

Beyond Antibiotics: Scientists Propose Detecting and Neutralizing the Molecular Signals That Drive Infection

New AmeboGenesis™ white paper introduces AG-RUL™, designed to detect and remove endotoxins linked to sepsis, antimicrobial resistance, and inflammatory disease.



GERMANTOWN, MD, UNITED STATES,

March 17, 2026 /EINPresswire.com/ -- A new scientific white paper released today by AmeboGenesis proposes what researchers describe as a potential paradigm shift in how infectious disease may be understood and managed in the future.

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The dangers for infection aren't only caused by microbes, but also by the molecular signals they release. To detect and neutralize these signals, may be the next era for infectious disease control.”

*Daniel Kilbank, Co-founder &
CSO of
MygoGenesis/AmeboGenesis*

For nearly a century, antibiotics have been the foundation of infectious disease treatment. But this new white paper suggests that the next generation of infection control may need to focus not only on killing microbes, but also on detecting and neutralizing the molecular signals that make infections dangerous.

The white paper introduces AG-RUL™, an emerging biotechnology platform designed for the rapid detection and potential removal of endotoxins and other bacterial molecular signals that can trigger severe inflammatory responses in the human body.

The full white paper can be downloaded here:

<https://mygogenesis.com/white-papers/>

The paper examines how endotoxin detection technologies, innate immune biology, and molecular infection control strategies may help address some of the most urgent challenges in modern medicine, including antimicrobial resistance, sepsis, and rapid infection diagnostics.

The paper asks a provocative question:

What if the future of infection control lies not in killing microbes, but in detecting and neutralizing the molecular signals that make them dangerous?

For decades, modern infectious disease treatment has focused primarily on eliminating pathogens using antibiotics. While antibiotics revolutionized healthcare in the twentieth century, growing antimicrobial resistance and persistent mortality from inflammatory conditions, such as sepsis, highlight the limitations of therapies focused solely on microbial eradication. Many of the most severe outcomes of infection arise not directly from microbes themselves, but from bacterial endotoxins and other pathogen-associated molecular signals that trigger powerful immune responses.

When released into the bloodstream, endotoxins can activate inflammatory cascades capable of leading to systemic inflammation, organ failure, and septic shock.

Globally, sepsis affects more than 45 million people each year and remains one of the leading causes of hospital mortality.

“For nearly a century we have fought infection by killing microbes,” said Daniel Kilbank, corresponding author of the white paper and co-founder and CSO of MygoGenesis. “But many of the most dangerous consequences of infection are not caused by microbes themselves. They are caused by the molecular signals microbes release. If we can detect and potentially neutralize those signals, it may represent the next frontier, beyond antibiotics, for infectious disease control.”

AG-RUL builds on AmeboGenesis’s biotechnology, which harnesses the extraordinary sensitivity and range of their AG-LAL™ endotoxin detection platform. The Amebocyte immune cells are derived from ancient innate immune systems, capable of detecting extremely small quantities of microbial molecules.

Historically, this biological sensitivity enabled the development of the Limulus Amebocyte Lysate (LAL) assay, the global standard for detecting bacterial endotoxin contamination in pharmaceutical manufacturing, biologics production, and medical device safety testing. However, traditional “gold standard” LAL testing relies on harvesting blood from horseshoe crabs, raising ecological concerns, issues of bio-consistency, and creating potential supply limitations.

The AmeboGenesis program seeks to address these challenges through the Mygotic Process™, designed to generate scalable and supplies of amebocytes while expanding their potential applications beyond traditional endotoxin testing.

Two emerging AmeboGenesis technology programs illustrate this approach.

AG-LAL™

A sustainable next-generation endotoxin detection platform designed to support pharmaceutical safety testing, biologics manufacturing, infection diagnostics, and environmental microbial monitoring.

AG-RUL™

A biotechnology platform being developed for the rapid detection and potential removal of bacterial endotoxins and inflammatory microbial signals from human fluids, including blood serum and cerebrospinal fluid.

If successfully developed, AG-RUL technologies could enable earlier detection of infection signals and potentially new approaches to managing inflammatory responses associated with sepsis, antimicrobial resistance, and severe bacterial infections.

The white paper proposes a broader technological framework described as molecular infection control, in which advanced detection systems monitor and potentially neutralize the molecular drivers of infectious disease alongside traditional antimicrobial therapies. By focusing on the molecular signals released by pathogens, researchers believe it may be possible to expand how infections are detected, monitored, and managed in the future.

The AmeboGenesis white paper explores the scientific rationale for this approach and examines how advances in innate immune system biology, endotoxin detection technologies, and infection diagnostics may contribute to a new generation of infectious disease tools.

The full white paper is available here: <https://mygogenesis.com/white-papers/>

About [AmeboGenesis™](#)

AmeboGenesis is focused on harnessing ancient innate immune system biology to develop next-generation technologies for endotoxin detection, infection diagnostics, and molecular infection control. The platform is built on the Mygotic Process™, a biological system created by MygoGenesis™, designed to generate sustainable and scalable supplies of amebocytes capable of detecting microbial molecular signals with extraordinary sensitivity.

Emerging programs include AG-LAL™, a next-generation endotoxin detection platform for pharmaceutical manufacturing and biologics safety, and AG-RUL™, a technology being developed for the detection and potential removal of bacterial endotoxins from human biological fluids, including serum and cerebrospinal fluids.

Learn more at <http://www.amebogenesis.com>

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