

Seasonal variation of antimicrobial and antioxidative activity in *Artemisia princeps* var. *orientalis*

Kyeong Won Yun,^{1*} Seongkyu Choi¹ and Hyung-Jin Jung²

¹Department of Oriental Medicine Resources, Suncheon National University, Suncheon 540-742;

²School of Bioresources, Andong National University, Andong 760-749, Republic of Korea

Leaves from natural populations of *Artemisia princeps* var. *orientalis* in Suncheon of South Korea were examined for antimicrobial and antioxidative activities monthly (April through October). The antimicrobial activity of the ethyl acetate and water fractions of crude methanol extract from the plant collected monthly against three gram-positive, two gram-negative and one lactic acid bacteria were studied. The ethyl acetate and water fractions of crude methanol extract from *A. princeps* var. *orientalis* collected in August and September had the highest antimicrobial activity. Minimum inhibitory concentrations (MIC) for each strain by ethyl acetate fraction of methanol extract from *A. princeps* var. *orientalis* was different depending on strains and sampling months. MIC for each strain was the highest in the sample of April, followed by October. In specific, MIC for *Bacillus cereus* was around 0.25mg/disc in the sample of April. The MIC for *Staphylococcus aureus* was 0.01mg/disc in the sample of July, August, and September. It was the lowest value among tested strains and samples. And the antimicrobial activity for *Lactobacillus plantarum* was not found at any concentrations and sampling months. The *in vitro* antioxidative activities of methanol extract from *Artemisia princeps* var. *orientalis* collected monthly were determined by the scavenging of DPPH radical and inhibition of xanthine oxidase activity. The DPPH scavenging activity of the extracts from the plant sampled in May, June and July were higher than any other months. The xanthine oxidase activity of the extract of *A. princeps* var. *orientalis* collected in April and May showed the greatest activity, it is different with antimicrobial activity.

Key words: *Artemisia princeps* var. *orientalis*, antimicrobial activity, antioxidative activity, seasonal variation.