Studies on Invitro Antioxidative and Invivo Hypolipidemic Activities of the Alpinia zerumbet Seed

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ABSTRACT

In this study, essential oil from Alpinia zerumbet seed were obtained using steam distillation and identified using GC and GC-MS.The antioxidant activities of the water and enthanol extracts of A. zerumbet seed were also studied. Finally, serum lipid lowering effect of A. zerumbet seed was conduct using animal test. The results are as follows: the yields of essential oil of A. zerumbet seed is around were 0.51% . The major volatile compounds in the essential oil of A. zerumbet are found to be terpenes, especially the monoterpenes (around 77.58%). After fractionation using silica gel column, the major volatile compounds in pentane fraction of A. zerumbet seed essential oil are found to monoterpenes(around 75.66 %),in whereas the major volatile compounds found in the ether fraction of A. zerumbet seed essential oil are monoterpenes and oxygenated sequiterpenes(27.10 % and 24.53% respectively). The ethanol extract of A. zerumbet seed was found to have stronger DPPH free radical scavenging capability (91.68% in 10 mg/mL dosage) than that of water extract. The water extract of A. zerumbet seed was found to have stronger ferric ion chelating effect capability (52.46% 100 mg/mL dosage) than that of ethanol extract.The ethanol extract of A. zerumbet seed was found to have better linoleic acid oxidation inhibition capability(68.64% 20 mg/mL dosage) than that of water extract.The ethanol extract of A. zerumbet seed has higher rutin and quercetion contents(6.06 mg and 46.29 mg per 100 gram, respectively)than that of water extract. The ethanol extracts of A. zerumbet seed has higher content of total polyphenol (2033 mg per mL) than that of water extract. In the essential oil and powder feeding study of A. zerumbet using the male hamsters, the male hamsters were fed with a controlled feed or a controlled feed plus 0.01 ,0.05, or 0.1% A. zerumbet seed essential oil or plus 1,3 and 5 % A. zerumbetseed powder. Both of the essential and the seed power of A. zerumbet were found to -viilower the levels of triglyceride and cholesterol, low density lipoprotein effect in the liver and serum of the tested hamsters.

Keywords : Alpinia zerumbet ; essential oil ; terpenes ; hamster ; antioxidant ; serum lipid lowering effect

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