

Effects of various environmental factors on recombinant antibody production by rCHO cells : 1. Effects of medium components and byproducts

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There are various environmental factors such as medium components, temperature, pH, byproducts (ammonia, lactate, and etc.). Because most of mammalian cells are very sensitive to their environmental change, effective regulation of environmental parameters is a very important consideration to enhance cell growth and product formation. Balanced addition of limiting medium components plays an essential role on improvement of cell capability. Temperature and pH are adjustable process parameters with comparative ease that influence cell growth and recombinant protein production for increase of productivity. Ammonia and lactate are well-known byproducts which have an inhibitory effect on cell growth when their concentrations exceed a specific level. In this work, effects of various environmental factors on cell growth and product formation were investigated in the cultivation of recombinant Chinese Hamster Ovary cells producing recombinant antibody. Most suitable condition of each element was proposed for enhancement of the cell growth and the productivity of recombinant antibody.