

**TBE****Tick-Borne Ehrlichiosis Panel by rPCR - Qual**

GA Test Code	8425
Method	Real-Time Polymerase Chain Reaction (rPCR) – Qualitative
PCR Targets	<div style="border: 1px solid black; padding: 5px;"><ul style="list-style-type: none">▶ <i>Anaplasma phagocytophilum</i>▶ <i>Ehrlichia chaffeensis</i>▶ <i>Ehrlichia ewingii/canis</i>▶ <i>Ehrlichia muris-like</i></div>
Specimens	Whole Blood (ACD or EDTA): 1.0 (min 0.5) mL, ambient (4 days), refrigerated (7 days). CSF: 1.0 (min 0.5) mL, refrigerated (7 days) or frozen (90 days).
Causes for Rejection	Quantity not sufficient (QNS); time/temperature instructions not followed.
Reference Range	Not Detected
Turnaround Time	Same or next day
CPT Codes	87798

Note: The DNA detected from *E. ewingii* and *E. canis* cannot be reliably differentiated by this test. A result of “Detected” for *Ehrlichia ewingii/canis* indicates the presence of either of these two organisms in the specimen.

Description

This assay uses real-time polymerase chain reaction (rPCR) for the simultaneous and multiplex amplification and detection of the DNA of the following causative pathogens of tick-borne disease (i.e. Anaplasmosis or Ehrlichiosis): *Anaplasma phagocytophilum*, *Ehrlichia chaffeensis*, *Ehrlichia ewingii/canis*, *Ehrlichia muris-like*.

Clinical Utility

Ehrlichia and *Anaplasma* species are tick-borne obligate intracellular bacteria that cause clinically similar febrile disease in humans and domestic animals. In the United States, ehrlichiosis is most commonly caused by *E. chaffeensis*, and to a much lesser extent *E. ewingii*. Infections from *E. canis* and *E. muris-like* subtypes are not as common and seem to be geographically isolated. Anaplasmosis is caused by *Anaplasma phagocytophilum* infecting granulocytes. Anaplasmosis is more common in the upper midwest and northeastern U.S., whereas ehrlichiosis is more common in the southeastern and south-central U.S. These areas correspond with the known geographic range of the host tick, the Lone Star tick (*Amblyomma americanum*).

PCR has emerged as the the best way to diagnose and ascertain the cause of ehrlichiosis and anaplasmosis. A “Detected” PCR result for any target indicates the presence of the respective organism in the specimen. A “Not Detected” PCR result indicates that target’s DNA was below detectable levels or not present in the specimen, but it does not completely rule out infection with these or other non-target pathogens.

www.cdc.gov/ticks/diseases/index.html

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