

Herbert Strobl

Key Researcher

Otto Loewi Research Center, Medical University Graz

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SCIENTIFIC & ACADEMIC CAREER

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| 2018- | Head, Division of Immunology at Otto Loewi Research Center, Med U Graz |
| 2018-2021 | Elected head of Otto Loewi Research Center, Med U Graz (founding period) |
| 2015-2018 | Head, Institute of Immunology and Pathophysiology, Med U Graz |
| since 2012 | Full Professor for Immunology, Med U Graz |
| 2001-2012 | Tenured Assoc. Professor, Institute of Immunology/VIRCC, U/Med U Vienna |
| 1999/2001 | Board certified Clinical Immunologist and Venia Docendi in Immunology |
| 1998-2001 | Postdoctoral researcher, Nolan Lab, Stanford U, CA, USA |
| 1996-1998 | Clinical training, General hospital and Lainz hospital Vienna |
| 1991-1998 | Training in Immunology, Mentor W. Knapp; Inst. of Immunology, U Vienna |
| 1991 | MD, University of Vienna, pre-doctoral training in Immunology |

MAIN AREA OF RESEARCH

Herbert Strobl studies the molecular and cellular mechanisms underlying immunological tolerance. His laboratory pioneered the *in vitro* generation of epithelial Langerhans-type dendritic cells (LC), by demonstrating that the prototypic anti-inflammatory cytokine TGF- β 1 induces LC differentiation at the expense of monocyte/macrophages in cultures of human CD34⁺ hematopoietic progenitor/stem cells. His lab then went on studying TGF- β family signaling processes in LC differentiation and function using human and murine models. In recent studies they identified transcription factors and miRNAs regulating myeloid and DC subset identity and differentiation during steady-state and inflammation. Aging favors the generation of pro-inflammatory myeloid cell differentiation at the expense of anti-inflammatory/tolerogenic DCs and lymphocytes, and these processes may contribute to the pathogenesis of several age-related inflammatory and metabolic diseases as well as cancer. Within MetAGE, Herbert Strobl aims to decipher the molecular mechanism underlying age-related changes in hematopoietic stem/progenitor cells leading to altered leukocyte differentiation and how these processes might contribute to enhanced susceptibility to infections and to reduced vaccination responses during aging.

ADDITIONAL RESEARCH ACTIVITIES (10 most important)

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| 1998-present | Acquisition of 12 competitive third-party funded research grants (€ ~4.7 Mio) |
| 2001-2012 | Member in study groups in leukemia/lymphoma diagnosis (EGIL, BFM) |
| Since 2009 | Subcommittee member IUIS nomenclature of blood monocytes and dendritic cells |
| Since 2007 | Faculty member in several FWF PhD DK and Doc fund programs |

Selected Presentations

- 2017 Keystone symposium: TGF-beta in immunity, inflammation and cancer, January 9-13, 2017
- 2016 Else-Körner-Lecture, Würzburg, July 18, 2016
- 2013 Keystone symposium: Understanding dendritic cell biology to advance disease therapy, March 3-8, 2013

Honors & Awards

- 2015-2017 Member of the Academic Senat of Medical University of Graz
- 2013 & 2014 Karl Landsteiner Prize for Strobl lab publications to lab members
- 2008-2013 Member of the Austrian Academy of Science (Junge Akademie)
- 2000 START Prize, FWF and Austrian Government
- 1998 Erwin Schrödinger Postdoc Fellowship FWF

10 MOST IMPORTANT PUBLICATIONS

Bauer, T., A. Zagorska, J. Jurkin, N. Yasmin, R. Koffel, S. Richter, B. Gesslbauer, G. Lemke, and H. Strobl. 2012. Identification of Axl as a downstream effector of TGF-beta1 during Langerhans cell differentiation and epidermal homeostasis. *J Exp Med* 209:2033-2047.

doi: [10.1084/jem.20120493](https://doi.org/10.1084/jem.20120493)

Borek, I., R. Koffel, J. Feichtinger, M. Spies, E. Glitzner-Zeis, M. Hochgerner, T. Sconocchia, C. Krump, C. Tam-Amersdorfer, C. Passegger, T. Benezeder, J. Tittes, A. Redl, C. Painsi, G.G. Thallinger, P. Wolf, G. Stary, M. Sibia, and H. Strobl. 2020. BMP7 aberrantly induced in the psoriatic epidermis instructs inflammation-associated Langerhans cells. *J Allergy Clin Immunol* 145:1194-1207 e1111.

doi: [10.1016/j.jaci.2019.12.011](https://doi.org/10.1016/j.jaci.2019.12.011)

Gobel, F., S. Taschner, J. Jurkin, S. Konradi, C. Vaculik, S. Richter, D. Kneidinger, C. Muhlbacher, C. Bieglmayer, A. Elbe-Burger, and H. Strobl. 2009. Reciprocal role of GATA-1 and vitamin D receptor in human myeloid dendritic cell differentiation. *Blood* 114:3813-3821.

doi: [10.1182/blood-2009-03-210484](https://doi.org/10.1182/blood-2009-03-210484)

Jorgl, A., B. Platzer, S. Taschner, L.X. Heinz, B. Hocher, P.M. Reisner, F. Gobel, and H. Strobl. 2007. Human Langerhans-cell activation triggered in vitro by conditionally expressed MKK6 is counterregulated by the downstream effector RelB. *Blood* 109:185-193.

doi: [10.1182/blood-2006-05-022954](https://doi.org/10.1182/blood-2006-05-022954)

Jurkin, J., C. Krump, R. Koffel, C. Fieber, C. Schuster, P.M. Brunner, I. Borek, G. Eisenwort, C. Lim, J. Mages, R. Lang, W. Bauer, D. Mechtcheriakova, A. Meshcheryakova, A. Elbe-Burger, G. Stingl, and H. Strobl. 2017. Human skin dendritic cell fate is differentially regulated by the

monocyte identity factor Kruppel-like factor 4 during steady state and inflammation. *J Allergy Clin Immunol* 139:1873-1884 e1810.

doi: [10.1016/j.jaci.2016.09.018](https://doi.org/10.1016/j.jaci.2016.09.018)

Koffel, R., A. Meshcheryakova, J. Warszawska, A. Hennig, K. Wagner, A. Jorgl, D. Gubi, D. Moser, A. Hladik, U. Hoffmann, M.B. Fischer, W. van den Berg, M. Koenders, C. Scheinecker, B. Gesslbauer, S. Knapp, and H. Strobl. 2014. Monocytic cell differentiation from band-stage neutrophils under inflammatory conditions via MKK6 activation. *Blood* 124:2713-2724.

doi: [10.1182/blood-2014-07-588178](https://doi.org/10.1182/blood-2014-07-588178)

Lim, C.X., B. Lee, O. Geiger, C. Passegger, M. Beitzinger, J. Romberger, A. Stracke, C. Hogenauer, A. Stift, H. Stoiber, M. Poidinger, A. Zebisch, G. Meister, A. Williams, R.A. Flavell, J. Henao-Mejia, and H. Strobl. 2020. miR-181a Modulation of ERK-MAPK Signaling Sustains DC-SIGN Expression and Limits Activation of Monocyte-Derived Dendritic Cells. *Cell Rep* 30:3793-3805 e3795.

doi: [10.1016/j.celrep.2020.02.077](https://doi.org/10.1016/j.celrep.2020.02.077)

Sconocchia, T., M. Hochgerner, E. Schwarzenberger, C. Tam-Amersdorfer, I. Borek, T. Benezeder, T. Bauer, V. Zyulina, C. Painsi, C. Passegger, P. Wolf, M. Sibilica, and H. Strobl. 2021. Bone morphogenetic protein signaling regulates skin inflammation via modulating dendritic cell function. *J Allergy Clin Immunol* 147:1810-1822 e1819.

doi: [10.1016/j.jaci.2020.09.038](https://doi.org/10.1016/j.jaci.2020.09.038)

Yasmin, N., T. Bauer, M. Modak, K. Wagner, C. Schuster, R. Koffel, M. Seyerl, J. Stockl, A. Elbe-Burger, D. Graf, and H. Strobl. 2013. Identification of bone morphogenetic protein 7 (BMP7) as an instructive factor for human epidermal Langerhans cell differentiation. *J Exp Med* 210:2597-2610.

doi: [10.1084/jem.20130275](https://doi.org/10.1084/jem.20130275)

Zyulina, V., K.K. Yan, B. Ju, E. Schwarzenberger, C. Passegger, C. Tam-Amersdorfer, Q. Pan, T. Sconocchia, C. Pollack, B. Shaner, A. Zebisch, J. Easton, J. Yu, J.M. Silva, and H. Strobl. 2021. The miR-424(322)/503 gene cluster regulates pro- versus anti-inflammatory skin DC subset differentiation by modulating TGF-beta signaling. *Cell Rep* 35:109049.

doi: [10.1016/j.celrep.2021.109049](https://doi.org/10.1016/j.celrep.2021.109049)