CHARACTERIZATION OF SURFACE ANTIGENS ON NORMAL AND TUMORAL LYMPHOCYTE FROM CHICKENS INOCULATED WITH A TRANSPLANTABLE MAREK'S DISEASE LYMPHOMA

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For the diagnosis of Marek's disease (MD), it is essential to establish the monoclonal antibodies (MAbs) specific to MD lymphoma, especially MD tumor-associated surface antigen (MATSA). In the present study, we established eight MAbs by somatic cell hybridization between mouse myeloma cells and spleen cells from mice immunized with either MD lymphoma from chickens inoculated with a transplantable MD lymphoblastoid cell line (MSB1–clo. 18) *in vivo* or cultured MSB1–clo. 18 cells *in vitro*.

None of the MAbs reacted with erythrocytes from 1–day–old and 50–days–old chickens or with cells from chicken embryo fibroblasts inoculated with MD viruses. Two MAbs, 7B2 (IgM) and H10 (IgM), reacted not only with MSB1–clo. 18 cells but also with other MD cell line cells, and the percentage of positive cells ranged from 5 to 70%. The 7B2 reacted with reticuloendotheliosis virus (REV)-induced cell line, but with neither cell line of lymphoid leukosis (LL) nor normal cells from different organs. One Mab, 9B5 (IgM), reacted with thymocytes, spleen lymphocytes and peripheral blood lymphocytes. It did not react with bursa cells, bone marrow cells or 3 types of tumor cell line cells. Anothor MAb, 12A3 (IgG_3), reacted with various MD cell line cells. It also reacted weakly with thymocytes and peripheral blood lymphocytes, but not with bursa cells, bone marrow cells, LL-derived cell line cells or REV cell line cells. The monoclonal antibody 12B4 (IgG_{2A}) reacted with several MD cell line cells, thymocytes, peripheral blood lymphocytes, cells from one LL cell line and epithelial cells of the distal tubule of kidney. This MAb recognized a specific polypeptide with a molecular weight of 66Kd from MSB1–clo. 18 cells by SDS-PAGE and Western blotting analysis. MAb 4–1 (IgG_1) was positive with thymocytes, bone marrow cells and cells of several MD cell lines, while 12C2 (IgG_1) was positive with various tumor cell line cells and normal cells from different organs, but negative with kidney and liver cells. As for 12C5 (IgM), it reacted with various tumor cell line cells, but not with thymocytes. The reactivities of these antibodies against MD lymphoma cells from chicken inoculated MSB1–col. 18 cells varied and ranged from 3 to 40%.

From these results, it seems that 7B2 and H10 recognized MATSA, and that they will be useful for the diagnosis of MD in the field. Further, it is conceivable that some of these MAbs might be applicable for the identification of the type of reactive cells against MD tumor cells present in MD lymphoma *in vivo*.