

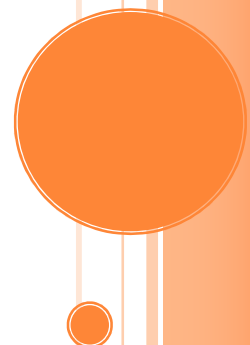
FED-BATCH TECHNOLOGY

Theory of Fed-batch

In comparison to the batch-cultivation technology that is used for example in shake-flasks, fed-batch technology is advantageous in many ways. Side metabolites are reduced and higher cell densities are reached with substrate feeding and oxygen control. Here the advantages and theory of EnBase and fed-batch technologies are reviewed and compared.

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In fed-batch processes high cell densities can be obtained without oxygen limitation. The specific growth rate of the culture will be slower than in batch cultures and therefore the cultivation time is significantly longer. With this technology it is possible to reach cell densities up to OD₆₀₀ of 400 in bioreactors. That is significantly higher than in shaking batch cultures, in which enough oxygen can be delivered only until OD₆₀₀ from 1 to 2.

EnBase™ uses the principle of fed-batch technology but the pump of the feeding solution is replaced by the biocatalyst which delivers the growth substrate (glucose) in a controlled manner to the cells.

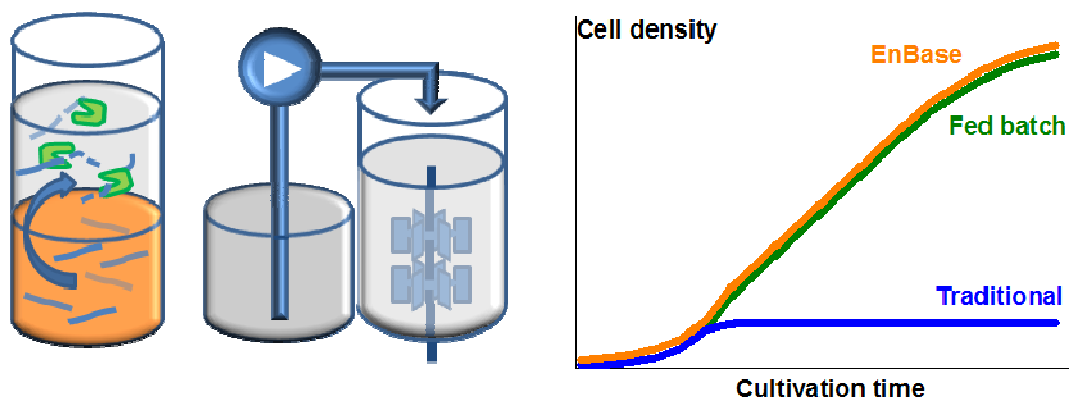


Figure 2. Schematic view of the EnBase™ substrate delivery system and the fed-batch bioreactor setup. Graph shows the difference between fed-batch and traditional batch cultivation growth profiles.

ENBASE™ PRODUCT FAMILY

There are also other members in the EnBase™ product family. The technology is currently available in shake flasks of 500 and 1000 ml and 96-well plates. Please ask for more details and get enthusiastic of our technology in all formats!

REFERENCES

Review articles which provide more comprehensive information about the fed-batch technology

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