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## **Q-Fever (*Coxiella burnetii*)**

Q-fever is a globally distributed zoonosis and is caused by the Gram-negative intracellular bacterium *Coxiella burnetii*. It is found most commonly amongst goats, sheep, and cattle, with human infection primarily occurring through direct contact with animals (Bielawska-Drozd *et al.*, 2013). Routes of transmission include inhalation of contaminated aerosols, and ingestion of contaminated animal products, including raw milk. Direct human-to-human transmission is thought to be relatively rare. Only a single organism is required to establish infection in humans (Brooke *et al.*, 2013), and a resistant infectious spore like form can persist in the environment for considerable lengths of time.

In humans acute infection with *C. burnetii* can result in flu-like symptoms including headaches, fever and an atypical pneumonia, although it can often be asymptomatic and is thus likely to go under-reported. A more serious chronic infection can develop that can lead to endocarditis, granulomatous hepatitis, chronic fatigue syndrome and death (Fournier *et al.*, 1998; Picchi *et al.*, 1960). The acute illness will usually clear quickly with appropriate antibiotic therapy, whilst the chronic illness can require antibiotic treatment over several years (Kersh, 2013). The number of Q-fever cases reported in humans in the UK are relatively few (less than 100 per year), although there have been a number of notable outbreaks (Hawker *et al.*, 1998).

Diagnosis of Q-fever using serological methods is unreliable since it can take several weeks before antibodies reach detectable levels, and these can persist after infection has cleared. At Micropathology Ltd. we have developed a sensitive nested PCR based assay for the rapid detection of *C. burnetii* DNA in a range of clinical specimens including respiratory samples, tissues and bloods.

### **References:**

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