

Press Release

m2p-labs sets a new standard in micro bioreactors with the Flowerplate

Aachen, 6th October 2008 – m2p-labs GmbH launches its new micro bioreactor platform, the Flowerplate, at the Biotechnica fair in Hannover (7.-9. October 2008). With this development m2p-labs sets a new standard in micro bioreactors. The Flowerplate was selected from a multitude of different microreactor geometries in an intensive research project in co-development with the Department of Biochemical Engineering (Prof. Jochen Büchs) at the RWTH Aachen University and m2p-labs. Recently the marketability was reached. The flower shaped well geometry dramatically improves mixing and gas/liquid mass transfer. Similar to baffles in shake flasks the flower shape acts as stream breaker and increases the gas exchange area during orbital shaking. Thus, a unique and unmatched Oxygen Transfer Rate (OTR) for micro bioreactors of 0.2 mol/L/h ($k_{La} > 1000$ 1/h) was achieved. For the first time researchers have now the possibility to culture microorganisms under non-oxygen limited conditions and grow their cells to high cell densities in micro scale. Especially in Systems Biology and in bioprocess development this is an important aspect, because researchers want to study metabolic pathways and networks under defined culture conditions and not under undefined, oxygen limited conditions with the risk of byproduct formation etc. Further on, the Flowerplate provides for the first time at micro scale comparable culture conditions like in industrial fermenters, thus, offering now a unique tool to perform mass screening and bioprocess development under scalable conditions. Additionally, in combination with the BioLector technology from m2p-labs, the Flowerplate offers also direct online monitoring of all relevant fermentation parameters (biomass, fluorescent proteins, pH and DO). It is now possible to perform 48 parallel batch fermentations with a minimal effort and with a dramatically increased output of information about the fermentations due to the real time culture monitoring. The 48 well Flowerplate fulfill the footprint of the SBS norms, so that the plate can be easily integrated in all common liquid handling systems providing an easy process automation. Also, the wide range of applicable filling volumes (0.3–1.5 mL) in the plate, allows the user to adapt different assays to the plate and on the other hand, enough material is left for further offline enzyme or protein analytics. In conclusion, the Flowerplate provides researchers in Systems Biology, Proteomics, Functional Genomics and in general in enzyme and protein expression with a unique and efficient research tool. For the first time they will be able to follow growth and protein expression in real time under sufficient oxygen supply. The first beta testers in academia and industry were really surprised about the Flowerplate performance, thus, they could demonstrate a nice reproducibility and comparable results to parallel shake flask and fermenter cultivations. m2p-labs is proud to be able to offer this new and unique product to their clients. No other technology on the market matches the performance of the Flowerplate in respect to mass transfer, throughput and information content. The new microplate will be presented to public at the Biotechnica fair on Booth B26 / Hall 9.

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For more information please see: www.m2p-labs.com/flowerplate.php



m2p-labs GmbH – www.m2p-labs.com

m2p-labs is a Spin Off of RWTH Aachen University. The biotechnology company is focusing on micro reaction solutions for cell culture and microbial screening. The company empowers the biotechnology, chemical and pharmaceutical industry with increasing number and information of cell culture and microbial experiments. The first development is a unique micro bioreactor system for High-Content-Screening. The so called *BioLector* technology is also available for clients as contract research in High-Throughput-Screening or Bioprocess Development projects. The Consulting Sector of the company offers "Scale up and down" studies of industrial bioprocesses and lab automation. m2p-labs is located in Aachen (Germany).

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