MALDI-TOF for Nontuberculous Mycobacteria Identification/MDDR Testing.

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What is MALDI-TOF?


- Mass spectrometry technology – proteins are separated by their mass.
How does it work?
Workflow:

• Positive MGIT tube – TB and MAC probes done, 7H11 plate subculture made.
• If TB and MAC negative, MALDI performed from growth on subculture.
• MALDI will provide ID for any organism in its database.
• Identified 50 isolates with 100% accuracy during verification.
## FDA Approved list:

<table>
<thead>
<tr>
<th>Pathogen 1</th>
<th>Pathogen 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>M. fortuitum group</td>
<td>M. avium</td>
</tr>
<tr>
<td>M. abscessus</td>
<td>M. intracellulare</td>
</tr>
<tr>
<td>M. chelonae</td>
<td>M. scrofulaceum</td>
</tr>
<tr>
<td>M. mucogenicum</td>
<td>M. simiae</td>
</tr>
<tr>
<td>M. gordonae</td>
<td>M. smegmatis</td>
</tr>
<tr>
<td>M. haemophilum</td>
<td>M. szulgai</td>
</tr>
<tr>
<td>M. immunogenenum</td>
<td>M. tuberculosis complex</td>
</tr>
<tr>
<td>M. kansasii</td>
<td>M. xenopi</td>
</tr>
<tr>
<td>M. lentiflavum</td>
<td>M. marinum</td>
</tr>
<tr>
<td>M. malmoense</td>
<td></td>
</tr>
</tbody>
</table>
TB complex still identified by probe.

• Eliminates delays waiting for 7H11 subculture to grow.

• MALDI unable to speciate the complex.

• All other testing (GeneXpert, DST, etc.) unchanged.
Significance to you:

• Streamlined workflow will improve overall lab efficiency.

• Will provide a more definitive answer when NTM infection is suspected.

• Preliminary ID: “ID by Vitek MS MALDI-TOF”.
MDDR Testing
CDC MDDR Testing

• Targeted DNA sequencing of regions associated with drug resistance.
• Can be performed on any NAAT-positive specimen or TB isolate.
• Results usually take about one week.
• INH and RIF tested, then other drugs if resistance is detected.
Reasons to request:

• Previous treatment for active TB or LTBI.
• Confirmation of drug resistance reported by laboratory.
• Spent time in a country with a high rate of drug resistance.
• Contact of a known drug resistant patient.
Questions?

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