

Raman spectroscopy for rapid identification and typing of microbial pathogens

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Technological proof-of-principle for efficient, high resolution typing of e.g. MRSA, MRSE, VRE, ESBL related species and *Acinetobacter* by Raman spectroscopy has been obtained. The methodology is being optimized for daily use in high throughput microbial typing, to fit the (seemingly) ever increasing need in infection prevention routines. The methods' discriminating power is comparable to current high-tech molecular methods, but available in a fraction of the time.

Recent developments, in collaboration with partners in the areas of water-, food-, and clinical microbiology will be presented. Within the water quality research the diagnostic questions are often quite simple, and only focus on the presence of an index species. We will show that using Raman spectroscopy the relevant distinction between *E. coli* and coliforms can be made, as well as the distinction between *Legionella pneumophila* and other *Legionella* species. For food-pathogens the application in analyzing porcine-MRSA will be presented, together with *Salmonella* subspecies typing. The potential of sharing data within a quality control network will be discussed briefly. Finally some crisp examples will be given of clinical situations where optical typing of bacteria can be beneficial to both patient and hospital (financial) policies.