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Chlamydia psittaci

Chlamydia psittaci is a small, Gram negative bacterial pathogen responsible for causing respiratory psittacosis (also known as ornithosis); a zoonotic infection transmitted to humans from infected avian and mammalian species. Following an incubation period of 1-4 weeks, disease with *C. psittaci* can present as a mild flu-like illness, but can also lead to severe atypical pneumonia and non-respiratory health conditions, particularly in susceptible individuals. For those with serious disease and in pregnancy, infection may be life-threatening and relapses can occur.

C. psittaci is capable of infecting a range of birds and poultry, as well as mammals such as cattle, pigs, sheep and horses, with occasional outbreaks affecting the poultry industry. There are nine known genotypes: A–F, E/B, M56 and WC, and all are capable of infecting humans¹. Birds are particularly efficient at distributing *C. psittaci* owing to their high mobility, and wild populations can be particularly problematic for transmission due to their large migration radii. Transmission to humans most often occurs through inhalation of aerosolised excreta or secretions from infected birds, therefore people working with or exposed to birds on a regular basis such as zoo workers, pet-shop owners and poultry farmers are at the highest risk of infection. Despite this, other cases where no avian contact has been described have also been recorded². In England and Wales, between 25 and 50 laboratory confirmed cases of *C. psittaci* are typically recorded each year³.

As culture is avoided due to the increased infection risk to laboratory staff, testing often relies on serology where a four-fold increase in IgM is considered diagnostic. However, PCR offers a faster and more specific way to detect this pathogen, particularly where clinical findings or history of avian contact indicates possibility of *C. psittaci* infection.

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At Micropathology Ltd, we use a semi-nested PCR for the qualitative detection of *C. psittaci* with end point visualisation on ethidium bromide agarose gel or melt curve analysis using Lightcycler480 instruments. Nasopharyngeal swabs and bronchoalveolar lavages (BAL) are UKAS accredited sample types for this assay, however other samples may be tested, and reported alongside a caveat stating that the assay is not UKAS accredited for testing these sample types. This assay can also detect *C. abortus*, *C. felis* and *C. caviae*, however these organisms may be distinguished using sequencing of amplicon produced using this assay.

Turnaround Times

Turnaround times are stated in the user manual (<http://www.micropathology.com/customer-downloads-handbook.php>) with results usually available in practice much sooner than the given time frame. Where there is a delay, we are usually confirming a result and addressing clinical data given with the specimen.

References:

¹ Van Lent S, Piet JR, Beeckman D, van der Ende A, Van Nieuwerburgh F, Bavoil P, Myers G, Vanrompay D, Pannekoek Y. Full genome sequences of all nine *Chlamydia psittaci* genotype reference strains. *J Bacteriol.* 2012 Dec;194(24):6930-1. doi: 10.1128/JB.01828-12. PMID: 23209198; PMCID: PMC3510619.

² John Mair-Jenkins, Tracey Lamming, Andy Dziadosz, Daniel Flecknoe, Thomas Stubington, nMassimo Mentasti, Peter Muir, and Philip Monk (2018) A Psittacosis Outbreak among English Office Workers with Little or No Contact with Birds, August 2015. *PLoS Curr.* 2018 April 27; 10

³ Common animal-associated infections quarterly reports: 2018: United Kingdom Health Security Agency (UKHSA) Quarterly reports on confirmed cases of non-foodborne zoonoses reported in England and Wales.