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Antioxidant and free radical scavenging activity of methanol extract of chungkukjang

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Some biological effects of chungkukjang(traditional fermented soyfood) fermented at 42°C for 72 h with 6 groups from Korean black soybean (*Glycine max*) were carried out. Total phenol and isoflavone contents of LBS group extracts were higher than that of SBS group extracts. Genistein contents were higher than daidzein in all groups. In total anthocyanin pigment, LBS groups are similar to SBS groups. LBS group extracts exhibited good inhibition rate of about 70-90% on antioxidant and some scavenging activities of free radical as well as hydrogen peroxide. *Bacillus megaterium* SMY-212 was a suitable fermenting strain to promote the antioxidant and free radical scavenging activities in cooked black soybean.

Key words : Black soybean chungkukjang Daidzein; Genistein; Phenol; Anthocyanin; Antioxidant activity

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Antioxidant activity against copper and cadmium-induced toxicity and effect on the cytokines production from immune cells by tea polyphenols thearubigins, theaflavins and EGCG

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Theaflavins (TF) and thearubigins (TR) are constituents of tea pigments which are polyphenols derived from Korean fermentation tea. In the present study, TF, TR and EGCG has been applied to macrophage cell line (RAW264.7) and COS-7 cell, NO synthesis, cytokines production and antioxidant activity were estimated. Cytokines production by enzyme linked immuno-sorbent assay (ELISA). NO production was increased by about 1.5-folds at the dose of 80µg /ml compared to control and LPS stimulation when TF, TR and EGCG were applied to a RAW264.7 cell. IL-6, TNF-α and GM-CSF increased depended on concentrations of TF, TR and EGCG. The production of tumor necrosis factor-α increased highly. These results suggest that TF, TR and EGCG have immune-enhancement effect through the cytokine production. Also we found that TF, TR and EGCG increased viability of COS-7 cells against stress, such as cadmium and copper-oxidative injury, free radicals etc, exhibited antioxidant properties when compared to control (Cu 500µM and Cd5µM) with percent inhibition of 82-95% at the dose of 80µg /ml in the MTT assays and observed suppressing -carotene oxidation rate in the presence of linoleic acid and scavenging hydroxyl radical.

Keywords : Theaflavins (TF) Thearubigins (TR) immunomodulator antioxidant activity