PhD course "Chemistry and biology of regulatory heme: demystification of a multifaceted molecule"

CURRICULUM VITAE

Diana Imhof

1 Short CV

RESEARCH INTERESTS

Peptide and protein biochemistry, peptide chemistry (in particular solid-phase synthesis) and analysis with focus on multiple disulfide-bonded peptides, peptide folding studies, combinatorial peptide libraries and screening, bioactive peptides and peptide complexes as tools for structure-function relationship studies, peptide therapeutics, protein-protein and protein-ligand (e.g. heme) interactions, peptides as tools

ACADEMIC EDUCATION AND DEGREES

1990 – 1994	Chemistry studies at University of Jena
1994 – 1995	Biology studies at Dublin City University, Dublin/Ireland
1996	Diploma in Chemistry, Chem.-Geol. Faculty, University of Jena

SCIENTIFIC EDUCATION AND DEGREES

1996 – 1999	Doctoral studies in Biochemistry, Biol.-Pharm. Faculty, University of Jena
1999	PhD in Biochemistry (*summa cum laude*), University of Jena
2008	Habilitation, *venia legendi* in Biochemistry, University of Jena

PROFESSIONAL CAREER

2017 –	Head of the Core Facility for Protein Synthesis and Bioanalytics, Univ. of Bonn
2016 –	Professor (W3) for Pharmaceut. Biochemistry and Bioanalytics, Univ. of Bonn
2011 – 2016	Professor (W2) for Medicinal Chemistry and Drug Synthesis, Univ. of Bonn

2007 – 2010	Head of Junior Research Group "Peptide Chemistry", CMB/University of Jena
2005 – 2006	HWP grant for habilitation, CMB/University of Jena
2004 – 2005	Postdoc with Prof. Dr. Dehua Pei, Johnston Laboratory, Department of Chemistry, Ohio State University, Columbus, USA
2003 − 2004	Research assistant, University of Jena
2002	Research assistant, University Hospital Jena
2001	HWP grant for habilitation, University of Jena
2000 − 2001	Head of Service Unit "Peptide Libraries" of IZKF, University Hospital Leipzig
1999 – 2000	Research assistant, University of Jena

SERVICE TO SCIENTIFIC COMMUNITY AND HONOURS (SELECTION)

9/1994-6/1995	Foreign exchange student, Erasmus program, DCU Dublin, Ireland
6/2000	PhD award of the Faculty of Biology and Pharmacy, University of Jena
7/2001-12/2001	Research grant for habilitation, "Hochschulwissenschaftsprogramm zur Nachwuchs- und Frauenförderung des Freistaates Thüringen"
2005-2006	Research grant for habilitation, "Hochschulwissenschaftsprogramm zur Nachwuchs- und Frauenförderung des Freistaates Thüringen"
2005, 2006	Grants of the Fonds der Chemischen Industrie
2015, 2018, 2022	DAAD travel/congress grants (invited lectures)
9/2011	Organizer of Workshop "Biomolecules in Ionic Liquids: synthesis, structure elucidation, biological activity" within DFG SPP1191, Heimerzheim
1/2012-6/2015	Finance representative, Pharmacy, University of Bonn, deputy since 7/2015
4/2014-9/2015	Member of the senate, University of Bonn
5/2020-6/2023	Member (Vice chair) of the Gender Equality Committee, University of Bonn
2014-15/2020-21	Executive director, Pharmaceutical Institute, deputy 2015-16, 2021-23
since 8/2020	Founder and patron of the network WHATS-UB (Women in higher education and top science – University of Bonn), University of Bonn

2 Bibliometric data

> 130 publications, 1 text book, 2 book chapters, >2500 citations, > 30 invited lectures/oral presentations

3 Selection of the 10 most project-relevant publications

[1] Kühl, T., Wißbrock, A., Goradia, N., Sahoo, N., Galler, K., Neugebauer, U., Popp, J., Heinemann, S.H., Ohlenschläger, O., Imhof, D. (2013) Analysis of Fe(III) heme binding to cysteine-containing heme regulatory motifs in proteins, ACS Chem. Biol., 8(8), 1785-1793. Doi: 10.1021/cb400317x

[2] Wißbrock, A., Kühl, T., Silbermann, K., Becker, A. J., Ohlenschläger, O., Imhof, D. (2017) Synthesis and evaluation of Abeta-derived and Abeta-independent enhancers of the peroxidase-like activity of heme. J. Med. Chem., 60(1), 373-385. Doi: 10.1021/acs.jmedchem.6b01432

[3] Kumar, A., Wißbrock, A., Goradia, N., Bellstedt, P., Ramachandran, R., Imhof, D., Ohlenschläger, O. (2018) Heme interaction of the intrinsically disordered N-terminal peptide segment of human cystathionine-β-synthase. Sci. Rep., 8, 2474. Doi: 10.1038/s41598-018-20841-z

[4] Wißbrock, A., Goradia, N.B., Kumar, A., Paul George, A.A., Kühl, T., Bellstedt, P., Ramachandran, R., Hoffmann, P., Galler, K., Popp, J., Neugebauer, U., Hampel, K., Zimmermann, B., Adam, S., Wiendl, M., Krönke, G., Hamza, I., Heinemann, S.H., Frey, S., Hueber, A.J., Ohlenschläger, O., Imhof, D. (2019) Structural insights into heme binding to IL-36α proinflammatory cytokine. Sci. Rep., 9, 16893. Doi: 10.1038/s41598-019-53231-0

[5] Humayun, F., Domingo-Fernandez, D., Paul George, A.A., Hopp, M.-T., Syllwasschy, B.F., Detzel, M.S., Hoyt, T.C., Hofmann-Apitius, M., Imhof, D. (2020) A computational approach for mapping heme biology in the context of hemolytic disorders. Front. Bioeng. Biotechnol., 8, 74. Doi: 10.3389/fbioe.2020.00074

[6] Paul George, A.A., Lacerda, M., Syllwasschy, B.F., Hopp, M.-T., Wißbrock, A., Imhof, D. (2020) HeMoQuest: A webserver for qualitative prediction of transient heme binding to protein motifs. BMC Bioinformatics, 21, 124. Doi: 10.1186/s12859-020-3420-2

[7] Hopp, M.-T., Alhanafi, N., Paul George, A.A., Hamedani, N. S., Biswas, A., Oldenburg, J., Pötzsch, B., Imhof, D. (2021) Molecular insights and functional consequences of the interaction of heme with activated protein C. Antioxid. Redox Signal., 34(1), 32-48. Doi: 10.1089/ars.2019.7992

[8] Hopp, M.-T., Domingo-Fernández, D., Gadiya, Y., Detzel, M.S., Graf, R., Schmalohr, B.F., Kodamullil, A.T., Imhof, D., Hofmann-Apitius, M. (2021) Linking COVID-19 and heme-driven pathophysiologies: A combined computational-experimental approach. Biomolecules, 11, 644. Doi: 10.3390/biom11050644

[9] Hopp, M.-T., Rathod, D., Imhof, D. (2022) Host and viral proteins involved in SARS-CoV-2 infection differentially bind heme. Protein Sci., e4451. Doi: 10.1002/pro.4451

[10] Mubeen, S., Domingo-Fernández, D., Días del Ser, S., Solanki, D. M., Kodamullil, A. T., Hoffmann-Apitius, M., Hopp, M.-T., Imhof, D. (2022) Exploring the complex network of heme-triggered effects on the blood coagulation system. J. Clin. Med., 11(19), 5975. Doi: 10.3390/jcm11195975