Studies on EPS production and biofilm formation by *Lactobacillus* spp.

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Abstract

In a previous study, we have isolated *Lactobacillus* spp. from healthy human and examined various characteristics such as exopolysaccharide (EPS) production and biofilm production.[1)] We have selected *L. paracasei* KLB58 having high EPS productivity and NTG (1-Methyl-3-nitro-1-nitrosoguanidine) mutant having high cell surface hydro- phobicity (CSH) for chemical analysis of their EPS. First, we have performed phenol sulfuric acid test under various growth condition for optimization of EPS production. The highest EPS production was found to occur at 20 °C during 44 hr static cultivation. Secondly, we performed a comparative study on EPS productivity and biofilm[2)] formation between the KLB58 and its CSH mutant. The results showed that wild type strain formed more biofilm than mutant did. We also attempted to determine monosaccharide composition of the EPS by using spiking method.[3,4)] Monosacharide of KLB58's EPS was found to consist of fructose, glucose, galactose, mannose, ribose, fucose and rhamnose whereas the CSH mutant's EPS consitsed of glucose, galactose, mannose, ribose and fucose. Further chemical analysis is under way.

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