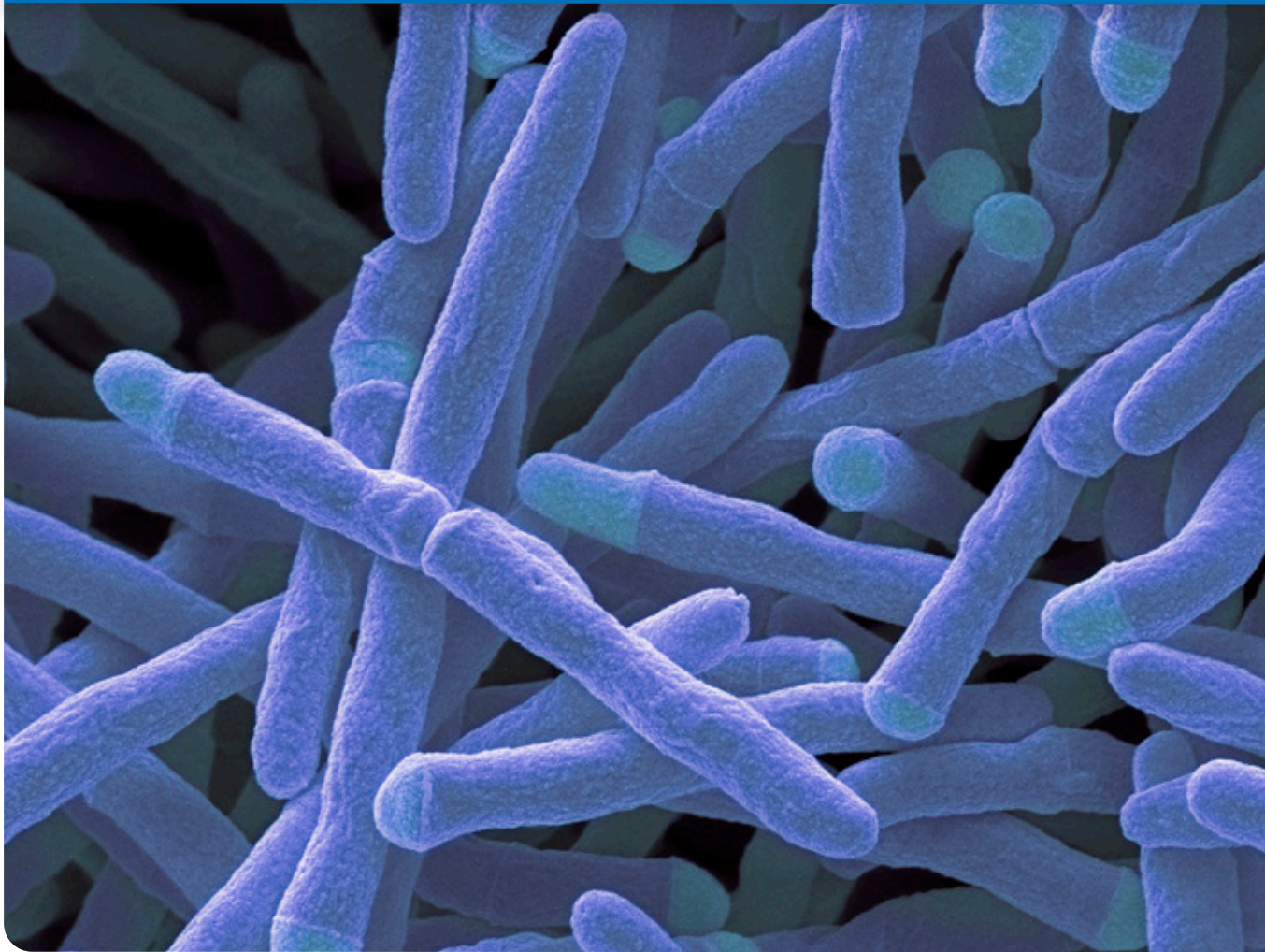


RUO



Mycobacteria Identification

● MALDI Biotyper®

Confident Mycobacteria Identification



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 immuno-compromised patients. This trend and the rise of antibiotic resistance in this genus demand improved differentiation among *Mycobacterium* species.

Covering the vast majority of Mycobacteria

The MBT Mycobacteria Library is the comprehensive solution for laboratories in need of highly reliable and fast mycobacteria identification via MALDI-TOF mass spectrometry. The MBT Mycobacteria RUO Library 7.0 covers 182 of the currently known 201 mycobacteria species. The natural variability of *Mycobacterium* species is ensured by 896 Strains - of which more than 500 are clinical isolates.

The accompanying MBT Mycobacteria RUO software module with adapted data acquisition and analysis secures high sensitivity of mycobacteria identifications.

Optimized and safe extraction

In general, *Mycobacterium* species are more demanding for MALDI-TOF MS analysis than most other bacteria. This is due to the rigid cell wall and a low metabolic activity, which is associated with a lower number of ribosomes.

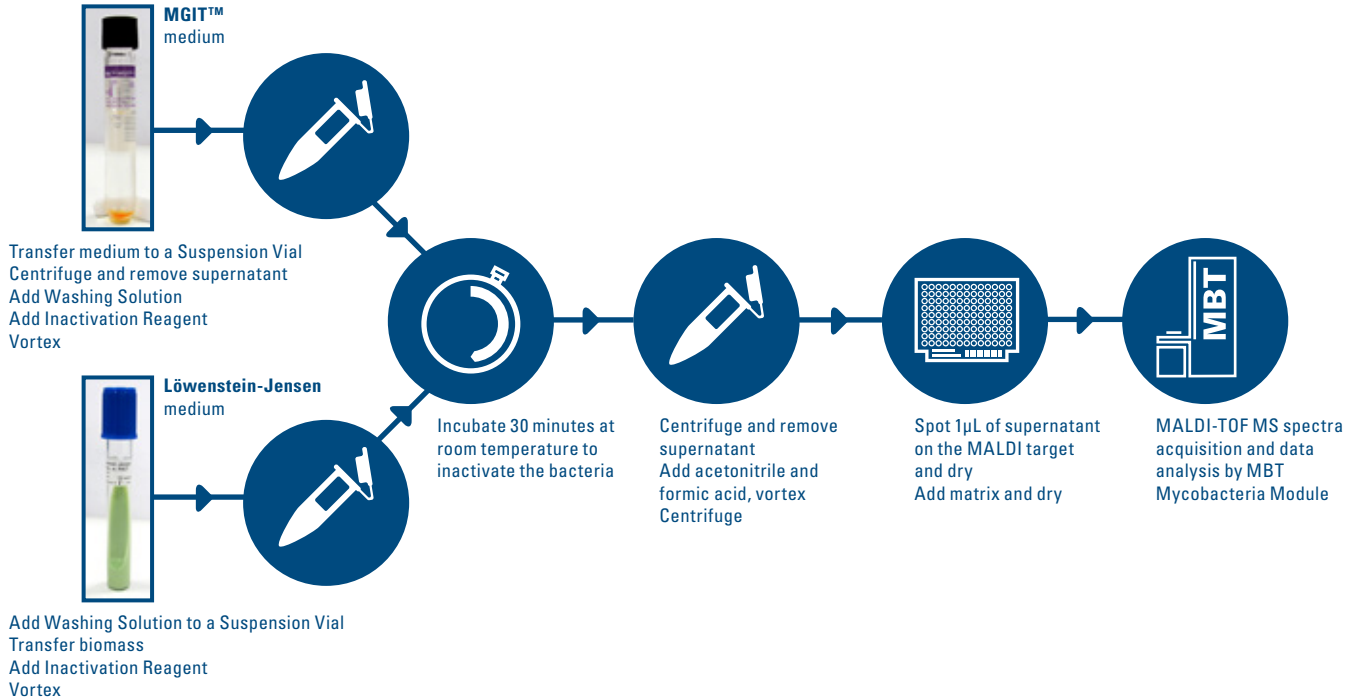
As ribosomal proteins are the main analyte molecules for microorganism identification by MALDI-TOF, an optimized sample preparation protocol is key to yielding good quality spectra.

Mycobacterium samples need to be considered as biosafety level 3 organisms until the identification result is available, hence reliable inactivation is an indispensable step of the sample preparation protocol.

MBT Mycobacteria Kit (RUO)

One workflow for solid media and liquid cultures

The new MBT Mycobacteria Kit offers a dedicated sample preparation method for *Mycobacterium* spp. cultivated in liquid as well as on solid media. Unlike other procedures, the inactivation method of this kit does not require boiling but comprises a convenient and user-friendly incubation of the bacteria with an Inactivation Reagent, at room temperature. Additionally, the MBT Mycobacteria Kit reduces the overall hands-on time from more than 1 hour to less than 45 minutes.



One reference library 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.

Thirty laboratories spread across 11 countries have provided well-characterized clinical strains from which more than 580 reference entries have been derived, improving significantly the strain coverage for clinical analyses.

Mycobacteria Library

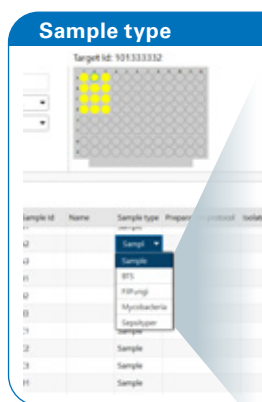
182 species entries

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

MBT Mycobacteria software module

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 solution to ensure a high quality mycobacteria identification.



Sample
BTS
FilFungi
Mycobacteria
Sepsityper

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

Result overview table--start						
Sample Id (Type)	Target Pos.	Organism (best match)	log(score) (Conf.)	Organism (second best match)	log(score) (Conf.)	Consistency
A1 (Mycobacteria)	A1	Mycobacterium duvalii	2.25 (+++)	Mycobacterium duvalii	2.24 (+++)	(A)
BTS (BTS)	H12	Escherichia coli	2.45 (+++)	Escherichia coli	2.38 (+++)	(A)

Result overview table--end

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	Matched Pattern	log(score) (Conf.)	NCBI Identifier
1	Mycobacterium duvalii CCUG 50278 CCUG b	2.25 (+++)	39688
2	Mycobacterium duvalii 1184456 IIUB b	2.24 (+++)	39688
3	Mycobacterium duvalii DSM 43545 DSM b	2.02 (+++)	39688
4	Mycobacterium duvalii DSM 43544 DSM b	1.84 (+++)	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	1.19 (+)	188915
10	Mycobacterium gastri WC14_0114 NYDH b	1.17 (+)	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. 1850766

MBT Mycobacteria Library

Consists of the MBT Mycobacteria Library and license for the MBT Mycobacteria Module. Prerequisite for the module is the MBT Compass software.

Part-No. 1889119

MBT Mycobacteria Kit

Consists of

- Suspension Vials (50)
- Inactivation Reagent (2 x 30 mL)
- Washing Solution (2 x 10 mL)



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As of May 2021, Bruker Daltonik GmbH is now Bruker Daltonics GmbH & Co. KG.

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