

Name RETH, Michael	Position Title Professor emeritus (C4) Department of Rheumatology and Clinical Immunology and Institute of Biology III University of Freiburg, Germany
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EDUCATION/TRAINING

Institution and Location	Degree	Year(s)	Field of Study
University of Cologne, Germany	Habilitation	1988	Genetics
University of Cologne	Dr. rer. nat.	1981	Immunol./Genetics
University of Cologne	Diploma	1971-1977	Biology

A. Positions and Honours

Employment/Experience

2023-2029	Scientific member of the Medical Centre of the University of Freiburg
2021-2023	Senior Professor at the University of Freiburg
2021-2023	Co-Speaker of the Centre for Biological Signalling Studies (BIOSS) and AI of CIBSS funded by the excellence program of the German government
2007-2020	Speaker of BIOSS
1996-2021	Full Professor in Molecular Immunology, University of Freiburg
1989-1996	Associate Professor (C3), MPI for Immunobiology, Freiburg
1985-1988	Group Leader, Institute of Genetics, University of Cologne
1982-1985	Postdoctoral Fellow (DFG), Columbia University, New York

Honors, Awards and Scholarships

2018	Elected member of the National Academy of Sciences (NAS)
2015	Jürgen Manchot Prize
2014	Paul Ehrlich Prize
2012	ERC Advanced Grant (Nanoscale analysis of protein islands on lymphocytes)
2009	Schering-Plough Prize
2006	Elected as member of the Leopoldina
1995	Gottfried-Wilhelm-Leibniz Prize of the DFG
1995	Elected as EMBO-member
1988	Heinz-Maier-Leibnitz Prize for Immunogenetics
1982	DFG Postdoctoral Fellowship

Other Scientific Activities

2008	Honorary Member of the American Association of Immunologists
2005-present	Member of the Advisory Board of the of the Program for Cellular and Molecular Medicine (PCMM), Harvard University, USA
2003-present	Editorial Board, Annual Review of Immunology
1992-2007	Editorial Board, European Journal of Immunology
1990-present	Transmitting Editor, International Immunology

Patents

2006: Branched proximity hybridization assay (Prof. Reth/ Dr. Yang)
Project No: ZEE20150625
<https://patents.google.com/patent/WO2016207436A1/en>

2015: LED Thermo Flow (Prof. Reth/ Optobiolabs)
Project No: ZEE20150318

Selected publications

Reth, M. (2023). "Discovering immunoreceptor coupling and organization motifs." *Front Immunol* **14**: 1253412.

Saltukoglu D, Özdemir B, Holtmannspötter M, Reski R, Piehler J, Kurre R and **Reth M.** Plasma membrane topography governs the three-dimensional dynamic localization of IgM B cell receptor clusters. *EMBO J.* 2023 Jan 3 ;e112030, doi: 10.15252/embj.2022112030.

Dong Y, Pi X, Bartels-Burgahn F, Saltukoglu D, Liang Z, Yang J, Alt FW, **Reth M,** Wu H. Structural principles of B cell antigen receptor assembly. *Nature.* 2022 Oct 13. doi: 10.1038/s41586-022-05412-7

Hossain, Md. A., Anasti K, Watts, B., Cronin, K, Derking, R., Groschel, B, Kane, AP, Edwards, R.J. Easterhoff, D., Zhang, J, Rountree, W, Ortiz, Y, Saunders, K, Schief, W, Sanders, R, Verkoczy, L, **Reth, M,** Alam, M. B cells expressing IgM B cell receptors of HIV-1 neutralizing antibodies discriminate antigen affinities by sensing binding association rates. *Cell Reports* 39, 111021 (2022).

Becker, M., Hobeika E., Jumaa H., **Reth M.,** and Maity, P. C. (2017). CXCR4 signaling and function require the expression of the IgD-class B-cell antigen receptor. *PNAS* 1621512114.

Volkman, C., Brings, N., Becker, M., Hobeika, E., Yang, J., and **Reth, M.** (2016). Molecular requirements of the B cell antigen receptor for sensing monovalent antigens. *EMBO J.* 35: 2371-2381.

Busch K, Klapproth K, Barile M, Flossdorf M, Holland-Letz T, Schlenner SM, **Reth M.,** Höfer T, Rodewald HR. (2015). Fundamental properties of unperturbed haematopoiesis from stem cells in vivo. *Nature* 518(7540): 542-546.

Maity, P. C., A. Blount, H. Jumaa, O. Ronneberger, B. F. Lillemeier and **M. Reth** (2015). "B cell antigen receptors of the IgM and IgD classes are clustered in different protein islands that are altered during B cell activation." *Sci Signal* 8(394): ra93.

Kläsener K, Maity PC, Hobeika E, Yang J, **Reth M.** (2014). B cell activation involves nanoscale receptor reorganizations and inside-out signaling by Syk. *Elife* 3: e02069.

Reth M. Matching cellular dimensions with molecular sizes. *Nat Immunol.* 2013 Aug;14(8):765-7. doi: 10.1038/ni.2621.

Reth, M. Pillars of Immunology article. (2014). *J Immunol* 192(9):415-416. Reprint of "Antigen receptor tail clue". *Nature* (1989).338:383-384.

Yang, J., and **Reth, M.** (2010). Oligomeric organization of the B-cell antigen receptor on resting cells. *Nature* 467(7314): 465-469.

Yang J, **Reth M.** The dissociation activation model of B cell antigen receptor triggering. *FEBS Lett.* 2010;584(24):4872-7.