O-2

Biological Activities and the Metabolite Analysis of *Camptotheca acuminata* Dence.

Jwa Yeong Cho, Mi Jin Park, Da Hye Ryu and Young-Hwa Kang*

Functional Plant Lab., Department of Horticultural Science, College of Agriculture and Life Sciences, Kyungpook National University, Daegu, Korea

This *Camptotheca acuminata* Decne. (CA), belonging to Nyssaceae, is a deciduous tree. and has been used as Traditional Chinese medicine since ancient times. The CA produces camptothecin a natural indole alkaloid, and reported to have anti-cancer effects. But the studies on biological activities of CA leaves are insufficient. Therefore, this study confirmed various biological activities such as antioxidant, antidiabetic, anticancer, antiinflammatory and metabolism analysis by HPLC-MS/MS of CA leaves. The RC_{50} values of DPPH radical scavenging activity of ethyl acetate fraction, *n*-Butanol fraction, methanol extraction, water fraction and *n*-Hexane fraction were 12.23±0.01, 15.93±0.42, 55.12±0.45, 56.29±4.15 and 427.29±6.13 ug/mL, respectively. The IC_{50} values of α-glucosidase inhibitory activity of ethyl acetate fraction, *n*-Butanol fraction, methanol extraction, *n*-Hexane fraction and water fraction were 24.29±0.14, 47.86±0.45, 54.23±1.21 466.76±2.21 and 623.91±9.67 ug/mL, respectively. The nitric oxide release activity of *n*-Hexane fraction, methanol extraction, ethyl acetate fraction, water fraction and *n*-Butanol fraction were 31.49±5.74, 29.79±0.71, 26.89±0.71, 8.24±5.83 and 7.75±4.08% at 25 ug/mL, respectively. The anti-cancer activity of *n*-Hexane fraction, methanol extraction, ethyl acetate fraction, water fraction and *n*-Butanol fraction were 31.49±5.74, 29.79±0.71, 26.89±0.71, 8.24±5.83 and 7.75±4.08% at 25 ug/mL, respectively. The ethyl acetate fraction activities showed higher biological activities than other fractions. Thus, Additional studies were conducted using ethyl acetate fraction. Metabolite analysis was performed using a LCMS-8040 triple quadrupole mass spectrometer. As a result, Five compounds (**1-5**) were identified in the ethyl acetate fraction of the CA leave. The identification of these compounds was generated by the analysis of fragmentation methods of the negative and positive ion modes. Five compounds were identified as gallic acid (**1**), chlorogenic acid (**2**), isoquercetin (**3**), astragalin (**4**) and camptothecin (**5**). These results suggest that the CA leave can be used for functional materials.

Key words: *Camptotheca acuminata* Dence., Antioxidant, α-glucosidase, Anti-inflammatory, Anti-cancer, Metabolomics