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MONOCLONAL ANTIBODIES AGAINST VIRUS-SPECIFIC ANTIGENS IN
CULTURES INFECTED WITH HERPESVIRUS OF TURKEYS

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Marek's disease (MD), a lymphoproliferative disease of chickens, is caused by Marek's disease virus (MDV). Herpesvirus of turkeys (HVT), which is antigenically related to MDV, is used widely for MD vaccine. At present, this is the only available vaccine against development of tumor. However, the exact mechanism for the vaccine protection has not been established. Thus, analysis of the viral antigens appearing in HVT-infected cells is important for understanding the vaccine immunity of HVT. The purpose of the present study is to establish monoclonal antibodies against HVT-infected cells.

Hybrid cells were produced by fusing P3-X63-Ag8. 653 and spleen cells derived from mice immunized with either unpurified antigens from homogenates of HVT-infected cells, HVT-specific antigens purified by affinity chromatography or gradient-purified plasma membranes from HVT-infected cells using PEG 1000 and selected with HAT medium. After screening by the indirect immunofluorescence method, 3 hybridomas, which secrete antibodies against HVT-infected cells, were established. C12 antibody stained irregular granules in the cytoplasm, which seems to be associated with intracellular inclusions, and the other two antibodies (G4, B2) showed diffuse cytoplasmic staining. None of the three antibodies had neutralizing activity to HVT nor reacted with JM strain of MDV (serotype 1) and the HPRS-24 strain of MDV (serotype 2). On the other hand, they reacted with Type 2 PPA of MDV, which is serologically unidentified, and HVT (serotype 3). By immunoprecipitation and analysis of SDS-PAGE, the 30K, 24K and 20K polypeptides in HVT-infected cells were immunoprecipitated with G4 and B2 antibodies, while the 70K and 45K polypeptides were slightly detectable with C12 antibody.