

The Inhibitory Effect of Weissella koreensis 521 Isolated from Kimchi on 3T3-L1 Adipocyte Differentiation

Authors : Kyungbae Pi, Kibeom Lee, Yongil Kim, Eun-Jung Lee

Abstract : Abnormal adipocyte growth, in terms of increased cell numbers and increased cell differentiation, is considered to be a major pathological feature of obesity. Thus, the inhibition of preadipocyte mitogenesis and differentiation could help prevent and suppress obesity. The aim of this study was to assess whether extracts from Weissella koreensis 521 cells isolated from kimchi could exert anti-adipogenic effects in 3T3-L1 cells (fat cells). Differentiating 3T3-L1 cells were treated with W. koreensis 521 cell extracts (W. koreensis 521_CE), and cell viability was assessed by MTT assays. At concentrations below 0.2 mg/ml, W. koreensis 521_CE did not exert any cytotoxic effect in 3T3-L1 cells. However, treatment with W. koreensis 521_CE significantly inhibited adipocyte differentiation, as assessed by morphological analysis and Oil Red O staining of fat. W. koreensis 521_CE treatment (0.2 mg/ml) also reduced lipid accumulation by 24% in fully differentiated 3T3-L1 adipocytes. These findings collectively indicate that Weissella koreensis 521 may help prevent obesity.

Keywords : Weissella koreensis 521, 3T3-L1 cells, adipocyte differentiation, obesity

Conference Title : ICFSB 2014 : International Conference on Food Science and Biotechnology

Conference Location : London, United Kingdom

Conference Dates : January 20-21, 2014