STUDIES ON ANTITUMOR EFFECT IN NUDE MICE BEARING TUMORS BY MONOCLONAL ANTIBODY AGAINST TUMOR-ASSOCIATED ANTIGEN OF BOVINE LEUKOSIS AND THE MONOCLONAL ANTIBODY CONJUGATED TO ADRIAMYCIN ENTRAPPED IN LIPOSOMES

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Antitumor effects were investigated in nude mice bearing bovine lymphoid tumors by monoclonal antibody (MoAb) against tumor-associated antigens (TAA) expressed in the leukemia cells of enzootic bovine leukosis (EBL) and the monoclonal antibody conjugated to liposomes containing adriamycin (ADM).

The following results were obtained:

1) After mouse MoAb c 143 was purified, $F(ab')_2$ fragments were generated by pepsin digestion and radiolabeled with ^{125}I. ^{125}I-labeled c 143 $F(ab')_2$ were injected into nude mice bearing bovine lymphoid tumors (BLSCKU-1 lines of leukemic cells of EBL). The fragments specifically located in the tumors and not in normal tissues, as determined by differential counting of tissue radioactivity (cpm/mg). Tumors (BLSCKU–1 cells) could be detected by whole-body scintigraphy with radiolabeled specific antibody $F(ab')_2$ fragments without background subtraction, and also by the scattering of silver grains by light microscopic autoradiography.

2) From 18 hours after inoculation of BLSCKU–1 cells into nude mice, MoAb was intraperitoneally inoculated every other day. The MoAb c 143 group showed no significant differences among MoAb c 143, mixed and control groups.

3) In the chronological observations of inoculated sites of the MoAb c 143 group from the histopathological viewpoint, from 3 days after inoculation of BLSCKU–1 cells, macrophagic reaction appeared, and after 1 or 2 weeks of inoculation, marked macrophagic reaction was revealed. After 5.5 weeks of inoculation, differentiation was difficult to make between the MoAb c 143 and control groups.

4) MoAb c 143 conjugated to liposomes containing ADM was inoculated into nude mice bearing tumors (BLSCK–1 cells) 3 times every 3 or 4 days. This group showed a more significant antitumor effect than the control. But histopathologically there were no significant differences between the groups of ADM and the control.