

P085 Cytotoxic effects of dimethyl sulfoxide in the Ames test (2nd report)

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[Introduction] At last year's conference, we reported that in the pre-incubation version of the Ames test cytotoxicity is observed following treatment with a volume that is frequently used, 0.1 ml of dimethyl sulfoxide (DMSO). The purposes of our latest studies were to confirm that the cytotoxic effects observed are due to the DMSO itself, and not due to impurities present in the test articles, and to examine whether or not the cytotoxic effects are dependent on physiological conditions (the growth phase of cells) and on the number of cells present at the initiation of treatment.

[Results] (1) There were no difference in the cytotoxicity of the DMSO test articles among the sources, specificities and lots, (2) The cytotoxic effects of the DMSO were observed to be more potent in cells in the early stationary phase (pre-cultured for 10 hours) than in the middle stationary phase (pre-cultured for 14 hours), and (3) Compared with an occasion when 2×10^8 cells were treated, the cytotoxicity of the DMSO was weaker when 2×10^5 cells were treated in 0.7 ml of treatment mixture.

[Conclusion] DMSO is a factor that by reason of its cytotoxicity possibly affects the repeatability and precision of the Ames test. The cytotoxic effects are also believed to be affected by the growth phase of cells and by the number of cells present at the time of treatment.

Ames試験におけるジメチルスルホキシドの細胞毒性(第二報)

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P086 Antimutagenic factor(s) in the edible mushroom *Agrocybe cylindracea*

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Many investigations have demonstrated that antigenotoxic substances are contained in our daily foods, including many mushrooms, the identification of which could lead to the development of cancer-preventing agents. Recently, we demonstrated antigenotoxic activity in a water soluble extract of *Agrocybe cylindracea* using the *Drosophila* genotoxicity-detection system and the Ames test. In this study, we attempted to isolate and identify the active component(s) from water-extract. When the water-extract was subjected to gel filtration column chromatography with Sephadex G-100, antimutagenic components were eluted in fractions corresponding to proteins about 30 kDa and over 100 kDa in size. In order to purify the antimutagenic factor(s), the water-extract was subjected to ammonium sulfate precipitation at 30, 40, 50, 60, 70, 80 and 90% saturation. Each precipitate was dissolved in distilled water and lyophilized to examine the antimutagenic activity. Precipitates at 40, 50 and 60% saturation showed antimutagenic activity against MeIQx in the Ames test. This antimutagenic activity decreased when the extract was heated at 100°C and treated with protease. The antimutagenic factor(s) appears to be protein or peptide. Further purification and investigations of antigenotoxic activity using mouse and *Drosophila* are in progress.

食用キノコヤナギマツタケ (*Agrocybe cylindracea*) に含まれる抗変異原物質の研究

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