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THE INHIBITORY EFFECTS OF OLIGONUCLEOTIDES, COMPLEMENTARY TO MAREK'S DISEASE VIRUS mRNA TRANSCRIBED FROM THE BamHI-H REGION, ON THE PROLIFERATION OF TRANSFORMED LYMPHOBLASTOID CELLS, MDCC-MSB1

Mikiko KAWAMURA

Department of Laboratory Animal Science, Faculty of Veterinary Medicine, Hokkaido University, Sappro 060, Japan

An oligonucleotide complementary to the splice donor sequence of the 1.8-kb gene family produced from the BamHl-H region of Marek's disease virus (MDV) DNA inhibited the proliferation of the MDV-derived lymphoblastoid cell line, MDCC-MSB1 (MSB-1), but not that of the avian lymphoblastoid leukosis-derived lymphoblastoid cell line, LSCC-BK3. Colony formation in soft agar was also inhibited by treatment of MSB-1 cells with the antisense oligonucleotide.

When cellular RNA prepared from MSB-1 cells treated with antisense oligonucleotide was analyzed by Northern blot hybridization using an RNA probe synthesized from the BamHl-H region of MDV DNA, the 1.8-kb mRNA was not detected. Moreover, when cellular RNA prepared from MSB-1 cells treated with antisense oligonucleotide was analyzed by RT-PCR using two oligonucleotides complementary to sequences within the 1.8-kb mRNA as primers, the fragment could not be detected in the amplified product.

These results indicate that expression of the 1.8-kb gene family produced from the BamHl-H region is directly associated with the maintenance of the tumorigenic states of transformed Marek's disease-derived lymphoblastoid cells.