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## Yeast whole cell sensors for the detection of acetic acid in biogas production

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**B**ioSAM, an innovative regional growth core funded by the BMBF, encompasses 11 companies and six research institutions that are focusing on applications of whole cell sensors in biotechnology, environmental and medical technology. Besides their high sensitivity and specificity, whole cell based biosensors indicate the bioavailability of a specific analytes. The project Biogas aims to generate functionalized yeast cells as sensors for the control and optimization of the biogas process. Acetic acid as a critical intermediate was defined as the key analytes. The accumulation of acetic acid indicates an imbalance of the process due to a kinetic uncoupling between acid producers and consumers. Monitoring of acetic acid may thus assist optimizing the biogas process. We here describe the generation and validation of yeast whole cell sensors which modulate the expression of a fluorescent protein depending on the concentration of the analyte. In order to increase the endurance of a monitoring device, in addition to vegetative cells, spores are tested for the monitoring process.

### Biography

Katja Hahne studied Human Biology at University of Greifswald. During her Diploma thesis, she dealt with the determination and the influence of peroxidase activity in human saliva and peroxidase containing products. Since 2015, she has been working as a PhD student at Institute of Genetics, Technische Universität Dresden. Within the Rödel group, her research is located in the field of "Biological sensor-actor systems".

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