

Antioxidant activity of Giant Black Garlic

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This study was carried out to investigate the antioxidant activities of giant black garlic from giant fresh garlic. Giant black garlic was manufactured and fermented by Jumbo Garlic (Co., Ltd., Yongin, Gyeonggi-do, Korea). Giant black garlic and giant fresh garlic were extracted in 50% ethanol⁽¹⁾ and Freeze-Dried powder were dissolved in 70% DMSO (Dimethyl sulfoxide). FRAP values (Ferric reducing antioxidant potential activity), Total phenol contents, DPPH radical scavenging activity were investigated. FRAP values of samples was measured by the method Benzie and Strain⁽²⁾ and total phenol contents of samples was measured by the method Folin-Ciocalteu and DPPH radical scavenging activity of the samples was measured by the method of Blois⁽³⁾ with a slight modification.

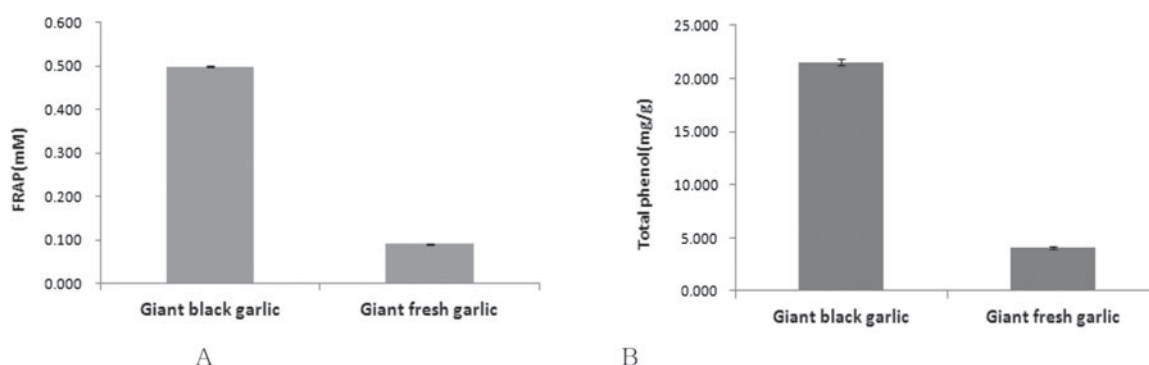


Fig. 1. FRAP(A) and Total phenol(B) of giant black garlic and giant fresh garlic.

Table 1. DPPH radical scavenging activity of giant black garlic and giant fresh garlic

	IC ₅₀ (mg/mL) ¹
Black	1.238 ± 0.546 ^{2,3(a)}
Fresh	52.360 ± 0.925 ^(a)

¹Amount required for 50% reduction of 0.2 μM DPPH after 30 min.

²Values are mean ± SD.

³Different letter within a same row(a-b) differ significant (p < 0.05).

FRAP values of giant black garlic and giant fresh garlic were 0.499 ± 0.003 and 0.091 ± 0.001 mM, respectively. FRAP values of giant black garlic was five times higher more than giant fresh garlic (Fig 1. A). Fig 1. B shows that the total phenol contents in giant black garlic and giant fresh garlic were 21.523 ± 0.278 and 4.130 ± 0.125 mg/g and total phenol of giant black garlic was five times higher more than giant fresh garlic. IC₅₀ of DPPH radical scavenging activity of giant black garlic and giant fresh garlic were 1.238 ± 0.546 and 52.360 ± 0.925 mg/mL and antioxidant activity of giant black garlic was higher than giant fresh garlic whereas IC₅₀ of giant black garlic was lower than giant fresh garlic (Table 1). The result support the view that giant black garlic is effective to antioxidant activities and can become good health food.

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