Allyl isothiocyanate-induced changes of the number of white blood cells and plasma energy substrate levels in rats

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(CON) group. The numbers of lymphocytes during the experimental period were 0.64–0.79 times significantly lower in the AITC group than in the CON group. Similar tendencies were observed in the number of monocytes. The numbers of neutrophils at 6–10 days after subcutaneous injection were 1.31–2.21 times markedly higher in the AITC group than in the CON group. AITC did not change the number of eosinophils and basophils. Plasma corticosterone concentrations during the experimental period were 4.7–8.4 times significantly higher in the AITC group than in the CON group. These results suggest that AITC-mediated immunosuppression is at least in part attributable to quantitative changes in the number of circulating WBCs. AITC-induced plasma corticosterone accretion may be related to AITC increased number of neutrophils, and AITC induced mild stress responses.

Methods and Materials

Two parts of an experiment, 1) the subcutaneous injection (Exp.1) and 2) oral administration (Exp.2) effects of AITC on the number of WBCs, plasma energy substrate concentrations and thermogenesis were investigated in male adult rats. The subacute effects of AITC on the weight of visceral organs were also examined.

Results and Discussion

[Exp.1] The number of total WBCs at 1–4 days after subcutaneous injection were 0.73–0.75 times significantly lower in the AITC group than in the control