

Development of Laser-Induced Cell Lysis System

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Technology description

This laser induced cell lysis system is effective in lysing bacteria for the purpose of bioanalytically detection of bacterial pathogens in food, water, environmental samples or on medical devices and supplies. The lasers destroy the cell membrane without damaging the interior of the cell thus exposing the proteins and nucleic acids for detection. Other methods rely on mechanical, physical or chemical manipulation to lyse cells in order to expose intracellular proteins, DNA, or RNA for detection purposes. Unlike this cell laser method, these methods are labor intensive, time requiring and can damage or alter the very molecule you are trying to detect.

Application area

- testing pathogens in the water supply
- examining contaminants in other liquids
- testing pathogens in biological samples
- determining levels of any organism as a clinical diagnostic
- determining certain nucleic acid sequences for research purposes

Advantages

- Rapid, non-damaging method to lyse cells
- No adverse chemicals introduced to system
- Simple to execute and adapt to multiple applications for use

Institution

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