

Coculture Fermentation of Red Ginseng Extract using Lactic Acid Bacteria

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Objectives

Coculture fermentation instead of single fermentation may result in increased yield, improved control of product qualities, because of the potential for synergistic utilization of the in a coculture situation. Examples of the utilization of coculture in food industry are the production of cheese, yoghurt, sourdough, whisky, sauerkraut etc. So, the purpose of this research is to apply the utilization of coculture in red ginseng extract.

Materials and Methods

○ Materials

Lactobacillus sp. 6105 was isolated from Kimchi in 2008 and 99.2% homology of 16S rRNA gene sequence with sequence of *Lactobacillus pentosus* JCM 1558T. *Lactobacillus casei* KACC 12413 and *Lactobacillus paracasei sub tolerans* KACC 12427 were kindly provided by Korean Collection for Type Culture. Six-year-old red ginseng extract (60brix) was purchased at ginseng market in Geumsan.

○ Methods

The strains were cultured on MRS broth containing 0.2%(w/v) L-cystein·HCl under mild aerobic conditions overnight 37 °C. Total 2ml of microorganisms were cultured in 50ml of 5% red ginseng extract sterilized at 121 °C for 15 min. During five days fermentation, red ginseng extract was monitored by pH using a corning 440 pH meter(corning Inc., Lowell, MA, USA), reducing sugar using the 3, 5-dinitrosalicylic acid (DNS) reagent and total polyphenol content using the Folin-Ciocalteu method. Also, ginsenosides were analyzed by High performance liquid chromatography (HPLC), using an poroshell 120 EC-C18 column (4.6x50mm, Agilent)

Results

Fermentation is continuing until 12 days and then measured with pH, reducing sugar, polyphenol and ginsenosides contents.

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