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BIOPROCESSING OF RECOMBINANT E.COLI PRODUCING β-GLUCURONIDASE ENZYME

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Cell Disruption of Recombinant *E. coli* Producing β-Glucuronidase by High Pressure Homogenizer

Maizirwan Mel, Hamzah Mohd Salleh, Mohd Ismail Abdul Karim and Mohd Syazwan Osman

1. Introduction

β-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. β-glucuronidase plays an important role in the enterohepatic circulation of drugs and the hydrolysis by *b*-glucuronidase can contribute significantly to the overall biological activity or toxicity of a xenobiotic in mammals (Sallch et al., 2006).

Homogenization of solution containing cells using high pressure homogenizer (HPH) is a widespread technique for extrication intracellular products from the cells. This mechanical mode of cell disruption is currently being the general method of choice for the large-scale disruption of microorganism especially for recombinant *E. coli* (Goldberg, 19972). Homogenization technology is based on the use of pressure on liquids to subdivide particles or droplets present in fluids into the very smallest sizes and create a stable dispersion ideal for further processing. Homogenization features a high concentration