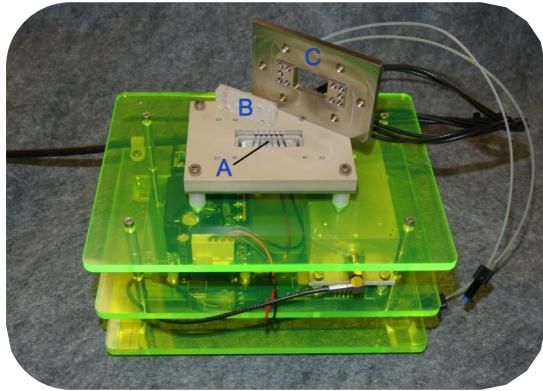


Exceptional service in the national interest

Sandia  
National  
Laboratories

CleanBurst™ System

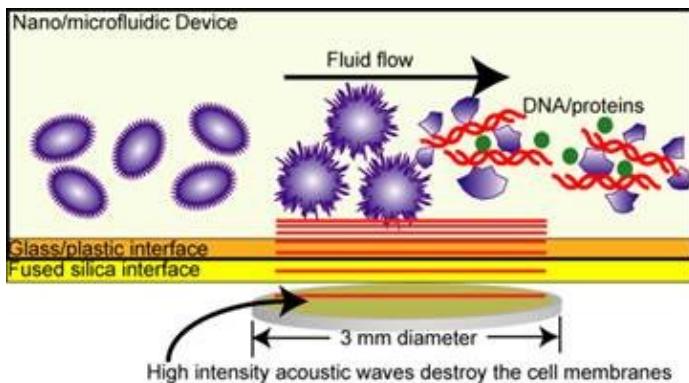
## CleanBurst™

Rapid Acoustic Lysis for Point-of-Care Diagnostics

Most biosensors in today's market and in R&D require a critical sample preparation procedure prior to analysis of cellular contents such as nucleic acids and proteins. Technology is needed to release the cellular contents in a format compatible with nano/microfluidic and Point-of-Care (POC) devices.

Sandia National Laboratories has developed a miniature cell lysis system to overcome the limitations of current extraction methods. This system utilizes high-frequency compression waves with a wavelength similar to the size of cells, resulting in more efficient energy transfer. Unlike commercial acoustic transducers, our technology does not generate significant amounts of heat, making it compatible with protein assays. This technology releases viable DNA, RNA, and proteins from human or bacterial cells, without chemicals or additional processing, to enable high-speed sample preparation for clinical point-of-care (POC) medical diagnostics and use with nano/microfluidic devices.

### How It Works



High-intensity acoustic waves leave the transducer and propagate into the fluid region of the nano/microfluidic device. Cells entering this region are lysed.

### Technology Benefits

No harsh chemicals or purification

Generates PCR-ready DNA

Portable and reusable

Suitable for difficult bacteria

### Potential Applications

Rapid DNA testing

Lysing of Resilient Cells

Species-specific drug prescriptions

Same-day pathogen diagnosis

For more information please contact us at [ip@sandia.gov](mailto:ip@sandia.gov)  
or visit our website: <https://ip.sandia.gov>.



Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000. SAND NO. 2011-XXXX

