

Curriculum vitae – Michael O. Glocker

Address (work):

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Personal Data:

Birthdate: 27th August 1960
Place of birth: Altheim, Kreis Biberach
Family status: married, 2 children
Citizenship: German

Academic Training:

14. January 1998 Habilitation, Venia legendi: "Analytical Chemistry", University of Konstanz
10. July 1990 Promotion (Organic Chemistry) "summa cum laude", University of Konstanz
12. June 1987 University Diploma (Chemistry / Biology) "with honor", University of Konstanz
21. June 1980 High School Diploma, Gymnasium Ehingen

Professional experience:

since 10 / 1999	Professorship	Director of the Proteome Center Rostock University of Rostock, Medical Faculty
2 / 1998 - 9 / 1999	Assistant	University of Konstanz, Faculty of Chemistry
4 / 1994 - 1 / 1998	Habilitand	University of Konstanz, Faculty of Chemistry
10 / 1992 - 3 / 1994	Scientific Fellow	University of Konstanz, Faculty of Chemistry
8 / 1990 - 9 / 1992	Postdoctoral Fellow	Oregon State University, USA

Research stays:

8 / 2017	Guest Professor	Al.I.Cuza Universität, Jasy, Romania
8 / 2007 - 9 / 2012	Guest Professor	Shanghai Center for Bioinformation Technology, CN
8 / 2006	Guest Researcher	Oregon State University, USA
9 / 1999	Guest Professor	Al.I.Cuza Universität, Jasy, Romania
5 / 1996 - 6 / 1996	Guest Researcher	Oregon State University, USA
8 / 1995	Guest Researcher	Oregon State University, USA

Honors and awards:

3 / 2010 Award of Excellence for Distinguished Contribution in Mass Spectrometry-Based Proteomics from the Romanian Mass Spectrometry Society
11 / 2003 Member of the distinguished scientific association „Max-Bergmann-Kreis“
9 / 2003 Cooperation agreement with the „Koichi Tanaka Mass Spectrometry Research Laboratory, Kyoto, Japan
3 / 2003 Proteome Center Rostock becomes reference laboratory for Shimadzu
8 / 2002 winner: Gründerflair contest Mecklenburg-Western Pommerania
3 / 1999 Distinguished lecture at the DGMS conference
4 / 1994 - 3 / 1997 DFG-Habilitation stipend

Teaching obligations:

MD and PhD curriculum

Initiator and speaker of the "Curriculum Committee" of the structured MD and PhD curriculum
"Molecular Mechanisms of Regenerative Processes" of the University Medicine Rostock

Master curriculae

Medicinal Biotechnology (University Medicine Rostock)
Chemistry (Natural Science Faculty, University of Rostock)
Molecular biology and Biochemistry (Natural Science Faculty, University of Rostock)

Bachelor curriculae

Medicinal Biotechnology (University Medicine Rostock)
Chemistry (Natural Science Faculty, University of Rostock)
Biosciences (Natural Science Faculty, University of Rostock)

Membership in Scientific Associations:

Deutsche Gesellschaft für Massenspektrometrie (DGMS)
Gesellschaft Deutscher Chemiker (GDCh)
The American Society for Mass Spectrometry (ASMS)
The European Peptide Society (EPS)
Deutsche Gesellschaft für Proteomforschung (founding member; DGPF)
Max-Bergmann-Kreis (MBK)
Proteome Alliance e.V. (board member; PA)
Romanian Society for Mass Spectrometry (founding member; RSMS).

Further Profesional Activities:

since 2004	Head of the board of the "Proteome Alliance e.V.
since 2005	Editorial Board Member „European Journal for Mass Spectrometry“
since 2008	Co-Speaker "Special Interest Group - Affinity Mass Spectrometry" of the German Mass Spectrometry Society (DGMS)
since 2010	Speaker of the structured MD and PhD curriculum "Molecular Mechanisms of Regenerative Processes" of the University of Rostock
since 2018	Scientific Advisory Board Member "Proteomics Centre at the University of Victoria, Canada"
2004 - 2006	Advisory Board Member "PhD Graduate School of Metabolism" University of Southern Denmark
2008 - 2012	Scientific adviser for the Beckman Research Institute / City of Hope graduate school, USA
2010	Member of the Selection Committee of the "Zukunftskolleg at the University of Konstanz", Germany
2010 - 2015	Scientific Advisory Board Member "Proteomics Centre at the University of Victoria, Canada"
2010 - 2012	Scientific adviser for the University of British Columbia, Canada
2012	Vice speaker of the Graduate Academy of the University of Rostock

Publications (selected - out of 181 entries in Google scholar):

(<https://scholar.google.de/citations?user=W61PGToAAAAJ&hl=de>)

3172 citations ; h-factor: 31

1. M. Przybylski and M.O. Glocker (1996). Electrospray Mass Spectrometry of Supramolecular Complexes of Biomacromolecules - New Analytical Perspectives for Supramolecular Chemistry and Molecular Recognition Processes. **Angew. Chem. Int. Ed. Engl.** 108, 878-899. (404 citations)
2. A. Sinz, M. Bantscheff, S. Mikkat, B. Ringel, S. Drynda, J. Kekow, H.-J. Thiesen, and M.O. Glocker (2002). Mass Spectrometric Proteome Analyses of Synovial Fluids and Plasmas from Patients Suffering from Rheumatoid Arthritis and Comparison to Reactive Arthritis or Osteoarthritis. **Electrophoresis**, 23, 3445-3456. (206 citations)
3. M.O. Glocker, C. Borchers, W. Fiedler, D. Suckau and M. Przybylski (1994). Molecular Characterization of Surface Topology in Protein Tertiary Structures by Amino-acylation Reactions and Mass Spectrometric Peptide Mapping. **Bioconj. Chem.**, 5, 583-590. (153 citations)
4. S. Drynda, B. Ringel, M. Kekow, C. Kühne, A. Drynda, M.O. Glocker, H.-J. Thiesen and J. Kekow (2004). Proteome analysis reveals disease-associated marker proteins to differentiate RA patients from other inflammatory joint diseases with the potential to monitor anti-TNF α therapy. **Pathology – Research and Practice**. 200, 165-171. (112 citations)
5. M.O. Glocker, S.H.J. Bauer, J. Kast, J. Volz and M. Przybylski (1996). Characterization of Specific Noncovalent Protein Complexes by UV-MALDI-Mass Spectrometry. **J. Mass Spectrom.** 31, 1221-1227. (103 citations)
6. S. Barbirz, U. Jakob and M.O. Glocker (2000). Mass spectrometry uncovers disulfide bond structure alteration as a molecular mechanism for functional regulation of heat shock protein 33 (Hsp33). **J. Biol. Chem.**, 275, 18759-18766. (87 citations)

Book chapters / reviews (selection):

- 2018 K.F.M. Opuni, M. Al-Majdoub, Y. Yefremova, R.F. El-Kased, C. Koy, and M.O. Glocker (2018). Mass Spectrometric Epitope Mapping. **Mass Spectrom. Rev.**, 37, 229-241.
- 2018 J.C. Finke, J. Yang, M. Bredell, U. von Fritschen, and M.O. Glocker (2018). Plasma cytokine and growth factor profiling during free flap transplantation. In: **Issues in Flap Surgery**, Dr. Sherif Amr (Ed.), publisher: InTech Open, London, UK, Chapter 1, pages 3-24.
- 2017 Y. Yefremova, B.D. Danquah, K.F.M. Opuni, R.F. El-Kased, C. Koy, and M.O. Glocker (2017) Mass Spectrometric Characterization of Protein Structures and Protein Complexes in Condensed and Gas Phase. **Eur. J. Mass Spectrom.**, 23, 445-459.
- 2016 M.O. Glocker, M. Wölter, M. Ruß, K. Bollig, and U. Pecks (2016). Protein Profiling from Dried Serum Spots. Towards Risk Assessment of Preterm Newborns by Mass Spectrometry. **GIT Laboratory Journal**. 5-6, 22-24.
- 2016 M.O. Glocker, M. Wölter, M. Ruß, K. Bollig, and U. Pecks (2016). Protein-Profiling anhand von getrockneten Serum-Spots. **GIT Labor-Fachzeitschrift**, 60/1, 36-38.
- 2014 M.O. Glocker, C. Röwer, M. Wölter, C. Koy, T. Reimer and U. Pecks (2014). Multiparametric analysis of mass spectrometry-based proteome profiling in gestation-related diseases. In: **Handbook of Spectroscopy**, 2nd ed., Wiley-VCH GmbH & Co. KgaA. G. Gauglitz and D.S. Moore (eds.). Part IV: Methods 3: Mass Spectrometry, Chapter 12, pages 407–428.
- 2012 C. Röwer, C. Koy, M. Ruß, J.P.C. Vissers, M. Kipping, M.O. Glocker (2012). Toponostics: Klinische Proteomforschung Polygener Tumorerkrankungen. **BIOspektrum**, 18, 626-628.
- 2006 M.O. Glocker, R. Guthke, J. Kekow und H.-J. Thiesen. Rheumatoid Arthritis, a Complex Multifactorial Disease - On the Way toward Individualized Medicine. **Medicinal Research Reviews**, 26, 63-87.
- 2005 T. Deierling, C. Koy, H. Montgomery, M. Resch and M.O. Glocker (2005). Höchste Sequenzabdeckung gefordert – Massenspektrometrische Strukturcharakterisierung Gel-separierter Proteine. **BIOspektrum**, 11, 762-766.

- 2003 C. Koy, M. Mreyen, M. Resch und M. O. Glocker. Anwendung Tandem-massenspektrometrischer Methoden zur Charakterisierung von Proteinpolymeren in der Klinischen Proteomforschung. **BIOspektrum**, Sonderausgabe 2003, 521-523.
- 2001 M. Bantscheff und M. O. Glocker. MALDI-Massenspektrometrie in der Proteomforschung. **BIOspektrum**, 7, 250-252.
- 2000 M.O. Glocker, B. Ringel, L. Götze, P. Lorenz, S. Wandschneider, V. Fehring, B. Damm, M. Bantscheff, S.M. Ibrahim, M. Löhr and H.-J. Thiesen (2000). Klinische Proteomforschung. in: **Laborwelt** (Gabrielczyc, S., Ed.) Verlag der BIOCROM AG, Berlin, pp 7-12.
- 2000 J. Kekow, M.O. Glocker and H.-J. Thiesen (2000). Neue Diagnose- and Therapieansätze für die rheumatoide Arthritis. **kliniker**, 8+9, 206-211.
- 2000 M.O. Glocker, A. Schönberger and H.-J. Thiesen (2000). Proteome-Alliance: Klinische Proteom-Analyse. Der BMBF-Leitprojektverband "Proteom-Analyse des Menschen". **BIOforum**, 5, 315-318.
- 2000 H.P. Happersberger, M. Bantscheff, S. Barbirz und M.O. Glocker. Multiple and subsequent MALDI-MS *on-target* chemical reactions for the characterization of disulfide bonds and primary structures of proteins. in: **Protein and Peptide Analysis: Advances in the Use of Mass Spectrometry** (Chapman, J.R., Ed.), Methods in Molecular Microbiology, Humana Press Inc., Totowa, NJ, pp 167-183.
- 1999 M.O. Glocker, H.P. Happersberger, J. Stapleton and C. Cowgill (1999). Characterization of the Folding Pathway of recombinant human Macrophage-Colony Stimulating-Factor (rhM-CSF) by Bis-cysteinylyl Modification and Mass Spectrometry, in: **Peptides** (Hrsg.: S. Bajusz and F. Hudecz), Akadémiai Kiadó, Budapest, pp. 354-355.
- 1998 M.O. Glocker, M.R. Jetschke, S.H.J. Bauer und M. Przybylski. Characterization of Tertiary Structure States and Specific Noncovalent Complexes of Proteins by UV-Matrix-Assisted Laser-Desorption / Ionization Mass Spectrometry, in **New Methods for the Study of Biomolecular Complexes**, A NATO ASI Series C: vol. 510 (Hrsg.: W. Ens et al.), Kluwer Academic Publ., Dordrecht, pp 193-208.
- 1998 M. Przybylski, V. Schnaible, J. Kast, M. Blüggel, J. Michels, A. Wattenberg, T. Fligge, D. Forst, K. Diederichs, U. Nestel, C. Zeth, M.O. Glocker and W. Welte (1998). Approaches to the Characterization of Tertiary and Supramolecular Protein Structures by Combination of Protein Chemistry and Mass Spectrometry, in **New Methods for the Study of Biomolecular Complexes**, A NATO ASI Series C: vol. 510 (Hrsg.: W. Ens et al.), Kluwer Academic Publ., Dordrecht, 17-43.
- 1998 W. Welte K. Diederichs, M. Przybylski, M.O. Glocker, R. Benz and J. Breed (1998). X-Ray Crystallographic and Mass Spectrometric Structure Determination and Functional Characterization of Succinylated Porin from *Rhodobacter capsulatus*: Implications for Ion Selectivity and Single-Channel Conductance, in **New Methods for the Study of Biomolecular Complexes**, A NATO ASI Series C: vol. 510 (Hrsg.: W. Ens et al.), Kluwer Academic Publ., Dordrecht, 54-71.
- 1996 M. Przybylski and M.O. Glocker (1996). "Electrospray Mass Spectrometry of Supramolecular Complexes of Biomacromolecules - New Analytical Perspectives for Supramolecular Chemistry and Molecular Recognition Processes", **Angew. Chem.** 35, 807-899.
- 1995 M. Przybylski, M.O. Glocker, C. Maier, C. Borchers, E. Dürr, W. Fiedler, J. Kast, H. Wendt and H.R. Bosshard (1995). Direct Characterization of Supramolecular Complexes of Polypeptides and Proteins by Electrospray Mass Spectrometry, in **Peptides**, (Hrsg.: H.L.S. Maia), Escom Science Publ., Leiden, S. 42-43.
- 1995 M. Przybylski, C. Borchers, M. Jetschke, R. Schuhmacher, W. Fiedler and M.O. Glocker (1995). Molecular Approaches for the Characterization of Protein Tertiary Structures by Selective Chemical Modification and Mass Spectrometric Peptide Mapping, in **Peptides**, (Hrsg.: R.S. Hodges and J.A. Smith), Escom Science Publ., Leiden, S. 254-256.

Plenary and key-note lectures (selection):

- 22.8.2018 Hochschule Rhein Main, Rüsselsheim, Germany "Mass Spectrometric Tools for Identification and Affinity Determination of Antibody Epitopes" (plenary speaker)
- 9.7.2018 2nd Intl. Summer School: Proteomics – from Introduction to Clinical Application, Iasi, Romania "Higher order structure of multi-domain proteins" (invited lecture)
- 11.6.2018 Beckman Institute, City of Hope, CA, USA "How to Determine Binding Constants of Protein Complexes in the Gas Phase" (invited lecture)
- 19.-21.2.2018 MS Pharma Network 2018 "ITEM-TWO: Simultaneous characterization of specificities and affinities of epitope – antibody reactivities in the gas phase by nano-electrospray mass spectrometry" (invited speaker)
- 3.11.2017 Hochschule RheinMain, Rüsselsheim, Germany "Immuno- Analytical Tumor Diagnostics - Crème de la Crème or Catch as Catch can?" (invited lecture)
- 12.7.2017 1st Intl. Summer School: Proteomics – from Introduction to Clinical Application, Iasi, Romania "Higher order protein structure and dynamics" (invited lecture)
- 30.5.2017 University of Washington Bothell, Seattle, USA "Determining Binding Constants of Protein Complexes in the Gas Phase by Electrospray Mass Spectrometry" (invited lecture)
- 29.5.2017 Stanford Medical School, Stanford, USA "Determining Binding Constants of Protein Complexes in the Gas Phase by Electrospray Mass Spectrometry" (invited lecture)
- 21.3.2017 3rd Annual COST Conference Heraklion, Crete "Mass Spectrometric Structural and Functional Characterization of Antibody-Protein Complexes in the Gas Phase" (invited lecture)
- 17.11.2016 6th Symposium on Structural Proteomics, Dortmund, Germany "What Mass Spectrometry Can Tell Us About *In-Solution* Protein Complex Stabilities - And Why We Want To Know Them" (invited lecture)
- 18.6.2016 Karolinska Institute Stockholm, Sweden "The mammalian immune system and the role of antibodies in disease diagnostic" (invited lecture)
- 29.10.2015 Heinrich Pette Institut Hamburg, Germany "Next Generation Autoimmune Disease Diagnostics Based on Mass Spectrometric and Peptide Chip Epitope Analysis" (invited lecture)
- 29.9.2015 HUPO workshop Affinity-Mass Spectrometry, Vancouver, Canada "Risk Assessment of Preterm Newborns by Affinity-Mass Spectrometry" (workshop organizer)
- 28.9.2015 University of Washington Bothell, Seattle, USA "Risk Assessment of Preterm Newborns by Affinity Mass Spectrometry and In-silico Approaches for Analyzing Molecular Recognition" (invited lecture)
- 10.9.2015 Jena Bioscience Seminar, Jena, Germany "Novel Developments and Clinically-relevant Applications with Mass Spectrometric Epitope Mapping" (invited lecture)
- 12.9.2014 University of Washington Bothell, Seattle, USA "Toponostics - Clinical Proteome Profiling Strategies" (invited lecture)
- 2.4.2014 analytica – Clinical Proteomics. München, Germany "Diagnostics of Pregnancy Complications by Affinity-Mass Spectrometry" (session opener)
- 21.1.2014 Symposium on Gynecology and Reproductive Medicine University Clinic RWTH Aachen, Aachen, Germany "Clinical Proteome Profiling Strategies" (invited lecture)
- 27.3.2013 InselSpital Universitätsklinik Bern, Bern, Switzerland Preeclampsia platform meeting "Proteomic strategies in preeclampsia" (invited lecture)
- 25.5.2012 2nd Symposium on Structural Proteomics, Vancouver, Canada "Glycosylation-heterogeneities of Apolipoprotein C-III in Umbilical Cord Blood Samples differentiate IUGR Infants from Inconspicuous Neonates" (invited lecture/M. Wölter)
- 3.5.-6.5.2011 2nd International Conference of the Romanian Society for Mass Spectrometry (RSMS), Timisoara, Romania. "Toponostics: From a Mass Spectrometry-derived Quantitative Proteome Signature to Tissue Image Analysis." (keynote lecture)
- 25.4.-29.4.2010 1st International Conference of the Romanian Society for Mass Spectrometry (RSMS), Sinaia, Romania. "Next generation autoimmune disease diagnostics

- based on mass spectrometric and peptide chip epitope analysis - approaching individualized medicine." (keynote lecture)
- 30.8.-4.9.2009 International Society for Mass Spectrometry (IMSC), Bremen, Germany. "Mass Spectrometric Epitope Analysis of Autoantigens and Applications to Autoimmune Disease Diagnostics." (keynote lecture)
- 31.1.2008 National Institute of Health (NIH), Bethesda, USA "Peptide Signatures of Mammary Carcinoma – label-free quantitation by LC-MS^E in comparison to 2-D PAGE - MALDI-TOF PMF." (invited lecture)
- 29.1.2008 Massachusetts Institute of Technology (MIT), Cambridge, USA. Label-free Quantification and Identification Proteomics Symposium "Breast Cancer Tissue Profiling - On the Way to Clinical Marker Profiles." (invited lecture)
- 30.9.-13.10.2007 DAAD Summer School: Methods from Mathematics and Computer Science for Pattern Recognition in Biology, Shanghai, China "Developments in Mass Spectrometry-based Proteomics: Applications to Polygenic Diseases."
- 14.5.-18.5.2006 Polish Society of Mass Spectrometry, Ustron, Poland: "Molecular Signatures of Polygenic Diseases - The Role of Mass Spectrometric Proteome Analysis in Individualized Medicine." (plenary lecture)
- 24.2.-26.2.2005 European Workshop on Rheumatology Research, Glasgow, UK: "Molecular Signatures of Rheumatoid Arthritis Characterized by Transcriptome and Proteome Analysis." (key note lecture)
- 5.2.2004 ETH Zürich, Pharma-Day '04, Zurich, Switzerland: "From Clinical Proteome Research to Individualized Medicine" (key note lecture).
- 6.7.-8.7.2003 The Royal Society of Chemistry "Proteomics: The Chemical Tools and Challenges", Cambridge, UK: "Combined proteome and transcriptome analyses to elucidate disease-specific gene expression patterns in patients suffering from rheumatoid arthritis - Towards a "Systems Biology" approach." (invited lecture)
- 21.11.-24.11.2002 1st HUPO World Congress, Paris, France: "Combined transcriptome and proteome approaches to elucidate gene expression patterns of synovial tissues from patients with rheumatoid arthritis versus osteoarthritis." (invited lecture)