

FT-IR analyzer for routine microbiology

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In the previous years it was shown that FT-IR spectroscopy is capable to identify microorganisms rapidly and reliably. The method is very cost effective because no consumables are required. Furthermore the sample preparation is fast and easy to perform. In contrast to many biochemical tests there is no second time consuming cultivation step necessary.

In summary the method should be well suited for routine identification of microorganisms. However in the past the method was used from several research groups but not from a broad field of routine microbial laboratories. To attract this group of users the availability of a complete solution is essential. For the high throughput of those laboratories it is necessary that the sample preparation can be done in the standard microplate format. The system software must be easy to use and highly automated. Results have to be stored in a convenient format which should also allow an easy transfer to other software.

Furthermore spectra libraries are of fundamental importance. The Zentralinstitut für Ernährungs- und Lebensmittelforschung (ZIEL) in Weihenstephan (Professor Scherer / Dr. Seiler) offers extensive data bases for many groups of food-relevant microorganisms to other customers. These libraries contain not only samples from different reference stocks but also isolates from different production sites.

In this paper we will show the automatic identification of microorganisms using an integrated FT-IR analyzer based on a microplate reader.