P57

Studies on Antioxidant Activity and Inhibition of Nitric Oxide Synthesis from *Codium fragile*.

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This study was carried out to investigate the biological effects from *Codium fragile*. *M*ethanol extract of *Codium fragile* increased two times at 2500 μg/ml the growth of *Lactobacillus plantarum* that associated with probiotic properties of lactic acid bacteria of Kimchi. Ethyl acetate extract of *Codium fragile* inhibited the cellulase activity up to approximately 60% at 2500 μg/ml. Methanol extract of *Codium fragile* was fractionated into several subfractions and their antioxidant activities were measured by using DPPH radical scavenging and SOD-like activity. Especially the antioxidative activity of ethyl acetate fraction was shown higher than that of other fractions and its fraction showed higher contents of total phenolic compounds, indicating the positive relationship between DPPH radical scavenging effect and total polyphenol content. Stimulation of the macrophages RAW264.7 cells with lipopolysaccharide (LPS) resulted in increased production of nitric oxide (NO) in the medium. However, the methanol extract of *Codium fragile* showed marked inhibition of NO synthesis in a dose-dependent manner. This result suggest that *Codium fragile* plays significant role for activation of immune system in the pathogenesis of inflammatory diseases.

Key words : *Codium fragile*, phenolic compound, antioxidant, nitric oxide

P58

Purification and Characterization of Agarase from Agarolytic strain *Sphingomonas paucimobilis*

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An agar-degrading bacterium strain AS-1 was isolated from the Ocean. The strain AS-1 was identified as *Sphingomonas paucimobilis* (90% probability). This bacterium was grown on the Marine broth 2216 at 27℃. The optimal temperature, NaCl and pH range of this strain were found to be 27℃, 1-3% and 5-7, respectively. A bacterial strain AS-1 which produced agarase was purified by 70% ammonium sulfate precipitation and ion exchange chromatography (HiPrepTM 16/10 DEAE FF) and gel filtration column chromatography (HiPrepTM 16/26 Sephacryl TM S-200HR). The purified enzyme appeared as a single band on sodium dodecyl sulfate polyacrylamide gel electrophoresis(SDS-PAGE). The molecular weight of the purified enzyme was 80kDa by SDS-PAGE. The enzyme was purified 104-fold from the culture supernatant by gel filtration column chromatography. The optimum temperature and pH for the enzyme activity were 40℃ and 7, respectively.