

Versatile vessels define single-use fermentation

Eppendorf's single-use fermentors now cover working volumes from 65ml to 3.75L, allowing greater flexibility in research and process development. Its new BioBLU 3f vessel for microbial fermentation extends the firm's portfolio of bioreactors for the cultivation of bacteria, yeasts and fungi.

Manufacture of enzymes, production of antibiotics or fabrication of food supplements: the list of goods produced by microbial fermentation is long. Researchers are constantly pushing the limits with new bioprocess solutions, and the optimal use of resources is more important than ever in order to outweigh the costs for raw materials and labour. A thorough understanding of critical process parameters paves the way to consistent product quality. Consequently, researchers need user-friendly fermentation systems that facilitate time-efficient process optimisation and enable easy scale-up towards larger production volumes.

Single-use fermentors

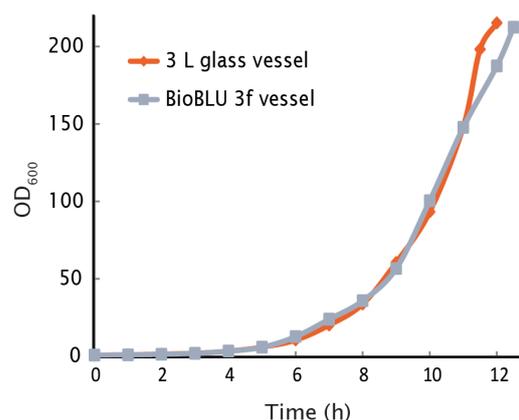
Traditionally, stirred-tank bioreactors are made of glass or stainless steel. Single-use vessels provide significant advantages, however, such as eliminating the risk of cross contamination and reducing the time between runs, thanks to the omission of laborious cleaning procedures. This gives researchers greater peace of mind, helps increase productivity and reduces overall costs.

The expansion of mammalian cells in single-use tanks like the BioBLU c vessels is firmly established. However, the specific demands on bioreactor design and functionality make the use of single-use technology for the cultivation of bacteria and fungi more challenging.

With the BioBLU f single-use family of vessels, Eppendorf sets new standards in microbial fermentation. The company's extensive experience in polymer technology enabled the development of single-use bioreactors optimised for microbial applications. The bioreactors' rigid walls eliminate the risk of damage during installation.

The newest family member

From cost-efficient process development in small volumes to large-scale manufacturing, bioreactor scalability is crucial. Researchers have benefitted from the BioBLU 0.3f and BioBLU 1f for culture sizes from 65ml to 1.25L. The BioBLU 3f now extends Eppendorf's portfolio for higher culture volumes up to 3.75L. The industrial design of the family of vessels ensures scalability, and simplifies technology transfer and process development.



E. coli K-12 growth curves in BioBLU 3f single-use vessels and conventional glass vessels are highly comparable.

As good as glass

BioBLU f vessels combine the advantages of single-use products with the reliable performance of glass or stainless steel bioreactors. Industrial design makes them meet the high demands of mass transfer and heat removal of microbial fermentation. A proven stirred-tank design, powerful overhead drives (featuring Rushton-type impellers for excellent mixing) and innovative baffles for cooling allow bacteria to grow as efficiently as in conventional glass vessels.

Compatibility and ease of use

Switching to single-use technology is easy. BioBLU f fermentation vessels are compatible with the Eppendorf bench-top bioreactor systems. Designed as drop-in replacements for autoclavable bioreactors, the new vessels can be installed quickly and operated without additional training of staff.

Easy-to-use BioBLU f vessels were developed to replace conventional glass bioreactors. They allow fermentation scientists to benefit from the advantages of single-use technology: time and cost-effective bioprocessing through reduced risk of contamination, shortened time between runs, and lower capital investment. ■

Further information

Eppendorf
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