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In this study, we investigated the molecular pathways targeted by platycodin D, which could involve apoptosis in immortalized human keratinocytes (HaCaT). We demonstrated that platycodin D-mediated apoptosis of HaCaT cells exhibited representative features, including DNA fragmentation, caspase-3, caspase-8 activation, and upregulation of Fas and FasL expression, but not p53 activation. To investigate the events involved in activation-induced FasL upregulation, we have examined mRNA accumulation, protein expression, and NF-kB activity to elucidate transcription level in the HaCaT cell line treated with platycodin D. We found that platycodin D induces apoptosis is mediated to activation of a death receptor pathway. Among the major transcription elements on the Fas and FasL promoter, we showed the essential role of NF-kB activation for the expression of the death receptor such as FasL. These results suggest that HaCaT cells have a property to induce apoptosis, which is involved in the upregulation of FasL expression via to NF-kB activation. In summary, our data demonstrate that NF-kB activation may play a crucial role in the induction of apoptosis in human HaCaT cells treated with platycodin D.

[PD2-22] [ 2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function ]

Platelet Anti-aggregatory Effects of Coumarins from the Roots of Angelica genuflexa and A. gigas
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Angelica genuflexa (Umbelliferae) is a perennial herbaceous plant which has also been variously reported as A. koreana and Ostericum koreanum. The MeOH extract was reported to have strong anti-thrombotic potential in the acute thrombosis model. In our preliminary testing, the MeOH extract and one of the solvent fractions (90% MeOH fr.) were observed to have both platelet anti-aggregating and anti-coagulant effects. Five coumarins, isoir Imperatorin (1), pabulonenol (2), isoxypeucedanin (3), oxypceuedanin hydrate (4) and osthol (5) were isolated from the MeOH extract of Angelica genuflexa in the course of searching for anti-platelet and anti-coagulant components. Pabulonenol (2) was isolated from A. genuflexa for the first time. The five compounds isolated from A. genuflexa, together with decursinol angelate (6), decursin (7) and nodakenin (8) from A. gigas were evaluated for their effects on platelet aggregation and blood coagulation. Compounds 2, 5, 6 and 7 were observed to be either equally effective or 2-4 times more inhibitory than acetylsalsilic acid in both arachidonic acid and U46619 (TXA2 mimic) induced platelet aggregations. Disappointingly, all of the tested compounds 1-8 were devoid of anti-coagulant effects, although the plant extract and the solvent fraction (90% MeOH fr.) elongated the coagulation time, suggesting the possibilities of the presence of compounds with anti-coagulant effects.

[PD2-23] [ 2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function ]

Nitric Oxide Production Inhibitory and Anti-Oxidative Activities of Phenolic Compounds from the Barks of Ulmus davidiana
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The Barks of Ulmus davidiana (Ulmaceae) have been used for the treatment of insecticide, anti-boil and anti-fungi in Korean traditional medicine. Four phenolic compounds were isolated from 80% Acetone extracts. The structures of these compounds were elucidated as (+)-catechin, (+)-catechin 7-O-β-D-glucopyranoside, (+)-catechin 7-O-β-D-xylopyranoside and procyandrin B-1. These phenolic compounds showed significant nitrogen monoxide(NO) production inhibitory activity in IFN-y, LPS stimulated RAW 264.7 cell and also showed significant antioxidative activity on DPPH radical. These results suggest that the phenolic compounds which were isolated from Ulmus davidiana might be developed as a anti-inflammatory and anti-oxidative agent.