

Studies on Hypolipidemic Activities of Onion Wines and Spirulina Wines

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ABSTRACT

The research of this thesis can be divided into three parts. In the first part of this thesis, functional components of Onion Merlot Wine, Spirulina Carbenet Wine, Merlot wine, and Carbenet Wine were studied. In the second part of this thesis, antioxidant abilities of Onion Merlot Wine, Spirulina Carbenet Wine, Merlot wine, and Carbenet Wine were studied. In the third part of this thesis, animal studies for the study of hypolipidemic activities of Onion Merlot Wine, Spirulina Carbenet Wine, Merlot wine, and Carbenet Wine were conducted. It was found that tartaric acid, oxalic acid, and citric acid were the major organic acids existed in the wine samples used in this thesis. Onion Merlot Wine was found to have the highest content of rutin and quercetin among the wine samples used in this thesis. The content of rutin and quercetin in Onion Merlot Wine was found to be 11.04 mg and 15.36mg /100ml, respectively. Carbenet Wine and Merlot Wine were found to have higher total polyphenolics content than Onion Merlot Wine or Spirulina Carbenet Wine. In antioxidant tests, it was found that four tested wine samples all showed very good DPPH radical scavenging activity. Carbenet Wine and Onion Merlot Wine showed the highest ferrous ion chelating capability (approaching 90.8% and 90.1%) among the wine samples used in this thesis. Four wine samples used showed good lipid antioxidative capabilities, but this ability descend with time. Four wine samples used also showed good relative reduction ability. The total antioxidant ability was found to reach 89.7%, 87.2%, 74.1%, and 73.3%, individually, in the Carbenet Wine, Merlot Wine, Spirulina Carbenet Wine, and Onion Merlot Wine. It was found that the total antioxidant ability in the wine samples used was agreed with their total polyphenolics content. The effects of wine intake on the lowering ability of triglyceride and cholesterol in the serum and the liver were studied by feeding the tested male hamsters with low (0.1ml/day) or high dosage (0.4ml/day) of wine samples and high fat high cholesterol diets. It showed that the feeding dosage of 0.1 ml wine samples per day can decrease the level of total content of triglyceride and content of low density cholesterol (LDL-C), increase the level of high density cholesterol (HDL-C), and decrease the ratio of LDL-C/HDL-C and TC/HDL-C in the serum of the tested male hamsters. It was also found that in the feeding dosage of 0.1 ml of Carbenet Wine or Merlot Wine per day can decrease the level of total content of triglyceride in the liver of the tested male hamsters. It also showed that the feeding dosage of 0.1 ml wine samples, especially Carbenet Wine and Merlot Wine, per day can increase the activity of SOD and GSH enzymes in the live of the tested male hamsters.

Keywords : onion、 wine、 Spirulina、 lipemia-reducing

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