

[PD2-24] [ 04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3] ]

### Mulberroside F isolated from the leaves of *Morus alba* inhibits melanin biosynthesis

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Dept. of Herbal Pharmacology, Graduate School of East-West Medical Science, Kyunghee University

The current study was carried out to investigate in vitro the effects of a 85% methanolic extract of the dried leaves of *Morus alba* on melanin biosynthesis which is closely related to hyperpigmentation. These extracts inhibited tyrosinase activity which converts dopa to dopachrome in the biosynthetic process. Mulberroside F (moracin M-6, 3'-di-O- $\beta$ -glucopyranoside), which was obtained after bioactivity-guided fractionation of the extracts, showed the inhibitory effects on tyrosinase activity. However, the inhibitory activity of mulberroside F did not account for that of the total extract of mulberry leaves, suggesting the presence of other active components in the extracts. These results suggested that the leaves of *M. alba* might be used as a skin whitening agent.

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### Phospholipase A2 activation is necessary for the induction of triterpenoid synthesis by elicitation in *Scutellaria baicalensis* suspension cells

Ma CJ<sup>o</sup>, Yoon HJ, Kim DK\*, Huh H

Seoul National University, College of Pharmacy, \* Chungang University, College of Pharmacy

Signal transduction mechanism of elicitor in phytoalexin production increase was investigated. The production of triterpenoids such as ursolic acid and oleanolic acid, in elicitor treated *Scutellaria baicalensis* (SB) suspension culture was used as a model assay system. Previously it was reported that triterpenoid production was increased in the culture media of the yeast extract treated suspension cells. Methyl jasmonate treatment to the SB cells also increased the production of the triterpenoid. Pretreatment of the cell with ancymidol and ketoconazole, jasmonic acid synthesis inhibitors, prevented the production of triterpenoid even after yeast extract treatment. The result clearly shows that the production of the phytoalexin synthesis is mediated by jasmonic acid. Activation of the phospholipase A2 (PLA2) by elicitation, early stage of the octadecanoid pathway was investigated. The activity of PLA2 was increased by 2.5 times 1hr after treatment of yeast extract (50  $\mu$ g/ml) to SB cells. The production of the triterpenoid was also increased at 24hr after treatment of yeast extract to the same batch of the cells. Even after elicitation by yeast extract, if the cells were treated with aristolochic acid (50  $\mu$ M), a PLA2 inhibitor, the triterpenoid induction was not observed. The presented results implicated that PLA2 was involved in the phytoalexin synthesis by elicitation.

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### Biological activities of *Rhodiola sachalinensis*

Lee YA, Cho SM<sup>o</sup>, Kim JS, Kim KH, Lee MW