

Metabolism Kinetics of Glucose in Anchorage-dependent Cell Cultures

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收稿日期 修回日期 网络版发布日期 接受日期

摘要 The kinetic model of glucose metabolism was established and successfully applied to batch cultures of rCHO and rBHK cells. It was found that a large amount of glucose was utilized for cell maintenance, and the overwhelming majority of maintenance energy from glucose was by its anaerobic metabolism in both rBHK and rCHO cell cultures. The overall maintenance coefficients from aerobic metabolism were 1.9×10^{-13} mmol/(cell·h) for rCHO cells and 7×10^{-13} mmol/(cell·h) for rBHK cells. In addition, all GO/T and EO/T gradually increased with the same trend as the cell growth in the culture of both rCHO and rBHK cells. The overall molecule yield coefficients of lactate to glucose were 1.61 for rCHO cells and 1.38 for rBHK cells. The yield coefficients of cell to glucose were 4.5×10^8 cells/mmol for rCHO cells and 1.9×10^8 cells/mmol for rBHK cells, respectively.

关键词 [animal cell culture](#) [metabolism](#) [kinetics](#) [glucose](#) [maintenance energy](#)

分类号 [Q952](#)

DOI:

对应的英文版文章: [2014-012](#)

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