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Anti-diabetic effect of Seapolynol™ and Dieckol extracted from *Ecklonia cava* in C57BL/KsJ-db/db mice

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Ecklonia cava, a kind of brown alga native to Korea and Japan seas, includes biologically active polyphenols. The effect of Seapolynol™ (SN) extracts in *Ecklonia cava* and Dieckol (DK), a major component of SN has shown anti-diabetic effects on C57BL/KsJ-db/db mice. 5 weeks old male db/db mice were divided into six groups, control (db/db), Rosi (db/db+rosiglitazone 10 mg/kgBW/day), SNLD (db/db +SN 60 mg/kgBW/day), SNHD (db/db+SN 150 mg/kgBW/day), DKLD (db/db+DK 30 mg/kgBW/day), DKHD (db/db+DK 120 mg/kgBW/day) administered mice. SN and DK supplementation groups significantly reduced final body weight, water intake, fasting blood glucose, plasma insulin, and c-peptide levels but to the contrary increased plasma adiponectin levels. Plasma lipid profiles including triacylglycerol, total cholesterol, HDL and LDL-cholesterol reduced SN and DK treatment groups. Moreover, administration of SN and DK activated Insulin Receptor Substrate-1 (IRS-1) signaling pathway and Glucose Transporter Type 4 (GLUT4) associated with insulin sensitivity and blood glucose regulation in visceral fat of diabetic mice. This study suggests that SN and DK administration might have potential anti-diabetic effects by regulation of IRS-1 signaling pathways in type 2 diabetes.

Biography

Boo-Yong Lee has completed his PhD from Korea University and Postdoctoral studies from University of Georgia, School of Food Science. He is the Professor of Department of Food Science and Biotechnology, CHA University. He has published more than 130 papers in reputed journals and has been serving as an Editorial Board Member of The Korean Society of Ginseng, Republic of Korean Society of Food Science and Technology, and The Korean Society of Food Science and Nutrition.

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