

## Study on the Effect of Antitumor of the *Agaricus blazei* Murill Medicinal Culture Medium

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With the development of new type of solid ferment of medicinal, fungus, people developed new traditional Chinese medicine, by making use of the enzyme which produced in the process of medicinal fungus hypha's growth metabolize to decompose the tissue of medicinal matrix to produce new composition which had new function. This paper took the compound traditional Chinese medicine of anticancer: Chinese Lobelia herb, Honeysuckle Flower, Barbary Wolfberry Fruit as the ferment matrix for *Agaricus blazei* Murill. Cultured under 26° C for 35 days, added distilled water equaling 5 times of the matrix, extracting for 5 hours at 98 100° C, next day filtered, then concentrated, killed the bacterium, took 250  $\mu\text{g}/\text{ml}$  as the maximum concentration diluted at the rate of 1:10 successively, observed its inhibition to gastric gland cancer MGC803 cells.

**1. Colony forming test :** Took out of gastric gland cancer subculture cell system, calculated after mixed completely. Diluted into every 1 *ml* contained 1000 cells with the RMPT 1640 culture fluid which had 20% FCS, mixed completely then added into the 35mm culture dish, put into the incubator which had saturation humidity, 37° C, 5% CO<sub>2</sub>, for 7 days, placed upside down under the optical microscope, wrote down the quantity of the colony-forming which had >50 cells, calculated the colony forming rate and relative inhibition rate. The result showed that the substance extracted by water from the *Agaricus blazei* Murill ferment matrix had the significant inhibition on the formation of gastric gland cancer MGC803 cell system, the relation of quantity-effect was significant, the maximum inhibition rate was 62.8%, IC<sub>50</sub> was 3.07  $\mu\text{g}/\text{ml}$ .

**2. Using MTT method to examine the anticancer activity of the Agaricus blazei Murill ferment matrix :** Diluted into every *ml* contained 1000 cells with the RPMI1640 culture fluid which contained 20% PCS, mixed completely, then inoculated into the 96 hole culture plate, added 100  $\mu$ l cell suspension liquid into every hole, put the culture plate into the incubator which had 5% CO<sub>2</sub>, saturation humidity, 37° C culturing for 3 days. Added 5% MTT 10  $\mu$ l into every hole at 4 hours before culturation was finished, culturing at 37° C for 4 hours, making MTT reduced into formazan, then added 10% SDS 100  $\mu$ l to finish the reaction, placed at room temperature, next day measured the value of A at 570nm with DG-3022 ELISA. The result showed that the water extraction from the Agaricus blazei Murill ferment matrix had the inhibition on the growth and reproduction of the gastric gland cancer cells.

Most anticancer traditional Chinese medicine was got curative effect by killing tumor cell, preventing its divisional reproduction or by improving the power of immunity. We observed the antitumor function by taking the gastric gland cancer cell as the target cell. The result showed that both the water extraction which hadn't been fermented by the Agaricus blazei Murill bacterium all had inhibition of the first was much stronger than the second. The colony formation could express the reproduction power of tumor stem cell and the stem cell was the source of tumor recurring and metastasis, it explained that the water extraction from the Agaricus blazei Murill had some direct inhibition on the gastric gland cancer cell. The extraction of new anticancer Agaricus blazei Murill ferment and its mechanism of antitumor are under thorough studying now.

**Key Words:** Agaricus blazei Murill, anti-cancer, plants colony forming test

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### Publication

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