A Comparison of the SixFors Fermenter System and Lab Scale Fermenters For Clone Selection

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Abstract: A basic method of selecting clones uses a 96 well plate format whereby cells are assessed and selected based on growth rate and specific production rates. However, such data does not allow us to select a clone based on criterion which may make it more amenable to production in a fermenter environment. Because of this we evaluate a number of clones in fermenters at 5 litre scale before making a final selection on a production candidate. Clones are assessed at 5 litre scale using a modified draw-fill fermentation. In this process, cells are grown in a fed-batch format for 5 days. This is designated as cycle 1. After this time 80% of the volume is removed and replaced with fresh medium. This first harvest is used for purification and characterisation of the product. In the second cycle of the fermentation the process is run in fed-batch mode to destruction and this data is used to characterise the cell performance and process kinetics. Fermenter time is a limited resource and we have evaluated an alternative strategy.

In the alternative strategy we use wave bioreactors in a 5 day batch mode to replace cycle 1 of the modified draw fill. We have also used a SixFors fermenter system to replace the second cycle of our modified draw-fill. The wave bag provides material for purification and characterisation and the Sixfors provides data to characterise the cell line and process kinetics. Data will be presented to show the comparability of these two techniques to data generated at 5 litre scale.

Key words: CHO, small scale fermentation, animal component free medium, clone selection, fermenter, SixFors.

R. Smith (ed.), Cell Technology for Cell Products, 607–607.