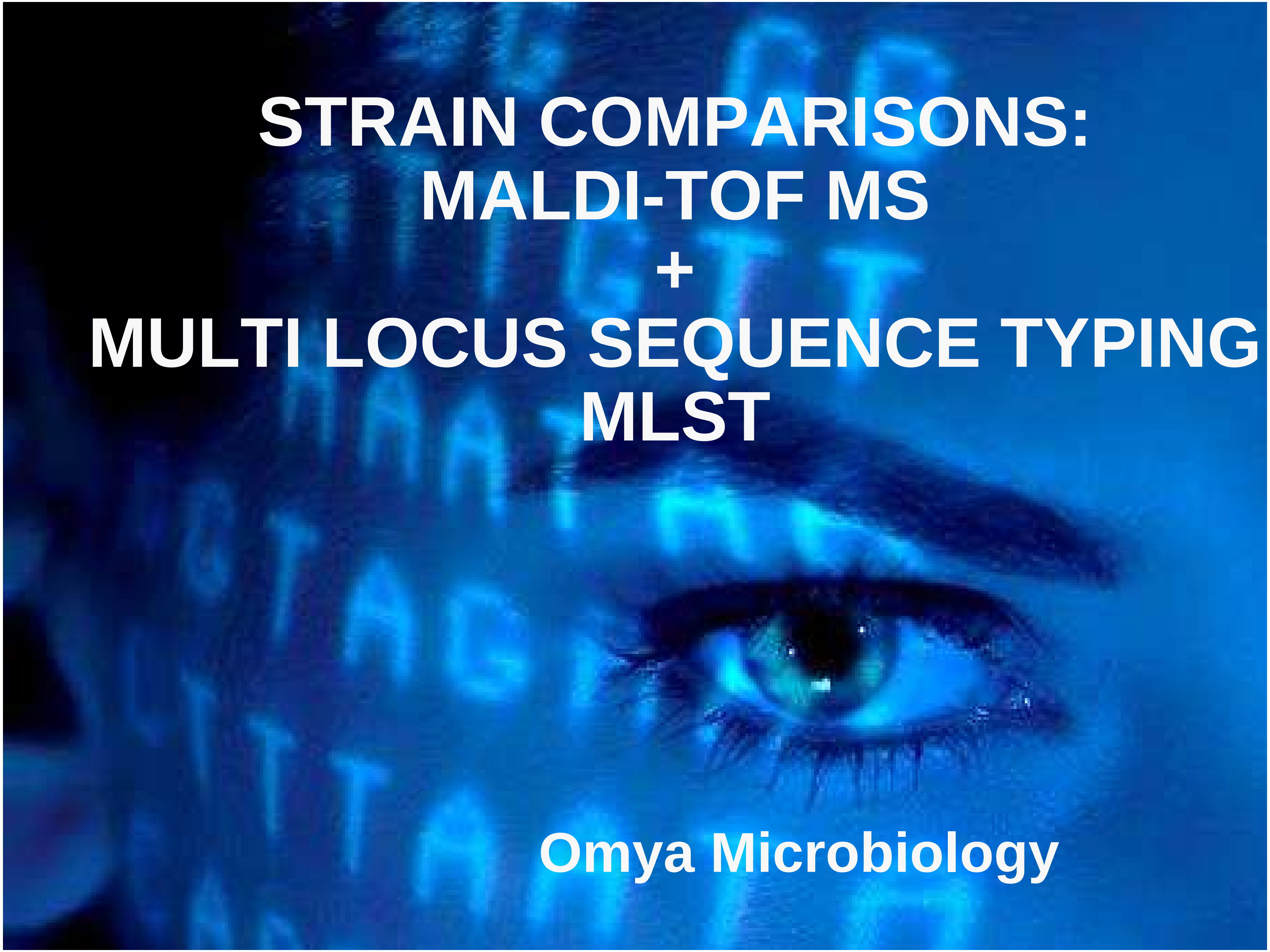
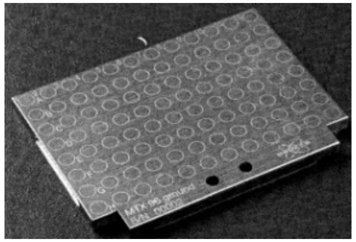


STRAIN COMPARISONS:
MALDI-TOF MS
+
MULTI LOCUS SEQUENCE TYPING
MLST

Omya Microbiology

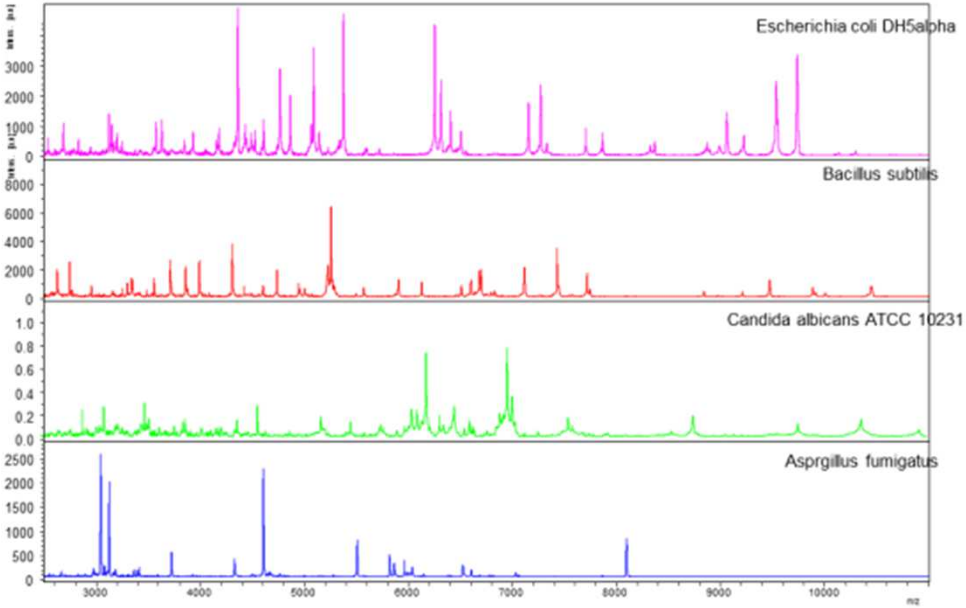
Strain comparisons by MALDI-TOF MS

Sample Preparation

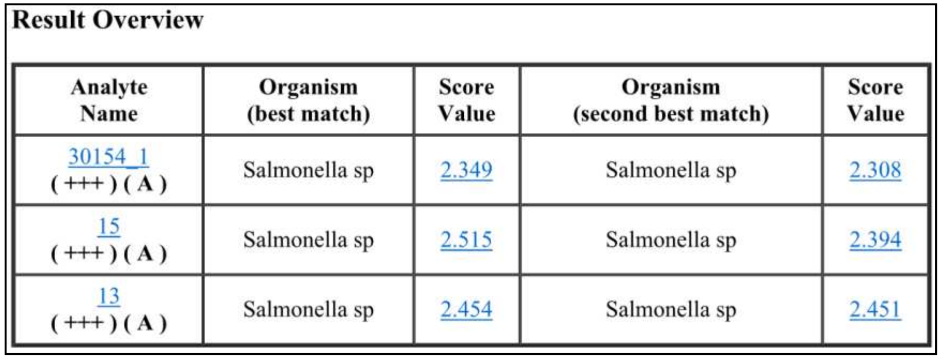


Identification

Data analysis



Strain comparisons by MALDI-TOF MS



Result Overview

Analyte Name	Organism (best match)	Score Value	Organism (second best match)	Score Value
30154_1 (+++) (A)	Salmonella sp	2.349	Salmonella sp	2.308
15 (+++) (A)	Salmonella sp	2.515	Salmonella sp	2.394
13 (+++) (A)	Salmonella sp	2.454	Salmonella sp	2.451

Figure 1. Results overview of species identification.

Score value >2.3 (+++ as symbol) confirms a high probable species identification. The **symbol A** indicates a high consistency among possible hits (i.e. All hits are Salmonella sp.). More detailed information on the results are shown in the full report. Due to the high similarity among Salmonella sp., species identification software can only assign the genus level of Salmonella.

For species level and serotype identification the MLST sequence typing is the subsequent step of analysis.

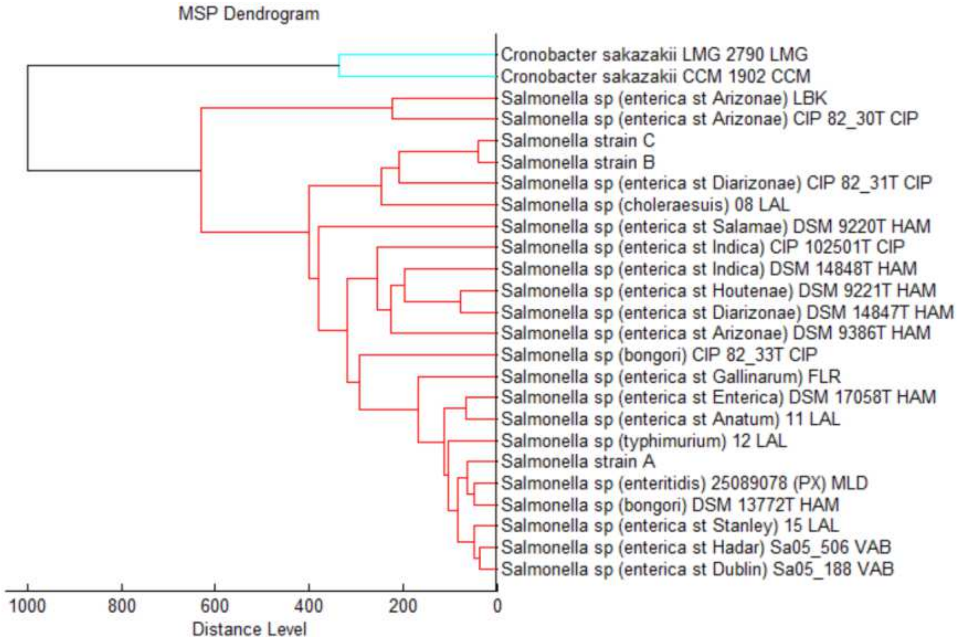
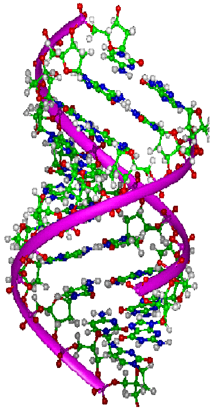


Figure 2. Data analysis (optional) - Results strain comparision
In deep comparision of MALDI- TOF-Mass spectra, reveals the close relation of isolated strain B & C compared with strain A. This is useful to trace the source of a contamination.

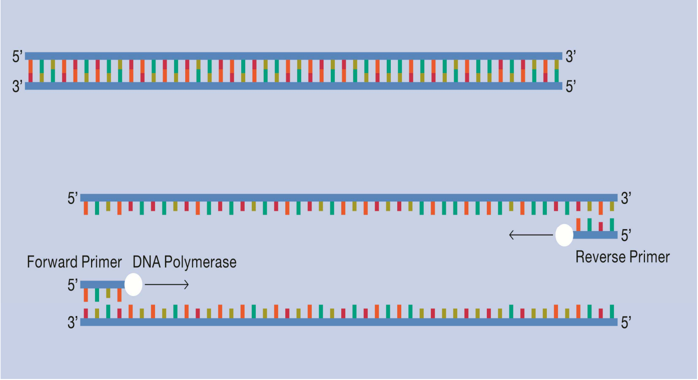
Strain comparisons by Multi Locus Sequence Typing (MLST)

DNA-Isolation



PCR

Loci: aroC, dnaN, hemD, hisD, purE, sucA, thrA



Sequencing

Data analysis

Strain comparisons by Multi Locus Sequence Typing (MLST)

Table 1. MLST results enviromental Isolates of Salmonella sp. (Example)

Salmonella sp.	aroC[1]	dnaN[1]	hemD[1]	hisD[1]	purE[1]	sucA[1]	thrA[1]	MLST[2]
Strain A	41	42	43	58	9	12	2	**112**
Strain B	230	38	228	416	236	216	209	**1086**
Strain C	230	38	228	416	236	216	209	**1086**

[1] sequence type of single loci

[2] MLST : sequence type of all loci

Table 2. Available information on identfied MLST in Table 1.

MLST	Strains	Sub-species	Serotype	Antigenic Formulas	Host Details	Source, Year
112	62 strains	I	61/62:Muenchen 1/62: Valdosta	6,8:d:1,2 6,8:a:1,2	Human, Reptile, Environment (water)	Multiple continents, 1984 - 2009
1086	1 strain	I	Maricopa	1,42:g,z51:1,5	Environment	USA, 1956

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