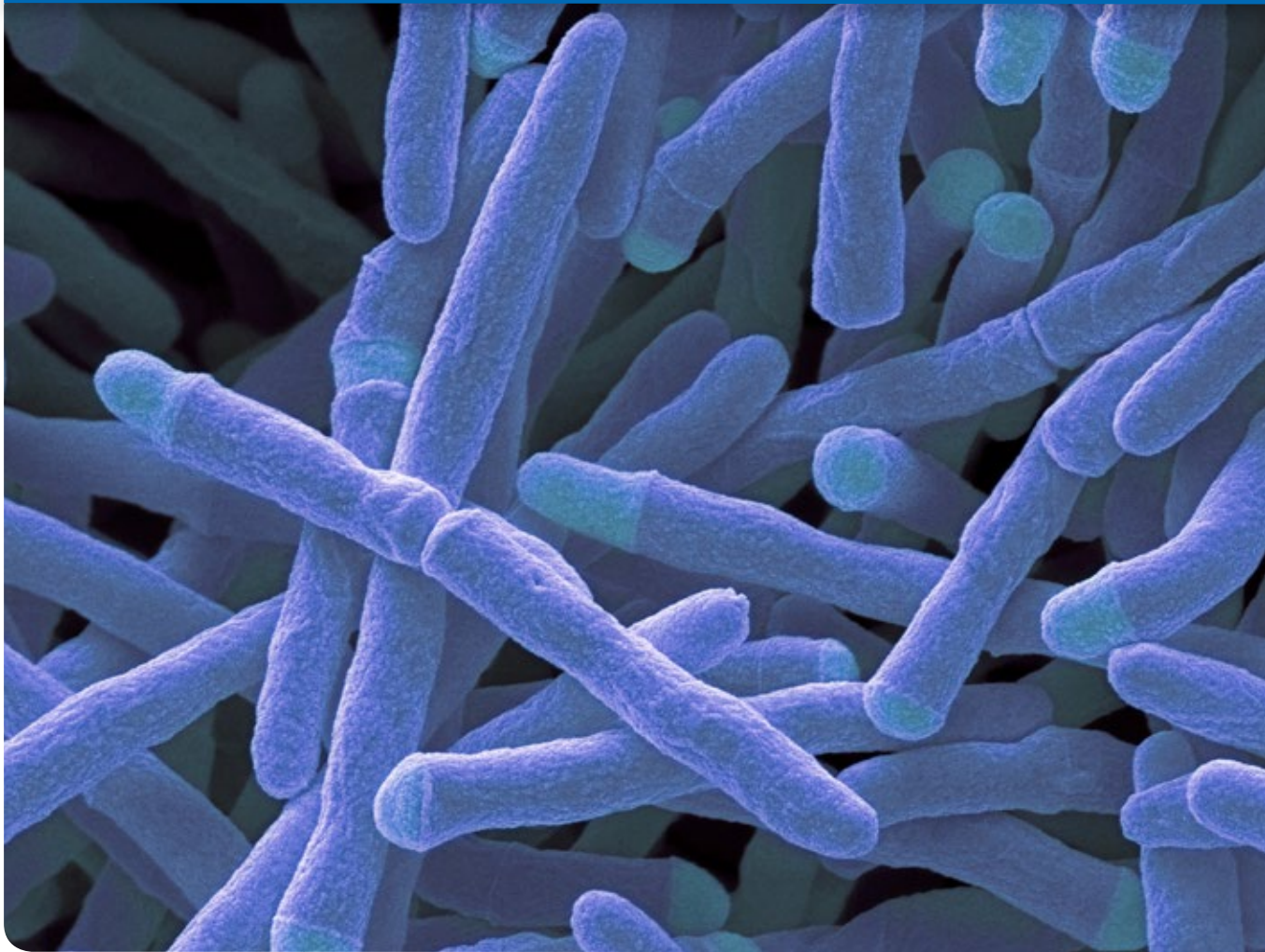
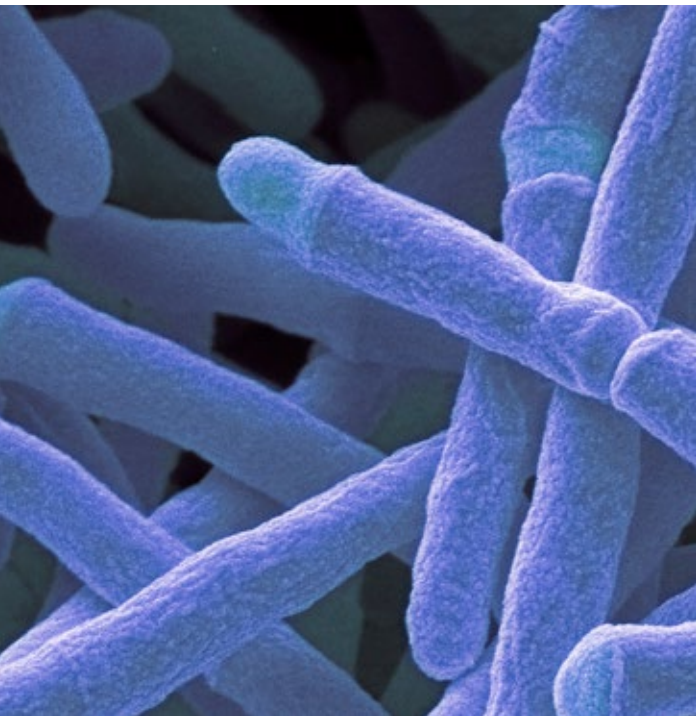


IVD



Mycobacteria Identification

● MALDI Biotyper®



The genus *Mycobacterium* includes, as major groups, the important pathogens of the *Mycobacterium tuberculosis* complex (MTC) and the nontuberculous mycobacteria (NTM). Members of the latter group are cited increasingly as the cause for opportunistic infections among immunocompromised patients. This trend and the rise of antibiotic resistance in this genus demand improved differentiation among *Mycobacterium* species.

The MBT Mycobacteria IVD Module is the comprehensive solution for laboratories in need of highly reliable and fast mycobacteria identification via MALDI-TOF mass spectrometry. The MBT Mycobacteria IVD Library covers 178 of the currently known 201 mycobacteria species. 807 Strains - of which more than 480 are clinical isolates - cover the natural variability of *Mycobacterium* species. The MBT Mycobacteria IVD Module with adapted data acquisition and analysis secures high sensitivity of mycobacteria identifications.

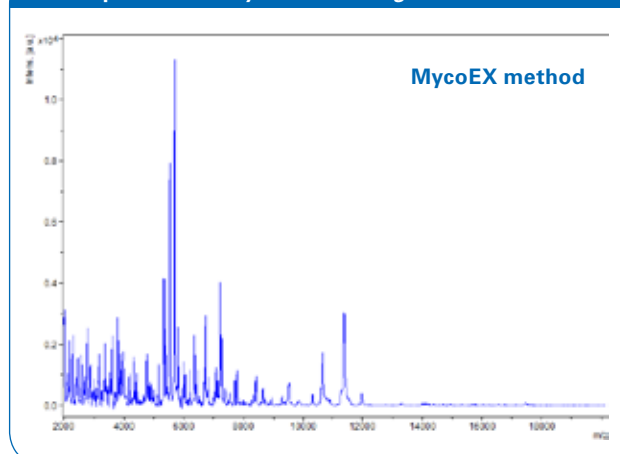
MycEX – the optimized and safe extraction protocol

Mycobacteria are rigid microorganisms for which direct transfer and conventional extraction methods might not yield MALDI-TOF mass spectra of sufficient quality for species identification.

Bruker has therefore developed an easy and safe silica bead-based extraction protocol, the results of which are high-quality mass spectra for species identification.

Images on front page and page 2:
Coloured scanning electron micrograph (SEM) of *Mycobacterium smegmatis* bacteria.

Mass Spectrum of *Mycobacterium gastris* DSM 44505^T



▲ Mycobacteria samples prepared with the MycoEX preparation protocol reveal excellent mass spectra securing sensitive and reliable mycobacteria identification.

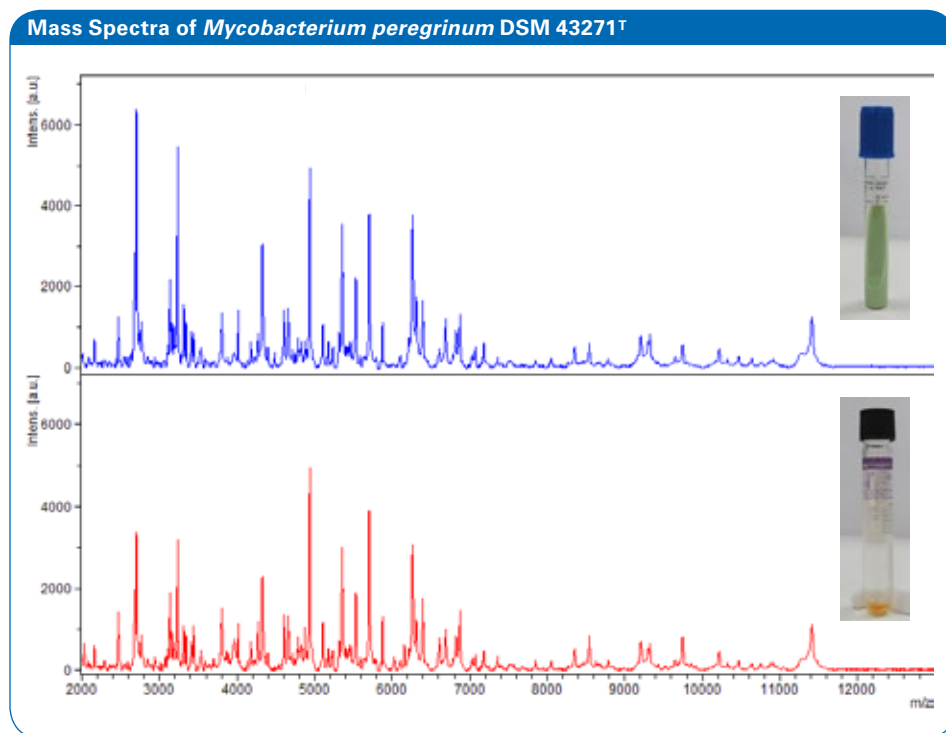
One workflow for solid media and liquid cultures

Spectra of most mycobacteria strains grown on solid Löwenstein-Jensen or BACTEC™ MGIT™ (BD Diagnostics) liquid media show no significant variation. For those with varying spectra, reference spectra from both liquid and solid media are stored in the mycobacteria reference library.

International mycobacteria consortium

The aim of this consortium is to collect securely identified mycobacteria strains to create a library as the basis for the highest performance in mycobacteria identification.

Twenty-seven laboratories spread across 10 countries have provided well-characterized clinical strains from which more than 480 reference entries have been derived, improving significantly the strain coverage for clinical analyses.



▲ Mass Spectra of *Mycobacterium peregrinum* DSM 43271^T cultivated on Löwenstein-Jensen medium (top) and in MGIT™ tube (bottom), using the MycoEX protocol.

Mycobacteria Library

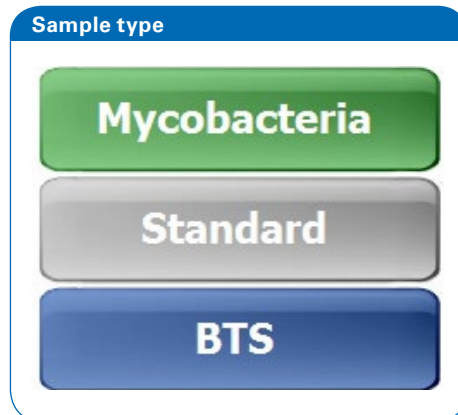
178 species entries

<i>M. abscessus</i>	<i>M. diernhoferi</i>	<i>M. kyorinense</i>	<i>M. poriferae</i>
<i>M. africanum</i>	<i>M. doricum</i>	<i>M. lacus</i>	<i>M. pseudoshottsii</i>
<i>M. agri</i>	<i>M. duvalii</i>	<i>M. lehmannii</i>	<i>M. psychrotolerans</i>
<i>M. aichiense</i>	<i>M. eburneum</i>	<i>M. lentiflavum</i>	<i>M. pulveris</i>
<i>M. algericum</i>	<i>M. elephantis</i>	<i>M. litorale</i>	<i>M. pyrenivorans</i>
<i>M. alsense</i>	<i>M. engbaekii</i>	<i>M. llatzerense</i>	<i>M. rhodesiae</i>
<i>M. alvei</i>	<i>M. europaeum</i>	<i>M. longobardum</i>	<i>M. riyadhense</i>
<i>M. angelicum</i>	<i>M. fallax</i>	<i>M. lutetiense</i>	<i>M. rufum</i>
<i>M. anyangense</i>	<i>M. farcinogenes</i>	<i>M. madagascariense</i>	<i>M. rutilum</i>
<i>M. aquaticum</i>	<i>M. flavescens</i>	<i>M. mageritense</i>	<i>M. salmoniphilum</i>
<i>M. arabiense</i>	<i>M. florentinum</i>	<i>M. malmoense</i>	<i>M. saopaulense</i>
<i>M. arcueilense</i>	<i>M. fluoranthenivorans</i>	<i>M. mantenii</i>	<i>M. sarraceniae</i>
<i>M. aromaticivorans</i>	<i>M. fortuitum</i>	<i>M. marinum</i>	<i>M. saskatchewanense</i>
<i>M. arosiense</i>	<i>M. fragae</i>	<i>M. marseillense</i>	<i>M. scrofulaceum</i>
<i>M. arupense</i>	<i>M. franklinii</i>	<i>M. microti</i>	<i>M. sediminis</i>
<i>M. asiaticum</i>	<i>M. frederiksbergense</i>	<i>M. minnesotense</i>	<i>M. senegalense</i>
<i>M. aubagnense</i>	<i>M. gadium</i>	<i>M. monacense</i>	<i>M. senuense</i>
<i>M. aurum</i>	<i>M. gastrii</i>	<i>M. montefiorensis</i>	<i>M. seoulense</i>
<i>M. austroafricanum</i>	<i>M. genavense</i>	<i>M. montmartrensis</i>	<i>M. septicum</i>
<i>M. avium</i>	<i>M. gilvum</i>	<i>M. moriokaense</i>	<i>M. setense</i>
<i>M. bacteremicum</i>	<i>M. goodii</i>	<i>M. mucogenicum</i>	<i>M. sherrisii</i>
<i>M. boenickei</i>	<i>M. gordonae</i>	<i>M. murale</i>	<i>M. shimoidae</i>
<i>M. bohemicum</i>	<i>M. grossiae</i>	<i>M. nebraskense</i>	<i>M. shinjukuense</i>
<i>M. botniense</i>	<i>M. haemophilum</i>	<i>M. neoaurum</i>	<i>M. simiae</i>
<i>M. bovis</i>	<i>M. hassiacum</i>	<i>M. neumannii</i>	<i>M. smegmatis</i>
<i>M. bourgelatii</i>	<i>M. heckeshornense</i>	<i>M. neworleansense</i>	<i>M. sphagni</i>
<i>M. branderi</i>	<i>M. heidelbergense</i>	<i>M. nonchromogenicum</i>	<i>M. stephanolepidis</i>
<i>M. brisbanense</i>	<i>M. helvum</i>	<i>M. noviomagense</i>	<i>M. stomatopiae</i>
<i>M. brumae</i>	<i>M. heraklionense</i>	<i>M. novocastrensis</i>	<i>M. szulgai</i>
<i>M. canariensis</i>	<i>M. hiberniae</i>	<i>M. obuense</i>	<i>M. talmoniae</i>
<i>M. caprae</i>	<i>M. hippocampi</i>	<i>M. pallens</i>	<i>M. terrae</i>
<i>M. celatum</i>	<i>M. hodleri</i>	<i>M. palustre</i>	<i>M. thermoresistibile</i>
<i>M. celeriflavum</i>	<i>M. holsaticum</i>	<i>M. paraense</i>	<i>M. tokaiense</i>
<i>M. chelonae</i>	<i>M. houstonense</i>	<i>M. paraffinicum</i>	<i>M. triplex</i>
<i>M. chimaera</i>	<i>M. immunogenum</i>	<i>M. parafortuitum</i>	<i>M. triviale</i>
<i>M. chitae</i>	<i>M. insubricum</i>	<i>M. paragordonae</i>	<i>M. tuberculosis</i>
<i>M. chlorophenolicum</i>	<i>M. interjectum</i>	<i>M. parakoreense</i>	<i>M. tusciae</i>
<i>M. chubuense</i>	<i>M. intermedium</i>	<i>M. parascrofulaceum</i>	<i>M. vaccae</i>
<i>M. colombiense</i>	<i>M. intracellulare</i>	<i>M. paraseoulense</i>	<i>M. vanbaalenii</i>
<i>M. conceptionense</i>	<i>M. iranikum</i>	<i>M. paraterrae</i>	<i>M. virginiae</i>
<i>M. confluentis</i>	<i>M. kansasii</i>	<i>M. parmense</i>	<i>M. vulnerans</i>
<i>M. conspicuum</i>	<i>M. komossense</i>	<i>M. peregrinum</i>	<i>M. wolinskyi</i>
<i>M. cookii</i>	<i>M. koreense</i>	<i>M. phlei</i>	<i>M. xenopi</i>
<i>M. cosmeticum</i>	<i>M. kubicae</i>	<i>M. phocaicum</i>	
<i>M. crocinum</i>	<i>M. kumamotoense</i>	<i>M. porcinum</i>	

High Confidence Mycobacteria Identification

The comprehensive library in combination with optimized software – including adapted thresholds for *Mycobacterium* spp. – ensures highly sensitive and specific identification in a fast and easy way.

These benefits are offered in a cost-effective suite to ensure the highest quality mycobacteria identification solution ever.



◀ Easy selection of the sample type during sample preparation for optimized data acquisition and analysis

Identification results

Sample Name	Sample ID	Organism (best match)	Score Value	Organism (second-best match)	Score Value
Mycobacterium spp (+++) (A)	unknown Mycobacterium (Mycobacteria)	Mycobacterium duvalii	2.25	Mycobacterium duvalii	2.24
Bts (+++) (A)	BTS (BTS)	Escherichia coli	2.45	Escherichia coli	2.36

◀ Results can be exported easily in a clearly structured and comprehensive report. The resultant report for each sample shows the two top matches along with their respective matching score.

Adapted thresholds for increased sensitivity

Rank (Quality)	Matched Pattern	Score Value	NCBI Identifier
1 (+++)	Mycobacterium duvalii CCUG 50278 CCUG b	2.25	39688
2 (+++)	Mycobacterium duvalii I184456 I184456 b	2.24	39688
3 (+++)	Mycobacterium duvalii DSM 43545 DSM b	2.02	39688
4 (+++)	Mycobacterium duvalii DSM 43544 DSM b	1.81	39688
5 (+)	Mycobacterium duvalii DSM 44244T DSM b	1.77	39688
6 (+)	Mycobacterium duvalii DSM 43544 DSM b L	1.67	39688
7 (+)	Mycobacterium duvalii DSM 43543 DSM b	1.64	39688
8 (-)	Mycobacterium duvalii DSM 43543 DSM b L	1.51	39688
9 (-)	Mycobacterium engbaekii DSM 45694T DSM b	1.40	188915
10 (-)	Mycobacterium gastri WC14_0114 NYDH b	1.37	1777

◀ The top ten matches, along with precise information about the closest matching strain, can also be displayed. Note the adapted thresholds for increased sensitivity.

Order information

Part-No. 1850731

MBT Mycobacteria IVD Module

Consists of the MBT Mycobacteria IVD Library and license for the MBT Mycobacteria IVD Module. Prerequisite for the module is the MBT Compass IVD software (Part-No. 1832771).

Please contact your local representative for availability in your country.
Not for sale in the USA.

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 **Bruker Daltonik GmbH**

Bremen · Germany
Phone +49 (0) 421-2205-0

ms.sales.bdal@bruker.com - www.bruker.com/microbiology

