

Quick test diagnoses bacterial or viral infection

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Researchers at Ben-Gurion University of the Negev (BGU) have developed a new test that quickly and accurately distinguishes between bacterial and viral infections in as little as five hours.

Treating viral infections with antibiotics is ineffective and contributes to the development of [antibiotic resistance](#), allergic reactions, toxicity and greater healthcare costs. Currently tests take 24-48 hours and aren't always accurate enough for a clear-cut diagnosis. Doctors often prescribe antibiotics to provide patient relief before the test comes back, without waiting for the results.

According to a study published in the *Journal of Analytical Chemistry*, the BGU group has shown it is possible to distinguish a patient's infection as either viral or bacterial by adding luminol to a blood sample and measuring the glow. Luminol is a luminescent [chemical substance](#) used in [crime scenes](#) to locate traces of blood.

BGU's study clearly indicated that [white blood cells](#) that protect the body (phagocytes) react differently to viral and bacterial infections and that the glow or "chemiluminescence" (CL) can detect those distinct reactions.

According to the study, "The method is timesaving, easy to perform and can be commercially available, thus, having predictive diagnostic value and could be implemented in various medical institutions."

In the study, 69 patients admitted to Soroka University Medical Center in Beer-Sheva with various types of infections. Rather than looking at the infection, they looked at the immune system's response to the infection.

A multi-disciplinary team, headed by Prof. Robert Marks, of the Department of Biotechnology Engineering and the National Institute for Biotechnology in the Negev (NIBN) made the discovery. Team member and doctoral student Daria Prilutsky undertook the project as part of her Interdisciplinary Technologies Fellowship from the Planning and Budgeting Committee of the Council for Higher Education.

"This is a terrific example of the multi-disciplinary approach at BGU that results in innovative research and yields results that can have a worldwide impact," explains Doron Krakow, executive vice president of American Associates, Ben Gurion University of the Negev. "A test of this type has significant implications for cutting healthcare costs, and providing more accurate treatment."

Provided by American Associates, Ben-Gurion University of the Negev

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