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Anti-melanogenesis and anti-inflammatory effects of *Opuntia humifusa*

Yongsub Yi and Yonghwa Lee
Hoseo University, South Korea

This study was to confirm the effects of anti-melanogenesis and anti-inflammatory effects from *Opuntia humifusa* fruit and stem extracts. A potent anti-oxidant activity was showed from the leaf extract at IC_{50} value of 38.33 ± 1.07 $\mu\text{g/mL}$ and fruit extract at IC_{50} value of 40.23 ± 2.21 $\mu\text{g/mL}$ by 1,1-diphenyl-2-picrylhydrazyl (DPPH) assay. Also, phenolic contents were confirmed through total phenolic assay by High Performance Liquid Chromatography (HPLC). Fraction of taxifolin from leaf extract was identified using HPLC and gas chromatography/mass spectrometry. The extracts of *Opuntia humifusa* fruit and stem were confirmed about toxicity effect in B16 F1 by cell viability. It was also observed that the melanin contents were decreased. *Opuntia humifusa* fruit and stem extracts had a positive effect on melanin synthesis inhibition for skin whitening. In investigating the anti-inflammatory activities of *Opuntia humifusa*, the results of cell viability indicated that taxifolin did not show any cytotoxicity effect on RAW264.7 cells at 500 μM of concentration. The result show that taxifolin inhibited Lipo Polysaccharide (LPS)-induced production of Nitrite Oxide (NO). In addition, taxifolin indicated the inhibition of Lipo Polysaccharide (LPS)-induced Tumor Necrosis Factor (TNF)- α and Interleukin (IL)-6 productions by cytokine assay and Cyclooxygenase (COX)-2 expressions by Western blot analysis, meaning that taxifolin had a significant anti-inflammatory effect. Our results suggested that taxifolin from *Opuntia humifusa* has anti-melanogenesis and anti-inflammatory activities.

Biography

Yongsub Yi has expertise in natural products research in cosmetic science. He is experienced in the evaluation of the materials as ingredients in cosmetics, and also gives lectures on Cosmetic Materials and Natural Products in the Department of Cosmetics Science, Hoseo University, South Korea.

yongsub@hoseo.edu

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