



Title	DEVELOPMENT OF SEROLOGICAL DIAGNOSIS OF CHLAMYDIAL INFECTION IN THE KOALA (PHASCOLARCTOS CINEREUS) BY AVIDIN-BIOTIN ENZYME-LINKED IMMUNOSORBENT ASSAY
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DEVELOPMENT OF SEROLOGICAL DIAGNOSIS OF CHLAMYDIAL
INFECTION IN THE KOALA (*PHASCOLARCTOS CINEREUS*)
BY AVIDIN-BIOTIN ENZYME-LINKED IMMUNOSORBENT ASSAY

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An avidin-biotin enzyme-linked immunosorbent assay was established for serological diagnosis of Chlamydial infection in the koala. Referring to the clinical manifestations and the complement-fixation (CF) antibody titer, the assay was evaluated using koala sera.

The results were summarized as follows:

1). Optimum concentrations were determined for a biotinylated antibody and streptavidin-horseradish-peroxidase (SA-HRP). According to the increase of the biotinylated antibody concentration, the absorbance values increased both in positive and negative sera. Therefore, the biotinylated antibody was used at 1:800 dilution, with the least nonspecific reaction. High absorbance values with positive sera were consistently detected at the range of 1:1600 to 1:6400 of SA-HRP dilution. Therefore, SA-HRP was used at 1:3200 dilution.

2). The optimum antigen concentration was examined and the absorbance values with positive sera increased in accordance with the antigen concentration. Constant values were obtained at antigen dilutions of less than 1:200. Therefore, optimum antigen concentration was determined to be 1:100 dilution.

3). The cut-off absorbance value was determined to be the added value of the mean absorbance in control wells and 0.15.

4). ELISA titers distributed in two distinguishable groups with a bordering titer of 1:800. Therefore, titers of 1:800 or higher were considered to be positive.

5). Thirty-five koala sera were tested by CF using a *chlamydia psittaci* koala strain. Of 16 sera with clinical manifestations, 13 were positive in CF. Of 19 sera with no clinical signs, only one serum was positive in CF. These sera were also tested by ELISA and 13 of 16 sera with clinical manifestations were positive. None of the 19 sera without clinical manifestations had positive ELISA titers.

6). Correlation was not observed between the CF titer and the ELISA titer. However, a good agreement between the two tests was observed for positive and negative judgments.

7). The judgments by CF and ELISA corresponded to the judgment by clinical manifestations. Accordingly, it was demonstrated that both tests were useful for the diagnosis of Chlamydial infection in the koala.