

## The improvement effect of antioxidant activity of Aronia extract that fermented by Lactic acid bacteria isolated from the fermented seafoods

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The purpose of this study was to evaluate the improved antioxidant activity of Aronia extract fermented by lactic acid bacteria isolated from fermented seafoods. Aronia fruits were collected from Sunchang, Chonbuk, South Korea. And these collected fruits were lyophilized for fermentation. For the selection of effective lactic acid bacteria useful for fermentation. Aronia fermented by lactic acid bacteria that isolated from fermented seafood was extracted with 60% ethanol. Antioxidant activity of Aronia extract was evaluated on the DPPH radical scavenging activity and total polyphenol contents were studied. To determine the optimal fermentation conditions, the changes of antioxidant efficacy was evaluated by controlling temperature (25, 30, 37, 40°C), Time (0~5 day) and inoculation dose of lactic acid bacteria (0.125~0.5ml). To confirm the antioxidative effect of Aronia fermented under optimal conditions, the DPPH & ABTS radical scavenging activity, total polyphenol & flavonoid contents were compared before and after fermentation were studied.

16 different kinds of lactic acid bacteria were isolated from fermented seafood, and of which antioxidant activity of Aronia fermented by *Pediococcus pentosaceus* B1 was maximum. Aronia fermentation at 37°C was maximized when fermented for 3 days and fermentation time is decreased as the start inoculation amount of lactic acid bacteria increased. The degree of increase in antioxidant activity after Aronia fermentation is that DPPH & ABTS radical scavenging activity was increased about 27%, 20% and total polyphenols & flavonoids contents was increased about 12%, 15%. In the result of this experiment indicated that fermentation process enhances the antioxidant efficacy of Aronia.

Key words : Aronia, Lactic acid bacteria, Fermentation, Optimization, Antioxidant,

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