OPSONIC EFFECTS OF MONOCLONAL ANTIBODIES AGAINST LEPTOSPIRES

Hiroyuki TAKASE

Department of Hygiene and Microbiology
Faculty of Veterinary Medicine
Hokkaido University, Sapporo 060, Japan

Opsonic effects of 6 clones of monoclonal antibodies against *Leptospira interrogans* serovar *copenhageni* Shibaura line No. 1 were compared *in vitro* using radiolabeld organisms and mouse peritoneal exudate macrophages.

Four of the IgG3 monoclonal antibodies at the subagglutinating concentration showed different degrees of opsonic effects. While the other IgM monoclonal antibodies did not show any significant opsonic effects even in the presence of complement.

Since the difference of the opsonic effects among IgG3 monoclonal antibodies was thought to be due to the amount of antibodies bound to the organisms, opsonic effects of IgG3 monoclonal antibodies were compared at the concentration with the same amount of bound antibodies in ELISA. Monoclonal antibody Sw-6 showed a significantly higher opsonic effect than the other antibodies.

Different reactivities of the 6 monoclonal antibodies were found in the microscopic agglutination test with 18 serovars of Icterohaemorrhagiae serogroup and 8 servars of other serogroups. This suggests that the monoclonal antibodies were directed to distinct antigenic determinants. Analyses by SDS-PAGE and immunoprecipitation showed that the antigenic determinants to which IgG3 monoclonal antibodies were directed were present on the same molecule of lipopolysaccharides.

Thus, the use of monoclonal antibodies against *Leptospira interrogans* servar *copenhageni* Shibaura line No. 1 revealed the heterogeneity of leptospiral opsonization, which has not been explored previously by the use of polyclonal antibodies.