



**Maizirwan Mel  
Hamzah Mohd Salleh  
Mohd Azmir Arifin**

**BIOPROCESSING OF RECOMBINANT  
E.COLI PRODUCING  $\beta$ -GLUCURONIDASE  
ENZYME**



**IIUM Press  
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA**

# **Bioprocessing Of Recombinant *E. coli* Producing $\beta$ -Glucuronidase Enzyme**

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Edited By

Maizirwan Mel

Hamzah Mohd Salleh

Mohd Azmir Arifin



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# Chapter 3

## **Batch Fermentation of Recombinant *Escherichia coli* producing $\beta$ -Glucuronidase using Different Control Conditions**

*Mohd Ismail Abdul Karim, Hamzah Mohd Salleh and Maizirwan Mel*

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### **1. Introduction**

$\beta$ -Glucuronidase, the enzyme responsible for the degradation of various polysaccharides or the cleavage of glucurono-conjugates, is widely distributed in animal, plants, insects and bacteria, with particularly high concentrations in liver found in animals. It catalyzes the hydrolysis of  $\beta$ -Glucuronidase conjugates to yield aglycone and free glucuronic acid.

*E. coli* is classified as non-photosynthetic and mesophiles bacteria (Wang and Touster, 1972). There are hundreds of different types of *E. coli* recognized by the combination of sugars and proteins displayed on the bacterial surface (Christner et al., 1970). *E. coli* bacteria have long rods without separation when grown under limited conditions.

There are several advantages of using recombinant *E. coli* for protein synthesis. It is one of the most-studied organisms used for recombinant protein synthesis (Himeno et al., 1974) and its genetics