

Personal Details

Sabrina Summer, PhD

ORCID number 0000-0002-1489-8638

Current Position: Junior project leader (PostDoc)

Department for Biomedical Research, Center for Experimental Medicine

University of Continuing Education Krems

Dr.-Karl-Dorrek-Strasse 30, A-3500 Krems

Email: sabrina.summer@donau-uni.ac.at



Homepage:

<https://www.donau-uni.ac.at/de/universitaet/organisation/mitarbeiterinnen/person/4295330329>

Google Scholar profile:

<https://scholar.google.com/citations?user=djj4o7AAAAAJ&hl=de>

Scientific Education and Career History

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|-------------|---|
| 2008 - 2013 | Bachelor Studies in Molecular Biology, University Vienna,
“The role of the RNA chaperone Hfq in the metabolism and virulence of Pseudomonas aeruginosa.” |
| 2013 - 2015 | Master Studies in Molecular Microbiology and Immunology, University Vienna,
“The role of type III interferons in the mucosal immune response to enteropathogens.” |
| 2015 - 2019 | PhD studies in Human Genetics in the FWF doctoral college (DK) “RNA biology”, Medical University Vienna
“YBEY is an essential biogenesis factor for mitochondrial ribosome assembly.”
(PhD defense 06/2020) |
| 2019 - 2021 | Postdoctoral Researcher, Medical University Vienna
Coordination of Molecular Analysis, Lab Management
Spatial transcriptomic and proteomic analysis, 3D modeling of the human liver |
| 2020 | Voluntary work, routine testing of SARS-CoV-2 patient specimens, validation of protocols for SARS-CoV-2 diagnostics, evaluation of transport condition for SARS-CoV-2 specimens (3 months) |
| Since 2021 | Junior PI (PostDoc)
University for Continuing Education, Department for Biomedical Research
Immunomodulatory function of stem cells and their contribution to the pathology of autoimmune diseases, 2D and 3D cell culture models |

Additional Qualifications

2019	Project Management and Team Leading, Karl-Franzens University of Graz Basics in Project Management, Project Management Tools and Team Leading
2020	Good clinical practice, Medical University Vienna, Basics of GCP
2020	SAP, WIFI Vienna, Basics in the handling of SAP, certificate foundation level
2020	Studies according to the medicines act, Medical University Vienna, Basics for the application of studies according to the AMG, Basics in Ethics, ICH-Guidelines
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RESEARCH INTEREST

Main Areas of Research

Immunomodulation mediated by mesenchymal stem cells under physiological and pathological conditions.

- Pathophysiology of rheumatoid arthritis
- Therapeutic potential of MSCs
- 3D cell culture models

Most Important Research Results

- The role of mesenchymal stem cells in the survival of leukemia cells
- The contribution of mesenchymal stem cells to RA disease progression
- The immunoregulatory mechanisms mediated by mesenchymal stem cells depend on the activation status of T-lymphocytes
- Establishment of a 3-dimensional cell matrix to monitor de novo vessel formation by endothelial and mesenchymal stem cells (published in 2022)
- Description of key processes in mitochondrial ribosome assembly (published in 2020)
- Characterization of the role of type III interferons in the mucosal immune response against bacterial pathogens

Academic Publications

1. Witalisz-Siepracka A, Denk C-M, Zdársky B, Hofmann L, Edtmayer S, Harm T, Weiss S, Heindl K, **Sumner S**, Dutta S, Casanova E, Putz EM, Sill H and Stoiber D. STAT3 in acute myeloid leukemia facilitates natural killer cell-mediated surveillance. *Front. in Immunol.* 2024. DOI 10.3389/fimmu.2024.1374068.
2. Kielbassa AM, **Sumner S**, Frank W, Lynch E and Batzer JS. Equivalence study of the resin-dentine interface of internal tunnel restorations when using an enamel infiltrant resin with ethanol-wet dentine bonding. *Sci Rep.* 2024. 14, 12444. DOI 10.1038/s41598-024-63289-0.
3. **Sumner S**, Kocsis A, Reihls EI, Rothbauer M, Lonhus K, Stys D, Ertl P, Fischer MB. Automated analysis of mitochondrial dimensions in mesenchymal stem cells: Current methods and future perspectives. *Heliyon.* 2023;9(1):e12987. DOI 10.1016/j.heliyon.2023.e12987.

4. **Summer S**, Rossmannith E, Pasztorek M, Fiedler C, Gröger M, Rauscher S, Weber V, Fischer MB. Mesenchymal stem cells support human vascular endothelial cells to form vascular sprouts in human platelet lysate-based matrices. PLoS One. 2022;17(12):e0278895. DOI 10.1371/journal.pone.0278895
5. **Summer S**, Schmidt R, Herdina AN, Krickl I, Madner J, Greiner G, Mayer FJ, Perkmann-Nagele N, Strassl R. Detection of SARS-CoV-2 by real-time PCR under challenging pre-analytical conditions reveals independence of swab media and cooling chain. Sci Rep. 2021;11:13592. DOI 10.1038/s41598-021-93028-8
6. **Summer S**, Smirnova A, Gabriele A, Toth U, Fasemore AM, Förstner KU, Kuhn L, Chicher J, Hammann Ph, Mitulović G, Entelis N, Tarassov I, Rossmannith W, Smirnov A. YBEY is an essential biogenesis factor for mitochondrial ribosomes. Nucleic Acids Res. 2020;48(17):9762-9786. DOI 10.1093/nar/gkaa148

Under revision:

Summer S, Borrell-Pages M, Bruno RM, Climie RE, Dipla K, Dogan A, Eruslanova K, Fraenkel E, Mattace-Raso F, Pugh CJA, Rochfort KD, Ross M, Roth L, Schmidt-Trucksäss A, Schwarz D, Shadiow J, Sohrabi Y, Sonnenberg Y, Tura-Ceide O, Guvenc Tuna B, Julve J and Dogan S. Centenarians- The way to healthy vascular ageing and longevity: A review from VascAgeNet. GeroScience. 2024. JAAA-D-24-00584.

Fellowships and Awards

FWF ESPRIT PI of the project “Mesenchymal stem cell mediated T-cell switch in rheumatoid arthritis” (PI, self-financing, 2023 – 2026)

Research Fundings

- FFG infrastructure (conceptualization together with Prof. Martin Kainz, 2024)
- FWF DocFundsConnect “EVision” (faculty member, conceptualization together with Prof. Viktoria Weber, 2024)

Oral Presentations at meetings/conferences

- Lecture and Workshop at Junge Uni and Fit4Youniversity (2023, 2024)
- Workshop “Isolation of human umbilical vein endothelial cells” at the PACT summer school in Vienna (2022)
- Long night of research, “Immunological memory”, at the University of Continuing Education Krems (2022, 2024)
- Girls Day at the University of Continuing Education Krems (2022, 2023)

Memberships

- Artery Society (ongoing)
- ESAO (ongoing)
- Cost Action “VascAgeNet” (2022 – 2023)