P28

Cordyceps militaris polysaccharide enhances antitumor activities *in vitro via* immunostimulation of murine bone marrow-derived dendritic cells

Gi-Young Kim[1], Woo-Shin Ko[2], Cheung-Yun Jin[1], Min-Ho Han[1], Jae-Yoon Lee[3], Jeong-Ok Lee[4], Chung-Ho Rhu[4], Yeong-Min Park[5], Young-Ki Jeong[6] and Yung Hyun Choi[7]

[1]Research Institute of Oriental Medicine, [2]Clinical Research Center of Oriental Medicine, [3]Department of Microbiology, Pusan National University, Busan 614-714, [4]Division of Applied Life Science, Gyeongsang National University, Jinju 660-701; [5]Department of Microbiology & Immunology, Pusan National University College of Medicine, Busan 602-739; [6]Department of Microbiology, Dongeui University, Busan 609-735, South Korea, [7]Department of Oriental Medicine, Dongeui University College of Oriental Medicine, Busan 614-052;

We investigated whether *Cordyceps militaris* polysaccharides (PS) induces the phenotypic and functional maturation of dendritic cells (DC). It profoundly increased CD40, CD54, CD80, CD86, and MHC class II expression in murine bone marrow (BM)-derived myeloid DC. Endocytosis was assessed by the uptake of FITC-dextran and FITC-albumin. The ability of unstimulated DC (UT-DC) to uptake dextran and albumin was higher than that of PS- or LPS-stimulated DC (LPS-DC). Also, UT-DC secreted a low concentration of IL-12, while PS- or LPS- DC secreted higher levels of IL-12 than UT-DC. PS not only formed morphologically mature DC and clusters, but also induced predominantly functional maturation. Moreover, PS is shown to promote the cytotoxicity of specific-cytotoxic T lymphocyte (CTL) induced by DC which were pulsed with P815 tumor-lysate during the stage of antigen presentation. These results suggest that DC maturation by PS can play a critical role in the improvement of the immunoregulatory function in patients with impaired host defense. [This study was financially supported by grant from Technology Development for Agriculture and Forestry, Ministry of Agriculture and Forestry (No. 202041031SB010).