Jena School for Microbial Communication
Graduate School of Excellence

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Title Postdoc Project:

SynThera: Synthetic therapeutic microbes for tailored antimicrobial therapies

Main Research Interests

- Synthetic biology
- Engineered live biotherapeutic products
- Biosensors

Methodological Experiences

- Molecular cloning
- Metabolic engineering
- Biochemistry

Curriculum Vitae

- 2025 - present: Postdoc - Institute of Microbiology, FSU-Jena, Germany.
- 2024 - 2025: Postdoc - Microbial Pathogenicity Mechanisms, Leibniz Institute for Natural Product Research and Infection Biology Hans-Knöll-Institute, Jena, Germany.
- 2020 - 2024: Postdoc - Synthetic Microbiology, Leibniz Institute for Natural Product Research and Infection Biology Hans-Knöll-Institute, Jena, Germany.
- 2017 - 2019: Postdoc - Adaptation, Diversity and Ecology of Yeasts, UMR Sciences pour l'Oenologie, INRAE Montpellier, France.
- 2015 - 2017: Postdoc - Yeast Genetics, Leibniz Institute of Plant Genetics and Crop Plant Research (IPK), Gatersleben, Germany.
- 2015: PhD in microbiology with the grade « magna cum laude » awarded by the University of Greifswald, Germany.

- 2010: Master's in science and technology, option biology and health awarded by the University of Montpellier, France and the National Graduate School of Chemistry of Montpellier (ENSCM), France
- 2010: Honour's master's degree in chemistry awarded by the National Graduate School of Chemistry of Montpellier (ENSCM), France

Publications

Peer-reviewed original papers

- Maneira, C., Becker, S., **Chamas, A**., & Lackner, G. (2025). A multilayered biocontainment system for laboratory and probiotic yeast. Metabolic Engineering, 91, 442-454. https://doi.org/10.1016/j.ymben.2025.06.009
- Castaño-Cerezo, S., **Chamas, A**., Kulyk, H., Treitz, C., Bellvert, F., Tholey, A., Galéote, V., Camarasa, C., Heux, S., Garcia-Alles, L. F., Millard, P., & Truan, G. (2024). Combining systems and synthetic biology for in vivo enzymology. The EMBO Journal, 43(21), 5169-5185. https://doi.org/https://doi.org/10.1038/s44318-024-00251-w
- **Chamas, A**., Svensson, C.-M., Maneira, C., Sporniak, M., Figge, M. T., & Lackner, G. (2024). Engineering Adhesion of the Probiotic Strain Escherichia coli Nissle to the Fungal Pathogen Candida albicans. ACS Synthetic Biology. https://doi.org/10.1021/acssynbio.4c00466
- **Chamas, A**., Pham, H. T. M., Jahne, M., Hettwer, K., Uhlig, S., Simon, K., Einspanier, A., Baronian, K., & Kunze, G. (2017). Simultaneous detection of three sex steroid hormone classes using a novel yeast-based biosensor. Biotechnology and Bioengineering, 114(7), 1539-1549. https://doi.org/10.1002/bit.26249
- **Chamas, A**., Pham, H. T. M., Jahne, M., Hettwer, K., Gehrmann, L., Tuerk, J., Uhlig, S., Simon, K., Baronian, K., & Kunze, G. (2017). Separation and identification of hormone-active compounds using a combination of chromatographic separation and yeast-based reporter assay. Science of the Total Environment, 605-606, 507-513. https://doi.org/S0048-9697(17)31481-X
- Pham, H. T. M., **Chamas, A**., Nieter, A., Giersberg, M., Rutten, T., Gehrmann, L., Hettwer, K., Tuerk, J., Uhlig, S., Simon, K., Baronian, K., & Kunze, G. (2016). Determination of glucocorticoids using photometric (A-YGS) and spectrofluorometric (A-YGFS) bioassays based on modified Arxula adeninivorans cells: Applications in environmental analysis. Sensors and Actuators B-Chemical, 223, 540-549. https://doi.org/10.1016/j.snb.2015.09.132
- **Chamas, A**., Nieter, A., Pham, H. T., Giersberg, M., Hettwer, K., Uhlig, S., Simon, K., Baronian, K., & Kunze, G. (2015). Development of a recombinant Arxula adeninivorans cell bioassay for the detection of molecules with progesterone activity in wastewater. Analytical and Bioanalytical Chemistry, 407(26), 8109-8120. https://doi.org/10.1007/s00216-015-8985-7
- **Chamas, A**., Giersberg, M., Friedrich, K., Sonntag, F., Kunze, D., Uhlig, S., Simon, K., Baronian, K., & Kunze, G. (2015). Purification and immunodetection of the complete recombinant HER-2[neu] receptor produced in yeast. Protein Expression and Purification, 105(0), 61-70. https://doi.org/http://dx.doi.org/10.1016/j.pep.2014.10.004
- Vijayan, V., Giersberg, M., **Chamas, A**., Mehrotra, M., Chelikani, V., Kunze, G., & Baronian, K. (2015). Use of recombinant oestrogen binding protein for the electrochemical detection of oestrogen. Biosensors and Bioelectronics, 66, 379-384. https://doi.org/10.1016/j.bios.2014.11.043

Peer-reviewed reviews and book articles

- Urbauer, E., Gräwe, A., **Chamas, A**., & Papenfort, K. (2026). Engineering quorum sensing: new directions for antimicrobial therapy. Trends in Microbiology. https://doi.org/https://doi.org/10.1016/j.tim.2026.05.006
- Maneira, C., **Chamas, A**., & Lackner, G. (2025). Engineering Saccharomyces cerevisiae for medical applications. Microb Cell Fact, 24(1), 12. https://doi.org/10.1186/s12934-024-02625-5
- **Chamas, A**., Jähne, M., Wegner, U., Pham, H. T. M., Simon, K., Uhlig, S., & Kunze, G. (2025). Biosensors Based on Yeast/Fungal Cells. In A. A. Sibirny (Ed.), Biotechnology of Yeasts and Filamentous Fungi (pp. 379-404). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-74726-7_13
- **Chamas, A**., Pham, H. T. M., Baronian, K., & Kunze, G. (2017). Biosensors Based on Yeast/Fungal Cells. In A. A. Sibirny (Ed.), Biotechnology of Yeasts and Filamentous Fungi (pp. 351-371). Springer International Publishing. https://doi.org/10.1007/978-3-319-58829-2_12
- Bischoff, F., **Chamas, A**., Litwińska, K., Matthes, F., Böer, E., & Kunze, G. (2017). Applications of Blastobotrys (Arxula) adeninivorans in Biotechnology. In T. Satyanarayana & G. Kunze (Eds.), Yeast Diversity in Human Welfare (pp. 455-479). Springer Singapore. https://doi.org/10.1007/978-981-10-2621-8_18

Non-peer-reviewed articles, conference abstracts, theses

- **Chamas, A**. *Development of novel Surface Plasmon Resonance-based biosensors with purified recombinant human HER-2 and progesterone receptor produced in two different yeast species*, 2015 (PhD thesis)