Epitope Mapping of *E. coli* 54K Protein Using Monoclonal Antibodies

Akiko Yagi

Laboratory of Microbiology,
Department of Disease Control,
School of Veterinary Medicine,
Hokkaido University, Sapporo 060–0818, Japan

Herpesvirus establishes a latent infection in a convalescent host. It is difficult to control herpesvirus infection due to reactivation of latent virus from an apparently healthy animal. During latnt infection with bovine herpesvirus 1 (BHV1), viral transcripts are detected in the trigeminal ganglia and translated to 41 K proteins. The latency related (LR) protein binds to cyclin A, which regulates host cell cycle, to play a role in maintenance of latency.

To provide the information about structure of LR proein, the author tried to make a panel of monoclonal antibodies using recombinant LR protein fused to histidine-tag generated in *E. coli* as antigens. Western blot analysis demonstrated that most monoclonal antibodies recognized a polypeptide with molecular mass of 54 K, which was expected for the recombinant LR protein. It is, however, revealed that the 54 K protein was a component of *E. coli.* The auther described here antigenic mapping of the 54 K protein of *E. coli.* At least 4 antigenic regions were obserbed on the molecule by competition binding assay. The results indicate that the panel of monoclonal antibodies would be useful for providing information about function of the 54 K protein of *E. coli.*

Vaccination trial against theileriosis using a recombinant vaccinia virus

Masako Shiki

Laboratory of Infectious Diseases,
Department of Disease Control,
School of Veterinary Medicine,
Hokkaido University; Sapporo, 060–0818, Japan

Bovine theileriosis is a tick-borne disease of cattle caused by the protozoan parasite *Theileria sergenti* which causes anemia as intraerythrocytic piroplasma and occasionally death in severe cases. Due to economic losses, new control methods are urgently needed. An immuno dominant major piroplasm surface protein (MPSP) is expressed on the surface of the merozoites. In this study, a recombinant vaccinia virus expressing the MPSP was used as live antigen delivery system to immunize cattle against *T. sergenti.*

The expression of MPSP in recombinant vaccinia virus-infected RK13 cells was confirmed by immunoblot analysis. Expression was detected 3 hrs after infection, and MPSP with molecular mass larger than the predicted size was detected which is believed to be due to N-linked glycosylation.

Immunogenicity of the recombinant MPSP was examined by viral inoculation to mice and calves. In both animals, antibodies to MPSP were produced after the second inoculation. In the calf vaccination trial, low level peripheral