



Title	ESTABLISHMENT OF MONOCLONAL ANTIBODIES AGAINST BOVINE LEUKEMIA VIRUS (BLV)-TRANSFORMED CELLS AND EVOLUTION OF ANTIBODY TITERS AGAINST THE CELLS IN BLV-INFECTED SHEEP
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ESTABLISHMENT OF MONOCLONAL ANTIBODIES
AGAINST BOVINE LEUKEMIA VIRUS
(BLV)-TRANSFORMED CELLS AND EVOLUTION OF ANTIBODY TITERS
AGAINST THE CELLS IN BLV-INFECTED SHEEP

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The purpose of the present study was to establish monoclonal antibodies to the cell surface antigen (presumably bovine leukosis tumor-associated antigen) of SF-28 cells, namely, sheep fibroblasts transformed with BLV, and to examine the evolution of cytotoxic antibody titer against the cells in 4 sheep inoculated with BLV materials.

The results obtained are summarized as follows.

1. Five hybridomas, which secreted immunoglobulin of IgG₁ (K), were established. In the complement dependent antibody cytotoxicity (CDAC) test, all 5 antibodies reacted only with SF-28 cells, and not with other cells, including FLK cells (fetal lamb kidney cells chronically infected with BLV), peripheral blood lymphocytes from the donor sheep of SF-28 cells, tumor cells from 4 types of bovine lymphosarcoma and normal cells from sheep. None of the antibodies inhibited syncytia formation in CC81 cells by BLV, or agglutinated erythrocytes of cattle, horses and sheep.

These results indicated that the antibodies were specific to SF-28 cells, but not against BLV antigen, histocompatibility antigen, heterophil antigen, or cell surface antigen of normal cells from sheep.

2. Three sheep (Nos. 19, 21 and 31) died and were pathologically diagnosed as having had lymphosarcoma. One sheep (No. 100) was clinically normal during the experimental period (46 months). The cytotoxic antibody titers against SF-28 cells (detected by CDAC test) of sera from the former 3 sheep gradually decreased with the progress of the disease, and finally became negative before their deaths. The cytotoxic antibody titer of serum from sheep No. 100 constantly showed a high level. Anti-BLV antibody was observed in all 4 sheep during the period. One control sheep inoculated with culture fluids of normal sheep cells developed no antibody to SF-28 cells or BLV throughout the experimental period.

These results suggested that humoral immune response directed against transformed SF-28 cells might play an important role in immunosurveillance of tumor progress.