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**BIOPROCESSING OF RECOMBINANT
E.COLI PRODUCING β -GLUCURONIDASE
ENZYME**



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Bioprocessing Of Recombinant *E. coli* Producing β -Glucuronidase Enzyme

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The *kLa* Evaluation of Recombinant *Escherichia coli* Fermentation Producing β -Glucuronidase Enzyme

Maizirwan Mel, Mohd Ismail Abdul Karim and Hamzah Mohd Salleh

1. Introduction

In general, many fermentation processes use microorganisms, which require oxygen to convert the substrates into the desired product. However, oxygen has a low solubility in aqueous solution and biological systems often have a high demand for oxygen. Thus, dissolved oxygen is one of the most important control variables in any aerobic fermentation process or bioreactor and the understanding of how oxygen is transferred to cells in a reactor is crucial for successful bioreactor design and operation (Doran, 2003).

Oxygen comes from air bubbles that are continuously sparged into the solution, and simultaneously broken up and mixed by mechanical agitation during stirring. Maintaining the oxygen concentration in the bioreactor while organisms are consuming oxygen requires that oxygen be transferred continuously into the reaction liquid.

The rate of mass transfer of oxygen from the air into the fermenter can be described by the oxygen mass transfer coefficient,