

ADVANCING AMERICA *through* TECHNOLOGY TRANSFER

LAWRENCE LIVERMORE NATIONAL LABORATORY

IMPROVING PUBLIC HEALTH *and* NATIONAL SECURITY
with THE EVERYTHING TEST



LAWRENCE LIVERMORE MICROBIAL DETECTION ARRAY

COMPREHENSIVE, AFFORDABLE,
and **FASTER PATHOGEN DETECTION**

 Lawrence Livermore
National Laboratory

U.S. DEPARTMENT OF
ENERGY

Office of
TECHNOLOGY TRANSITIONS



How do we keep babies, astronauts, and combat veterans healthier with a single test?

The Lawrence Livermore Microbial Detection Array (LLMDA), also known as the Everything Test, is the most comprehensive and widely applicable technology of its kind, improving upon conventional pathogen testing in speed, capability, sensitivity, and cost. The Everything Test contains 388,000 probes within three square inches, accurately tests for more than 10,000 microbes in a single assay, and detects more than 3,000 viruses and 1,900 bacteria within 24 hours.

LLMDA enables the scientific community to better evaluate vaccine safety, prevent and contain epidemics, respond to biological terror attacks, promptly treat combat wound infections, and manage astronaut health while in outer space. The results are improved public health and a safer and more secure Nation.

LLNL at a Glance

Lawrence Livermore National Laboratory traces its origins 50 miles west of San Francisco, where in 1952 a 'new ideas' laboratory was born in direct response to the Cold War's nuclear arms race with a mission to meet urgent national security needs by advancing nuclear weapons science and technology. More than half a century later, LLNL continues to strengthen the security of the Nation by developing and applying world-class research, technology, and engineering across diverse mission areas spanning biosecurity, counterterrorism, defense, energy, intelligence, nonproliferation, various sciences, and weapons.

U.S. Department of Energy National Laboratories

The 17 U.S. Department of Energy (DOE) National Laboratories comprise a preeminent federal research system that executes long-term government scientific and technological missions, often with complex security, safety, project management, or other operational challenges. The National Laboratory system produces the scientific research needed to develop national energy policy and solutions allowing DOE to be one of the largest supporters of technology transfer in the federal government.

Technology Transitions

The mission of the Office of Technology Transitions (OTT) is to expand the commercial impact of the DOE's research and development portfolio to advance the economic, energy, and national security interests of the Nation. The office develops the Department's policy and vision for expanding the commercial impact of its research investments, and streamlines information and access to DOE's National Labs and sites to foster partnerships that will move innovations from the labs into the marketplace.

www.energy.gov/technologytransitions

LLMDA is the most comprehensive diagnostic platform ever developed

Performance

The LLMDA is cheaper and faster than DNA sequencing, significantly more comprehensive than Polymerase Chain Reaction, and five times better in detection capability than conventional assays.

Examples in Excellence

LLMDA detected contaminated infant vaccines prior to entry in the supply chain.

LLMDA accelerates treatment and recovery of injured military members by rapidly and precisely detecting combat wound pathogens.

Contact Us

The scientific discovery highlighted on this poster is just one of DOE's many successes advancing America.

Learn more about available resources and partnering opportunities with the National Labs by visiting:

www.energy.gov/technologytransitions

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