

Sieweke, Michael, Prof., PhD (B05)

Personal Data

Title	Prof. Dr.
First name	Michael
Name	Sieweke
Current position	Professor (W3) of Stem Cell Research; permanent position
Current institution(s)/site(s), country	Center for Molecular and Cellular Bioengineering, Center for Regenerative Therapies (CRTD), Technische Universität Dresden (TUD), Fetscherstr. 105, 01307 Dresden, Germany
Identifiers/ORCID	ORCID-ID: 0000-0002-3228-9537

Qualifications and Career

Stages	Periods and Details
Degree programme: Biochemistry	1984 – 1986, Undergraduate Program in Biochemistry, Eberhard-Karls University, Tübingen, Germany 1986 – 1991, PhD Program in Biochemistry / Cell and Molecular Biology, University of California, Berkeley, USA
Doctorate: PhD thesis	19.12.1990: Supervisor: Mina Bissell, <i>Wound-Induced Transforming Growth Factor-β is a Cocarcinogen in Rous Sarcoma Virus Tumorigenesis</i> , University of California, Berkeley, USA
Stages of academic / professional career	
Since 2019	Deputy Director, CRTD, TUD, Dresden, Germany
2018	Alexander-von-Humboldt Professor, CRTD, TUD, Dresden, Germany
2010	Directeur de Recherche 1ere classe (Full Professor Level) at Centre National de la Recherche Scientifique (CNRS), Marseille, France
1999	Habilitation and <i>venia legendi</i> , Molecular Biology, “ <i>Partner proteins of the transcription factor Ets-1 in hematopoietic differentiation</i> ”, Ruprecht-Karls University, Heidelberg, Germany (Mentor: Thomas Graf)
1999	Group leader at Centre d’Immunologie de Marseille Luminy (CIML), Directeur de Recherche 2eme classe, Marseille, France
2012 – 2018	INSERM-Helmholtz group leader, Max-Delbrück-Center for Molecular Medicine, Berlin, Germany
1996 – 1999	Staff scientist/Junior faculty, Cell Regulation and Developmental Biology Program, EMBL, Heidelberg, Germany
1991 – 1995	Postdoctoral Fellow, Differentiation Program EMBL, Heidelberg, Germany
1986 – 1991	Research assistant, University of California, Berkeley, USA

Engagement in the Research System

- Science4Life Business Plan competition winner with Makrohagen 2.0 (2023)
- ERC PoC Oncomac (2022 – 2023)
- BMBF GO-Bio Makrophagen 2.0 (2022)
- BMBF Cluster4Future SaxoCell, xMacs Project (2021)
- DFG FOR2599 Tissue Type 2 Immunity (2020)
- Faculty, Dresden International School for Biomedicine and Bioengineering (since 2018)
- Alexander-von-Humboldt Professor (2018)
- ERC Advanced Grant MacAGE (2016)
- INSERM-Helmholtz Franco-German research cooperation grant (2012)
- FRM group (prestigious label of Fondation pour la Recherche Médicale) (2007 – 2010; 2011 – 2014)
- ATIPE, French Young Investigator Award (1999)

Scientific Results

Category A, * contributed equally, # open access

1. Subramanian S, Busch CJ, Molawi K, Geirsdóttir L, Maurizio J, Vargas Aguilar S, Belahbib H, Gimenez G, Yuda RAA, Burkon M, Favret J, Gholamhosseinian Najjar S, de Laval B, Kandalla PK, Sarrazin S, Alexopoulou L, **Sieweke MH**. Long-term culture-expanded alveolar macrophages restore their full epigenetic identity after transfer in vivo. **Nat Immunol** 2022; 23(3):458-468. doi: 10.1038/s41590-022-01146-w.
2. de Laval B, Maurizio J, Kandalla PK, Brisou G, Simonnet L, Huber C, Gimenez G, Matcovitch-Natan O, Reinhardt S, David E, Mildner A, Leutz A, Nadel B, Bordi C, Amit I, Sarrazin S, **Sieweke MH**. C/EBP β -Dependent Epigenetic Memory Induces Trained Immunity in Hematopoietic Stem Cells. **Cell Stem Cell** 2020; 26(5):657-674.e658. doi: 10.1016/j.stem.2020.01.017. Erratum in: Cell Stem Cell. 2020 May 7;26(5):793. Erratum in: Cell Stem Cell. 2023 Jan 5;30(1):112. PMID: 32169166. #
3. Imperatore F, Maurizio J, Vargas Aguilar S, Busch CJ, Favret J, Kowenz-Leutz E, Cathou W, Gentek R, Perrin P, Leutz A, Berruyer C, **Sieweke MH**. SIRT1 regulates macrophage self-renewal. **EMBO J** 2017; 36(16):2353-2372. doi: 10.15252/embj.201695737. #
4. Soucie EL, Weng Z, Geirsdóttir L, Molawi K, Maurizio J, Fenouil R, Mossadegh-Keller N, Gimenez G, VanHille L, Beniazza M, Favret J, Berruyer C, Perrin P, Hacoheh N, Andrau JC, Ferrier P, Dubreuil P, Sidow A, **Sieweke MH**. Lineage-specific enhancers activate self-renewal genes in macrophages and embryonic stem cells. **Science** 2016; 351(6274):aad5510. doi: 10.1126/science.aad5510. #
5. Matcovitch-Natan O, Winter DR, Giladi A, Vargas Aguilar S, Spinrad A, Sarrazin S, Ben-Yehuda H, David E, Zelada González F, Perrin P, Keren-Shaul H, Gury M, Lara-Astaiso D, Thaiss CA, Cohen M, Bahar Halpern K, Baruch K, Deczkowska A, Lorenzo-Vivas E, Itzkovitz S, Elinav E, **Sieweke*** **MH**, Schwartz* M, Amit* I. Microglia development follows a stepwise program to regulate brain homeostasis. **Science** 2016; 353(6301):aad8670. doi: 10.1126/science.aad8670.
6. Molawi K, Wolf Y, Kandalla PK, Favret J, Hagemeyer N, Frenzel K, Pinto AR, Klapproth K, Henri S, Malissen B, Rodewald HR, Rosenthal NA, Bajenoff M, Prinz M, Jung S, **Sieweke MH**. Progressive replacement of embryo-derived cardiac macrophages with age. **J Exp Med** 2014; 211(11):2151-2158. doi: 10.1084/jem.20140639. #

7. **Sieweke MH**, Allen JE. Beyond stem cells: self-renewal of differentiated macrophages. **Science** 2013; 342(6161):1242974. doi: 10.1126/science.1242974.
8. Mossadegh-Keller N, Sarrazin S, Kandalla PK, Espinosa L, Stanley ER, Nutt SL, Moore J, **Sieweke MH**. M-CSF instructs myeloid lineage fate in single haematopoietic stem cells. **Nature** 2013; 497(7448):239-243. doi: 10.1038/nature12026. #
9. Sarrazin S, Mossadegh-Keller N, Fukao T, Aziz A, Mourcin F, Vanhille L, Kelly Modis L, Kastner P, Chan S, Duprez E, Otto C, **Sieweke MH**. MafB restricts M-CSF-dependent myeloid commitment divisions of hematopoietic stem cells. **Cell** 2009; 138(2):300-313. doi: 10.1016/j.cell.2009.04.057. #
10. Aziz A, Soucie E, Sarrazin S, **Sieweke MH**. MafB/c-Maf deficiency enables self-renewal of differentiated functional macrophages. **Science** 2009; 326(5954):867-871. doi: 10.1126/science.1176056.

Category B

1. **Method for expanding monocytes**: United States patent No. 8,574,903 B2, delivered 05.11.2013; Japan patent No. 5579442, delivered 18.07.2014; Singapore patent No. 154039, delivered 15.02.2012; European patent No. 2126051, delivered 26.08.2015
2. **Method for generating, maintaining and expanding monocytes, and/or macrophages and/or dendritic cells in long term culture: United States patent No. 8,691,964 B2, delivered 08.04.2014**; European patent No. pub 1944361, 16.07.2008, filed 10.01.2007
3. **A method for inducing extended self-renewal of functionally differentiated somatic cells**: United States patent, No. 9,175,265, delivered 03.11.2015; European patent No. 09305661.2, filed 08.07.2009
4. **Methods and compositions for preventing or treating myeloid cytopenia and related complications**: European patent No. 13305464.3-1456, filed 09.04.2013; WO patent, No. pub WO 2014/167018, filed 16.10.2014; European patent No. EP 2 983 696 B1; United States patent No. US 10,709,762 B2
5. **MafB mutants and uses thereof**: European patent No. 13306661.3, filed 03.12.2014
6. **Methods for expanding a population of alveolar macrophages in a long-term culture**: International patent No. 15306959.6, filed 08.12.2015; European patent No. EP3387115B1, delivered: 26.01.2022
7. **Ex vivo proliferation of human phagocytic cells**: EP21163800 Filing date 19.3.2021; WO2022194929, filing date 16.3.2022
8. **Human macrophages resistant to tumor-induced repolarization**: EP21163800 Filing date 12.8.2021; WO2022194930, filing date 16.3.2022
9. **Placental macrophages for cell therapy**: EP21210741 Filing date 26.11.2021; WO2022082951, filing date 23.11.2022;
10. **M-CSF for use in the prophylaxis and/or treatment of viral infections in states of immunosuppression**: EP22186231, filing date 21.7.2022
11. **Allogeneic Human Macrophages for Cell Therapy**: EP22195618, filing date 14.9.2022

Academic Distinctions

- CNRS Silver Medal (2017)

- EMBO Member (2014)
- Einstein BIH Visiting Fellow (2014)
- Prix AXA from the French Academy of Science (2010)
- EMBO Postdoctoral Fellowship (1992)
- Böhringer Ingelheim Fonds Postdoctoral Fellowship (1991)
- Julian D. Morgan Regents of the University of California Fellowship (1989)
- Josephine de Karman Fellowship (1989)
- Regents of the University of California Fellowship (1988) / most prestigious Award of the University