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Inhibitory Effect of Medicinal Plant Extract on Tyrosinase Activity

Yun-Young Lee, Jung Ae Park[1], Byung Tae Choi[1], Byung Won Kang[2],
Hye Young Jeon[3], Ho-Ok Park[4] and Kyung Tae Chung[5]

Department of Life Science and Applied Biotechnology, Dong-Eui University
[1]Dept. of Anatomy, School of Oriental Medicine, Pusan National University
[2]Department of Chemistry Dong-Eui University
[3]Amaranth Cosmetics, 1534-2, Songjeong-dong, Ganseo-gu
[4]Department of Life Science and Applied Biotechnology, Dong-Eui University
[5]Department of Clinical Sciences, Dong-Eui University

Tyrosinase converts tyrosine to 3,4-dihydroxyphenylalanine (L-DOPA) which is catalyzed to be melanin through dopaquinone. Melanin is the key compound to determine skin color. Therefore, tyrosinase is the major enzyme for the study of pigmentation disorder and skin-whitening agents in the cosmetic industry. Several tyrosinase inhibitors including arbutin have been used in skin-whitening cosmetics. Also, several plants were identified to have suppression of melanin formation inhibiting tyrosinase activity or synthesis. The authors attempted to screen tyrosinase inhibitor from medicinal plants and found that the organic solvent extracts of those showed inhibition of tyrosinase activity *in vitro* using arbutin as a positive inhibitor control. In this study we present plant extraction technique, inhibitor screening methods and inhibition activity. Our data indicate that unknown compounds with greater inhibition activity than arbutin can be still screened and applicable for the cosmetic industry.

Key words: Tyrosinase, skin-whitening, medicinal plants, arbutin

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Snail Family Protein Esg Contributes to Negative Regulation of Wnt Signaling Pathway

Dong-jin Yang and Mi-Ae Yoo

Department of Molecular Biology, Pusan National University, Busan 609-735, South Korea

Regulation of Wnt transcriptional targets is thought to occur by a transcriptional switch. In the absence of Wnt signaling, sequence-specific DNA-binding proteins of the TCF family repress Wnt target genes. Upon Wnt stimulation, stabilized β-catenin binds to TCFs, converting them into transcriptional activators. C-terminal-binding protein (CtBP) is a transcriptional corepressor that has been reported to inhibit Wnt signaling by binding to TCFs or by preventing β-catenin from binding to TCF. In addition, Snail family transcriptional factor Escargot (Esg) is known to interact with CtBP. However, the relationship between Esg and Wnt signaling is unknown. Here, we show that Esg is genetically interacted with canonical Wnt signaling pathway but not non-canonical pathway and negatively regulates the target genes of Wnt signaling pathway using GAL4/UAS system in *Drosophila* eye model system. Taken together, we demonstrate that Esg contribute to negative regulation of Wnt signaling pathway.