[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-β-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.

[PD2-25] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

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

Ma CJ°, 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 culutre 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 ㎍/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 μM), a PLA2 inhibitor, the triterpenoid induction was not observed. The presented results implicated that PLA2 was involved in the phytoalexin synthesis by elicitation.

[PD2-26] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Biological activities of Rhodiola sachalinensis

Lee YA, Cho SM°, Kim JS, Kim KH, Lee MW

Chung-Ang University

Biological activities of Rhodiola sachalinensis

이연아, 조수민, 김준식, 김광호, 김세원, 이민원

Recently, It was reported that a few herbal extracts could decrease blood ethanol concentrations by stimulating ethanol metabolism or inhibiting ethanol absorption in the gastrointestinal tract. And it was also reported that the extract of Rhodiola root decrease blood ethanol concentration in rats fed ethanol by blocking ethanol absorption. We made an activity guided isolation from ethanol extract of Rhodiola sachalinensis and some identified phenolic compounds as a active components of blocking ethanol absorption.

[PD2-27] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl. Bldg 3]]

A Study on the Anti-metastatic activties and Toxicity of IH-901

Sung JH°, Bong JS, Lee SK, Lee SJ,

Central Reserch Inst., IL-HWA Co. Ltd.

Anti-metastatic activities of IH-901, an intestinal bacterial metabolic derivative formed from Ginseng protopanaxdiol saponins, was studied using experimental and sapotaneous metastasis model produced by intravenous, intraportal, and intrasplenic or subcutaneous injections of Lewis lung carinoma, B16 melanoma or Colon26 carcinoma in syngeneic C57BL/6 or BALB/c mice. And the study was carried out to investigate the acute toxicity in ICR mice of both sexes exposed to IH-901. The mice of the both sexes were observed daily for 14 days after single oral administration. Results from separate studies on general toxicity and safty pharmacology of IH-901 revealed its low toxicity. Also IH-901 administrated mice did not induce any mortalites and abnormal signs in clinical findings, body weights, gross findings and histopathological findings. Based on the results, it is impossible estimate LD50 vaules(LD50 values in male and female mice would be > 5g/kg b.w. in the intragastrically route.) in male and female mice.

[PD2-28] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl. Bldg 3]]

Benzothiadiazole potentiates elicitor-induced rosmarinic acid production in the suspension cultures of Agastache rugosa

Kim HK, Chang S and Huh H

College of Pharmacy, Seoul National University

Benzothiadiazole (BTH) which is known as a plant activator plays an important role in various plant defense responses. It has been reported that BTH induced systemic acquired resistance in several plants and primed for augmented elicitation of phytoalexin synthesis. Rosmarinic acid (RA) is one of the most abundant phenylpropanoid in the species of Labiatae. Because of its antimicrobial activities and elicitor-inducible characteristic, rosmarinic acid could serve as a defense compound (phytoalexin) against pathogens. Recently, we reported that the suspension cultures of Agastache rugosa also produced rosmarinic acid larger amount than the intact plant and its production can be increased by yeast elicitor treatment. As one of the methods to increase the yield of RA we attempted to preincubate the cells with BTH. When 50 μM of BTH was added in the suspension cultures of A. rugosa prior to elicitation, RA content was increased by 11 folds compared to non-elicited cells. BTH alone, however, was not able to induce RA production. Therefore, the results presented above implicated that BTH could be used as a chemical tool to facilitate the expression of the genes which is involved in the biosynthesis of a certain secondary metabolite, especially phytoalexin, together with elicitation.