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Title (English)

Improvement of a CHO cell process by feeding peptones

Title (Swedish)

Abstract

Peptones are undefined hydrolysates of proteins. Using peptones derived from plants instead of animal derived serum to supplement mammalian cell culture media would eliminate the risk of virus, mycoplasma or prion contamination of the biopharmaceutical product. The use of plant peptones in a CHO fed-batch process was developed by studying the dose and timing of the peptone feeding using Biovitrum´s proprietary protein free medium. Different combinations of peptone cocktail and amino acids were screened in 50 ml filter tubes and spinners and the best combination was assessed in 3 L bioreactor scale. It was found that feeding the peptone cocktail significantly improved the cell growth, process longevity and antibody productivity. The beneficial effects of the peptones could not be reproduced by amino acid supplementation. Further, it was found that overfeeding the amino acids is toxic to the cells and the peptones can reduce the toxic effect of amino acid overfeeding.

Keywords

Peptones, CHO cells, fed-batch process, amino acids, mammalian cell cultivation

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