

Antitumor Polysaccharide Fraction from the Culture Filtrate of *Fomes fomentarius*

Polysaccharide fraction from the culture filtrate of *Fomes fomentarius* (Japanese name "Tsuriganetake") was found to possess a potent antitumor effect against Ehrlich ascites carcinoma in mice.

It is well known that some polysaccharides, *i.e.* Zymosan,¹⁾ Lentinan,²⁾ antitumor polysaccharide from mycelia of *Coriolus versicolor* (ATSO) and Coriolan³⁾ exert suppressive effects against solid tumors in mice, and their action is considered to be a host-mediated immune mechanism. However, these polysaccharides were ineffective against the ascites form and spontaneous tumors. Previously, the authors⁴⁾ have reported that polysaccharide fraction from *Sargassum thunbergii* showed antitumor effect against Ehrlich ascites carcinoma. In this paper, we describe the antitumor effect of the polysaccharide fraction from the culture filtrate of *Fomes fomentarius* on Ehrlich ascites carcinoma.

The submerged culture broth of the spore of *Fomes fomentarius* grown for 8 days was centrifuged to separate mycelium from filtrate. The filtrate was concentrated under a reduced pressure and the polysaccharide fraction was precipitated by the addition of 4 volume of ethanol. The precipitation procedure with ethanol was repeated 3 times and the final precipitate was dissolved in distilled water and was dialyzed against distilled water followed by lyophilization. From the chemical analysis, the major constituents were carbohydrate of 60.5% and protein of 9.7% and the major sugar component was glucose. Antitumor activity of the polysaccharide fraction was examined with A/Jax strain mice weighing about 25 g, inoculated intraperitoneally with Ehrlich ascites carcinoma 2×10^5 cells (0.25 ml). The sample was injected intraperitoneally once daily for 10 days, starting 24 hr after tumor inoculation. Antitumor effect was estimated by comparing the survival period of the treated groups and those of the control. The result is shown in Fig. 1. All the mice in the control group died within 23 days after tumor inoculation, while the treatment of the polysaccharide fraction at a dose of 20 mg/kg/day led to complete regression in 16 out of 20 mice at 60 days. At a dose of 5 mg/kg/day of the sample, the antitumor effect was decreased, and the complete regression of the tumor was shown in a few mice. Studies on further purification and biological roles of this substance are now in progress.

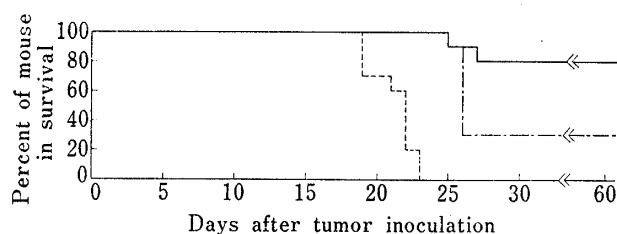


Fig. 1. Effect of Polysaccharide Fraction from the Culture Filtrate of *Fomes fomentarius* on the Survival of Mice Inoculated with Ehrlich Ascites Carcinoma

Treatment was initiated at 24 hr after *i.p.* inoculation with Ehrlich ascites 2×10^5 cells. Each group was consisted of 20 mice.
-----, control; —, 20 mg/kg \times 10 daily; , 5 mg/kg \times 10 daily

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