düzel, E., Jessen, F., Delcode Study Group; Rizzoli,

SO., Zimmermann WH., Schulze, TG., Falkai T., Sananbenesi F., Fischer A. A microRNA signature that correlates with cognition and is a target against cognitive decline **EMBO Mol Med** 2021 Oct 11; e13659.

Rathjens FS, Iyer LM, Blenkle A, Renger A, Syeda F, Noack C, Jungmann A, Dewenter M, Toischer K, El-Armouche A., Müller OJ, Fabritz L, Zimmermann WH, *Zelarayan LC, ***Zafeiriou MP** Preclinical evidence for the therapeutic value of TBX5 normalization in arrhythmia control. **Cardiovascular Research** 2021 117(8):1908–1922

Zheng X, Zhang L, Kuang Y, Venkataramani V, Jin F, Hein K, **Zafeiriou MP**, Lenz C, Moebius W, Kilic E, Hermann DM, Weber MS, Urlaub H, Zimmermann W-H, Bähr M, Thorsten R Doeppner Extracellular Vesicles Derived from Neural Progenitor Cells--a Preclinical Evaluation for Stroke Treatment in Mice **Transl Stroke Res** 2021 12(1):185-203.

***Zafeiriou MP**, Bao G, Hudson J, Halder R, Blenkle A, Schreiber MK, Fischer A, Schild D, *Zimmermann WH. Network Activity and Plasticity in Bioengineered Neuronal Organoids. **Nature Comm.** 2020 11(1):3791.

Noack C, Iyer LM, Liaw NY, Schoger E, Khadjeh S, Wagner E, Woelfer M, **Zafeiriou MP**, Milting H, Sossalla S, Streckfuss-Boemeke K, Hasenfuß G, Zimmermann WH, Zelarayan LC. KLF15-Wnt-Dependent Cardiac Reprogramming Up-Regulates SHISA3 in the Mammalian Heart. **J Am Coll Cardiol.** 2019 Oct 8;74(14):1804-1819.

Iyer LM, Nagarajan S, Woelfer M, Schoger E, Khadjeh S, **Zafeiriou MP**, Kari V, Herting J, Pang ST, Weber T, Rathjens FS, Fischer TH, Toischer K, Hasenfuss G, Noack C, Johnsen SA, Zelarayan LC. A context-specific cardiac β -catenin and GATA4 interaction influences TCF7L2 occupancy and remodels chromatin driving disease progression in the adult heart. **Nucleic Acids Res.** 2018; 46(6):2850-2867

Wiedmann F, Schulte JS, Gomes B, **Zafeiriou MP**, Ratte A, Rathjens F, Fehrmann E, Scholz B, Voigt N, Müller FU, Thomas D, Katus HA, Schmidt C. Atrial fibrillation and heart failure-associated remodeling of two-pore-domain potassium (K2P) channels in murine disease models: focus on TASK-1. **Basic Res Cardiol.** 2018; 113(4):27.

Schmidt C, Wiedmann F, Kallenberger SM, Ratte A, Schulte JS, Scholz B, Müller FU, Voigt N, **Zafeiriou MP**, Ehrlich JR, Tochtermann U, Veres G, Ruhparwar A, Karck M, Katus HA, Thomas D. Stretch-activated two-pore-domain (K2P) potassium channels in the heart: Focus on atrial fibrillation and heart failure. **Prog Biophys Mol Biol.** 2017; 130(Pt B):233-243.

Castillo-Gómez E, Oliveira B, Tapken D, Bertrand S, Klein-Schmidt C, Pan H, **Zafeiriou P**, Steiner J, Jurek B, Trippe R, Prüss H, Zimmermann WH, Bertrand D, Ehrenreich H, Hollmann M. All naturally occurring autoantibodies against the NMDA receptor subunit NR1 have pathogenic potential irrespective of epitope and immunoglobulin class. **Mol Psychiatry.** 2016 00: 1–9

Ott C, Martens H, Hassouna I, Oliveira B, Erck C, **Zafeiriou MP**, Peteri UK, Hesse D, Gerhart S, Altas B, Kolbow T, Stadler H, Kawabe H, Zimmermann WH, Nave KA, Schulz-Schaeffer W, Jahn O, Ehrenreich H. Widespread expression of erythropoietin receptor in brain and its induction by injury *Mol Med* 2015; 21(1): 803–815.

***Zafiriou MP**, Noack C, Unsold B, Didie M, Pavlova E, Fischer HJ, Reichardt HM, Bergmann MW, El-Armouche A, Zimmermann WH, *Zelarayan LC. Erythropoietin Responsive Cardiomyogenic Cells Contribute to Heart Repair Post Myocardial Infarction *Stem Cells*. 2014; 32(9):2480-91

Renger A, **Zafiriou MP**, Noack C, Pavlova E, Becker A, Sharkova K, Bergmann MW, El-Armouche A, Zimmermann WH, Zelarayan LC. The four and a half LIM-domain 2 controls early cardiac cell commitment and expansion via regulating beta-catenin-dependent transcription. *Stem Cells*. 2013; 31(5):928-940.

Noack C, **Zafiriou MP**, Schaeffer HJ, Renger A, Pavlova E, Dietz R, Zimmermann WH, Bergmann MW, Zelarayan LC. Krueppel-like factor 15 regulates Wnt/beta-catenin transcription and controls cardiac progenitor cell fate in the postnatal heart. *EMBO Mol Med*. 2012; 4(9):992-1007.

Zafiriou MP, Zelarayan LC, Noack C, Renger A, Nigam S, Siafaka-Kapadai A. Hepoxilin A(3) protects beta-cells from apoptosis in contrast to its precursor, 12-hydroperoxyeicosatetraenoic acid. *Biochim Biophys Acta*. 2011; 1811(6):361-369.

Deva R, Sczepanski M, Saha S, **Zafiriou MP**, Kerstin N, Jakobsson PJ, Inoue Y, Nigam S. C. albicans activates cyclooxygenase but not its product prostaglandin E(2) in HPV 16-stabilized cells. *Eur J Obstet Gynecol Reprod Biol*. 2010; 152(2):205-209.

Zelarayan L, Renger A, Noack C, **Zafiriou MP**, Gehrke C, van der Nagel R, Dietz R, de Windt L, Bergmann MW. NF-kappaB activation is required for adaptive cardiac hypertrophy. *Cardiovasc Res*. 2009; 84(3):416-424.

Zelarayan LC, Noack C, Sekkali B, Kmecova J, Gehrke C, Renger A, **Zafiriou MP**, van der Nagel R, Dietz R, de Windt LJ, Balligand JL, Bergmann MW. Beta-Catenin downregulation attenuates ischemic cardiac remodeling through enhanced resident precursor cell differentiation. *Proc Natl Acad Sci U S A*. 2008; 105(50):19762-19767.

Nigam S, **Zafiriou MP**, Deva R, Kerstin N, Geilen C, Ciccoli R, Sczepanski M, Lohse M. Hepoxilin A3 (HXA3) synthase deficiency is causative of a novel ichthyosis form. *FEBS Lett*. 2008; 582(2):279-285.

Zafiriou MP, Deva R, Ciccoli R, Siafaka-Kapadai A, Nigam S. Biological role of hepoxilins: upregulation of phospholipid hydroperoxide glutathione peroxidase as a cellular response to oxidative stress? *Prostaglandins Leukot Essent Fatty Acids*. 2007; 77(3-4):209-215.

Ciccoli R, Sahi S, Singh S, Prakash H, **Zafiriou MP**, Ishdorj G, Kock JL, Nigam S. Oxygenation by COX-2 (cyclo-oxygenase-2) of 3-HETE (3-hydroxyeicosatetraenoic acid), a fungal mimetic of arachidonic acid, produces a cascade of novel bioactive 3-hydroxyeicosanoids. *Biochem J*. 2005; 390(Pt 3):737-747.

Karava V, **Zafiriou PM**, Fasia L, Anagnostopoulos D, Boutou E, Vorgias CE, Maccarrone M, Siafaka-Kapadai A. Anandamide metabolism by *Tetrahymena pyriformis* in vitro. Characterization and identification of a 66 kDa fatty acid amidohydrolase. *Biochimie*. 2005; 87(11):967-974.

Reviews

*equal contribution

Wrobel C*, **Zafeiriou MP***, Moser T. Understanding and Treating Paediatric Hearing Impairment, *EbioMedicine* 2021; 63:103171

Nigam S, **Zafiriou MP**, Deva R, Ciccoli R and Roux-Van der Merwe R. Structure, Biochemistry and Biology of Hepoxilins: an update (invited minireview) *FEBS Journal*, 2007; 274: 3503-12S.

Nigam S and **Zafiriou MP** Hepoxilin A₃ Synthase (invited review) *Biochem. Biophys. Res. Commun.* 2005; 338:161-168.

Editorials and book chapters

Zafeiriou MP. The Erythropoietin System Protects the Heart Upon Injury by Cardiac Progenitor Cell Activation. *Vitam Horm.* 2017; 105:233-248.

Zelarayan LC, **Zafiriou MP**, Zimmermann WH. Emerging Concepts in Myocardial Pharmacoregeneration. In *Regenerative Medicine- From Protocol to Patient*, Steinhoff G, Second edition, 2013; 25. Netherland: Springer

Zelarayan LC, Noack C, **Zafiriou MP**, Renger A, Bergmann MW (2010) Wnt signaling molecules in left ventricular remodeling: focus on dishevelled 1. *Hypertension* 2010; 55: 852-854

Patents

Zafeiriou MP, Zelarayan LC and Zimmermann WH "Prevention Or Treatment Of Cardiac Arrhythmia And Sudden Cardiac Death". EP1802864.7

Zafeiriou MP, Zimmermann WH "Methods of Producing Bioengineered Neuronal Organoids (BENOs) and uses thereof". EP17175874.1.