World Academy of Science, Engineering and Technology
International Journal of Bioengineering and Life Sciences
Vol:11, No:02, 2017

Anti-Melanogenesis and Anti-Inflammatory Effects of Opuntia humifusa

Authors : Yonghwa Lee, Yoon Suk Kim, Yongsub Yi

Abstract : 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 shown from the leaf extract at IC50 value of 38.33±1.07 μg/mL and fruit extract at IC50 value of 40.23±2.21 μg/mL by 1,1-diphenyl-2-picrylhydrazyl (DPPH) assay. Also, phenolic contents were confirmed 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. Melanin contents were decreased. Opuntia humifusa fruit and stem extracts had a positive effect of 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 cytotoxicity on RAW264.7 cells at 500 μM of concentration. The results show that taxifolin inhibited lipopolysaccharide (LPS)-induced production of Nitrite oxide (NO). In addition, taxifolin indicated the inhibition of lipopolysaccharide (LPS)-induced tumor necrosis factor (TNF) -α and interleukin (IL) -6 productions by cytokine assay and cyclooxygenase (COX)-2 expression 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.

Keywords : anti-melanogenesis, anti-inflammatory, Opuntia humifusa, taxifolin
Conference Title : ICACD 2017 : International Conference on Aesthetic and Cosmetic Dermatology
Conference Location : Paris, France
Conference Dates : February 23-24, 2017