

# Microbial identification and characterisation services

RiboPrinter® analysis



## Introduction

The RiboPrinter® is a fully automated molecular based system that can provide identification and/or characterisation of **bacterial isolates**. These results can be used to identify potential sources of contamination, and enable tracking in the factory and laboratory environments. Further applications include strain authentication of starter cultures. Ribotyping is a fast effective way of identifying and characterising bacteria, giving results from pure colony in 9h.



## Test details

Bacterial isolates are broken open (lysed) to release the DNA, which is cleaved (cut) with a restriction enzyme to create fragments of different lengths. These fragments are separated according to size through a gel matrix, and transferred onto a membrane for detection. The DNA bar code-like fingerprint is detected using a labelled probe that targets a conserved region of ribosomal DNA. Data is captured with a camera and passed to the computer software for analysis.

Each pattern is compared to the reference database to give an identification to either genus or species level. A further comparison is made with patterns stored on our custom database to determine strain similarity. **The profiles are retained and can be compared to subsequent isolates to provide a dynamic, expanding database.**

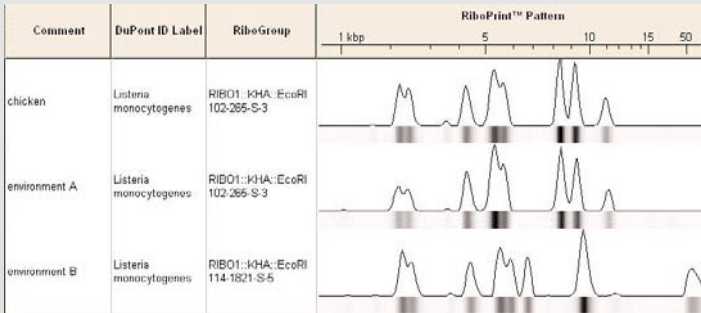


## Format of results

Each isolate has a characteristic profile that reflects the size and intensity of the DNA fragments. We issue reports in two formats: premium and standard.

Our premium report includes a description of the test done, a table of results, and the RiboPrinter® patterns (example shown in Figure 1). Strain comparisons are also available on request. A standard report includes the results in table format without the patterns.

Figure 1: Example RiboPrinter® patterns for three *Listeria* spp. isolates



The example in Figure 1 shows RiboPrinter® patterns for *Listeria* strains isolated from chicken and two production environments. A comparison of the isolates with the reference database gives an automatic identification as *Listeria monocytogenes*. These patterns were also compared against each other to determine similarity, which is assessed by the software. One of the environmental isolates (A) was placed in the same ribogroup as the chicken isolates, indicating that they are indistinguishable from each other at this level of investigation. The results suggest that environment A is the likely source of contamination of the chicken. Environmental isolate B has distinct differences compared to the other two, and is therefore unlikely to be the source of contamination.



## Contacts

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