

Lukas Wisgrill - Academic curriculum vitae and research achievements:

Date of Birth: October 11, 1988
Place of Birth: Vienna
Nationality: Austrian
Acad. Degree: PD Dr. med. Dr. scient. med.
Current Position: Physician Researcher/Neonatologist
Address: Division of Neonatology, Pediatric Intensive Care & Neuropediatrics,
Comprehensive Center for Pediatrics, Department of Pediatrics & Adolescent
Medicine, Medical University of Vienna, Währinger Gürtel 18-20, 1090 Vienna,
AUSTRIA, Tel: +43-1-40400-73819;
e-mail: lukas.wisgrill@meduniwien.ac.at
WEB: <https://www.wisgrill-lab.com>
ORCID: <https://orcid.org/0000-0001-9833-9499>

Main Research Interests

I am a physician researcher at the Medical University of Vienna with a background in neonatology, immunology and infectious diseases. Since 2021, I lead my own research group for Neonatal & Pediatric Systems Immunology. Our goal is to understand host-microbe interactions on a systems-level, focusing on the gut microbiome of extremely premature infants as well as host-virus-interactions. In addition, we study the impact of inflammation and infections on brain development. Our vision is that we can provide the future-best care and support for complication-free and physiological development, even for the youngest and most fragile infants.

Key findings

Our key research achievements include identification of gut *Klebsiella* as a biomarker of brain injury in extremely premature infants as well as drivers of exaggerated inflammation proceeding necrotizing enterocolitis and sepsis. Furthermore, I used relevant system-immunology approaches to identify important biomarkers and immunological networks in atopic dermatitis

Scientific Education and Career History

2008 – 2014	Graduate Studies at the Medical University of Vienna, Vienna, Austria and the Karls- Ruprechts- University of Heidelberg, Heidelberg, Germany.
2014	Graduation as Doctor Medicinae (MD) at the Medical University of Vienna, Austria
2014 – 2021	PhD student at the Dept. of Pediatrics and Adolescent Medicine, Medical University of Vienna. Degree awarded: 20.06.2021.
2019	Research Fellow at the Institute for Environmental Medicine, Systems Toxicology, Alenius Lab, Karolinska Institutet, Stockholm, Sweden
2014 – 2021	Physician in Pediatrics and Adolescent Medicine, Special training in Neonatology at the Division of Neonatology, Pediatric Intensive Care and Neuropediatrics, Medical University of Vienna
Since 2021	Group Leader, Institute of Medical Genetics, Medical University of Vienna
2023	Habilitation in Pediatrics, Medical University of Vienna

Supervision of Graduate Students and Postdoctoral Fellows

Since 2014 Currently 3 PhD students, 4 master students, 4 diploma students

Teaching Coordination Activities (selected)

Since 2014 Lectures in vaccinology, immunology, and immune deficiency at the human medicine curriculum at the Medical University of Vienna. Lecturer at the Master Course Toxicology about host-microbiome-interaction at Karolinska Institutet.

Commission of Trust (selected)

2010 - now Reviewer for Allergy, PLoS Biology, European Journal of Immunology, Journal of Leukocyte Biology, Environmental Microbiology, etc.
2010 - now Grant reviewer for Czech Health Research Council, Estonian Research Council, etc.

10 Most Important Publications

49 scientific papers (<https://pubmed.ncbi.nlm.nih.gov/?term=wisgrill+L.>) with a current life-time Hirsch h Index of 16 with 746 Citations (1. March 2023 Google Scholar).

1. Jamnik T, Flasch M, Braun D, Fareed Y, Wasinger D, Seki D, Berry D, Berger A, **Wisgrill L**, Warth B., Next-generation biomonitoring of the early-life chemical exposome in neonatal and infant development, Nat Commun. 2022 May12;13(1):2653 doi: 10.1038/s41467-022-30204-y
2. Seki D, Schaubberger C, Hausmann B, Berger A, **Wisgrill L**, Berry D., Individuality of the Extremely Premature Infant Gut Microbiota Is Driven by Ecological Drift. mSystems. 2022 Apr 27:e0016322. doi: 10.1128/msystems.00163-22.
3. Zioutis C, Seki D, Bauchinger F, Herbold C, Berger A, **Wisgrill L**, Berry D., Ecological Processes Shaping Microbiomes of Extremely Low Birthweight Infants. Front Microbiol. 2022 Feb 28;13:812136. doi: 10.3389/fmicb.2022.812136.
4. Seki D, Mayer M, Hausmann B, Pjevac P, Giordano V, Goeral K, Unterasinger L, Klebermaß-Schrehof K, De Paepe K, Van de Wiele T, Spittler A, Kasprian G, Warth B, Berger A, Berry D, **Wisgrill L.**, Aberrant gut-microbiota-immune-brain axis development in premature neonates with brain damage. Cell Host Microbe. 2021 Sep 1:S1931-3128(21)00380-2. doi: 10.1016/j.chom.2021.08.004.
5. Riskumäki M, Tessa I, Ottman N, Suomalainen A, Werner P, Karisola P, Lauerma A, Ruokolainen L, Karkman A, **Wisgrill L**, Sinkko H, Lehtimäki J, Alenius H, Fyhrquist N., Interplay between skin microbiota and immunity in atopic individuals. Allergy. 2021 Jan 22. doi: 10.1111/all.14744
6. Fortino V, **Wisgrill L**, Werner P, Suomela S, Linder N, Jalonen E, Suomalainen A, Marwah V, Kero M, Pesonen M, Lundin J, Lauerma A, Aalto-Korte K, Greco D, Alenius H, Fyhrquist N., Machine-learning-driven biomarker discovery for the discrimination between allergic and irritant contact dermatitis. Proc Natl Acad Sci U S A. 2020 Dec 29;117(52):33474-33485. doi: 10.1073/pnas.2009192117.
7. Ottman N, Barrientos-Somarribas M, Fyhrquist N, Alexander H, **Wisgrill L**, Olah P, Tsoka S, Greco D, Levi-Schaffer F, Soumelis V, Schröder JM, Kere J, Nestle FO, Barker J, Ranki A, Lauerma A, Homey B, Andersson B, Alenius H., Microbial and transcriptional differences elucidate atopic dermatitis heterogeneity across skin sites. Allergy. 2020 Oct 1. doi: 10.1111/all.14606.

8. Werner P, **Wisgrill L**, Riskumäki M, Jalonen E, Vendelin J, Suomela S, Lauerma A, Alenius H, Fyhrquist N., Identification of novel miRNA-mRNA regulatory networks in contact dermatitis by integrated microarray analysis. *Allergy*. 2020 Sep 3. doi: 10.1111/all.14578.
9. Martens A, Amann G, Schmidt K, Gaupmann R, Böhm B, Dehlink E, Szépfalusi Z, Förster-Waldl E, Berger A, Fyhrquist N, Alenius H, **Wisgrill L**., An optimized, robust and reproducible protocol to generate well-differentiated primary nasal epithelial models from extremely premature infants. *Sci Rep*. 2019 Dec 27;9(1):20069. doi: 10.1038/s41598-019-56737-9.
10. **Wisgrill L**, Werner P, Jalonen E, Berger A, Lauerma A, Alenius H, Fyhrquist N., Integrative transcriptome analysis deciphers mechanisms of nickel contact dermatitis. *Allergy*. 2020 Jul 24. doi: 10.1111/all.14519

Additional Scientific/Scholarly Research Achievements

Awards & Prizes (selected)

- 2020 Hygiene-Award 2020 of the Robert-Schülke-Foundation
- 2018 Austrian Hospital-Hygiene Award of the Austrian Society for Hygiene, Microbiology & Preventive Medicine

Invited presentations to conferences and/or international advanced schools

- 2021: Invited talk to GNPI2021 in Vienna about host-microbe interactions in preterm infants.
- 2015: Invited talk at the Leipziger Flow Meeting about Extracellular Vesicles

Research Funding

- WWTF Life Science Grant 2021 for “Combating the viral susceptibility in preterm infants”, WWTF, 740k €, Principal Investigator, 2021
- Marietta-Blau-Grant: Deciphering the impact of host-microbe interaction on antiviral immune mechanism in extreme premature infants, Austrian Student Exchange Service (OeAD), 15,000 €, Principal Investigator, 2019.
- Research Funding Roche for Reference Values for IL-6 in Preterm Neonates, Roche, 38,550€, Principal Investigator, 2019.
- Medical Scientific Fund of the Mayor of the City of Vienna for Determination of C-reactive protein in neonatal saliva, City of Vienna, 14,000 €, Principal Investigator, 2016.

Review writing (selected)

- Bellach L, Eigenschink M, Hassanein A, Savran D, Salzer U, Müllner EW, Repa A, Klebermass-Schrehof K, **Wisgrill L**, Giordano V, Berger A., Packed red blood cell transfusion in preterm infants., *Lancet Haematol*. 2022 Aug;9(8):e615-e626. doi: 10.1016/S2352-3026(22)00207-1