



Title	NESTED POLYMERASE CHAIN REACTION FOR DETECTION OF CHLAMYDIA (C.) PSITTACI IN AVIAN FECES AND AGE-RELATED SUSCEPTIBILITY OF QUAILS TO C. PSITTACI
Author(s)	HIYOSHI, Maki
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NESTED POLYMERASE CHAIN REACTION FOR DETECTION OF  
*CHLAMYDIA (C.) PSITTACI* IN AVIAN FECES AND AGE-RELATED  
SUSCEPTIBILITY OF QUAILS TO *C. PSITTACI*

Maki HIYOSHI

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

The polymerase chain reaction (PCR) was employed for detection of *Chlamydiae* from avian feces, an important source of psittacosis.

In addition, a quail model for chlamydial infection was developed to examine the influence of the age factor on susceptibility to the infection.

The results were summarized as follows ;

1. Template DNA for PCR was prepared from internal organs by a celite particle procedure in which DNA was purified from a crude DNA extract by adsorption to the particles. This procedure was revealed to be simple and rapid as compared with the ordinary phenol-chloroform extraction procedure.

2. The proteinase K digestion procedure employed to obtain template DNA from feces was simple, but showed some inhibitory effect on the genome amplification of PCR. By diluting the template solution to 1: 100, the detection level with this procedure was markedly improved and was equal to that with the celite particle procedure.

3. Nested PCR was applied to detect *Chlamydiae* in fecal samples from budgerigars. The detection rate with nested PCR (22%) was higher than that with yolk sac inoculation (12%) using embryonated eggs.

4. Chlamydial DNA was detected from several organs of quails inoculated by the intra-air-sac route with the Izawa-1 strain, but not from feces of these birds. Survival rates were dependent on inoculated chlamydial doses in both 1-day-and 7-day-old quails, and 1-day-old quails showed a lower survival rate than 7-day-old ones.

5. Survival rates were decreased remarkably in immunosuppressed quails treated with cyclophosphamide. Chlamydial counts increased in the organs of these quails, while antibody production was suppressed. The results suggested that the age-related resistance of quails to the chlamydial infection was due to development of the immune system.