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Alteration in Natural Defense Activity Against NKSusceptible B16 Melanoma Cells after Treatment with *Corynebacterium parvum*

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Abstract

We have investigated the effects of administration of *C. parvum* on host anti-metastatic activity against B16 melanoma H-2L, a natural killer (NK) sensitive clone with a low expression of H-2^b. The anti-metastatic activity was estimated by monitoring the following two points. One was the survival ratio at an early stage after an intravenous (iv) inoculation of radiolabeled B16 H-2L cells, the other was the formation of pulmonary metastases after iv injection with the tumor cells.

Administration of *C. parvum* showed a biphasic change in the NK activity of the spleen cells and the peritoneal exudate cells (PEC) in mice. At an early phase (2–3 days) after administration of *C. parvum*, the NK activity of the spleen cells and PEC was significantly augmented. On the other hand, at a later phase (14 days) after *C. parvum* administration, the NK activity was deeply depressed. In correlation with NK activity of the mice treated with *C. parvum*, the anti-metastatic activity of the hosts was augmented in the early phase, whereas a depressed level of anti-metastatic activity was observed in the late phase after administration of *C. parvum*. These results suggest that the modification of NK activity is a possible basis for modulation of anti-metastatic activity by *C. parvum*.

Abbreviations

C. parvum, *Corynebacterium parvum*; NK, natural killer; BCG, Bacillus Calmette-Guérin; PEC, peritoneal exudate cells; FCS, fetal calf serum; FACS, fluorescent activated cell sorter; HBSS, Hanks' balanced salt solution; PBS, phosphatebuffered saline; ATxFL, adult thymectomy, irradiation and reconstruction with fetal liver cells; mAb, monoclonal antibody; FITC, fluorescein isothiocyanate

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