Biopharmaceutical Expression Systems and Genetic Engineering Technology

Current and Future Manufacturing Platforms

New expression systems have the potential to revolutionize the biopharmaceutical industry! Until recently, there has been little basic change in the technologies used for commercial-scale manufacture of biopharmaceutical products. Nearly all current products are manufactured using much the same old, familiar technologies – primarily using Esherichia coli (E. coli bacterium), Chinese hamster ovary (CHO) cells and the yeast Saccharomyces cerevisiae (S. cerevisiae) as hosts – technologies invented in the 1970s. Today, a number of factors are rapidly changing the biopharmaceutical manufacturing environment. Scientific and technological advances offer significant advantages. Recombinant protein manufacture that typically involved multi-1000 liter bioreactors and dedicated facilities can now be accomplished using bioreactors an order of magnitude smaller.

Expression systems – These systems encompass the technologies needed to genetically modify organisms for the manufacture of recombinant proteins (including glycoproteins and antibodies). This book is perhaps the single most informative source concerning commercial biopharmaceutical product manufacturing-related expression systems and basic engineering technologies. The primary goal is to inform the user of the many technologies in commercial use and those claimed to be useful for commercial-scale manufacture of biopharmaceutical products. This directory should save the reader considerable time and effort in finding technologies relevant to his or her interests. It should reliably cover relevant technologies currently being used commercially, those being actively offered for licensing, those discussed in industry news sources and review articles, and those offered by leading genetic engineering and bioprocessing technology licensors.

Coverage - This directory concentrates on what is used or needed for upstream manufacture. Coverage concentrates on host cells/organisms, basic genetic engineering methods, recombinant constructs and the many technologies available to enable or improve expression of desired proteins, including glycoproteins and antibodies. This directory concentrates on the core genetic materials (e.g., host cell lines and organisms) and related methods and materials, e.g., vectors, promoters, selection and amplification methods, chaperones, etc., used or claimed useful for commercial-scale manufacture of biopharmaceutical products, primarily recombinant proteins and monoclonal antibodies.

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BioPlan Associates, Inc.

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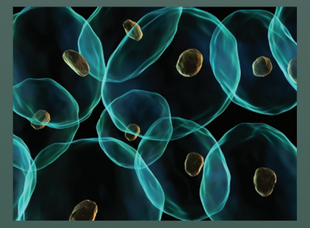

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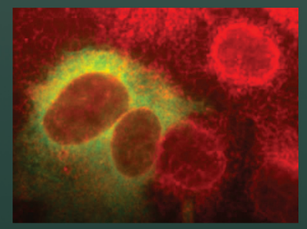

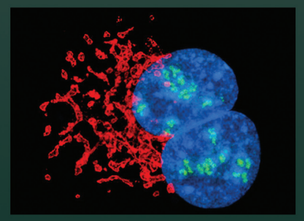

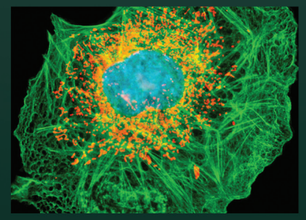

by Ronald A. Rader