

Fermentative production of lactic acid from pretreated cellulosic hydrolysate by *Lactobacillus rhamnosus*

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Lactic acid, the most widely occurring hydroxy-carboxylic acid, has traditionally been used as food, cosmetic, pharmaceutical, and chemical industries. Even though it has tremendous potential for large scale production and use in a wide variety of applications, high cost lactic acid materials are primarily problems. Generally, lactic acid was produced from pure starch or from glucose. As an alternative, cellulosic substances which is the most abundant renewable resources on earth have been considered for conversion to readily utilizable hydrolysate. In this study, we conducted the SSF fermentation method to produce L(+)-lactic acid production from pretreated hydrolysate was investigated by *Lactobacillus rhamnosus* ATCC 10863. The cellulosic hydrolysate was obtained from pretreatment process of cellulosic biomass using dilute-acid and soaking in aqueous ammonia (SAA) followed by enzymatic hydrolysis. The optimum conditions of lactic acid production was investigated and compared with those of pure carbon sources. In order to effectively enhance lactic acid conversion and product yield, controlled hydrolysate concentration was conducted under optimal conditions.