タイトル

A study on macrophages activation by Sophy beta glucan ingestion.

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著者

C.Taniwaki(1 ,E.Tsuru(2 ,S.Tsuru(4 ,H.Tanaka(4 ,Y.Watanabe(1 ,S.Mizobuchi(1 .

1)Clinical Nursing, Science, Kochi Univ., Nankoku, Japan, 2)Laboratory animal science, Kochi Univ.,

Nankoku, Japan, 3)RI center, Kochi Univ., Nankoku, Japan, 4)Tosa Municipal Hospital, Tosa, Japan

The beta 1,3-1,6 glucan have been reported for having many immunomodulatory activities in vivo and in vitro. The Sophy beta glucan (S-βg) is based on the water-soluble beta 1,3-1,6 glucan which Aureobasidium pullulanse induces. The S-βg has the authorization as food additive from the Japanese Government.

We found various immunostimulatory effects by ingestion of the S-βg in a past study, such as anti-infection, anti-tumor and anti-allergy effect. In this study, we focused in the activation of the macrophages by the S-βg. The S-βg was tested for cell killing activity induction by macrophages in vitro. The instruction macrophages in the peritoneal cavity of control and the S-βg intake C57/BL6N mice were checked for cell killing activity.

The cell killing activity of macrophages was measured by 16hr 51 Cr-release assay using YAC-1 target cells. The activity was derived by the S-βg intake, cell killing activity of macrophages high in S-βg intake group (mean±S.E.=10.73±1.85) compared to control group(4.41±1.09).

We determine the mechanism of killing of YAC-1 cells, we added active oxygen inhibitors,Super oxide dismutase (SOD) has no effect and deferoxamine (an inhibitor of OH) and L-N5-(1-iminoethyl) ornithine (L-NIO) (an inhibitor of nitric oxide synthase) has little effect on killing. However, catalase and NaN3 (an inhibitor of peroxidase) inhibited most of

killing. In other words this killing activity of effector molecules　was H2O2 and/or OCl-.

We are analyzing the cytokine mRNA level, IFN-γ, IL-12 and IL-4, in the macrophages and we elucidate the activated mechanism of macrophages by S-βg.