Abstracts *(Poster Presentation)*

Effect of *Carallia brachiata* Ethanolic Extract on Adipogenesis in 3T3-L1 Adipocytes

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Abstract

Introduction: An excess storage of body fat causes obesity. Since obesity increases risk of chronic diseases, thus it is important to inhibit excessive storage of fat. *Carallia brachiata* is a plant that found in Thailand. There is a report that the leaf of *Carallia brachiata* has an antidiabetic effect in rat model.

Objectives: The aim of this study was to demonstrate the effect of *Carallia brachiata* leaf and stem ethanolic extracts (CL and CS) on adipogenesis in 3T3-L1 adipocytes.

Methods: 3T3-L1 adipocytes were used for measuring cytotoxicity of CL and CS (3, 10, 30, and 100 μg/mL). To determine adipogenesis process, CL and CS extracts were added to the cell culture medium at concentrations of 0, 3, 10, 30 and 100 μg/mL. After 8 days of treatments, adipocyte cells were stained with Oil Red O solution and measured the expression of adipogenic genes.

Results: CL and CS did not inhibit cell proliferation and showed no cytotoxicity in 3T3-L1 cells. Therefore, concentration range of 3 - 100 μg/mL CL and CS was used for subsequent experiments. CS inhibited lipid accumulation in 3T3-L1 adipocytes and suppressed gene expression of CCAAT/enhancer-binding protein α (C/EBPα), peroxisome proliferator-activated receptor γ (PPARγ), sterol regulatory element binding protein 1c (SREBP1c), adipocyte-specific genes fatty acid synthase (FAS), lipoprotein lipase (LPL) and adipocyte fatty acid-binding protein 2 (aP2). Whereas, CL dis not inhibit lipid storage and only had an inhibitory activity on SREBP1c and aP2 genes.

Conclusions: Our findings suggest that *Carallia brachiata* has an inhibitory effect on adipogenesis could be partially caused by suppressing C/EBPα, PPARγ and SREBP1c genes in 3T3-L1 adipocytes.

Keywords: *Carallia brachiata*, Adipogenesis, 3T3-L1 adipocyte
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