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Antimicrobial, Antioxidant and Antithrombosis Activities of different Natural Spices

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Natural products and plants extracts have been intensively investigated as the demand for safe bio-active compounds. Among natural products, fragrant spices, such as garlic, or clove oils, maintained their top bio-active compound during the last centuries and are used to appetite aid, food preservation agents, and medicinal purpose. In the present study, the antimicrobial, antioxidant and antithrombosis activities of the herb of rosemary, chamomile, peppermint and thyme, and the powders of ginger, cinnamon, black pepper, wasabi, mustard, garlic, chinese pepper and clove oils were investigated. The fragrant spices were extracted with water and methanol, respectively, and the compositions of water extract were determined. In antimicrobial activity assay, the methanol extract of rosemary showed strong anti-cavity activity, and clove oils showed broad-range antibacterial activity. In antioxidant activity assay, the methanol extract of thyme, cinnamon, and clove oil showed superior DPPH scavenging activity with 15.5, 17.2, and 27.1 $\mu\text{g/ml}$ of IC_{50} , respectively. In antithrombosis activity assay, only the water extract of peppermint showed extended thrombin time; the thrombin time was increased to 25 folds at concentration of 460 $\mu\text{g/ml}$. Our results suggested that a fragrant spice is a potent source of bio-active compounds.

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Isolation and Characterization of Osmotolerant and Ethanol-tolerant Yeast from Andong-SOJU

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Traditional liquor, Min-Sok-Ju, has been used as a communication tool between human and god or among human beings in Korea. AndongSOJU is one of a famous traditional distilled liquor with pure and high alcohol contents, and good flavors. Since the AndongSOJU has been adopted a traditional brewing using a Nuruk with naturally selected yeasts, the fermentation broth may provide a source of potent yeast. In the present study, we report a newly isolated potent alcohol fermentation yeasts, isolated from the fermentation broth. From the matured broth, four different yeast strains, ADS-9, -10, -11, and -12, were purified. Based on *api20 C AUX*, physiological characteristics and 26S rDNA sequencing, the strain ADS-9, -10, and -11 were identified as *Sacchomyces cerevisiae*, respectively, and ADS-12 were identified as *Issatchenkia orientalis*. The strain ADS-9, -10, and -11 showed strong fermentation activity in 20% glucose medium. Especially, the strain ADS-11 showed strong osmotolerant and ethanol-tolerant, and could produce 10.3% and 12.33% (v/v) ethanol in 20% and 40% glucose medium, respectively. The ADS-11 was deposited in KACC (93043P) and could be used as potent biocatalyst for economic ethanol production.