

10th World Congress on

NUTRITION & FOOD SCIENCES

May 29-31, 2017 Osaka, Japan

Regulation effect of Djulis hull on blood lipids in hyperlipidemic hamsters

Yi-Zhen Chen, Jia-Lin Guo, Pi-Jen Tsai, Mei-Li Wu and Yu-Kuo Chen
National Pingtung University of Science and Technology, Taiwan

Heart disease and cerebrovascular disease are the second and third leading cause of death in Taiwan in 2015. Many studies showed that the most important factor leading to cardiovascular-related diseases is atherosclerosis, and the main caused by atherosclerosis is high blood cholesterol levels. Over the years, the risk of cardiovascular disease associated with population continues to increase, so the healthy diet and exercise have become one of the important issues. Djulis (*Chenopodium formosanum*) is a native cereal plant in Taiwan, and the Djulis Hull (DH) was found to be its major source of antioxidant compound. Studies showed that it possesses several active components with hypolipidemic activities, such as dietary fiber and polyphenol compounds. The objective of this investigation was to evaluate the regulation effects of DH in blood lipid levels to achieve the prevention of atherosclerosis effect. Five weeks old hamsters were randomly divided into five groups: (1) control group, (2) hyperlipidemic group (high fat diet containing 0.2% cholesterol; HFC), (3) low-dose DH group (HFC diet and treated with 100 mg/kg/day DH; LDH), medium-dose DH group (HFC diet and treated with 250 mg/kg/day DH; MDH), high-dose DH group (HFC diet and treated with 500 mg/kg/day DH; HDH). After 8 weeks of feeding study, the results showed that levels of triglyceride (TG; LDH: 194±31 mg/dl; MDH: 194±25 mg/dl; HDH: 204±26 mg/dl), total cholesterol (TC; LDH: 328±25 mg/dl; MDH: 301±21 mg/dl; HDH: 283±41 mg/dl) and low-density lipoprotein cholesterol (LDL-C; LDH: 165±33 mg/dl; MDH: 145±31 mg/dl; HDH: 140±28 mg/dl) in serum were significantly reduced by DH administration compared with those of HFC group (TG: 309±64 mg/dl; TC: 398±79 mg/dl; LDL-C: 184±31 mg/dl). Moreover, levels of TG and TC in liver were lower than HFC group, and levels of TG and TC in feces were higher than HFC group. These results indicate that DH possesses hypolipidemic potential to be a benefit functional food to prevent high fat/high cholesterol diet-induced hyperlipidemia.

Biography

Yi-Zhen Chen is currently a Master's student in the Department of Food Science at the University of National Pingtung University of Science and Technology. She has obtained her Bachelor's degree in Food Science at NPUST in June 2015. She has full of great interests in the knowledge about Food Science. Her Master's thesis title is "The regulation effect of *Djulis hull* on blood lipids in hyperlipidemic hamsters". She has published one peer-reviewed research article in SCI international journal and five conference posters and has passed the required qualification examination for six technician certificates.

joanne18930310@yahoo.com.tw

Notes: