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The effect of water-soluble isolated polysaccharide from *Phellinus linteus* on activation of murine bone marrow-derived dendritic cells

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Phellinus linteus is known as a medicinal mushroom, which has the activity on anti-tumors, anti-inflammatory, and immunostimulation. In the present study, we examined the effect of water-soluble isolated polysaccharide(WSPS) from *P. linteus* on activation of murine bone marrow(BM)-derived dendritic cells(DC). BM cells were cultured in the presence of IL-4 and GM-CSF and the generated immature DC were stimulated with WSPS or LPS(WSPS-DC and LPS-DC, respectively). WSPS considerably enhanced the expression of CD80, CD86, and major histocompatibility complex(MHC) I and II, as did LPS. IL-12p70 production in WSPS-DC was also identical to that in LPS-DC. The antigen-uptake capacity of WSPS-DC was determined by FITC-labeled dextran uptake. WSPS-DC lost dextran uptake capacity comparable to LPS-DC. Treatment of WSPS showed that the DC turned into typical activated DC with long dendrite and the activated DC migrated to lymph node. After treatment of receptor tyrosine kinase(PTK) inhibitor, genistein and protein kinase C(PKC) inhibitor, staurosporine, addition of WSPS inhibited productions of CD80, CD86, MHC I and II, and IL-12p40/p70-PE. This data indicates that PTK and PKC may be involved in the activation of DC.

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Development of traditional wine using biomass from alcoholic fermentation by *Phellinus* sp. mycelium.

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Phellinus sp. is known as a medicinal mushroom, which has the activity on anti-tumors, anti-inflammatory, and immunostimulation. In the previous study, the functional liquor was fermented using *Phellinus* sp. instead of yeast(*Saccharomyces* sp). The evaporating extract of the liquor showed anti-inflammatory and anti-oxidation activity. In this study, we development traditional wine using biomass from alcoholic fermentation by *Phellinus* sp. *A. kawachii* was inoculated on 800g of autoclaved rice. When the spawned rice had been fully colonized with *A. kawachii*, 50g of *Phellinus* sp. mycelia were mixed all together in 1.2 liters of autoclaved water. Incubation was done for 6 days at 25°C. Each 600g of biomass and 1 liter of autoclaved water were additionally added at 24 h and at 72 h of the incubation period. The wine has 12.4% alcoholic concentration. In HPLC technique analysis, four organic acids, oxalic acid, lactic acid, acetic acid and citric acid were identified and concentration of citric acid was highest while that of oxalic acid was lowest among 4 organic acids in the beverage. The effect of the traditional wine on the expression of inflammatory proteins was examined in HepG₂ cells. The results of Western blot and RT-PCR analyses showed that the level of nitric oxide synthetase(iNOS), COX-2, TNF- α was induced by LPS, however, the wine inhibited the expression of these proteins and its mRNA in a concentration dependent manner. These results suggested that the traditional wine may be a functional alcoholic drinks.