CLASSIFICATION OF CHLAMYDIA AND SEROVAR DETERMINATION OF *CHLAMYDIA TRACHOMATIS* USING MONOCLONAL ANTIBODIES

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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 KIO_4-, pronase- and heat-treated antigens. Two types of genus-specific antigen were noted: one was lipopolysaccharide, which was sensitive to KIO_4 and resistant to pronase and heat, and the other was glycoprotein, which was sensitive to KIO_4, pronase and heat. The other antigens besides those that were the genus-specific were the protein which was resistant to KIO_4.

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.