

### Anti-obesity and anti-diabetic effects of deep sea water on *ob/ob* mice

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In this study, the anti-obesity and anti-diabetic effects of DSW in *ob/ob* mice were investigated. The animals were randomly divided into two groups with six animals: control group received tap water; the experimental group were treated with DSW of hardness 1000 for 84 days. The body weight gain after 84 days in DSW-fed group was decreased by 7% compared to the control group. The plasma glucose levels in the DSW-fed mice were substantially reduced by 35.4%, as compared to control mice. The results of oral glucose tolerance test (OGTT) revealed that DSW-fed groups significantly increased the glucose disposal after 84 days. DSW increased plasma protein levels of adiponectin and decreased plasma protein levels of resistin, RBP4, and FABP. Moreover, GLUT4 and AMPK levels in skeletal muscle tissue were increased while PPAR $\gamma$  and adiponectin were decreased in adipose tissue of DSW-fed mice. These results suggest that the anti-diabetic and anti-obesity activities of DSW were mediated by modulating the expression of diabetes- and obesity-specific molecules. Taken together, these results provide a possibility that continuous intake of DSW can ameliorate obesity and diabetes.