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Author(s)	SATO, Chiaki
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CLASSIFICATION OF CHLAMYDIA AND SEROVAR DETERMINATION OF
CHLAMYDIA TRACHOMATIS USING MONOCLONAL ANTIBODIES

Chiaki SATO

*Department of Public Health
Faculty of Veterinary Medicine
Hokkaido University, Sapporo 060, Japan*

Serological classification and antigenetic analysis of Chlamydia were carried out using monoclonal antibodies against *Chlamydia* (*C.*) *trachomatis* L2/434/Bubo strain. Reaction patterns of the monoclonal antibodies were tested against 10 strains of Chlamydia with the enzyme-linked immunosorbent assay (ELISA), the microimmunofluorescence test (MIFT), the immunofluorescence antibody test (IFA) and the complement fixation test (CF). In addition, clinical isolates were identified and differentiated into serovars using a monoclonal antibody set which could distinguish the 15 serovars of *C. trachomatis* standard strains.

The results were summarized as follows :

- 1) Twenty monoclonal antibodies were classified into 6 groups : genus-specific (3D11, 2B8, 3E6 & 3B4), subgenus-specific (4E11), species-specific (2F3), subspecies-specific (4D8, 5F9, 1F10, 3D3, 3G5, 4C2, 2G5, 4D4, 3C5 & 4G8), biovar-specific (5C11 & 3C3) and strain-specific (1C3).
- 2) Some of the monoclonal antibodies with IgG1 and IgG3 isotypes had high CF titers, whereas some of the monoclonal antibodies with IgG2 and IgM isotypes had no CF titers.
- 3) There was a high correlation between ELISA and MIFT titers of monoclonal antibodies. However, CF titers were not significantly correlated with the titers of other methods, ELISA, MIFT and IFA.
- 4) To reveal the biochemical properties of antigenic determinants recognized by monoclonal antibodies, ELISA titers of the antibodies were tested against KIO₄, pronase- and heat-treated antigens. Two types of genus-specific antigen were noted : one was lipopolysaccharide, which was sensitive to KIO₄ and resistant to pronase and heat, and the other was glycoprotein, which was sensitive to KIO₄, pronase and heat. The other antigens besides those that were the genus-specific were the protein which was resistant to KIO₄.
- 5) Ten isolates from patients with inclusion conjunctivitis were differentiated into serovars by IFA using the monoclonal antibody set. Five isolates were identified as serovar D, 2 isolates as F and 2 isolates as D or E, but 1 isolate could not be identified as any particular serovar.