

FROM SCREENING TO PROCESS OPTIMIZATION: AMBR TECHNOLOGY TO SPEED UP MICROBIAL FERMENTATION PROCESSES

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Session proposals:

- Therapeutic Proteins
- Vaccines

The development of biopharmaceuticals or biotechnological products derived from microbial fermentation is a financially risky endeavor and time consuming process, requiring technical upstream solutions which reduce timelines, increase efficiency, and raise likelihood of success. We have identified in particular the early steps of strain and process development offering best prospects to speed up the entire process significantly by using a reliable screening system. Based on the well-proven ambr® principle we designed with ambr 15 fermentation system to accelerate early stage development of microbial fermentation products. The multi-fermentation unit mimics larger scale bioreactor processes, and is suitable for screening clones, strains or growth conditions. In case studies with industrial partners using *E. coli* and *P. pastoris*, consistent and efficient control of fermentations across a variety culture conditions (e.g. feed, temperature, duration, pH) could be demonstrated. In the succeeding step of process development ambr 250 has been widely applied to speed up the 2nd critical phase of the microbial upstream process development. The larger working volume and the range of features, which this multi-parallel system offers, are superior to common benchtop fermenters. Optical density supervision, off gas analysis, fed-batch processing and advanced control capabilities allow process development for most commercial-scale upstream fermentation processes. In addition to this impressive range of features ambr250 has proven its ability to reliably increase the efficiency of fermentation process development many times through its rapid setup and cleanup, advanced control software, and automation.