

Tyrosinase 활성과 멜라닌 생합성에 미치는 식물 추출물의 저해효능

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Inhibitory Effects of Plant Extracts on Tyrosinase Activity and Melanin Synthesis

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실험목적 (Objectives)

In order to develop new skin whitening agents, 100 plant extracts (methanol or water extracts) were screened for their inhibitory effects on tyrosinase activity and melanin biosynthesis in mouse melanocytes melan-a cells.

재료 및 방법 (Materials and Methods)

- 실험재료
 - 100 plant extracts (methanol or water extracts)
 - Mushroom tyrosinase, L-DOPA (L-3,4-dihydroxyphenylalanine)
 - Melanin, α-arbutin
- 실험방법
 - Enzyme assay
 - Cell lines and culture: mouse melanocytes (melan-a cells)

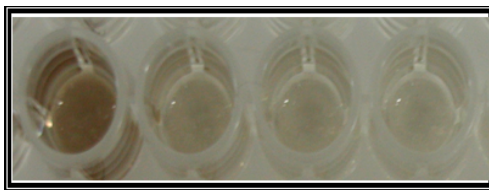
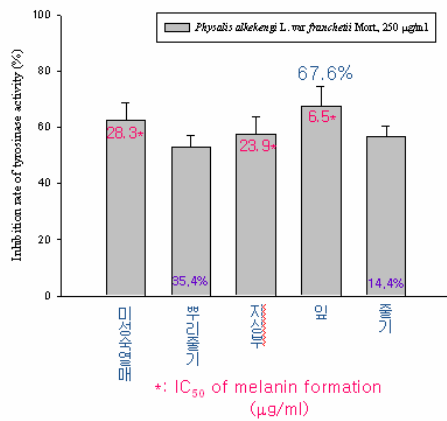
실험결과 (Results)

Of the extracts examined, 4 showed over 40% inhibition of melanin synthesis compared to control at a concentration of 20 µg/ml. In mouse melan-a cells, 3 extracts of *Aster ageratoides* Turcz. var. *ageratoides* (branch, root, aerial; IC₅₀=17.3, 6.1, 13.6 µg/ml, respectively) and *Physalis alkekengi* var. *francheti* (leaf, IC₅₀=6.5 µg/ml) markedly inhibited melanin synthesis. In addition, the tyrosinase activity was monitored by the measurement of dopachrome formation from the oxidation of L-3,4-dihydroxyphenylalanine. Extracts of *Aster ageratoides* Turcz. var. *ageratoides* (flower) and *Physalis alkekengi* var. *francheti* (leaf) exhibited the most potent inhibitory activity in a dose-dependent manner.

These plants represent potential sources of novel whitening agents in the development of skin-whitening products.

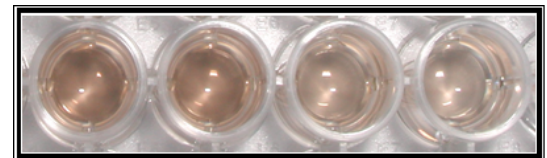
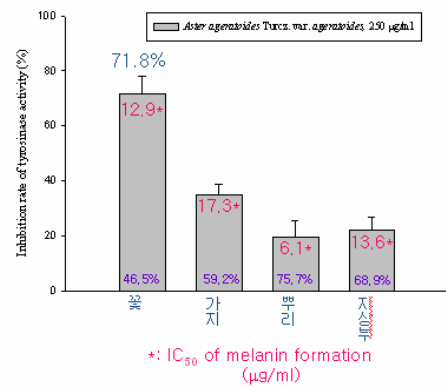
* 시험성적

Inhibitory activity of dopachrome formation by *Physalis alkekengi* L. var. *franchetii* Mort extract using mushroom tyrosinase



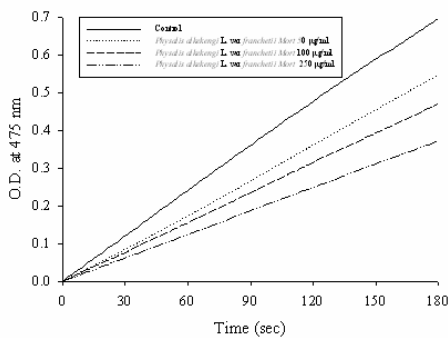
0 10 20 30
파리 추출물 (µg/ml)

Inhibitory activity of dopachrome formation by *Aster ageratoides* Turcz. var. *ageratoides* extract using mushroom tyrosinase



0 10 20 30
까실쑥부쟁이 추출물 (µg/ml)

Tyrosinase inhibitory activity of MeOH extracts of *Physalis alkekengi* L. var. *franchetii* Mort (Leaf)



Tyrosinase inhibitory activity of MeOH extracts of *Aster ageratoides* Turcz. var. *ageratoides* (Flower)

