

Curriculum Vitae

Name & Address

Maria Sibilía – *Professor for Cellular and Molecular Tumorbiology*

Current Position: Head of the Institute of Cancer Research

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Main Research Interests

My group employs genetically engineered mouse models (GEMMs), human tumor patient material and primary cell cultures as model systems to unravel the molecular mechanisms leading to inflammatory diseases and cancer focusing especially on squamous cell carcinomas as well as liver and colorectal cancers. Our long-standing interest lies in understanding how EGFR signaling pathways lead to tumor development. We investigate the cell-specific role of EGFR signaling in cancer and tumor stromal cells and their complex interaction and have made major discoveries in this field. Moreover, we aim to understand how inflammatory cells in particular macrophages and plasmacytoid Dendritic Cells (pDC) influence inflammatory diseases and affect tumor development and regression. We exploit novel concepts to modulate tumors to become more sensitive to current immunomodulatory therapies with the ultimate goal is to translate this knowledge to patients to develop more effective personalized treatments for human cancer. The experimental strategies employed include molecular and biochemical approaches, various immunological assays, primary cell cultures and genetic engineering in mice.

Scientific Education and Career History

- Since 2010 Head of the Institute of Cancer Research, Department of Medicine I, Comprehensive Cancer Center (CCC), Medical University of Vienna, Vienna, Austria
- Since 2007 Full Professor for Cellular and Molecular Tumorbiology, Head of the Research Unit Cellular and Molecular Tumorbiology Institute for Cancer Research, Department of Medicine I, Medical University of Vienna, Vienna, Austria
- 2002 – 2007 Associate Professor at the Department of Dermatology, DIAID, University of Vienna Medical School, Vienna, Austria
- July 2002 Venia docendi (Habilitation) in Molecular Biology and Genetics
- 1999 – 2002 Assistant Professor at the Department of Dermatology, DIAID, University of Vienna Medical School, Vienna, Austria
- 1996 – 1998 Staff Scientist at the Institute of Molecular Pathology (IMP), Vienna, Austria
- 1993 – 1996 Postdoctoral fellow at the Institute of Molecular Pathology (IMP), Vienna, Austria
- 1990 – 1992 Ph.D. Studies in Genetics and Molecular Biology, University of Pavia and Department of Biotechnology and Virology, Brescia, Italy
- 1984 – 1989 Study of Biological Sciences, University of Pavia, Italy and Experimental thesis (Laurea), Department of Genetics and Microbiology, University of Pavia, Italy with distinction.
- 1970 – 1984 Schools in Thusis and Chur (GR), Switzerland

Experience in Scientific Management, Organization & Student Supervision (selected)

- Since 1999 Supervisor of 16 Postdocs, **15 PhD students** (10 already finished), **>20 Master**

students; Many PhD students and PostDocs received several prizes, awards and fellowships, like fellowships from l'Oréal Women in Science, DOC-Austrian Academy of Sciences. Sanofi-Aventis prize, best PhD thesis awards, poster and best oral presentation awards.

- Since 2007 Program Coordinator of the international PhD program "Inflammation and Immunity" (IAI), funded by the FWF after competitive selection and regular evaluation (3year interval).
- Since 2008 Academic Career Mentor for young women in science within the Gender Mainstreaming program of the Medical University of Vienna Member, Austria.
- Since 2009 Co-Organizer: Annual International PhD Symposium of the PhD program "Inflammation and Immunity", Austria (organized by PhD student)
- Since 2010 Coordinator of oncological research within the CCC and speaker of MedUniWien Oncology Cluster
- Since 2013 Meeting committee: Symposium on Hormones and Cell Regulation of the European Society of Endocrinology, Mont Ste Odile, Alsace, France
- 2015 Co-Organizer: European Cancer Congress 2015 of the European Cancer Organisation (ECCO), Vienna, Austria
- 2015 Organizer of the Symposium "Hormones, Metabolism and Cancer", 40th Symposium on Hormones and Cell Regulation, European Society of Endocrinology (ESE), Mont Ste Odile, France
- 2018 Organizer of the 2018 EMBO Conference on Cellular signalling, Dubrovnik/Cavtat, Croatia

Supervision of Doctoral (PhD) Thesis Students (past five years – 15 since 2000)

Nicole Amberg- PhD Student 2012-2016

"The effect of inflammation on stem cells of the skin"

Karin Komposch - PhD Student 2012-2016

"Role of EGFR in liver fibrosis and cancer"

Gabriel Stulnig - PhD Student 2012-2017 (thesis in preparation)

"Mechanisms of anti-tumor response mediated by Imiquimod"

Markus Linder - PhD Student 2013-2017 (thesis in preparation)

"The role of inflammatory cells in bone tumors and bone metastasis formation"

Jörg Klufa – PhD Student 2014-**ongoing**

"EGFR controls epidermal homeostasis and skin inflammation"

Philipp Novoszel - PhD Student 2014-**ongoing**

"AP1 proteins in skin tumor development and inflammation"

Invited Conference Lectures (5 recent selected)

- 2016 - Invited talk, EMBO meeting 'Cellular Signaling and Cancer Therapy', Cavtat, Croatia.
- 2017 - January: Invited talk at the EMBO Workshop "Cell death, inflammation and Cancer", Obergurgl, Austria.
- 2017 - Invited talk at 26th Conference of the Asian Pacific Association for the Study of the Liver (APASL Annual Meeting 2017), Shanghai, China.
- 2017 - Invited talk at the 2nd European Association for Cancer Research EACR-OECI Conference "Making it Personal: Cancer Precision Medicine", Amsterdam, Netherlands.
- 2017 - Invited talk, OMICs 2.0 conference "Advances in Biomedical Research" conference, Split, Croatia.

Honors & Awards

- 2005 - Alois-Sonnleitner Prize, Austrian Academy of Sciences (ÖAW) for outstanding achievements in Cancer Research
- 2012 - Elected as EMBO Member (European Molecular Biology Organization)
- 2012 - Prize of the City of Vienna for Medical Sciences
- 2013 - Elected corresponding member of the Austrian Academy of Sciences
- 2014 - Italian Order of knighthood: Commander from the Order of Merit of the Italian Republic for outstanding scientific achievements
- 2016 - ERC-Advanced Grant - 694883 TNT-Tumors

Member of Reviewing Panels, Editorial Boards, Scientific Organizations (5 selected)

- Reviewer for journals, including Nature Cell Biology, Nature Comm., Cell Reports, Cancer Cell, Dev. Cell, EMBO J., Cancer Res. MCB, JBC, JCB, Development, Oncogene, JID, JCI, Hepatology, Journal of Clinical Oncology (Editorial Board). etc.
- Frequent reviewer for various funding agencies: MRC (UK), Wellcome Trust, ERC, EMBO (fellowships), AICR, DFG, ISF, Dutch and Belgian Cancer Foundation
- Member of the Board (Kuratorium) of the Austrian Science Funds (FWF)
- Member of the selection committee for Austrian L'OREAL-women in science fellowships
- Selection Committee member of the EMBO Young Investigator Program (YIP), 2013 - 2016

Most Important Research Funding (past 5 years)

- 2017 - 2020, WWTF - Personalized medicine - 999 k€
- 2016 - 2021, ERC - TNT-Tumors - 2.500 k€
- 2012 - 2017, FWF (SFB) - Transmembrane transporters in health and disease - 589 k€
- 2007 – 2019, FWF (DK) - Inflammation and Immunity (+administration) - 1.920 k€
- 2009 - 2012, FFG GENAU III - Austrian Network for functional Mouse Genetics - 245 k€

Key International collaborations (5 selected)

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|-------------------------------|--|--------------------------------|
| • Marco Colonna | University of St Louis, USA | mcolonna@wustl.edu |
| • Erwin F. Wagner | CNIO, Madrid, ESP | ewagner@cnio.es |
| • Cedric Blanpain | University of Brussels, BEL | labblanp@ulb.ac.be |
| • Fortunato Ciardiello | University of Naples, ITA | fortunato.ciardiello@unina2.it |
| • Hongyang Wang | National Center for Liver Cancer, CHN, | hywangk@vip.sina.com |

List of Publications (2012 - 2016)

Scientific papers: **68** (plus 4 in revision, submitted, in preparation) with average impact factor **10,94** and on average **100,49** citations per publication, Reviews & Book Chapters: **12**, Invited lectures: **>130**, Patents: **4**

1. Amberg N, Holcman M, Stulnig G, Glitzner E, **M. Sibilja**. Effects of Depilation Methods on Imiquimod-Induced Skin Inflammation in Mice. **J Invest Dermatol**. 2017 Feb;137(2):528-531. doi: 10.1016/j.jid.2016.09.018. Epub 2016 Sep 30 No abstract available.
2. Amberg, N., M. Holcman, G. Stulnig and **M. Sibilja**, Effects of Imiquimod on hair follicle stem cells and hair cycle progression, **J Invest Dermatology**, 2016 Nov;136(11):2140-2149. doi: 10.1016/j.jid.2016.06.613.
3. Svinka J, Pflügler S, Mair M, Marschall HU, Hengstler JG, Stiedl P, Poli V, Casanova E, Timelthaler G, **Sibilja M**, Eferl R. Epidermal growth factor signaling protects from cholestatic liver injury and fibrosis. **J Mol Med (Berl)**. 2016 Aug 27. [Epub ahead of print]
4. Wiedermann U, Sitte HH, Burgmann H, Eser A, Falb P, Holzmann H, Kitchen M, Köller M, Kollaritsch H, Kundi M, Lassmann H, Mutz I, Pickl WF, Riedl E, **Sibilja M**, Thalhammer F, Tucek B, Zenz W, Zwiauer K. Guidelines for vaccination of immunocompromised individuals. **Wien Klin Wochenschr**. 2016 Aug;128 Suppl 4:337-76. doi: 10.1007/s00508-016-1033-6. German
5. Schreier, B., M. Hunerberg, S. Rabe, S. Mildenberger, D. Bethmann, C. Heise, **M. Sibilja**, S. Offermanns, and M. Gekle. 2016. Consequences of postnatal vascular smooth muscle EGFR deletion on acute angiotensin II action. **Clin Sci (Lond)** 130: 19-33.
6. Schossleitner, K., S. Rauscher, M. Groger, H. P. Friedl, R. Finsterwalder, A. Habertheuer, **M. Sibilja**, C. Brostjan, D. Fodinger, S. Citi, and P. Petzelbauer. 2016. Evidence That Cingulin Regulates Endothelial Barrier Function In Vitro and In Vivo. **Arteriosclerosis, thrombosis, and vascular biology** 36: 647-654.
7. Satoh, R., K. Kakugawa, T. Yasuda, H. Yoshida, **M. Sibilja**, Y. Katsura, B. Levi, J. Abramson, Y. Koseki, H. Koseki, W. van Ewijk, G. A. Hollander, and H. Kawamoto. 2016. Requirement of Stat3 Signaling in the Postnatal Development of Thymic Medullary Epithelial Cells. **PLoS genetics** 12: e1005776.
8. Monteforte, R., G. F. Beilhack, R. Grausenburger, B. Mayerhofer, R. Bittner, R. Grillari-Voglauer, **M. Sibilja**, H. Dellago, E. Tschachler, F. Gruber, and J. Grillari. 2016. SNEV(P) (rp19/) (PSO) (4) deficiency increases PUVA-induced senescence in mouse skin. **Experimental dermatology** 25: 212-217.
9. Komposch, K., and **M. Sibilja**. 2016. EGFR Signaling in Liver Diseases. **International journal of molecular sciences** 17.
10. Brunner, P. M., E. Glitzner, B. Reininger, I. Klein, G. Stary, M. Mildner, P. Uhrin, **M. Sibilja**, and G. Stingl. 2015. CCL7 contributes to the TNF-alpha-dependent inflammation of lesional psoriatic skin. **Experimental dermatology**.
11. Schreier, B., S. Rabe, S. Winter, S. Ruhs, S. Mildenberger, B. Schneider, **M. Sibilja**, M. Gotthardt, S. Kempe, K. Mader, C. Grossmann, and M. Gekle. 2014. Moderate inappropriately high aldosterone/NaCl constellation in mice: cardiovascular effects and the role of cardiovascular epidermal growth factor receptor. **Scientific reports** 4: 7430.
12. Sayar, B. S., S. Ruegg, E. Schmidt, **M. Sibilja**, M. Siffert, M. M. Suter, A. Galichet, and E. J. Muller. 2014. EGFR inhibitors erlotinib and lapatinib ameliorate epidermal blistering in pemphigus vulgaris in a non-linear, V-shaped relationship. **Experimental dermatology** 23: 33-38.
13. Ozaki, N., Y. Fukuchi, S. R. Tomiyoshi, H. Uehara, S. Ida, J. Wang, K. Araki, **M. Sibilja**, H. Baba, K. Yamamura, and M. Ohmuraya. 2014. Autophagy regulation in pancreatic acinar cells is independent of epidermal growth factor receptor signaling. **Biochemical and biophysical research communications** 446: 224-230.
14. Lanaya, H., A. Natarajan, K. Komposch, L. Li, N. Amberg, L. Chen, S. K. Wculek, M. Hammer, R. Zenz, M. Peck-Radosavljevic, W. Sieghart, M. Trauner, H. Wang, and **M. Sibilja**. 2014. EGFR

has a tumour-promoting role in liver macrophages during hepatocellular carcinoma formation. **Nature cell biology** 16: 972-981, 971-977.

15. Horak, P., E. Tomasich, P. Vanhara, K. Kratochvilova, M. Anees, M. Marhold, C. E. Lemberger, M. Gerschpacher, R. Horvat, **M. Sibilgia**, D. Pils, and M. Krainer. 2014. TUSC3 Loss Alters the ER Stress Response and Accelerates Prostate Cancer Growth in vivo. **Scientific reports** 4: 3739.

16. Glitzner, E., A. Korosec, P. M. Brunner, B. Drobits, N. Amberg, H. B. Schonhaler, T. Kopp, E. F. Wagner, G. Stingl, M. Holcman, and **M. Sibilgia**. 2014. Specific roles for dendritic cell subsets during initiation and progression of psoriasis. **EMBO molecular medicine** 6: 1312-1327.

17. Alias, S., B. Redwan, A. Panzenboeck, M. P. Winter, U. Schubert, R. Voswinckel, M. K. Frey, J. Jakowitsch, A. Alimohammadi, L. Hobohm, A. Mangold, H. Bergmeister, **M. Sibilgia**, E. F. Wagner, E. Mayer, W. Klepetko, T. J. Hoelzenbein, K. T. Preissner, and I. M. Lang. 2014. Defective Angiogenesis Delays Thrombus Resolution: A Potential Pathogenetic Mechanism Underlying Chronic Thromboembolic Pulmonary Hypertension. **Arteriosclerosis, thrombosis, and vascular biology**.

18. Zaiss, D. M., J. van Loosdregt, A. Gorlani, C. P. Bekker, A. Grone, **M. Sibilgia**, P. M. van Bergen en Henegouwen, R. C. Roovers, P. J. Coffe, and A. J. Sijts. 2013. Amphiregulin enhances regulatory T cell-suppressive function via the epidermal growth factor receptor. **Immunity** 38: 275-284.

19. Winter, M., M. A. Moser, D. Meunier, C. Fischer, G. Machat, K. Mattes, B. M. Lichtenberger, R. Brunmeir, S. Weissmann, C. Murko, C. Humer, T. Meischel, G. Brosch, P. Matthias, **M. Sibilgia**, and C. Seiser. 2013. Divergent roles of HDAC1 and HDAC2 in the regulation of epidermal development and tumorigenesis. **The EMBO journal** 32: 3176-3191.

20. Schreier, B., S. Rabe, B. Schneider, M. Bretschneider, S. Rupp, S. Ruhs, J. Neumann, U. Rueckschloss, **M. Sibilgia**, M. Gotthardt, C. Grossmann, and M. Gekle. 2013. Loss of epidermal growth factor receptor in vascular smooth muscle cells and cardiomyocytes causes arterial hypotension and cardiac hypertrophy. **Hypertension** 61: 333-340.

21. Lichtenberger, B. M., P. A. Gerber, M. Holcman, B. A. Buhren, N. Amberg, V. Smolle, H. Schrupf, E. Boelke, P. Ansari, C. Mackenzie, A. Wollenberg, A. Kislak, J. W. Fischer, K. Rock, J. Harder, J. M. Schroder, B. Homey, and **M. Sibilgia**. 2013. Epidermal EGFR controls cutaneous host defense and prevents inflammation. **Science translational medicine** 5: 199ra111.

22. Navas, C., I. Hernandez-Porrás, A. J. Schuhmacher, **M. Sibilgia**, C. Guerra, and M. Barbacid. 2012. EGF receptor signaling is essential for k-ras oncogene-driven pancreatic ductal adenocarcinoma. **Cancer cell** 22: 318-330.

23. Holcman, M., B. Drobits, and **M. Sibilgia**. 2012. How imiquimod licenses plasmacytoid dendritic cells to kill tumors. **Oncoimmunology** 1: 1661-1663.

24. Eberl, M., S. Klingler, D. Mangelberger, A. Loipetzberger, H. Damhofer, K. Zoidl, H. Schnidar, H. Hache, H. C. Bauer, F. Solca, C. Hauser-Kronberger, A. N. Ermilov, M. E. Verhaegen, C. K. Bichakjian, A. A. Dlugosz, W. Nietfeld, **M. Sibilgia**, H. Lehrach, C. Wierling, and F. Aberger. 2012. Hedgehog-EGFR cooperation response genes determine the oncogenic phenotype of basal cell carcinoma and tumour-initiating pancreatic cancer cells. **EMBO molecular medicine** 4: 218-233.

25. Drobits, B., M. Holcman, N. Amberg, M. Swiecki, R. Grundtner, M. Hammer, M. Colonna, and **M. Sibilgia**. 2012. Imiquimod clears tumors in mice independent of adaptive immunity by converting pDCs into tumor-killing effector cells. **The Journal of clinical investigation** 122: 575-585.

26. Ardito, C. M., B. M. Gruner, K. K. Takeuchi, C. Lubeseder-Martellato, N. Teichmann, P. K. Mazur, K. E. Delgiorno, E. S. Carpenter, C. J. Halbrook, J. C. Hall, D. Pal, T. Briel, A. Herner, M. Trajkovic-Arsic, B. Sipos, G. Y. Liou, P. Storz, N. R. Murray, D. W. Threadgill, **M. Sibilgia**, M. K. Washington, C. L. Wilson, R. M. Schmid, E. W. Raines, H. C. Crawford, and J. T. Siveke. 2012. EGF receptor is required for KRAS-induced pancreatic tumorigenesis. **Cancer cell** 22: 304-317.

Reviews, Book Chapters & Special Journal Issues (without peer-review)

1. Holcman, M., B. Drobits, and **M. Sibilja**. 2012. How imiquimod licenses plasmacytoid dendritic cells to kill tumors. **Oncoimmunology** 1: 1661-1663. (IF: 6,283; CI: 13)
2. Savarese F., Holcman M. and **M. Sibilja**. 2014, World Cancer Report 2014, Signal transduction and targeted therapy, Bernard Stewart and Christopher P. Wild (Eds.), International Agency for Research on Cancer, WHO, ISBN 978-92-832-0429-9
3. Holcman M. , N. Amberg, B. Drobits, E. Glitzner, K. Komposch, J. Robson, F. Savarese, S. Srivatsa, G. Stulnig, and **M. Sibilja**. Mouse Models of Receptor Tyrosine Kinases. Springer 2015. **Receptor Tyrosine Kinases: Structure, Functions and Role in Human Disease**. Wheeler, Deric L., Yarden, Yosef (Eds.)
4. Amberg N., M. Holcman, E. Glitzner, P. Novoszel, G. Stulnig, and **M. Sibilja**. 2015. Mouse Models of Non-Melanoma Skin Cancer. In Mouse Models of Cancer. **Methods Mol Biol.**, 1267:217-250.

10 Most Important Publications

1. Lanaya, H., A. Natarajan, K. Komposch, L. Li, N. Amberg, L. Chen, S.K. Wculek, M. Hammer, R. Zenz, M. Peck-Radosavljevic, W. Sieghart, M. Trauner, H. Wang and **M. Sibilja**. 2014. EGFR is required in liver macrophages for IL-1-induced IL-6 production and hepatocellular carcinoma formation. **Nature Cell Biology**, Aug 31. doi: 10.1038/ncb3031. IF 19.679, CI 16
2. Glitzner E, Korosec A, Brunner PM, Drobits B, Amberg N, Schonthaler HB, Kopp T, Wagner EF, Stingl G, Holcman M, **M. Sibilja**. 2014. Specific roles for dendritic cell subsets during initiation and progression of psoriasis. **EMBO Mol Med**. Sep 12. pii: e201404114. doi: 10.15252/emmm.201404114. [Epub ahead of print] IF 8.25, CI 7
3. Lichtenberger, B.M., P.A. Gerber, M. Holcman, B.A. Buhren, V. Smolle, H. Schrupf, E. Boelke, P. Ansari, C. Mackenzie, A. Wollenberg, J. W. Fischer, J. Harder, J. M. Schröder, B. Homey and **M. Sibilja**. 2013. Epidermal EGFR controls cutaneous host defense and prevents inflammation. **Sci Transl Med**. Aug 21;5(199):199ra111. doi: 10.1126/scitranslmed.3005886; IF 15.843, CI 37
4. Drobits B., M. Holcman, N. Amberg, M. Swiecki, R. Grundtner, M. Hammer, M. Colonna, **M. Sibilja**. 2012. Imiquimod clears tumors in mice independent of adaptive immunity by converting pDCs into tumor-killing effector cells. **J. Clin. Invest**. Jan 17. [Epub ahead of print] IF 13.215, CI 93
5. Lichtenberger, B. M., P. K. Tan, H. Niederleithner, N. Ferrara, P. Petzelbauer, and **M Sibilja**.. 2010. Autocrine VEGF signaling synergizes with EGFR in tumor cells to promote epithelial cancer development. **Cell** 140:268-279. IF 33.116, CI 136
6. Natarajan, A., B. Wagner, and **M. Sibilja**. 2007. The EGF receptor is required for efficient liver regeneration. **PNAS USA** 104:17081-17086 IF 9.674, CI 144
7. Wagner, B., A. Natarajan, S. Grunau, R. Kroismayr, E. F. Wagner, and **M. Sibilja**. 2006. Neuronal survival depends on EGFR signaling in cortical but not midbrain astrocytes. **EMBO J** 25:752-762. IF 10,434, CI 57
8. Palamara, F., S. Meindl, M. Holcman, P. Luhrs, G. Stingl, and **M. Sibilja**. 2004. Identification and characterization of pDC-like cells in normal mouse skin and melanomas treated with imiquimod. **J Immunol** 173:3051-3061. IF 4.922, CI 127
9. **Sibilja, M.***, A. Fleischmann, A. Behrens, L. Stingl, J. Carroll, F. M. Watt, J. Schlessinger, and E. F. Wagner. 2000. The EGF receptor provides an essential survival signal for SOS-dependent skin tumor development. **Cell** 102:211-220 (*corresponding author). IF 33.116, CI 235
10. **Sibilja, M.**, and E. F. Wagner. 1995. Strain-dependent epithelial defects in mice lacking the EGF receptor. **Science** 269:234-238. IF 33.611, CI 715