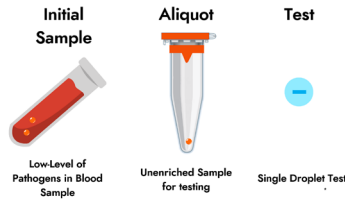


# Galaxy *Bartonella* Testing Goes Beyond the Limits of Detection

The **Galaxy *Bartonella* Digital ePCR™** platform detects active, low-level infections missed by other labs.\*

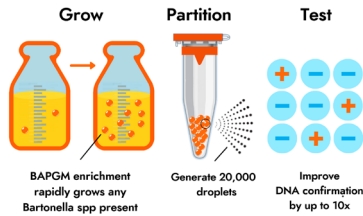
Only Galaxy uses a patented BAPGM™ enrichment medium and other processes that exponentially grow *Bartonella* to increasingly detectable levels.

## Without Enrichment Culture



Risk of  
**FALSE  
NEGATIVES**

## With ddPCR BAPGM™ Enrichment



Greater  
sensitivity  
more **TRUE  
POSITIVES**

## The Galaxy Difference

Globally recognized scientific expertise in *Bartonella* research and diagnostics powered by sample enrichment and revolutionary detection methods

- ▶ BAPGM™ enrichment step **DOUBLES** sensitivity for hard-to-detect infections
- ▶ ddPCR enhances DNA detection using 20,000 reactions vs only one
- ▶ Genus-level DNA detection for a broad range of pathogenic *Bartonella* species
- ▶ Triple draw serial testing further enhances sensitivity for cyclical bloodstream infection

## The Most Important Bacteria You've Never Heard Of

*Bartonella* infection can result in severe, life-threatening symptoms in both humans and companion animals, including dogs, cats, and horses.

The good news is that infection is both treatable and preventable, especially when detected early.



### Find it. Treat it. Prevent it.

- ▶ Use the right test when you suspect *Bartonella* infection to ensure appropriate and timely treatment
- ▶ Learn about important diseases, like *Bartonella*, that pets can acquire from arthropods and accidentally spread to families
- ▶ Practice flea and tick prevention to protect everyone from *Bartonella* infection

Galaxy Diagnostics offers the only testing solutions powered by revolutionary sample enrichment technologies for elusive flea and tick borne pathogens.

Learn more at  
[www.galaxydx.com](http://www.galaxydx.com)

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Email: [contact@galaxydx.com](mailto:contact@galaxydx.com)

Advancing diagnostics based on 20+ years of research experience and over 100 scientific publications on *Bartonellosis* in human and animal medicine.

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## Understanding hidden infection: **Cat Scratch Disease** (*Bartonella*)

If you suffer from a chronic illness in which symptoms are not improving and

you have had exposure to fleas, lice, ticks or companion animals...

You may have *Bartonella*, a stealth infection that can be difficult to accurately diagnose.

**GALAXY**  
ADVANCED MICROBIAL DIAGNOSTICS™

Go Beyond the Limits of Detection

# Bartonella

*Bartonella* infection can present many ways beyond Cat Scratch Disease (CSD) and has been documented as a cause of both acute and chronic disorders.

## Symptoms and Conditions

Two types of presentations:

### 1 Acute

Cat Scratch Disease, an illness characterized by fever and lymph node swelling following a cat bite or scratch

### 2 Chronic

Moderate-to-severe conditions affecting the central nervous system, heart, joints, eyes and skin

Non-specific/  
General

Fever of unknown origin, granulomatous inflammation, fatigue, weight loss, irritability, headaches, migraines, rash

Heart/Blood

Endocarditis, myocarditis, pericarditis, hemolytic anemia, hypotension, pulmonary thromboembolism, cardiac arrhythmias

Brain/Central  
Nervous System

Hallucinations, vision loss, peripheral neuropathy, polyneuropathy, transverse myelitis, encephalopathy, areflexia, numbness, seizures

Eyes

Uveitis, retinal vasculitis vitritis, neuroretinitis, intraocular inflammation

Bone/Muscle/  
Joints

Arthritis, arthralgia, chronic fatigue, myositis, myalgia, systemic vasculitis, osteomyelitis, bone pain

Blood Vessels/  
Circulation

Bacillary angiomatosis, peliosis hepatis, Carrion's disease, tumors/lesions

## Risk Factors



### Acute Infection Risk

- ▶ Outdoor or indoor exposure to fleas, lice, ticks and biting flies
- ▶ Working or living with cats, dogs or other animals

### Chronic Disease Risk

- ▶ Naturally weakened or compromised immune systems due to age (younger children, adolescents, aging adults), cancer treatment, HIV or other immune disorders, immune suppressive therapy and pregnancy

## Accurate Testing Uncovers Hidden Infection

Up to  
**28%**  
of symptomatic  
veterinarians



and over  
**40%**  
of chronically ill patients



have tested positive for  
*Bartonella* DNA in blood



compared to  
**0%**  
of healthy controls.

(Lantos, 2014; Maggi, 2012)

## Ask your doctor for the most sensitive testing available

*Bartonella* is notoriously difficult to detect. Conventional testing methods are unreliable. Here's why:

IFA serology (antibody testing)

*the diagnostic standard used by other labs*

- *Bartonella* evade the body's immune response, resulting in false negatives in antibody detection
- Does not confirm active infection
- Cross-reactivity with other pathogens has been documented

Standard PCR

*#2 most common testing method*

- *Bartonella* Infection is at low levels, resulting in a PCR false negative rate up to 90%

Culture

- *Bartonella* are difficult to grow without complex nutritional and growth conditions

Microscopy

- Cannot differentiate between a low-level *Bartonella* infection and other microorganisms

Cyclical  
Bacteremia

- *Bartonella* cycle in and out of the blood stream from tissues. Testing at a single point in time can result in false negatives simply because the bacteria are not present in the blood during sample collection

Adapted from Harms, 2012

## Sample Enrichment is Key

**Only Galaxy Diagnostics uses combined sample enrichment (grows pathogens >10x when present) with Digital ePCR™ (tests 20,000 droplets instead of just 1) to directly detect infection.**