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Title	CLASSIFICATION AND ANTIGENIC ANALYSIS OF CHLAMYDIA WITH MONOCLONAL ANTIBODIES
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Citation	Japanese Journal of Veterinary Research, 34(2), 155-155
Issue Date	1986-04-30
Doc URL	https://hdl.handle.net/2115/3002
Type	departmental bulletin paper
File Information	KJ00002374409.pdf



CLASSIFICATION AND ANTIGENIC ANALYSIS OF *CHLAMYDIA* WITH
MONOCLONAL ANTIBODIES

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Serological classification and antigenic analysis of Chlamydia were studied using monoclonal antibodies against two strains of *Chlamydia (C.) psittaci*, P-1041 (pigeon origin) and Izawa (budgerigar origin).

The results were summarized as follows :

- 1) Fifteen monoclonal antibodies against P-1041 were classified into 3 groups : genus-specific, subspecies-specific and strain-specific. Twelve monoclonal antibodies against Izawa were classified into 2 groups : genus-specific and subspecies-specific.
- 2) There was a high correlation between ELISA antibody titers and MIFT antibody titers of monoclonal antibodies. However, there was no significant correlation between either ELISA titers and CF titers, or MIFT titers and CF titers.
- 3) High CF antibody titers were detected in some of the monoclonal antibodies with IgG1 and IgG3 isotypes, which were formerly considered not to have CF binding activity. Moreover, no CF antibody titer was detected in any of the monoclonal antibodies with IgG2a and IgM isotypes which were formerly considered to have CF binding activity.
- 4) Monoclonal antibodies were applied to the serological classification of chlamydial strains by MIFT. Nine *C. psittaci* strains from feral pigeons were classified into 2 groups and 16 *C. psittaci* strains from budgerigar were classified into 8 groups. *C. trachomatis* strains of L-group were differentiated from other *C. trachomatis* serotypes.
- 5) Properties of antigenic determinants against monoclonal antibodies were revealed by ELISA using variously treated antigens and immuno-blots. The genus-specific antigen was a KIO₄-sensitive, pronase-resistant and heat-stable polysaccharide with a molecular weight of 10k daltons. The subspecies- or strain-specific antigens were glycoprotein, sensitive to KIO₄, pronase and heat treatment, or were protein, resistant to KIO₄. The molecular weight profile of these antigens was classified into 4 groups, which included 40K, 90K, 25K plus 40K and 50K plus 90K.