

CURRICULUM VITAE

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EDUCATION

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| 01/2020 | Ph.D. (pass with distinction) in Biology, University of Vienna, Austria |
| 11/2013 | Diploma <i>Magistra reis naturalis</i> (M.Sc. equivalent) in Microbiology and Genetics, University of Vienna, Austria |
| 07/2009 | 1st Diploma (B.Sc. equivalent) in Biology at the University of Vienna, Austria |

RESEARCH AND PROFESSIONAL EXPERIENCE

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|-------------------|--|
| 06/2024 – now | Postdoctoral researcher at the Dep. of Functional and Evolutionary Ecology, Archaea Biology and Ecogenomics Unit, University of Vienna, Austria
Prof. Christa Schleper group, Project: “ <i>Virus defence systems in Archaea</i> ” |
| 04/2021 – 06/2024 | Postdoctoral researcher at the Laboratory of Microbiology, Wageningen University, The Netherlands, Prof. John van der Oost group, Project: “ <i>Nuclease engineering, CRISPR-Cas and Argonautes</i> ” |
| 01/2020 – 04/2021 | Postdoctoral researcher at the Dep. of Functional and Evolutionary Ecology, University of Vienna, Austria, Prof. Christa Schleper group Project: “ <i>RNA interference by the type III CRISPR-Cas system in Saccharolobus solfataricus</i> ” |
| 03/2014-01/2020 | Ph.D. student at the Dep. of Functional and Evolutionary Ecology, University of Vienna, Austria, Advisor: Prof. Christa Schleper
Ph.D. thesis: “ <i>Investigation of CRISPR-mediated RNA interference in the hyperthermophilic Archaeon Saccharolobus solfataricus</i> ” |
| 10/2017 | Co-organizer of the international CRISPR symposium : “Editing genomes with CRISPR: Between scientific breakthroughs and societal challenges”, Vienna, Austria (see: https://rri.univie.ac.at/workshops-events/crispr-symposium/) |
| 05-08/2014 | Guest researcher during Ph.D. studies at the Institute of Genome Biology, Illinois, USA, Host: Prof. Rachel Whitaker group |
| 03/2012- 11/2013 | Diploma student (M.Sc. equivalent) at the Dep. of Functional and Evolutionary Ecology, University of Vienna, Austria; Prof. Christa Schleper group
Diploma thesis: “ <i>Development of a plasmid shuttle vector system for CRISPR studies in the archaeon Sulfolobus solfataricus</i> ” |

GRANTS AND FELLOWSHIPS (SELECTED)

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| 2022 – 2025 | Schroedinger Postdoctoral fellowship (FWF Austrian Science fund) for performing 2 years of research at the Wageningen University, The Netherlands, 1 year return phase to University of Vienna, Austria |
| 2018 | PhD Completion grant of the University of Vienna for supporting the finalization of the Ph.D. thesis (6 months funding) |
| 2016 | Microbiology Society Conference Grant 2016 for attendance of the MboA5 conference in London, UK |

2016-2018

DOC fellowship – Internationally reviewed doctoral Fellowship Programme of the **Austrian Academy of Sciences (ÖAW)** supporting highly qualified doctoral candidates (24 months funding for Ph.D. thesis)

LIST OF ACADEMIC PUBLICATIONS OF ARTICLES AND PATENTS

- Wimmer E., **Zink IA.**, Hodgskiss L.H., Kerou M., Schleper C[#], (2024). The type III-B CRISPR-Cas System Affects Energy Metabolism and Adaptation in the Archaeon *Saccharolobus solfataricus*”, bioRxiv 2024.09.02.610847; doi: <https://doi.org/10.1101/2024.09.02.610847>
- Van Min, M., **Zink, I.**, Swarts, D.C., Van der Oost, J. (2022) METHODS OF ENRICHING NUCLEIC ACIDS. PCT/EP2023/052479; published 10 August 2023, WO 2023/148235.
- Wimmer E, **Zink IA**, Schelper C[#] (2022). Wimmer E, Zink IA, Schleper C. Reprogramming CRISPR-Mediated RNA Interference for Silencing of Essential Genes in Sulfolobales. *Methods Mol Biol.* 2022;2522:177-201. doi: 10.1007/978-1-0716-2445-6_11.
- **Zink IA**^{*,#}, Wimmer E^{*}, Schleper C (2020). Heavily Armed Ancestors: CRISPR Immunity and Applications in Archaea with a Comparative Analysis of CRISPR Types in Sulfolobales. *Biomolecules*, 10(11), 1523, doi: 10.3390/biom10111523
- **Zink IA**, Fouqueau T, Tarrason Risa G, Werner F, Baum B, Bläsi U, Schleper C[#] (2020). Comparative CRISPR type III-based knockdown of essential genes in hyperthermophilic *Sulfolobales* and the evasion of lethal gene silencing. *RNA Biology* 21, 1-14, doi: 10.1080/15476286.2020.1813411
- **Zink IA**^{*}, Pfeifer K^{*}, Wimmer E, Sleytr UB, Schuster B, Schleper C[#] (2019). CRISPR-mediated gene silencing reveals involvement of the archaeal S-layer in cell division and virus infection. *Nature Communications*, 10(1), 4797. doi: 10.1038/s41467-019-12745-x.
- Bassani F[#], **Zink IA**, Pribasnig T, Wolfinger MT, Romagnoli A, Resch A, Schleper C, Bläsi U, La Teana A (2019). Indications for a moonlighting function of translation factor aIF5A in the crenarchaeum *Sulfolobus solfataricus*. *RNA Biology* 16(5), 675–685, doi: 10.1080/15476286.2019.1582953.
- Zebec Z^{*}, **Zink IA**^{*}, Kerou M, Schleper C[#] (2016). Efficient CRISPR-Mediated Post-Transcriptional Gene Silencing in a Hyperthermophilic Archaeon Using Multiplexed crRNA Expression. *G3 (Bethesda)* 6(10), 3161–3168, doi: 10.1534/g3.116.032482.

*shared-first authorships, #corresponding authorship on published articles

RESEARCH FOCUS

I study the molecular function, cellular roles, and interactions of immune systems like CRISPR-Cas and Argonautes in Archaea, focusing on both their virus defense mechanisms and broader roles beyond immunity. Additionally, I repurpose these systems as tools for genetic engineering in Archaea. As a researcher, I value a comprehensive approach, combining *in vivo* and *in vitro* work to fully understand these systems.

LOOKING FOR A MSC STUDENT

I am looking for a motivated Master's student interested in virus defense in Archaea, who is eager to learn and perform *in vitro* work (such as protein purification) combined with *in vivo* work (genetic engineering, plaque assays, culturing,...)