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Abstract

The Eppendorf MagSep Tissue gDNA Kit has been specifically developed to be used with the Eppendorf epMotion M5073 automated pipetting system. It provides a flexible, easy to use solution for magnetic bead-based, automated purification from 1-24 samples of high quality, ready to use genomic DNA from a broad variety of sample sources, such as tissue, mouse tails, cultured cells and bacteria. In this study different mouse tissues were subjected to automated purification of high quality genomic DNA from various tissues using the Eppendorf MagSep Tissue gDNA Kit on the Eppendorf epMotion® M5073.

Ulrich Wilkening, Eppendorf AG, Hamburg, Germany

Introduction

With the introduction of the Eppendorf ep Motion M5073 automated pipetting system with integrated Thermomixer (TMX) and Magnetic Finger Module a powerful tool for the automation of magnetic bead-based applications became available. The Eppendorf MagSep Tissue gDNA Kit is a suitable addition that enables the user to easily perform hands free, walk away automated genomic DNA purification. This combination of instrument and kit delivers ready to use, high quality, high yield genomic DNA that is directly compatible with downstream applications. The purification process benefits from the combination of the well-known Eppendorf TMX module and a magnetic separator, allowing the entire process being performed without any labware transport steps. In addition the reagents of the Eppendorf MagSep Tissue gDNA Kit are delivered in a tray that can directly be placed into a ReagentRack on the worktable of the Eppendorf epMotion, rendering error prone buffer decanting obsolete.

No cross contamination was detectable and the genomic DNA was directly compatible with downstream real-time PCR amplification. Typical yields ranged from 13.5 µg (10 mg mouse tail material) to 33 µg (10 mg mouse liver).

Figure 1: Eppendorf epMotion M5073

Scalability of Parallel E. coli Fermentations in BioBLU® Single-use Bioreactors

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Abstract

Single-use bioreactor solutions have been successfully established in animal and human cell culture in the last years. Now this technology is going to make its way for microbial applications. In the following case study reproducible process control was achieved with single-use mini bioreactors and 1 L single-use vessels running in parallel. Fermentation of E. coli K12 led to highly reproducible results thus proving the tested rigid wall single-use stirred-tank vessels to be an appropriate tool to accelerate microbial process development and shorten time-to-market in biopharmaceutical industry.

Introduction

Regardless if in cell culture or in microbial applications, single-use bioreactors provide a couple of advantages for time- and cost-effective bioprocessing. Minimal setup times, no need for cleaning procedures and therefore reduced labor time can accelerate bioprocess development rigorously. Compared to the use of single-use bioreactors in cell culture, microbial applications make specific demands on bioreactor design and functionality. Fermentation processes need much higher k L a values for proper mass transfer as well as suitable heating and cooling options.

Materials and Methods

To evaluate the reliability of microbial fermentation processes using single-use technology E. coli K12 (DSM 498) was cultivated in a fully instrumented Eppendorf BioBLU 0.3f single-use mini bioreactor and compared to fermentations in BioBLU 1f single-use bioreactors. This rigid wall stirred-tank single-use bioreactors were specifically designed for microbial applications and are equipped with two (BioBLU 0.3f) and three Rushton-type (BioBLU 1f) impellers, respectively. The BioBLU 1f vessel

Figure 1: BioBLU 0.3f and BioBLU 1f Single-use Vessels for Microbial Applications

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Our trainings encompass technology, applications, workflows, and maintenance in Liquid Handling, Sample Handling and Cell Handling to help you gain maximum competence in your laboratory.

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