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Effect of Hot Water Extract from Agaricus Blazei Murill on Chemotaxis of Neutrophils

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ABSTRACT

Hot water extract from the edible Brazilian mushroom, Agaricus Blazei Murill (ABM), is used for both traditional and alternative medicine. ABM is reported to stimulate anti-tumor, anti-infection, and immune activity. However, there are few reports of how ABM affects neutrophils. Therefore, in this study, we examined the effect of hot water ABM extract on neutrophil migration, phagocytosis, and reactive oxygen species production using neutrophils from guinea pig. Migratory direction and velocity as indicators of chemotactic activity of neutrophils were significantly ($p < 0.001$) increased at concentration of 50 and 100 mg/ml in ABM extract compared with control. Phagocytic activity of neutrophil was significantly ($p < 0.01$) increased at concentration of 5 mg/ml in ABM extract compared with control. Production of reactive oxygen species (ROS: H_2O_2 or) by neutrophils was significantly ($p < 0.01$) increased at concentration of 5 mg/ml in ABM extract compared with control. These results suggest that enhancement in neutrophil chemotactic activity, phagocytic activity and ROS production are mechanisms by which ABM extract inhibits bacterial infection in the skin and dermatitis.

KEYWORDS

Neutrophil; Chemotactic Activity; Phagocytic Activity; ROS Production; Agaricus Blazei Murill

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