

## Curriculum Vitae

### Personal Data

Title	Prof. Dr.
First name	Winfried
Name	Römer
Current position	Full Professor for Synthetic Biology of Signalling Processes
Current institution(s)/site(s), country	University of Freiburg; Faculty of Biology; BIOS; Schänzlestraße 18; 79104 Freiburg; Germany
Identifiers/ORCID	0000-0002-2847-246X

### Qualifications and Career

Stages	Periods and Details
1. State examination  Diploma	11/1996 – 07/2001: Studies in Biology, Chemistry and Didactics; University of Regensburg; Germany  2005 – 2007: Diploma in Management Consultancy; Akademie für Wirtschaftswissenschaften Bad Harzburg; Germany
Graduate Studies in Chemistry (Dr. rer. nat.)	09/2001 – 07/2004: with Prof. Dr. Claudia Steinem; University of Regensburg; Institute of Analytical Chemistry, Chemo- and Biosensors; Germany
Full Professor (W3) for Synthetic Biology of Signalling Processes  Junior Professor (W1) for Synthetic Biology of Signalling Processes  Permanent Research Scientist (chargé de recherche)  Postdoctoral fellow	Since 04/2017; Faculty of Biology and BIOS Centre for Biological Signalling Studies; University of Freiburg, Germany  04/2011 – 03/2017; Faculty of Biology and BIOS Centre for Biological Signalling Studies; University of Freiburg, Germany  11/2008 – 03/2017; CNRS (French national center for scientific research) and Curie Institute; Traffic, Signaling and Delivery Laboratory; Paris; France  09/2004 – 10/2008; with Dr. Ludger Johannes at Curie Institute; Traffic, Signaling and Delivery Laboratory; Paris; France

## Activities in the Research System

### *Academic self-governance*

- 2014-today Elected member of the Advisory Board of the Faculty of Biology, University of Freiburg; Germany
- 2012-today Member of the PhD examination board (Promotionsausschuss), Faculty of Biology, University of Freiburg
- 2012-today Member of the study committee, Faculty of Biology, University of Freiburg
- 2012-2014 Mentoring program for female scientists at the Christian-Albrechts-University Kiel; Germany
- 2012-2014 Membership in the scientific selection panel of the Helmholtz-Zentrum Berlin; Germany
- 2010-2013 Elected member of the advisory board of the French Society for Cell Biology; France

### *Activities in collaborative research projects*

- 2024-today Vice-Spokesperson of BLOSS; University of Freiburg; Germany
- 2021 Appointment as FRIAS senior fellow; University of Freiburg; Germany
- 2019-2024 Vice-Spokesperson of the International Max Planck Research School for Immunobiology, Epigenetics, and Metabolism (IMPRS-IEM); Freiburg; Germany
- 2019 Appointment as AI of CIBSS; University of Freiburg; Germany
- 2015-today Member of the steering committee of BLOSS; University of Freiburg; Germany
- 2014-2024 Member of the steering committee of IMPRS-MCB; Freiburg; Germany
- 2012-2024 PI of the International Max Planck Research School of Molecular and Cellular Biology (IMPRS-MCB); Freiburg; Germany
- 2011 Appointment as PI of BLOSS; University of Freiburg; Germany
- 2011 Appointment as PI of the Spemann Graduate School of Biology and Medicine; University of Freiburg; Germany

### *Conference organization*

- 2018 Co-organizer of the Symposium “Biophysical characterization of membrane proteins”; Freiburg; Germany
- 2013 Organizer of the “Symposium on Advanced Microscopy Techniques in Life Sciences”; Freiburg; Germany
- 2011 Co-organizer of the Congress “Cytoskeleton in membrane trafficking”; Paris; France

### *Peer review*

Grant reviewer: Landsteiner Foundation for Blood Transfusion Research (Netherlands), French National Research Agency (ANR, France), Medical Research Council (MRC, UK) and (BMBF).

Reviewer for EU projects: EraSynBio; ERC Synergy

Ad-hoc reviewer for scientific journals including Nature Communications, Cell Chemical Biology, JACS, Nano Letters, Chemical Science, BBA-Molecular Cell Research, Molecular Biology of the Cell, Cancer Letters, Biophysical Journal, PLoS ONE, Interface Focus, Biomolecules

Evaluation activity for HCERES (The High Council for Evaluation of Research and Higher Education, France)

## Supervision of Researchers in Early Career Phases

Supervision of 17 doctoral dissertations, 28 Masters dissertations, 20 Bachelor dissertations (within the last 5 years and ongoing).

Hosting of two postdoctoral researchers (within the last 5 years and ongoing).

## Scientific Results

### Category A

*Pseudomonas aeruginosa* LecB suppresses immune responses by inhibiting transendothelial migration.

Sponsel J, Guo Y, Hamzam L, Lavanant AC, Pérez-Riverón A, Partiot E, Muller Q, Rottura J, Gaudin R, Hauck D, Titz A, Flacher V, Römer W\*, Mueller CG\*. **EMBO Rep.** 2023 Mar 1:e55971. doi: 10.15252/embr.202255971. \* corresponding author

Neutralizing the Impact of the Virulence Factor LecA from *Pseudomonas aeruginosa* on Human Cells with New Glycomimetic Inhibitors.

Zahorska E, Rosato F, Stober K, Kuhaudomlarp S, Meiers J, Hauck D, Reith D, Gillon E, Rox K, Imberty A, Römer W\*, Titz A\*. **Angew Chem Int Ed Engl.** 2023 Feb 6;62(7):e202215535. doi: 10.1002/anie.202215535. \* corresponding author

Novel lectin-based chimeric antigen receptors target Gb3-positive tumour cells.

Meléndez AV, Velasco Cárdenas RM, Lagies S, Strietz J, Siukstaite L, Thomas OS, Tomisch J, Weber W, Kammerer B, Römer W\*, Minguet S\*. **Cell Mol Life Sci.** 2022 Sep 12;79(10):513. doi: 10.1007/s00018-022-04524-7. \* corresponding author

Septin barriers protect mammalian host cells against *Pseudomonas aeruginosa* invasion.

Aigal S, Omidvar R, Stober K, Ziegelbauer J, Eierhoff T, Schampera JN, Römer W\*, Schwan C\*. **Cell Rep.** 2022 Oct 18;41(3):111510. doi: 10.1016/j.celrep.2022.111510. \* corresponding author

The Gb3-enriched CD59/flotillin plasma membrane domain regulates host cell invasion by *Pseudomonas aeruginosa*.

Brandel A, Aigal S, Lagies S, Schlimpert M, Meléndez AV, Xu M, Lehmann A, Hummel D, Fisch D, Madl J, Eierhoff T, Kammerer B, Römer W. **Cell Mol Life Sci.** 2021 Apr;78(7):3637-3656. doi: 10.1007/s00018-021-03766-1.

Carbohydrate-dependent B cell activation by fucose-binding bacterial lectins.

Wilhelm I, Levit-Zerdoun E, Jakob J, Villringer S, Frensch M, Übelhart R, Landi A, Müller P, Imberty A, Thuenauer R, Claudinon J, Jumaa H, Reth M, Eibel H, Hobeika E\*, Römer W\*. **Sci Signal.** 2019 Mar 5;12(571):eaao7194. doi: 10.1126/scisignal.aao7194. \* corresponding author

A lipid zipper triggers bacterial invasion.

Eierhoff T, Bastian B, Thuenauer R, Madl J, Audfray A, Aigal S, Juillot S, Rydell GE, Müller S, de Bentzmann S, Imberty A, Fleck C\*, Römer W\*. **Proc Natl Acad Sci U S A.** 2014 Sep 2;111(35):12895-900. doi: 10.1073/pnas.1402637111. \* corresponding author

Shiga toxins--from cell biology to biomedical applications.

Johannes L, Römer W. **Nat Rev Microbiol.** 2010 Feb;8(2):105-16. doi: 10.1038/nrmicro2279.

Actin dynamics drive membrane reorganization and scission in clathrin-independent endocytosis.

Römer W\*, Pontani LL, Sorre B, Rentero C, Berland L, Chambon V, Lamaze C, Bassereau P, Sykes C, Gaus K, Johannes L\*. **Cell.** 2010 Feb 19;140(4):540-53. doi: 10.1016/j.cell.2010.01.010. \* corresponding author

Shiga toxin induces tubular membrane invaginations for its uptake into cells.

Römer W, Berland L, Chambon V, Gaus K, Windschiegl B, Tenza D, Aly MR, Fraisier V, Florent JC, Perrais D, Lamaze C, Raposo G, Steinem C, Sens P, Bassereau P, Johannes L. **Nature**. 2007 Nov 29;450(7170):670-5. doi: 10.1038/nature05996.

## **Category B**

Science communications:

*Pseudomonas aeruginosa* Bacteria produce a molecule that paralyzes immune system cells.

Römer W and Mueller C. 2023.

Sugar-based inhibitors disarm the pathogen *Pseudomonas aeruginosa*

Titz A and Römer W. 2023.

Cytoskeleton acts as cells' bouncer for bacteria.

Römer W and Schwan C. 2023.

Binding with consequences.

Römer W and Hobeika E. 2019.

Bacterial Protein Impairs Important Cellular Processes

Römer W. 2019.

Zipper triggers bacterial invasion.

Römer W. 2014.

Sugar Protects Cells from Bacterial Invasion.

Römer W and Winssinger N. 2014.

Patent applications:

PROTEINS FOR REGULATION OF SYMBIOTIC INFECTION AND ASSOCIATED REGULATORY ELEMENTS

T Ott, L Siukstaite, C Su, W Römer

US Patent App. 17/932,775, 2023 03 23

HYGIENIC EARLY-STAGE WARNING SYSTEM

H Ophardt, A Lang, S Steltenkamp, J Claudinon, M Madec, P Perronno, W Römer, S Disegna

US Patent App. 18/669,881, 2024 12 05

## **Academic Distinctions**

2011 Pfizer Foundation Research Prize (Infectiology)

2011-2016 ERC Starting Grant

2005-2007 Post-doctoral fellowship from CNRS; France

2004-2005 Post-doctoral fellowship from Curie Institute; France