

P8 INHIBITION OF NEUTROPHIL FUNCTION BY *BARLERIA LUPULINA* LINDL AND *CLINACANTHUS NUTANS* (BURM. F.) LINDAU

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ABSTRACT

Barleria lupulina Lindl and *Clinacanthus nutans* (Burm. f.) Lindau, both belonging to the family *Acanthaceae*, have been widely used in Thai folklore medicine as anti-inflammatory agents and for the treatment of insect bite, allergic response and herpes infection. However, the mechanisms underlying their activities in these treatments have never been reported. In the present study, extracts from the leaves and twigs of *B. lupulina* and *C. nutans* were investigated for their inhibitory activities on neutrophil functions, including neutrophil chemotaxis, superoxide anion generation (SAG) and degranulation. It was found that *B. lupulina* (10-1000 µg/ml) and *C. nutans* (10-1000 µg/ml) inhibited fMLP-induced neutrophil chemotaxis in a concentration-dependent manner with $IC_{50} = 8.0 \pm 2.2$ µg/ml and $IC_{50} = 11.9 \pm 2.2$ µg/ml, respectively. Both *B. lupulina* and *C. nutans* (10-1000 µg/ml) caused a concentration-related inhibition of fMLP-induced SAG with IC_{50} for *B. lupulina* was 42.4 ± 10.7 µg/ml and for *C. nutans* 62.2 ± 9.2 µg/ml. These concentrations of both herbs also inhibited fMLP-induced elastase release in a concentration-dependent manner with $IC_{50} = 145.7 \pm 15.1$ µg/ml and $IC_{50} = 86.1 \pm 18.5$ µg/ml, respectively. The results also showed the inhibitory effects of *B. lupulina* (10-1000 µg/ml) and *C. nutans* (10-1000 µg/ml) on neutrophil MPO production, giving $IC_{50} = 64.1 \pm 10.2$ µg/ml and $IC_{50} = 48.2 \pm 11.1$ µg/ml, respectively. These findings suggest that inhibition of neutrophil activation by these herbs may be attributed, in part, to their anti-inflammatory activities.

Key words : *Barleria lupulina* Lindl, *Clinacanthus nutans* (Burm. f.) Lindau, neutrophil chemotaxis, superoxide anion generation, neutrophil elastase, neutrophil myeloperoxidase