



## Fed-Batch Fermentation: A Practical Guide to Scalable Recombinant Protein Production in Escherichia Coli (Woodhead Publishing Series in Biomedicine)

By G G Moulton



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**Fed-Batch Fermentation: A Practical Guide to Scalable Recombinant Protein Production in Escherichia Coli (Woodhead Publishing Series in Biomedicine)** By G G Moulton

Fed-batch Fermentation is primarily a practical guide for recombinant protein production in E. coli using a Fed-batch Fermentation process. Ideal users of this guide are teaching labs and R&D labs that need a quick and reproducible process for recombinant protein production. It may also be used as a template for the production of recombinant protein product for use in clinical trials. The guide highlights a method whereby a medium cell density - final Ods = 30-40 (A600) - Fed-batch Fermentation process can be accomplished within a single day with minimal supervision. This process can also be done on a small (2L) scale that is scalable to 30L or more. All reagents (media, carbon source, plasmid vector and host cell) used are widely available and are relatively inexpensive. This method has been used to produce three different protein products following cGMP guidelines for Phase I clinical studies.

- This process can be used as a teaching tool for the inexperienced fermentation student or researcher in the fields of bioprocessing and bioreactors. It is an important segue from E. coli shake flask cultures to bioreactor
- The fed-batch fermentation is designed to be accomplished in a single day with the preparation work being done on the day prior
- The fed-batch fermentation described in this book is a robust process and can be easily scaled for CMO production of protein product



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## **Editorial Review**

### **About the Author**

*Garner G. Moulton* has a Masters of Science in Biology from the Program of Cell and Molecular Biology at San Diego State University. He has been working in biotech and non-profit research for over 25 years, and has focussed specifically on protein purification and fermentation process development over the last 17 years. During the past 4 years he has been employed by the Infectious Disease Research Institute (IDRI) in Seattle, WA, USA, where he is a principal research associate in charge of the Process Development Department. He has developed many robust fermentation processes that can be adapted to many different recombinant products without having to re-optimize conditions of growth and expression. Numerous projects have been successfully transferred to a contract manufacturer for scale-up production and use in clinical trials.

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