CASE STUDY

Karius Test for Detection of *Coxiella burnetii* in Endocarditis

**Diagnosis and Genotyping of *Coxiella burnetii* Causing Endocarditis in a Patient with Prosthetic Pulmonary Valve Replacement Using Next-Generation Sequencing of Plasma**

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The Karius Test enabled earlier diagnosis of *Coxiella burnetii* culture-negative endocarditis (Q Fever) leading to early targeted antimicrobial therapy.

**PATIENT HISTORY**

29-year old male with a history of Tetralogy of Fallot, multiple pulmonary valve replacements, and 18 months of intermittent fever and night sweats.

Relevant history also included travel to South and South East Asia, use of a LivaNova 3T Heater-Cooler device during surgery (therefore at risk for *Mycobacterium chimaera* infection), and drinking unpasteurized milk.

**DIAGNOSTIC WORKUP**

Cardiac CT and echocardiography showed pulmonary opacities and echodensity on pulmonary valve.

Blood cultures were negative. Serologic testing was ordered and results were still pending at the time of ordering the Karius Test.

**RESULTS**

The Karius Test detected *Coxiella burnetii* directly from plasma, which lead to targeted treatment.

Comprehensive examination of the sequencing data was performed for strain typing and demonstrated high relatedness to the CbuK_Q154 (group IV) strain typically seen in North America.