

μM) and jasmonic acid were added to the culturing cell suspension, separately. The volatile oil fraction was extracted from the callus and investigated by mean of GC-MS. The composition of the oil was compared with that of the mother plant.

As the result, sixty five compounds including feruginol were identified in the callus oil. The main component of the oil from leaves of *Isodon japonicus* was methyl chavicol. The oils from cultured cells treated with jasmonates showed considerably different patterns.

[PD2-29] [10/20/2000 (Fri) 11:30 – 12:30 / [Hall B]]

Inhibition of phospholipase C γ 1 by lignans from *Machilus thunbergii*

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Eleven lignans and two flavans were isolated from the CH₂Cl₂ fraction of *Machilus thunbergii*. These isolated compounds were identified by spectroscopic analysis. Of them, compounds 5,7-di-*O*-methyl-3',4'-methylenated (-)-epicatechin (12) and 5,7,3'-tri-*O*-methyl (-)-epicatechin (13) have not reported in this plant. In addition, seven compounds, machilin A (1), (-)-sesamin (3), machilin G (5), and (+)-galbacin (9), licarin A (10), (-)-acuminatin (11), 5,7-di-*O*-methyl-3',4'-methylenated (-)-epicatechin (12), and 5,7,3'-tri-*O*-methyl (-)-epicatechin (13) showed dose-dependent potent inhibitory activities against phospholipase C γ 1 *in vitro* with IC₅₀ values from 8.8 to 25.9 μM. These lignans, neolignans and flavans were presented as new classes of PLC γ 1 inhibitors. The structure activity relationship including their related lignans revealed that benzen ring having methylene dioxy group is suggested as a new active site of inhibitor for expression of inhibitory activities on PLC γ 1 and distance between these groups is also important for this action. Plus, antiproliferative effects of these compounds against human cancer cell are very closed to those against PLC γ 1. Therefore, these inhibitors may be beneficial as candidates of chemotherapeutic and chemopreventive anticancer agents.

[PD2-30] [10/20/2000 (Fri) 11:30 – 12:30 / [Hall B]]

Isolation of an inhibitor of PGE₂ production in murine peritoneal macrophages from the leaves of *Acanthopanax chiisanensis*

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Acanthopanax sp. have been reputed for their various biological activities including anti-inflammatory activity. As an attempt to evaluate anti-inflammatory principles from the leaves of *A. chiisanensis*, various fractions obtained from this plant parts were tested for their effect on PGE₂ production in rat peritoneal macrophages. Rat peritoneal macrophages (0.75 x 10⁶ cells) were incubated at 37°C for 4hr in 0.5 ml of medium in the presence of 12-*O*-tetradecanoylphorbol 13-acetate (TPA). Among fractions tested chloroform and ethylacetate fractions were found to exhibit significant inhibition of PGE₂ production. Further fractionation of these active fractions led to isolation of hyperin as an active principle. Hyperin showed almost complete inhibition of TPA-induced PGE₂ production at 100 μg/ml. Its IC₅₀ values were calculated to be 7.6 μg/ml (16.4 μM). These results suggested that hyperin might be responsible for one of anti-inflammatory principles of this plant part.