

## **HOT WATER EXTRACT OF AGARICUS BLAZEI MURILL (ABM) PREVENTS THE AGEING PROCESS BY ACTIVATION OF NEUTROPHIL FUNCTIONS**

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Background: Hot water extract of *Agaricus blazei* Murill (ABM) is known in anti-oxidant activities. There are a few reports that neutrophils functions are decreased by ageing. Aims: In this present study, we investigated whether ABM enhanced the functions of neutrophils. Methods: ABM was provided by Kyowa Wellness Co. Ltd. Neutrophils were obtained from guinea pig blood. Neutrophils were isolated from blood of guinea-pig using ficoll-paque. Chemotactic activity for neutrophils was analyzed by EZ-TAXIScan. Productions of reactive oxygen species were measured by FACS using Hydroethidine and 2',7'-Dichlorofluorescein diacetate. Phagocytosis was measured by FACS using FITC labeled Latex beads. Results: ABM showed chemotactic activity for neutrophils. Velocity as an indicator of chemotactic activity in migrated neutrophils was  $0.31 \pm 0.07 \mu\text{m}/\text{sec}$ . (mean $\pm$ S.D.),  $0.28 \pm 0.07 \mu\text{m}/\text{sec}$ . in ABM at concentration of 50 and 100 mg/ml and  $0.11 \pm 0.09 \mu\text{m}/\text{sec}$  in control. There were significantly ( $p < 0.001$ ) difference between ABM and control. Radian as an indicator of chemotactic activity in migrated neutrophils were also significantly ( $p < 0.001$ ) increased by ABM at concentration of 50 and 100 mg/ml compared with control. Productions of O<sub>2</sub>- or H<sub>2</sub>O<sub>2</sub> from neutrophils were significantly ( $p < 0.01$ ) increased by ABM compared with control. Phagocytic activity of neutrophils was significantly ( $p < 0.01$ ) enhanced by ABM compared with control. Conclusion: ABM enhanced the functions of neutrophils. These results suggest that ABM may be a candidate for anti-ageing by activation of neutrophils.