

acid moiety using the vinyl addition and the ring-closing metathesis (RCM).

[OD2-1] [ 2003-10-11 10:15 - 10:30 / ASEM Hall Meeting Room 203 ]

### **Dereplication and Quantification of Steroidal Saponins in Polygonatum Species Using LC-MS**

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Rhizomes of Polygonatum species belong to Liliaceae are important herbal drugs in the traditional medical practice of Asian region. Two representative Chinese drugs derived from this genus are Hwangjeong and Okjuk. Though botanical origins of these drugs are officially listed as *P. falcatum*, *P. sibiricum* and *P. kingianum* for Hwangjeong and *P. odoratum* var. *pluriflorum* for Okjuk in the Korean Pharmacopoeia and Korean Herbal Pharmacopoeia, respectively, they are often sold as a mixture of several different species in the market. Therefore, a simple HPLC-MS technique was developed to differentiate these species in this study. This approach was focused on the detection of steroidal saponins that were reported to show hypoglycemic activity. In addition, this method was used to analyze commercial Polygonatum species products and the related tea products. Five spirostanol glycosides (1-5) were isolated from *P. sibiricum* and used as standard compounds for qualitative and quantitative analysis of Polygonatum species. Among them, compounds 1, 3 and 5 were found to be new spirostanol glycosides through dereplication procedure using MS<sup>n</sup> analysis, and other spectroscopic data. These new glycosides have a 6-O-acetyl- $\beta$ -D-galactopyranose as a common moiety in their structures. The relative distribution of these compounds in each extract of five Polygonatum species was established by HPLC-ESI-MS with SIM mode. Furthermore, eleven Polygonatum species herbal drugs and seven herbal tea products were analyzed. It was found that LC-MS method could be utilized to differentiate these herbal drugs and tea products effectively. In conclusion, the LC-MS technology can improve the accuracy, sensitivity and speed of the analysis when it was compared to the conventional HPLC method.

[OD2-2] [ 2003-10-11 10:30 - 10:45 / ASEM Hall Meeting Room 203 ]

### **Cytotoxic constituents of Zingiber cassumunar**

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A new phenylbutenoid dimer, ( $\pm$ )-trans-3-(3'-methoxy-4'-hydroxyphenyl)-4-[(E)-3''',4'''-dimethoxystyryl]cyclohexene (1), were isolated from the rhizomes of Zingiber cassumunar along with three known phenylbutenoids, ( $\pm$ )-trans-3-(3',4'-dimethoxyphenyl)-4-[(E)-3''',4'''-dimethoxystyryl]cyclohexene (2), 4-(3',4'-dimethoxyphenyl)but-1,3-diene (3), and 4-(2',4',5'-trimethoxy-phenyl)but-1,3-diene (4), and a known heptanoid, curcumin (7), as cytotoxic constituents against several human cancer cell lines. In addition, two known phenylbutenoids, (E)-3-hydroxy-1-(3',4'-dimethoxy-phenyl)but-3-en-1-yl acetate (5) and (E)-4-(3',4'-dimethoxyphenyl)but-3-en-1-ol (6), were also obtained as inactive constituents in the present study. Structure elucidation of compound 1 will be presented as well as biological activity of the compounds 1-7.

[OD2-3] [ 2003-10-11 10:45 – 11:00/ ASEM Hall Meeting Room 203 ]

### **Antioxidant Activity of Cercis chinensis and Its Protective Effect on Skin Aging**

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Reactive oxygen species are capable of damaging biomolecules such as lipids, proteins, and DNA, which can not only lead to various diseases, but also oxidative damage resulting aging. In our previous study, *Cercis chinensis* (Leguminosae) showed a potent antioxidant activity. Twenty compounds including a new flavonol glycoside were isolated through antioxidant activity-guided fractionation. *C. chinensis* and some of the