

# Microbial Identifications

**M**icrobial identifications are performed for a variety of reasons, including characterization of a product's bioburden, routine testing of incoming materials, evaluation of environmental isolates, identification of sterility test positives, and investigation of out-of-spec products or conditions.

WuXi AppTec performs microbial identification and characterization in-house using various instruments and techniques. Primary methods of identification are performed using the ABI 3130 Genetic Analyzer, the BioMerieux VITEK® 2 system or the DuPont RiboPrinter® system.

WuXi AppTec is a global leader in providing discovery, testing and manufacturing services for the pharmaceutical, biotechnology and medical device industries. Research-driven and customer-focused, with operations in China and the U.S., WuXi AppTec offers a broad and integrated portfolio of services designed to assist our customers with cost-effective and efficient outsourcing solutions.

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## ABI 3130 Genetic Analyzer

### Principle

Fluorescently labeled dideoxynucleotides, which act as DNA chain terminators, are incorporated into various length sequences of DNA during PCR amplification. Each newly created strand of DNA differs in length by one nucleotide. When these strands of DNA are run through a polymer they are segregated according to their size length. As each strand of DNA exits the polymer, the ABI 3130 Genetic Analyzer uses a laser to detect the fluorescently labeled dideoxynucleotides revealing the sequence of bases in the original DNA sample.

### Advantages

Using comparative analysis of both forward and reverse PCR reactions allows for more accurate, dependable and reliable results. Isolated colonies of bacteria or mold may be processed directly from original cultures with results in just a few hours.

## VITEK® 2 Compact System

### Principle

The fully automated VITEK® 2 compact system performs bacterial identification by biochemical analysis using colorimetry.

### Advantages

Rapid, accurate identification of some bacterial strains can be accomplished in as little as two hours. In addition to bacteria, the system's database can identify multiple species of yeast.

## RiboPrinter® System

### Principle

The RiboPrinter® is a fully automated system for identifying and characterizing bacterial isolates. The system uses ribosomal DNA to create a genetic fingerprint, or RiboPrint® pattern, which can be used to identify bacteria beyond the species level. The DuPont Identification Library has over 6000 ribosomal patterns – representing more than 1400 microbial species – and new patterns can be added to expand the library.

### Advantages

The RiboPrinter® system is fast, reliable, and, being totally automated, both consistent and non-subjective. It allows identification beyond the species level, which is an advantage when tracking microbial isolates for particular materials, a specific product or throughout a process or system. As new patterns are encountered, they can be added to expand the library, and these patterns can be compiled into individual, client-specific databases.

## Other Microbial Methods

Identifications can also be performed biochemically using the BBL™ Crystal™ Identification Systems. In addition, fatty acid analysis is available through approved contractors.



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The ABI 3130 Genetic Analyzer, with MicroSeq® analysis software, performs comparative analysis of both forward and reverse PCR reactions.



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The VITEK® 2 compact system offers Advance Colorimetric™ technology that allows for the identification of 98% of clinical isolates.



Used with permission of DuPont Qualicon.

The automatic RiboPrinter® system from DuPont Qualicon identifies and characterizes bacteria through genetic "fingerprinting."

For more information on WuXi AppTec's services please contact:

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