

MALDI Biotyper®

Filamentous Fungi Identification

A mighty mold solution

Innovation with Integrity

CE-IVD/RUO

Tackle the filamentous fungi challenge

The MALDI Biotyper has revolutionized the identification of microorganisms in the 21st century, setting new standards in speed, ease of use, reliability and cost-effectiveness. But even with state-of-the-art MALDI-TOF mass spectrometry, the identification of molds and multicellular fungi still persists as one of the most challenging aspects of microbiology. This can be mainly attributed to the effects of varying culture conditions.

To facilitate the identification of these microorganisms, Bruker has developed a cultivation method supporting creation of reference spectra for the MBT HT Filamentous Fungi Modules, and a standard workflow for identification.

The MBT HT Filamentous Fungi Modules combine a comprehensive library of reference spectra with an optimized software module, leading to a high identification success rate.



A standardized reference library

In order to reduce the effects of culture conditions on the mass spectrum and to aid in the formation of a uniform mycelium, Bruker developed a liquid based cultivation method, standardizing the physiological status. This method has been used to create reproducible reference spectra for the respective libraries, which can be used for identification of front mycelium harvested directly from regular agar.

To create the reference library, tubes with liquid medium have been inoculated with the fungi and placed on a rotator to incubate overnight or until enough biological material was observed.

This standardized Liquid Cultivation method prevents the germination process and the formation of spores, which, in turn, permits the creation of reproducible library entries.

As a consequence, identification of filamentous fungi by isolation of their mycelium enables fast and reliable species identification.

MBT HT Filamentous Fungi IVD Module Library

MBT HT Filamentous Fungi Module Library

Versions 2024, covering
225 species/species groups

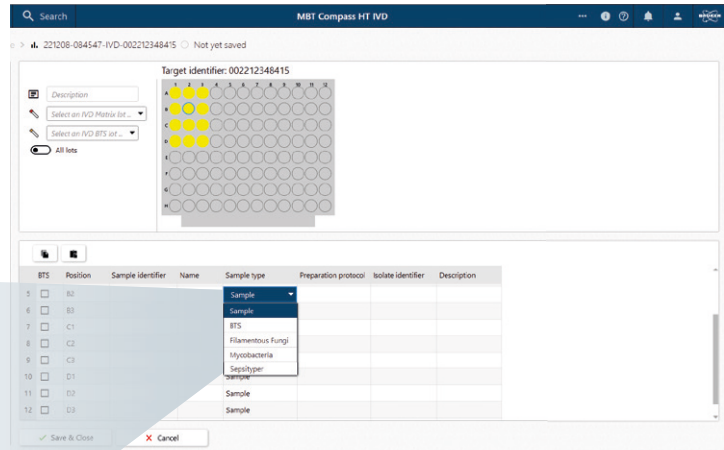
More than a library

The MBT HT Filamentous Fungi Modules combine a comprehensive library with an optimized software module, including adapted thresholds for identification of filamentous fungi.

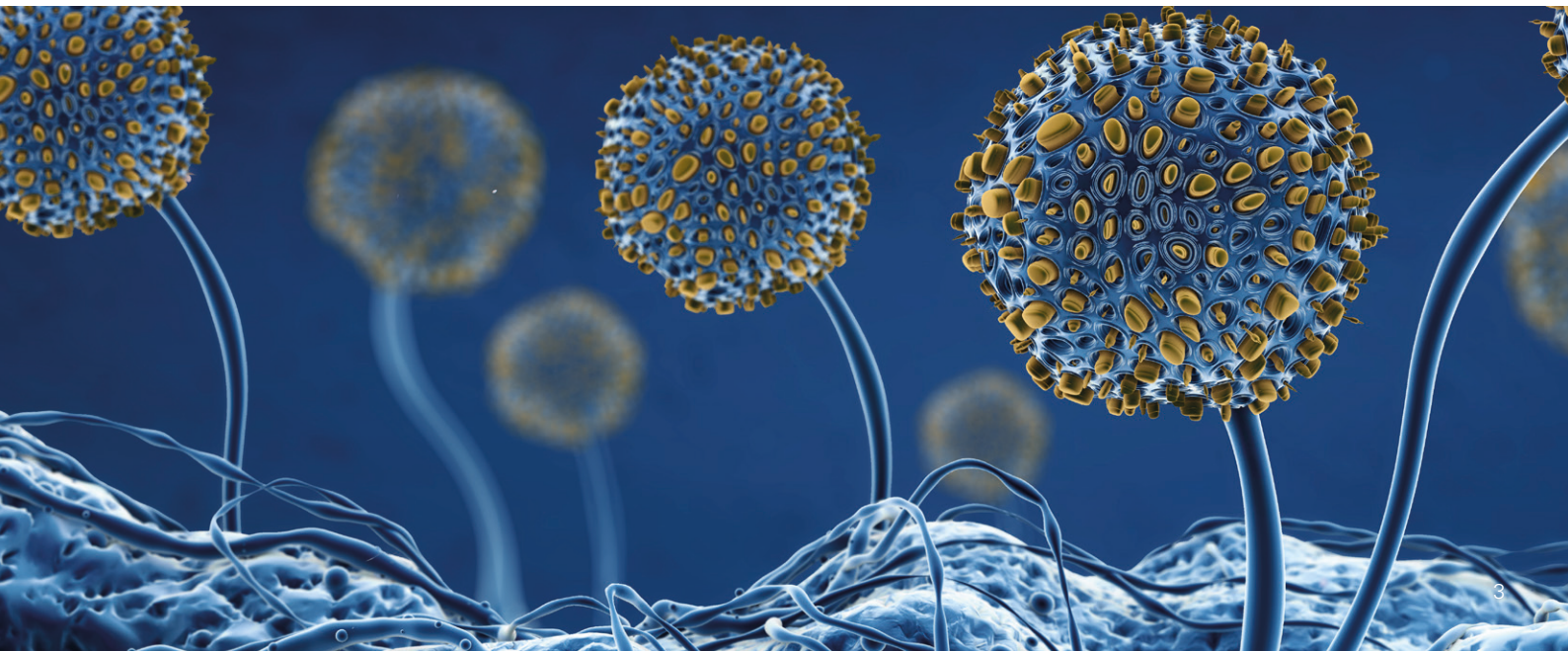
The dedicated software module triggers mass spectral acquisition using different weighting parameters than those applied for most bacteria. The optimized data acquisition and analysis contribute to a high identification success rate.

Sample
BTS
Filamentous Fungi
Mycobacteria
Sepsityper

Sample type



Easy selection of the sample type while setting up the run for optimized data acquisition and analysis



Your easy daily workflow

Despite being challenging microorganisms, sample preparation of filamentous fungi for identification by the MALDI Biotyper is stunningly easy with our Mycelium Transfer (MyT) procedure. The simple yet successful MyT method is in fact a modified extended Direct Transfer (eDT) and enables the microbiologist to achieve high identification success rates for most of the filamentous fungi samples.

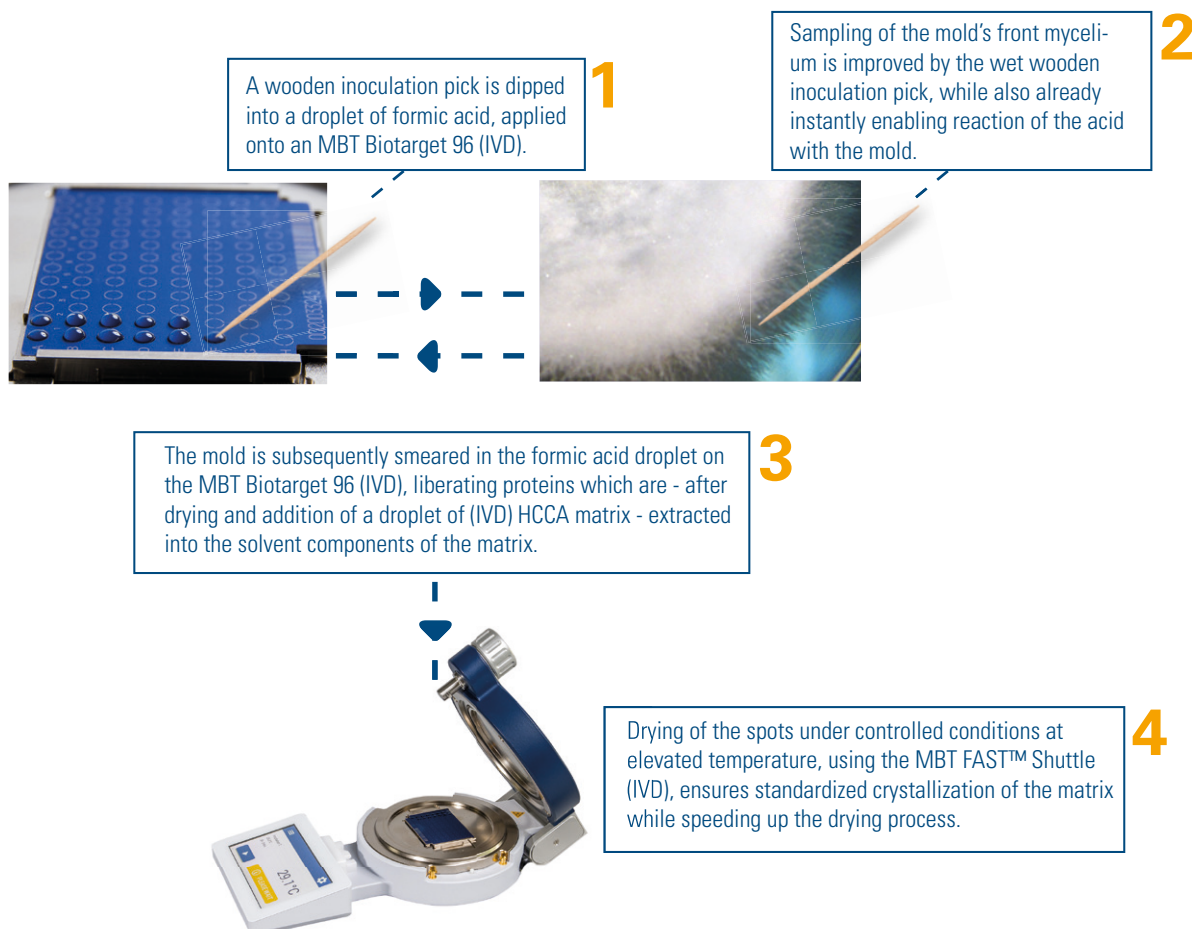
The easy MyT method can be used in most of the cases, when front mycelium is clearly visible and can be harvested easily, like in the example shown below. Hence, sample preparation is most often very similar to the straightforward and fast eDT method that is typically used for yeast.

Best results are obtained when using the disposable MBT Biotarget 96 (IVD) for sample preparation. The slightly rough surface of the

MBT Biotarget 96 (IVD) ensures an intense homogenization and effective cell disruption of the fungal material on the MALDI target. The MBT FAST™ Shuttle (IVD) can conveniently be used to accelerate the drying of the spots.

In general, good results can be obtained for the majority of samples using the new MyT method, with sample preparation on an MBT Biotarget 96 (IVD).

The Mycelium Transfer (MyT) procedure



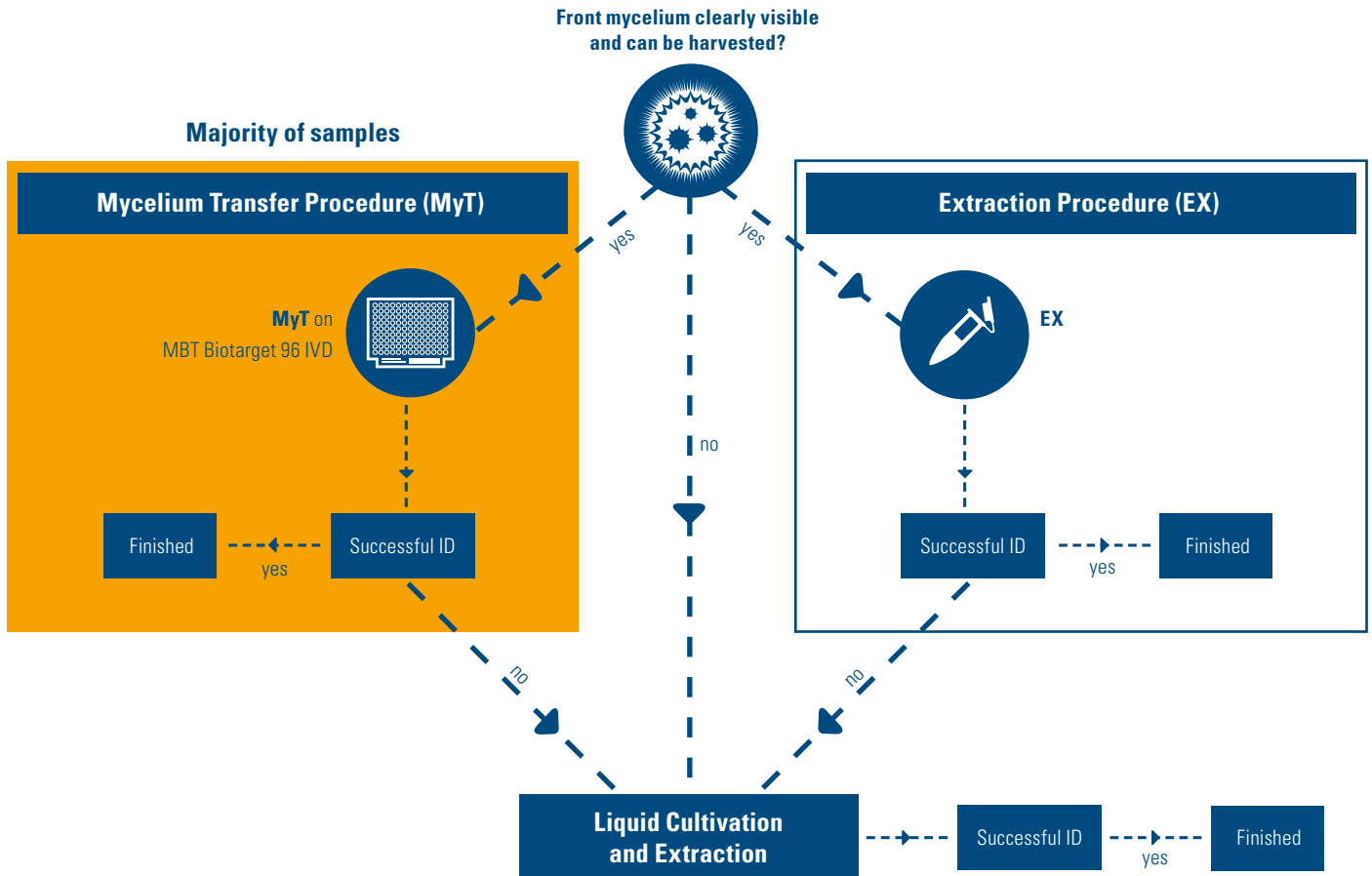
Mighty analysis directly from agar

The new MyT method requires a droplet of formic acid to be spotted first on an MBT Biotarget 96 (IVD), after which a wooden inoculation pick is dipped into that droplet. This action improves the subsequent sampling of the mold's front mycelium with the wet wooden inoculation pick, while also already instantly enabling reaction of the acid with the mold. When subsequently smearing the mold into the formic acid droplet on the MBT Biotarget 96 (IVD), mechanical disruption happens due to the slightly rough surface of the target, favorable for liberating more proteins. After drying and addition of a droplet of matrix, these proteins are extracted into the solvent components of the matrix. Surprisingly, this extremely simple and fast MyT method has resulted in an even better identification success rate than the Extraction (EX) method, which however also can be used if users prefer that method.

The slightly more time-consuming Liquid Cultivation is only used when the MyT or EX methods do not result in a reliable identification

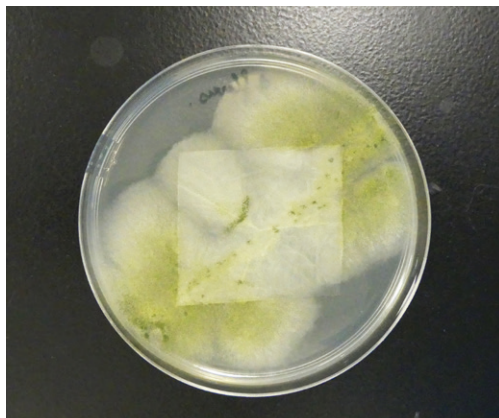
or when easy harvesting of mold material is impossible, for example due to a strong adherence to the agar. As soon as turbidity is observed in the liquid culture, which is typically after overnight cultivation, the dedicated MBT Filamentous Fungi Extraction Procedure for liquid medium samples can be applied. Only very few samples need to be prepared following this procedure.

For all sample preparation procedures, it is highly recommended to dry the spots under controlled conditions at an elevated temperature, using the MBT FAST™ Shuttle (IVD).



Boost your results by Id-Fungi Plates™

Id-Fungi Plates™ are an innovative solution allowing the selective growth of molds, yeasts and dermatophytes for MALDI-TOF analysis, on a specific culture medium with an optimized composition and pH. Its unique membrane limits the contact of the sample with the agar and makes sampling much easier, resulting in generation of better-quality MALDI-TOF spectra and an increased success rate of identified samples.



Aspergillus flavus grown on an Id-Fungi Plate™



Order information

MBT HT Filamentous Fungi IVD Module

Part No. 1877013



Consists of the MBT HT Filamentous Fungi IVD Module Library and license for the MBT HT Filamentous Fungi IVD software module. Prerequisite for the use of the module is the MBT Compass HT IVD software.

MBT Biotarget 96 IVD

Part No. 1839298



MBT FAST™ Shuttle IVD

Part No. 1878263



Not for sale in the USA.

MBT HT Filamentous Fungi Module

Part No. 188953



Consists of the MBT HT Filamentous Fungi Module Library and license for the MBT HT Filamentous Fungi software module. Prerequisite for the use of the module is the MBT Compass HT RUO or MBT Compass HT Industry software.

MBT Biotarget 96

Part No. 1840375

MBT FAST™ Shuttle

Part No. 1872847

For Research Use Only.

Not for use in clinical diagnostic procedures.

Please contact your local representative for availability in your country.

MALDI Biotyper® is a registered trademark of the Bruker group of companies.

Id-Fungi Plates™ are manufactured by Conidia SAS – France.

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