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Anti-obesogenic effects of vinegar brewed from *Monascus*-fermented unpolished rice in rats subjected to a high fat diet

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A *Monascus*-fermented product has been used as a functional dietary supplement to reduce the cholesterol level in humans. The valuable secondary metabolite of the *Monascus* species, mevinolin (natural statin), has been proven as the inhibitor of 3-hydroxy-3-methylglutaryl-coenzyme A (HMG-CoA) reductase. The present study was conducted to evaluate the anti-obesogenic effect of vinegar brewed from *Monascus*-fermented unpolished rice (MFRV) in rats subjected to a high fat diet. Thirty male Sprague Dawley rats (180±10 g) were divided into 3 three equal groups. A witness group submitted to standard laboratory diet and two groups subjected to a high fat diet (HFD); one receives a daily gavage of MFRV (10 mL/kg/d) for 30days. Throughout the experiment monitoring the nutritional assessment, anthropometric and biochemical parameters is achieved. MFRV supplementation in rats fed a HFD markedly decreased visceral fat weights without changing the food and calories intakes. MFRV decreases very significantly different anthropometric parameters: BMI ($P<0.05$), chest circumference and abdominal circumference ($P<0.01$), decreases serum glucose levels (22.3%) and improves the serum lipid profile by reducing plasma levels of total cholesterol (33.4%), TG (46.2%), LDL-c (49.5%), VLDL (48.3%) and the total lipid (40.1%), and increasing HDL-c (33.6%), thus offering protection against atherogenic risk. These results show that MFRV prevented obesity by suppressing visceral fat and lipid accumulation in obese rats, and suggest that MFRV can be used as an anti-obesity therapeutic agent or functional food.

Biography

Young-Hee Pyo received her PhD in 1990 in Food Chemistry from Sungshin Women's University in Seoul, Republic of Korea. After completing three years as a Post-doctorate fellow at Rutgers University in NJ, USA, she joined the faculty at Sungshin Women's University as an Assistant Professor in the Department of Food & Nutrition. She has published over 50 papers and scientific articles, and is an Editorial Board Member for a variety of publications, including the Protective Nutrition & Food. Her current research interests focus on the health benefits and nutraceutical properties of fermented products.

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