Characterization of Brown Pine Needle Extract for the Treatment of Acne and Atopic Dermatitis

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In this study, we investigated the biological activities of brown pine needles of pine tree for the chronic inflammatory skin disorder such as acne and atopic dermatitis. The Minimum Inhibitory Concentration(MIC90) of pine needles extracts against P. acnes was 0.1 mg/ml. However, the MIC range of brown pine needles extract(BPNE) and green pine needles extract(GPNE) are 0.01 to 0.1 mg/ml(BPNE) and 0.05 to 0.1 mg/ml(GPNE), respectively. Especially, only BPNE showed bactericidal effect with Minimum Bactericidal Concentration(MBC) values of 1 mg/ml. Accordingly, BPNE showed 2 times higher bactericidal effect against P. acne than GPNE. The MIC and MBC values of BPNE and GPNE against S. aureus were similar at 2 and 5 mg/ml. It also showed good DPPH scavenging activity(45.9% at 1 mg/ml). In addition, BPNE at noncytotoxic doses inhibited nitric oxide(NO) production in LPS-stimulated RAW264.7 cells(51% at 0.01 mg/ml).

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