

# EARLY, SPECIFIC, BLOOD-BASED DIAGNOSTIC FOR SEPTIC ARTHRITIS

---

[Luhmann, Scott](#)

[Gill, John](#)

T-018905

## Technology Description:

Researchers at Washington University in St. Louis have identified blood-based cytokine signatures that could be used to specifically detect, distinguish and monitor septic arthritis, synovitis and osteomyelitis. This assay could enable timely, accurate treatment to avoid joint damage.

Septic arthritis, transient synovitis and osteomyelitis are among several conditions that cause acutely painful limbs and joints. It is critical for physicians to quickly diagnose which condition is causing the pain in order to begin appropriate treatment. However, current testing is non-specific. This assay solves this problem with a rapid assay of four blood-based protein biomarkers that are highly sensitive and specific for septic arthritis and can differentiate it from viral synovitis and osteomyelitis. This technology could be adapted to a variety of clinical assay formats (in hospital or point-of-care) to help clinicians identify the best course of treatment for improved patient care.

## Stage of Research:

The diagnostic test has been validated in a pilot study of clinical patient samples and demonstrated sensitivity and specificity of 91%.

## Applications:

- **Diagnostic for bone and joint infections** – detecting, monitoring and determining treatment for septic arthritis, osteomyelitis or synovitis

## Key Advantages:

- **Early, specific diagnostic:**
  - enables timely, accurate disease-specific treatment to avoid joint damage
  - differentiates septic arthritis from viral synovitis and osteomyelitis
  - can be used alone or in combination with existing tests
- **Blood-based test adaptable to widely used clinical assay formats or point-of-care testing**
  - measures levels of cytokines from simple blood test, eliminating need for painful, invasive synovial fluid testing
  - potential reduces costs of diagnostic work-up

**Patents:** [Methods of detecting septic arthritis, transient synovitis and osteomyelitis](#) (PCT Application, Publication No. WO2020172622A1)

**Related Web Links:** [Luhmann Profile](#)