## 発表論文抄録（1985年）

# Sphaerotilus natans とその粘液画分のマウスにおける抗腫瘍活性

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# Antitumor Activity of Sphaerotilus natans and Its Slime Fraction in Mice

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**ABSTRACT** Antitumor activity of the whole cell and slime of an aquatic sheathed bacterium, Sphaerotilus natans IAM 12068, against ascites form of Ehrlich carcinoma in ddY mice was investigated. Intraperitoneal injection of whole cells and the slime fraction showed remarkable antitumor activity against mice inoculated with $10^4$ to $10^5$ tumor cells, the slime fraction being more effective. To examine the chemical nature of the active principle in the slime fraction, separation by Sepharose 4B gel filtration was carried out and two fractions designated as GF-P-1 and GF-P-2, which are mainly composed of protein, carbohydrate, and lipid, were obtained. GF-P-1 fraction, which contains large amounts of fucose and unidentified sugar as neutral sugar, showed marked antitumor activity at half the dose of the slime fraction, whereas the antitumor activity of GF-P-2, which is composed mainly of protein, was weak. This finding indicates that GF-P-1 fraction of *S. natans* slime may be a main active principle. The consistently demonstrable antitumor activity of GF-P-1 was abrogated by treatment of mice with silica, an anti-macrophage agent, suggesting that the antitumor activity of GF-P-1 depends on the activation of macrophages.

水生の有鞘細菌 Sphaerotilus natans IAM 12068 株を用い，マウスにおける腹水型エールリッヒ癌細胞に対する抗腫瘍活性を調べた。抗腫瘍性は全菌体を用いるよりも，菌の産生する粘液の方が強い。セルローズ 4B ゲル濾過で，粘液部を GF-P-1 と GF-P-2 画分に分離した。いづれの画分もタンパク質，炭水化物，脂質を含むが，このうちフコースに富む GF-P-1 の活性が最も高い。この GF-P-1 の活性は，マウスを抗マクロファージ阻害物質の シリカゲルで処理すると低下することから，GF-P-1 抗腫瘍活性はマウスのマクロファージ の 活性 化によるものと考えられる。

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