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**Constructing a β-glucosidase overexpression system in *Lactobacillus* spp. to improve its efficiency in biological conversion**

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*Lactobacillus* spp., usually found in human gastrointestine and vagina, is a genus of Gram-positive facultative anaerobic or microaerophilic rod-shaped bacteria. It plays an important role in many medical application and healthy food. *L. rhamnosus* belongs to probiotics, many research evidence it have many benefits to humans. In this study, *L. rhamnosus* was used as a biological host. A β - glucosidase - overexpression platform was established based on it. In recent years, many studies have showed that there are interactions between β - glucosidase and herbal medicine. Some natural compounds need to be modified by β- glucosidase in order to show their biological activities, such as ginsenoside Rh2, which could induce the apoptosis of cancer cells. Thus, two shuttle vectors pGHL6 and phy300PLK were tested and compared the efficiency of electroporation and overexpression ability between them. The purpose of this study is to establish a system of overexpression and lead to a useful tool which can apply in biological conversion of herbal medicine.

Keywords: *Lactobacillus* spp. and β -glucosidase