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Protective role of soybean extract from H₂O₂-oxidative stress and cell death in human keratinocyte HaCaT Cells

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Oxidative stress is closely related to incidence of various skin diseases. The soybean has been known as beneficial food that is demonstrated to possess a variety of antioxidants. Here, we examined whether soybean extract had a protective role against oxidative stress-induced cell death in human keratinocyte HaCaT cells. Firstly, we determined bioactive components in the soybean extract (Cheongja#3 black soybeans) using ultra performance liquid chromatography (UPLC) analysis. We found that 1.38 µg of γ-tocopherol and 9.738 ng of lutein existed in 100 mg of soybean extract. Soybean-treatment markedly decreased hydrogen peroxide-generated intracellular reactive oxygen species (ROS) levels at 100 µg/ml without no cytotoxicity. Furthermore, soybean extract protected cells from H₂O₂-induced cell death by assessment of MTT assay and caspase activities. From these results, antioxidant function of soybean extract could be potential for the protection of human keratinocytes HaCaT cells from oxidative stress and triggered cell death.

Biography

Yoon-Mi Lee, Ph.D is a post doctor at the department of food bioscience, Konkuk University, South Korea. She received her BS degree in the Department of Bioscience, Sungkunkwan University and Ph.D degree in the College of Medicine, Seoul National University, South Korea. While pursuing her Ph.D. degree, she was studying identifications of drugs targeting cancer and characterizing their molecular mechanisms in cells and animal models. She is currently focusing on identifying efficacy of food bioactives in the prevention and treatment of various chronic diseases including metabolic disorders.

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