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Education and Scientific Career

- Since 2024** **Principal Investigator** at the **Medical University of Vienna**, Center for Pathobiochemistry and Genetics, Währingerstraße 10, 1090 Vienna, Austria.
- 02/2019 – 07/2024** Scientist at the **Medical University of Vienna**, Center for Pathobiochemistry and Genetics, Währingerstraße 10, 1090 Vienna, Austria.
- 02/2018 - 01/2019** Erwin Schrödinger Postdoctoral research fellow at the **Medical University of Vienna**, Center for Pathobiochemistry and Genetics, Währingerstraße 10, 1090 Vienna, Austria.
- 02/2015 - 01/2018** Erwin Schrödinger Postdoctoral research fellow at the Institute of Tumor Biology and II. Medical Clinics, **University Medical Clinics Hamburg Eppendorf**, Hamburg, Germany, Laboratory of Prof. Sonja Loges.
- 09/2013 - 09/2014** Postdoctoral research fellow at the **Medical University of Graz**, Institute of Molecular Biology and Biochemistry, Laboratory of Prof. Ernst Steyrer.
- 03/2009 – 06/2013** **PhD Thesis at the Medical University of Vienna, Max F. Perutz Laboratories.** Department of Medical Biochemistry, Division of Molecular Genetics; PhD program Molecular Mechanisms of Cell Biology (N094); Laboratory of Univ. Prof. Wolfgang J. Schneider.
- 02/2008 – 12/2008** **Diploma Thesis at the Medical University of Vienna, Max F. Perutz Laboratories.** Department of Medical Biochemistry, Division of Molecular Genetics, Laboratory of Univ. Prof. Wolfgang J. Schneider.
- 10/2003 - 02/2009** **University of Vienna.** Undergraduate studies of Microbiology and Genetics, Faculty of Life Sciences, main focus Developmental and Cell Biology.

Main interests of research and currently ongoing projects:

- I. Modulation of the immunosuppressive properties of myeloid-derived suppressor cells in the TME
- II. Impact of lipid oxidation products on myeloid-derived suppressor cells
- III. Dissecting the impact of FGF21 on the development and progression of cancer-associated cachexia.

Working skills and research experience:

- *In vivo* work with syngeneic, orthotopic and genetic mouse tumor models of solid and hematologic malignancies as well as mouse models for the analysis of lipoprotein biology.

- Extensive experience in planning, executing and analyzing preclinical therapeutic intervention trials using murine tumor models (e.g. small molecule inhibitor-, monoclonal antibody- or chemotherapeutic interventions).
- Multicolor flow cytometric analyses of tumor-associated immunologic cell populations as well as histomorphometric analysis of tissues (immunohistochemical and immunofluorescence-based analysis).
- Primary cell culture of myeloid-derived suppressor cells and functional analysis of their immunosuppressive capacity using T cell proliferation / suppression assays.
- Extensive experience in molecular biological, biochemical and cell culture standard techniques.
- Coordinating, writing, layouting and publishing of scientific papers, animal research grants and research proposals.
- Working with an international team in a competitive environment.

10 most important publications (note that surname was changed from Bauer to Oberle in 2021)

1. **Oberle R**, Kühner K, Österreicher T, Weber F, Steinbauer S, Udonta F, Wroblewski M, Ben-Batalla I, Hassl I, Körbelin J, Unseld M, Jauhainen M, Plochberger B, Röhl C, Hengstschläger M, Loges S, Stangl H. The HDL particle composition determines its anti-tumor activity in pancreatic cancer. **Life Science Alliance**, 2022 May 16. PMID: **35577388**, DOI: [10.26508/lsa.202101317](https://doi.org/10.26508/lsa.202101317)
2. Fritsch SD, Sukhbaatar N, Gonzales K, Sahu A, Tran L, Vogel A, Mazic M, Wilson JL, Forisch S, Mayr H, **Oberle R**, Weiszmann J, Brenner M, Vanhoutte R, Hofmann M, Pirnes-Karhu S, Magnes C, Kühnast T, Weckwerth W, Bock C, Klavins K, Hengstschläger M, Moissl-Eichinger C, Schabbauer G, Egger G, Pirinen E, Verhelst SHL, and Weichhart T. Metabolic support by macrophages sustains colonic epithelial homeostasis. **Cell Metabolism**, 2023 Sep 29:S1550-4131(23)00341-8. PMID: **37804836** DOI: [10.1016/j.cmet.2023.09.010](https://doi.org/10.1016/j.cmet.2023.09.010)
3. Vondra S, Höbler AL, Lackner AI, Raffetseder J, Mihalic ZN, Vogel A, Saleh L, Kunihs V, Haslinger P, Wahrmann M, Husslein H, **Oberle R**, Kargl J, Haider S, Latos P, Schabbauer G, Knöfler M, Ernerudh J, and Pollheimer J. The human placenta shapes the phenotype of decidual macrophages. **Cell Reports**, 2023 Jan 31;42(1):111977. PMID: **36640334**. DOI: [10.1016/j.celrep.2022.111977](https://doi.org/10.1016/j.celrep.2022.111977)
4. **Bauer R**, Udonta F, Wroblewski M, Ben-Batalla I, Santos IM, Taverna F, Kuhlencord M, Gensch V, Päsler S, Vinckier S, Brandner JM, Pantel K, Bokemeyer C, Vogl T, Roth J, Carmeliet P, Loges S. Blockade of myeloid-derived suppressor cell expansion with all-trans retinoic acid increases the efficacy of anti-angiogenic therapy. **Cancer Research**. 2018 Apr 19. PMID:29674477; DOI:[10.1158/0008-5472.CAN-17-3415](https://doi.org/10.1158/0008-5472.CAN-17-3415)
5. Wroblewski M, **Bauer R**, Cubas Córdova M, Udonta F, Ben-Batalla I, Legler K, Hauser C, Egberts J, Janning M, Velthaus J, Schulze C, Pantel K, Bokemeyer C, Loges S. Mast cells decrease efficacy of anti-angiogenic therapy by secreting matrix-degrading granzyme B. **Nature Communications**. 2017 Aug 16. PMID: 28814715; DOI:[10.1038/s41467-017-00327-8](https://doi.org/10.1038/s41467-017-00327-8)
6. **Bauer R**, Tondl P, Schneider WJ. A differentiation program induced by bone morphogenetic proteins 4 and 7 in endodermal epithelial cells provides the molecular basis for efficient nutrient transport by the chicken yolk sac. **Developmental Dynamics**. 2019;1–15. PMID: 31691430; DOI:[10.1002/dvdy.129](https://doi.org/10.1002/dvdy.129)
7. **Bauer R**, Plieschnig JA, Finkes T, Riegler B, Hermann M, Schneider WJ. The developing chicken yolk sac acquires nutrient transport competence by an orchestrated differentiation process of its endodermal epithelial cells. **J. Biol. Chem**. 2013 Jan 11. PMID: 23209291; DOI:[10.1074/jbc.M112.393090](https://doi.org/10.1074/jbc.M112.393090)
8. Röhl C, Steinbauer S, **Bauer R**, Roitinger E, Otteneder K, Wallner M, Neuhauser C, Schwarzingner B, Schwarzingner C, Stangl H, Iken M, Weghuber J. Aqueous extracts of lingonberry and blackberry leaves identified by high-content screening beneficially act on cholesterol metabolism. **Food Funct**. 2021 Nov 1. PMID: 34617546, DOI:[10.1039/d1fo01169c](https://doi.org/10.1039/d1fo01169c)
9. Vondra S, Kunihs V, Eberhart T, Eigner K, **Bauer R**, Haslinger P, Haider S, Windsperger K, Klambauer G, Schütz B, Mikula M, Zhu X, Urban AE, Hannibal RL, Baker J, Knöfler M, Stangl H, Pollheimer J, Röhl C. Metabolism of cholesterol and progesterone is differentially regulated in primary trophoblastic subtypes and might be disturbed in recurrent miscarriages. **J Lipid Res**. 2019 Nov. PMID: 31530576; DOI: [10.1194/jlr.P093427](https://doi.org/10.1194/jlr.P093427)

10. Wroblewski M, Scheller-Wendorff M, Udonta F, **Bauer R**, Schlichting J, Zhao L, Ben-Batalla I, Gensch V, Päsler S, Wu L, Wanior M, Taipaleenmäki H, Bolamperti S, Najafova Z, Pantel K, Bokemeyer C, Qi J, Hesse E, Knapp S, Johnsen S, Loges S. BET-inhibition by JQ1 promotes proliferation and self-renewal capacity of hematopoietic stem cells. *Haematologica* 2018 Mar 22. PMID: 29567778; DOI:[10.3324/haematol.2017.181354](https://doi.org/10.3324/haematol.2017.181354)

Teaching activities:

- Junior PhD Supervisor in the PhD programme 'Immunology' at the Medical University of Vienna
- Supervision of various Bachelor and Master theses at the Medical University of Vienna
- Lectures and practical courses (Biochemistry) in the Curriculum N202 of the Medical University of Vienna
- Young Science Ambassador of the OeAD.

Grants, Awards and Certificates

- **FWF Principal Investigator Project PAT1364323:** Oxidation-specific epitopes as regulators of MDSC in cancer (470.000€).
- **CVC Translational Synergy Grant 2020.** Project: 'The role of myeloid-derived suppressor cells in cardiac regeneration after acute myocardial infarction' (10.000€)
- **Margaretha Hehberger-Cancer Research Fund 2023** (to Raimund Oberle and Matthias Unseld). 'Analyzing the role of FGF21 in the development and progression of cancer associated cachexia' (46.000€)
- **Seed funding research grant** of the Immunology Research cluster of the Medical University of Vienna (awarded December 2019). Project: Oxidized LDL as a potential regulator of myeloid-derived suppressor cell functionality (15.000€)
- **Erwin Schrödinger Postdoctoral Fellowship** of the Austrian Science Fund FWF: The functional role of HDL in the tumor microenvironment (J 3664-B19, awarded November 2014, 142.690€).
- **MSD-Austria Publication Award** at the 20th annual meeting of the Austrian Atherosclerosis Society (AAS), May 2013; St. Gilgen / Wolfgangsee, Austria.
- **FELASA B certificate** for the handling with laboratory animals from the University Medical Clinics Hamburg Eppendorf (2015).

Selected Conference Contributions

- **45th Annual Scientific Meeting of the European Lipoprotein Club (ELC) in Tutzing, Germany, 2022.** Oxidized LDL increases the immunosuppressive properties of myeloid-derived suppressor cells (poster presentation).
- **41st Annual Scientific Meeting of the European Lipoprotein Club (ELC) in Tutzing, Germany, 2018.** HDL exerts anti-tumor activity in a murine model of pancreatic cancer (poster presentation).
- **Annual Meeting of the German, Austrian and Swiss Society for Hematology and Medical Oncology, DGHO 2017, Stuttgart, Germany.** All-trans retinoic acid enhances the therapeutic efficacy of anti-angiogenic therapeutics by intratumoral S100A8 reduction and vessel normalization (oral presentation).
- **VII. UCCH Research Retreat, 11. - 12. September, 2015; Jesteburg, Germany.** The role of myeloid derived suppressor cells in the formation of resistance to anti-angiogenic therapies (oral presentation).
- **ASBMB Special Symposia Series 2012; Frontiers in Lipid Biology; September 4th-9th, 2012; Banff, Alberta, Canada.** A differentiation process of chick yolk sac endodermal epithelial cells orchestrates nutrient transport to the embryo (poster presentation).
- **18th annual Scandinavian Atherosclerosis Conference; April 16th-19th, 2012; Humlebaek, Denmark.** Lipoprotein transport in the yolk sac (poster presentation).