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Fermentation with Lactobacillus plantarum CK10 Enhanced Antioxidant Activity of Blueberry Puree

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Abstract : Blueberry, a perennial shrub, is one of the most popular fruits due to its flavor and strong free radical scavenging properties. In this study, the blueberry puree was fermented by Lactobacillus plantarum CK10 and the antioxidant activities of fermentation products were examined. Various conditions with different supplements (5% sucrose or 10% skim milk) were evaluated for fermentation efficiency and the effects on antioxidant properties. The viable cell count of lactic acid bacteria, pH, total phenolic compounds and flavonoids contents were measured after 7 days of fermentation. DPPH (1,1-diphenyl-2-picrylhydrazyl) and ABTS [2,2'-azino-bis(3-ethylbenzthiazoline-6-sulfonic acid)] radical scavenging activities were highly enhanced compared to non-fermented blueberry puree after fermentation. Interestingly, the antioxidant activities were greatly increased in the fermentation of blueberry puree alone without supplements. The present results indicate that the blueberry puree fermented by Lactobacillus plantarum CK10 could be used as a potential source of natural antioxidants and these findings will facilitate the utilization of blueberry as a resource for food additive.

Keywords : antioxidant activity, blueberry, lactobacillus plantarum CK10, fermentation
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