



DNA and PCR LAB SERVICES

EMSL

Quantitative Polymerase Chain Reaction (qPCR) is a cutting-edge molecular technology that analyzes for the genetic material called deoxyribonucleic acid (DNA) that is found in every cell. DNA is unique for every individual organism. Using qPCR allows for the detection of fungi, bacteria, and certain microorganisms by identifying the presence of their specific DNA in their genome.

qPCR analysis of fungi and certain bacteria is performed at EMSL Analytical, Inc. under a Patent License Agreement with the EPA National Exposure and Research Laboratory. EMSL is currently developing several methods using qPCR for the detection of pathogenic bacteria that are of interest to the indoor air quality, food, consumer products, and pharmaceutical industries. EMSL has DNA sequencing capacity for bacteria, fungi, and animal identification.

qPCR can detect the presence of small quantities of organisms whether they are alive, dead, or cannot be cultured. For these reasons, qPCR is a fast, accurate, sensitive, and specific alternative analysis that has many advantages over traditional microbiological methods that involve microscopic direct examination or culturing.

Key tests include* (but are not limited to) the following:

PCR - WATER DAMAGE PANELS

- Environmental Relative Moldiness Index (ERMI)
- Water Damage 10 Panel
- Water Damage 15 Panel
- Water Damage 20 Panel
- *Aspergillus/Penicillium* Screen

PCR - ASPERGILLUS PANELS

- *Aspergillus* Comprehensive 15 Panel
- *Aspergillus* Common 10 Panel
- *Aspergillus* Nosocomial 6 Panel

PCR - PENICILLIUM PANELS

- *Penicillium* Comprehensive 13 Panel
- *Penicillium* Comprehensive Mycotoxin 9 Panel

PCR - FECAL CONTAMINATION INDICATORS

- Total *Enterococcus*
- Total *Bacteroides*
- Human *Bacteroides*

PCR - FOOD

- Meat Species Identification

PCR - LEGIONELLA TESTING

- Broad Screen for 50 *Legionella* spp. and *Legionella pneumophila*
- *Legionella pneumophila*
- *Legionella pneumophila* serogroup 1
- *Legionella micdadei*
- *Legionella saintelensi/cincinnatiensis*
- *Legionella maceachernii*

PCR - PATHOGEN DETECTION PACKAGES

- *Mycobacterium tuberculosis*
- *Salmonella*
- *Histoplasma capsulatum*
- *Cryptococcus neoformans*
- *Giardia* spp.

PCR and DNA SEQUENCING

- Bacteria DNA ID
- Fungi DNA ID
- Whole Genome Sequencing utilizing Next-Generation Sequencing (NGS)

PCR – VIRUSES

- SARS-CoV-2 (COVID-2019)
- Human adenovirus
- Human norovirus
- Human polyomavirus
- Human rotavirus
- Human enterovirus
- Human astrovirus

PCR – OTHER

- Bed Bug (*Cimex lectularius*)
- Ticks- Lyme Disease Pathogen *Borrelia burgdorferi*
- *Candida auris*
- Mycotoxin-Producing Fungi

