

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- κ B 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- κ B 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- κ B activation. In summary, our data demonstrate that NF- κ B 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*

Lee Yong Yook^o, Lee Sanghyun, Jin Jing Ling, Yun-Choi Hye Sook

Natural Products Research Institute, Seoul National University, Seoul 110-460, Korea

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, isoimperatorin (1), pabulenol (2), isooxypeucedanin (3), oxypeucedanin 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. Pabulenol (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 acetylsalicylic acid in both arachidonic acid and U46619 (TXA₂ mimetic) 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.

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Nitric Oxide Production Inhibitory and Anti-Oxidative Activities of Phenolic Compounds from the Barks of *Ulmus davidiana*

Jae Hee Lee^o, Seung Hwan Yeom, Min Kee Kim, Hyun Jung Kim, Jae Geul Sim, Min Won Lee

College of Pharmacy, Chung-Ang University, Seoul 156-756, Korea

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 procyanidin B-1. These phenolic compounds showed significant nitrogen monoxide(NO) production inhibitory activity in IFN- γ , 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.