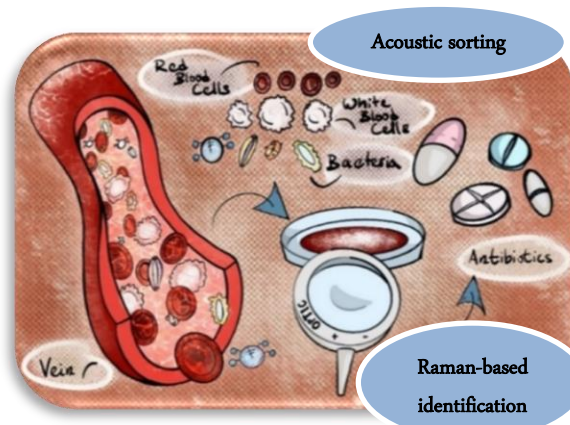


RamanSound: Acoustic sorting device for non-contact presorting and sample enrichment before rapid identification and characterization of pathogens directly from human body fluids using a compact Raman spectroscopy-based device

Rapid and accurate identification of pathogens is one of the biggest challenges in medicine. Timely identification of causative agents and their antimicrobial resistance profile can significantly improve the management of infection, lower costs for healthcare, mitigate ever-growing antimicrobial resistance and, in many cases, save lives.



We aim to prepare an acoustic sorting device to be coupled with our compact device consisting of a microfluidic platform and optical tweezers systems, which can be added to a commercial Raman spectrometer. The acoustic sorting is intended to quickly, non-invasively, and non-destructively sort the microbes from the sample thus enhance the performance of the existing system. Currently, we have a functioning compact device and are designing the acoustic sorting device for proper re-treatment of complex samples, sample enrichment (small volumes), and removal of interfering objects to enhance the performance of the whole system.

Application

Rapid, non-invasive, non-destructive sorting and subsequent identification of microbes and their virulence factors from tiny sample volumes of liquid samples.

At the first stage we focus on bloodstream infections.

Competitive Advantage

- Golden standard = culture-based methods (slow: 48 h or more), other methods: need for expensive consumables and/or cells do not remain viable
- Our system would allow cheap, easy, almost real-time diagnostics (in several minutes).

Market Assessment

- Target: EU market (global population, especially patients with severe, life-threatening infections)
- No expensive consumables needed = a cheap, fast, sustainable method
- An accessory for existing devices (Raman spectrometers) together with the compact Raman tweezers and a microfluidic platform

IP Status

- technology concept formulated
- aim: experimental proof of concept

Needs

- Possible future financing: more extensive testing of the technology in the lab and on the actual patient samples
- Mediating communication with industrial partners

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