



IPRO 345

PRODUCTION OF IFN- α

OBJECTIVES:

The Objective of IPRO 345 was to design a process for the large scale production of Interferon-Alpha (IFN- α) to meet the growing demand of this bio-therapeutic product. We also had to perform an Economic Analysis on the process we designed.

BACKGROUND:

Interferon (IFN) is a protein produced by the animal cell when they are invaded by viruses, then released into the bloodstream or intercellular fluid to induce manufacture of enzymes that counteract the infection. IFN- α can be produced by genetic engineering. IFN-Alpha has been approved for use as a therapeutic against hairy-cell Leukemia, Hepatitis C, chronic Hepatitis B. It has also been found as the treatment for genital warts and some rare cases of cancers of the blood and bone marrow.

ORGANIZATION:

Our Teams split into three sub teams: a design team and two research teams. The three groups collaborated to meet the overall team goals.

ACCOMPLISHMENTS:

Our Team designed a process to isolate IFN- α from Chinese Hamster Ovary Cells (CHO cells). Our process includes the growth of cells and secretion of products in a batch reactor system, recovery system to obtain a high purity product from cell broth. The process Designed was extremely profitable based on the price on IFN- α . We put in consideration to subsidize the price of our product, this still proved profitable.

ACKNOWLEDGEMENTS:

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