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### Evaluation of antithrombosis activity of after-distilled ethanol-free solution of Korean traditional liquors.

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In Korea, there are three immaterial-cultural assets and 16 provincial designated wines in traditional liquors industry. Since the Korean traditional liquors have a unique characteristic, in that use of Nuruk, which contained starch liquifying enzymes and fermentation yeast. the fermentation broth may have different biologically active substances. In the present study, the antithrombosis activity of after-distilled ethanol-free solution were investigated. Different traditional liquors were purchased from local market and ethanol in liquors were removed by vacuum evaporation at 50~55°C, respectively. Among the tested liquors, Bokbunja, Sansachun, Chunyeon-yaksok, Bakseju, and Eadong-Makgulri showed strong antithrombosis activity at concentration of 12~40 mg/ml, although the recovery yields of active substance from their liquors were varied. The sequential organic solvent extraction showed that only ethylacetate fractions of traditional liquor had activity. At concentration of 1.0~1.5 mg/ml, the ethylacetate fraction of Bokbunja, Sansachun, and Bakseju showed increased thrombin time to 600 sec or more, which represent 20 folds of untreated control. Application of traditional liquors for production of functional-yam fresh cut is under study.

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### Antimicrobial, Antioxidant and Antithrombosis Activities of *Crataegi* Fructus

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Korean *Crataegi* Fructus, the fruits of *Crataegus pinnatifida* Bunge, has been used for herb medicine against diarrhea, abdominal pain, and poor digestive. Several pharmacological active ingredients, such as ursolic acid, quercetin, crataegolic acid, and different organic acids, were reported. Recently it was also reported the quercetin from *Crataegi* Fructus has strong monoamine oxidase inhibitory activity, which can be used as a anti-depressive and anti-parkinson's diseases. In the present study, the antimicrobial, antioxidant and antithrombosis activities of *Crataegi* Fructus were investigated. Three different extracts were prepared from dried *Crataegi* Fructus, 1) methanol extract, 2) water extract and 3) boiled-water extract, respectively. The methanol extract showed strong antithrombosis activity, whereas the water, or boiled-water extract showed minor activity. The sequential organic solvent extraction showed that the fraction of butanol has antithrombotic substance; the thrombin time at concentration of 2.5 mg/ml was extended to 15 folds compared than untreated control. These results suggest that heat-labile and methanol soluble compound(s) is responsible for antithrombosis activity. The antioxidation assay revealed that the methanol extract has strong activity. The sequential organic solvent extraction showed that the fraction of ethylacetate has strong DPPH scavenging substance (53.8 µg/ml of IC<sub>50</sub>). The antimicrobial activities of water and methanol extract were ignorable. Our results suggested that *Crataegi* Fructus, was a potent source of antioxidant and antithrombosis agents.

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