MALDI Consumables

- Your Resource for original MALDI Consumables and Supplies

Innovation with Integrity

Mass Spectrometry

Content

MALDI-TOF and TOF/TOF Mass Spectrometry

Bruker's flagship FLEX series is the global leader for MALDI applications

Bruker's FLEX series – well-known for outstanding performance, reliability, convenience, and innovative design – is a market leading technology platform. It is the gold standard for Top Down Protein Sequencing, MALDI Imaging, and Polymer Analysis. FLEX series MALDI systems include a wide range of capabilities enabling beginners and experts to achieve maximum efficiency.

Highly automated workflows enable data acquisition and in-depth analysis from the smallest amounts of samples within seconds. Intuitive and powerful software packages support data visualization and turn-key target characterization.

smartfleX series

Entry-level MALDI-TOF benchtop for QC applications. Features positive and negative ionization mode to allow access to a wide sample range.

microflex series

A benchtop MALDI-TOF instrument for fast and flexible analysis. From peptide and protein QC applications to biomarker discovery or the analysis of oligonucleotides, small molecules, polymers and quality control screening, the bench-top microflex® LRF is the perfect choice.

autoflex maX series

Innovative MALDI-TOF and TOF/TOF technology optimized for robustness enables reliable and detailed protein/peptide characterization, polymer analysis, MALDI tissue imaging, glycan analysis, and high-throughput biochemical screening.

ultraflextreme series

With its further enhanced dynamic range and the patented smartbeam-II laser the ultrafleXtreme provides outstanding spectral quality in both MS and MS/MS modes empowering tissue imaging, intact protein analysis, glycoproteomics, biologics or oligo QC, and LC-MALDI workflows.

rapifleX series

The rapifleX® series is the most advanced and adaptable MALDI-TOF and TOF/TOF system available today. With its mass resolving power of up to 50,000 and increased dynamic range, applications such as ultra-high throughput biochemical screening, top-down sequencing (e.g., of biotherapeutics), glycan structure analysis or disulfide/scrambling/ trisulfide bond determination are easily addressed.

timsTOF fleX

timsTOF fleX combines the best x-omics platform with a MALDI source designed for imaging. Intelligence derived from MALDI Imaging can guide x-omics analysis of select cell populations to deliver greater cellular specificity of LC-MS approaches and establish a new SpatialOMx benchmark for the future of pathology.

Did you know?

Bruker LabScape maintenance service agreements are not only a key component for maximizing the duty cycle and reliability of your instrument. It is also your access to a global network of application and support specialists as well as orginal parts and supplies. Depending on your contract you enjoy a basic or premium discount on Bruker MALDI consumables, dedicated training and targeted application support.

Get in touch with your local Bruker office and discover your possibilities.

LabScape®
Service & Lifecycle Support

Maintenance Service Agreements for Life Science

	LabScape Connect	LabScape Essential	LabScape Access	LabScape Complete	LabScape Complete 48
Remote Services					
Remote Monitoring*	✓	✓	✓	✓	✓
Unlimited Priority Remote Support	✓	✓	✓	✓	✓
Software services					
Compass & Data Analysis SW Upgrades	✓	✓	✓	✓	✓
Postprocessing SW Licenses & Upgrades**		discount	discount	premium discount	premium discount
Upgrade of Postprocessing Software**				1 Voucher p.a	1 Voucher p.a
Regular Maintenance					
Regular Maintenance Work and Parts		✓	✓	✓	✓
On-site Repair Services and Parts					
Unlimited Repair Visits incl. Spare Parts			✓	✓	✓
Wear and Tear Part Replacement	discount	discount	discount	✓	✓
Loaner Equipment*					✓
Compliance Services					
Operational Qualification / Perform. Validation					included
On-site Response Service Level					
On-site Response			3-5 business days	3-5 business days	2nd business day
Additional benefits					
Consumable Parts	discount	discount	discount	premium discount	premium discount
Operation Training or Applications Training	discount	discount	discount	premium discount	premium discount

* if applicable to the respective MS product
** SCiLS, MetaboScape, TASQ, Biopharma Compass

MALDI Matrices

Bruker provides a comprehensive range of high-purity MALDI matrices. All matrix substances were carefully selected and optimized to deliver unparalleled analytical performance for your application. All matrices come as solids portioned in tubes and can be dissolved on demand in appropriate solvent, which increase the shelf life. Further information on the sample preparation can be found in matrix-specific instructions for use as well as in this "Guide to MALDI Sample Preparation" available under

https://www.bruker.com/en/resources/certificates-data-sheets/ifu.html?q0=8702557

The available MALDI matrices cover almost all MALDI applications. The high-level overview of available matrices and recommended applications is summarized in the table below.

Part No.	Description	Proteins	Lipids	Peptides	Polymers	Glycans	Nucleic acids	Other samples
1877109	fleXmatrix for MALDI-2		✓	✓	✓			Metabo-lites
1869371	fleXmatrix for Lipid Imaging		✓			✓		
1869450	fleXmatrix for Peptide Imaging			✓				
1869451	fleXmatrix for Protein Imaging	✓						
8201346	2,5-Dihydroxybenzoic acid	✓	✓		✓	✓		
8209813	SDHB	(ISD)						ISD
8201344	α-Cyano-4-hydroxycinnamic acid			✓	✓			
8201345	Sinapinic acid	✓						
8231829	2,5-Dihydroxyacetophenon	✓						
8201224	3-Hydroxypicolinic acid						✓	

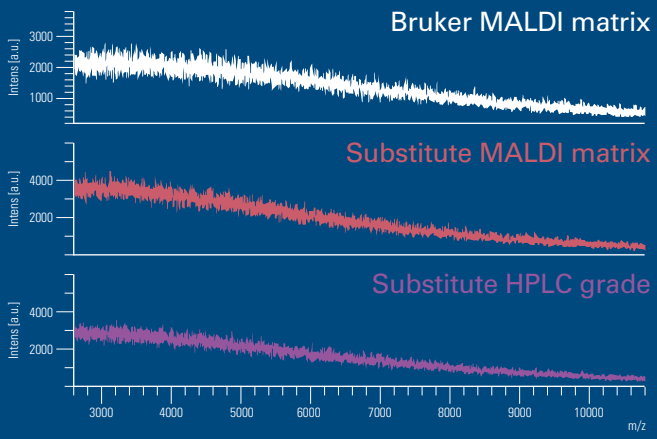
Why to use Bruker MALDI matrices?

All provided matrix substances were carefully selected and optimized for the use on Bruker MALDI instruments. With more than 25 years of experience in MALDI mass spectrometry we tested and compared almost all matrices and substitutes available on the market. None of them were satisfactory, so that we developed our own process for the refining and purification of the matrix substances and calibration standards to remove potential sources of contamination. As the result, we provide you MALDI matrices with outstanding quality criteria, which help you to achieve the best analytical figures of merit for your application. Examples of the quality criteria are purity, crystallization behavior of the matrix, background noise and signal-to-noise ratio and many others.

A comparison of the Bruker matrices with other products is shown on the selected examples below.

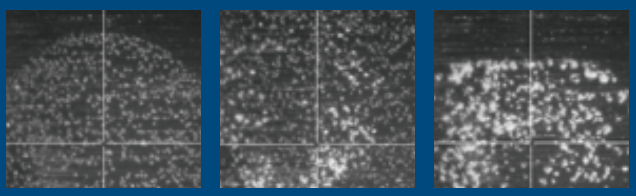
1 Background

Background and its noise have an impact on the limit of detection of your application. A comparison of the Bruker MALDI matrix with substitutes is shown in the figure on the right. It can be clearly seen that the intensity of the spectral background of the Bruker MALDI matrix is up to two times lower as compared to the substitutes. This will have a positive effect on the achievable limit of detection.



2 Crystallization behavior

Crystallization behavior of the matrix has a strong impact on the reproducibility of the MALDI measurements. The more homogeneous matrix crystals are, the more reproducible the MALDI measurements will be. The figures on the right show crystals of the HCCA matrices on the ground steel target plate. It can be seen clearly that Bruker HCCA matrix crystalizes in small, homogeneously distributed crystals. The substitute matrix for MALDI applications build large crystals. Especially when using standard chemical grade HCCA the crystals are significantly larger. The inhomogeneous distribution on the target plate also lowers the reproducibility of MALDI measurements.



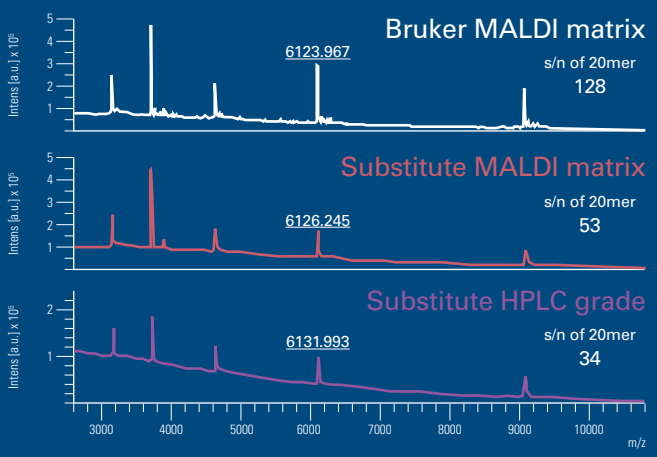
Bruker
HCCA matrix

non-Bruker
HCCA Matrix

non-Bruker
HCCA
standard quality

3 Signal

The overall quality of matrix can have an impact on the signal intensity. This can be clearly demonstrated on the MALDI spectra of the oligonucleotide calibration standard prepared using matrices from different suppliers shown on the right. The increased signal-to-noise ratio (SNR) of the Bruker matrix allows for improving the limits of detection in this example by a factor of four. The difference between a dedicated MALDI matrix and substitutes can be even stronger, when comparing it with a substitute in technical quality grade.



fleXmatrix - The key to success in MALDI MS analyses

fleXmatrix® kits enable easy and convenient preparation of matrix solutions for use in MALDI Imaging. Delivered in convenient portion sizes, fleXmatrix® simplifies and speeds up sample preparation. Different kits are available for the MALDI Imaging analysis of lipids, peptides, and proteins, and a specialized matrix specifically for MALDI-2 post-ionization analysis.

fleXmatrix® is extra pure to remove potential sources of contamination. This simplifies laboratory workflows and maximizes uptime by removing potential sources of sample or instrument contamination. fleXmatrix® comes pre-portioned for ease of preparation and dissolves rapidly for short sonication times.

fleXmatrix® is perfectly suited for use with IntelliSlides® (Part No. 1868957) and can be used with all of Bruker's MALDI Imaging platforms. It offers reliable MALDI ionization and is easily removed from tissue samples after MALDI measurement for applications such as histological staining.

Features:

- *Small portions remove the need for messy weighing; fits standard TM Sprayer methods*
- *Dissolves rapidly and completely; short sonication times is sufficient for complete mixing*
- *Easily removed from the sample postmeasurement for histological staining, immunohistochemistry or genetic analyses*
- *Perfectly suited for use with IIntelliSlides® (Part No. 1868957)*

The fleXmatrix is a dedicated application-specific solution:

- fleXmatrix for Lipid Imaging,
  Part No. 1869371
  (10 single-use tubes à 200 mg of matrix)
- fleXmatrix for Peptide Imaging,
  Part No. 1869450
  (10 single-use tubes à 200 mg of matrix)
- fleXmatrix for Protein Imaging,
  Part No. 1869451
  (10 single-use tubes à 200 mg of matrix)
- fleXmatrix for MALDI-2,
  Part No. 1877109,
  dedicated matrix for MALDI-2 post-ionization analysis
  (10 single-use tubes à 150 mg of matrix)

2,5-Dihydroxybenzoic acid, 1 g

(Part No. 8201346)

2,5-Dihydroxybenzoic acid (2,5-DHB) is one of the most widely used matrices for MALDI-TOF MS. It can be used for the analysis of a wide variety of peptides, proteins, polymers and carbohydrates, including phosphopeptides and glycoproteins.

The package consists of 5 single-use tubes à 200 mg DHB sufficient for the analysis of up to 200.000 samples when using the AnchorChip sample carrier.

SDHB, 5 g

(Part No. 8209813)

The "super-DHB" matrix is a mixture of 2,5-DHB and 2-hydroxy-5-methoxybenzoic acid. It is the preferred choice for the analysis of very large intact proteins and glycoproteins using MALDI-TOF MS. SDHB is also suitable for the generation of in-source decay (ISD) spectra of intact proteins.

The package consists of 10 single-use tubes à 500 mg SDHB sufficient for the analysis of up to 1.000.000 samples using the AnchorChip sample carrier.

2,5-Dihydroxyacetophenon, 1 g

(Part No. 8231829)

2,5-Dihydroxyacetophenon (2,5-DHAP) is a matrix substance widely used in proteomics. It can be used for the analysis of proteins in the mass range between 8 and 100 kDa. 2,5-DHAP prevents in-source decay (ISD) fragmentation and is recommended for proteomic profiling studies and for the analysis of glycoproteins.

The package consists of 5 single-use tubes à 200 mg 2,5-dihydroxyacetophenon (DHAP) sufficient for the analysis of up to 30.000 samples.

3-Hydroxypicolinic acid, 1 g

(Part No. 8201224)

3-Hydroxypicolinic acid (3-HPA) is the preferred choice for the analysis of oligonucleotides using MALDI-TOF MS.

The package consists of 5 single-use tubes à 200 mg 3-hydroxypicolinic acid (3-HPA) sufficient for the analysis of up to 5 x 10.000 samples (AnchorChip target preparation).

α-Cyano-4-hydroxycinnamic acid, 1 g

(Part No. 8201344)

α-Cyano-4-hydroxycinnamic acid (HCCA or CHCA) is a matrix widely used in proteomics. It enables highly sensitive measurements of peptides and proteins from 0.7 to 20 kDa. Additionally, it can be used for MALDI-TOF MS analysis of nucleotides.

The package consists of 5 single-use tubes à 200 mg HCCA sufficient for the analysis of up to 1.400.000 samples when using the AnchorChip sample carrier.

Sinapinic acid, 1 g

(Part No. 8201345)

Sinapinic acid is a commonly used matrix for a wide variety of peptides and proteins. It is the preferred choice for the analysis of large proteins (10–150 kDa) and some polar polymers. Sinapinic acid is also suitable for the generation of in-source decay (ISD) spectra of intact proteins.

The package consists of 5 single-use tubes à 200 mg sinapinic acid sufficient for the analysis of up to 10.000 samples.

Calibration Standards

Bruker provides a wide range of calibration standards for MALDI-TOF MS. All provided standards contain high quality calibrants, which enable calibration and testing of MALDI-TOF MS. The standards come as solids in tubes and can be dissolved on demand in appropriate solvent, which increase the shelf life. Further details on sample preparation can be found in the individual instructions for use as well as in "Guide to MALDI Sample Preparation" available under

https://www.bruker.com/en/resources/certificates-data-sheets/ifu.html?q0=8702557

The provided standards are dedicated, application specific solutions. The high-level overview of available standards as well as the recommended matrices is summarized in the table below.

Part No.	Description	Mass range	Recommended matrix
8206200	Oligonucleotide Calibration Standard	4000 to 10000 Da	3-hydroxypicolinic acid (3-HPA) (Part No. 8201224)
8217028	Oligonucleotide Calibration Standard LMW	1000 to 4000 Da	3-hydroxypicolinic acid (3-HPA) (Part No. 8201224)
8206195	Peptide Calibration Standard I	1000 to 3500 Da	α-Cyano-4-hydroxycinnamic acid (HCCA) (Part No. 8201344)
8222570	Peptide Calibration Standard II	700 to 3200 Da	α-Cyano-4-hydroxycinnamic acid (HCCA) (Part No. 8201344)
8206355	Protein Calibration Standard I	4000 to 20000 Da	α-Cyano-4-hydroxycinnamic acid (HCCA) (Part No. 8201344)
8207234	Protein Calibration Standard II	10000 to 70000 Da	sinapinic acid (Part No. 8203073)
1880825	fleXstandard Polymers	300 to 10000 Da	DCTB

Please note: All calibration standards are shipped at ambient temperatures. It is recommended to store the standard on arrival at less than 0 °C. Dissolved calibration standards should be aliquoted and frozen. It is not recommended to refreeze dissolved samples after thawing.

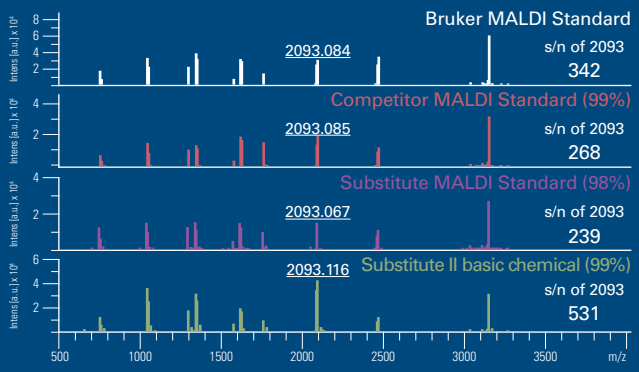
Why to use Bruker MALDI calibration standards?

In the last 25 years, we have continuously optimized all steps of the MALDI measurement in order to deliver unparalleled analytical figures of merit and meet all your requirements. Part of this optimization was a careful selection of the calibration standards for your application and instrument. The outstanding performance of Bruker calibration standards is shown in the figure below. The figures show a comparison of the MALDI spectra of Peptide Calibration Standard II from Bruker and other suppliers.

The dilution series clearly reveals superior behaviour of the Bruker standard across a wider concentration range.

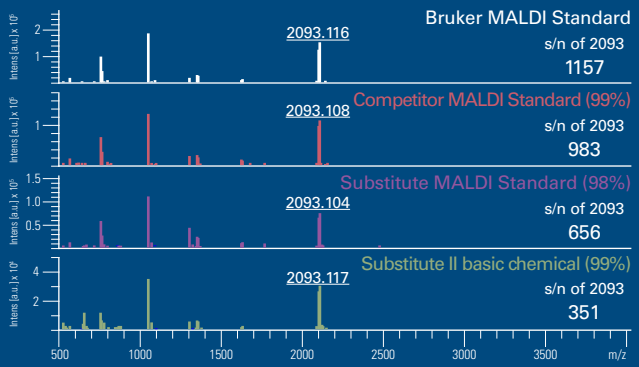
Undiluted

The undiluted samples of Peptide Calibration Standard II from Bruker and other suppliers show a comparable analytical figures of merit.



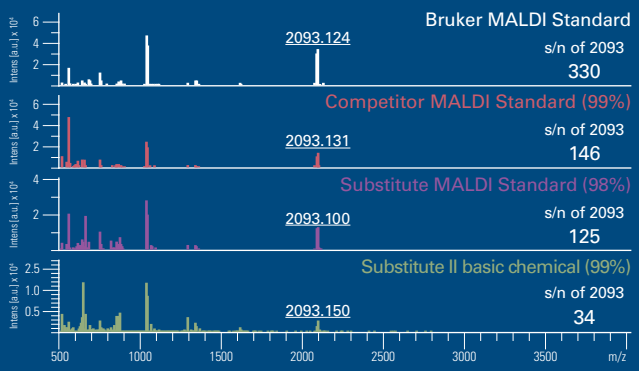
x10 Dilution

The situation changes dramatically when it comes to the analysis of diluted samples. The signal-to-noise ratio of Bruker is up to three times better, when it comes to the analysis of 10fold diluted samples.



x100 Dilution

The analysis of highly diluted MALDI spectra show a clear advantage of Bruker calibration standard as compared to substitutes. The estimated signal-to-noise ratio of Bruker standard is up to 10times better.



Oligonucleotide Calibration Standard

(Part No. 8206200)

Oligonucleotide	$[M+H]^+$ Average	[M] Average
Oligo 12 (12-mer)	3646.4	3645.4
Oligo 20 (20-mer)	6118.0	6117.0
Oligo 30 (30-mer)	9192.0	9191.0

The Oligonucleotide Calibration Standard allows calibration and testing of MALDI-TOF MS. It is designed for calibration of method parameter files of MALDI-TOF mass spectrometers in the mass range between 3500 and 10000 Da. The standard contains three oligonucleotides (12-, 20- and 30-mer). The compounds are listed in the following table together with their molecular weights.

It is recommended to use this calibration standard in combination with 3-hydroxypicolinic acid (3-HPA) (Part No. 8201224) as matrix.

The Oligonucleotide Calibration Standard is supplied in five tubes per package allowing 5x100 calibration spots.

Oligonucleotide Calibration Standard LMW

(Part No. 8217028)

Oligonucleotide	$[M+H]^+$ Average	[M] Average
Oligo 4 (4-mer)	1174.8	1173.8
Oligo 5 (5-mer)	1488.0	1487.0
Oligo 7 (7-mer)	2106.4	2105.4
Oligo 9 (9-mer)	2723.8	2722.8
Oligo 11 (11-mer)	3342.2	3341.2

The Oligonucleotide Calibration Standard LMW allows calibration and testing of MALDI-TOF MS. It is designed for calibration of method parameter files of MALDI-TOF mass spectrometers in the low mass range between 1000 and 4000 Da. The standard contains five oligonucleotides (4-, 5-, 7-, 9- and 11-mer). The compounds are listed in the following table together with their molecular weights.

It is recommended to use this calibration standard in combination with 3-hydroxypicolinic acid (3-HPA) (Part No. 8201224) as matrix.

The Oligonucleotide Calibration Standard LMW is supplied in five tubes per package allowing 5x100 calibration spots.

Peptide Calibration Standard

(Part No. 8206195)

Peptide	$[M+H]^+$ Monoisotopic	$[M+H]^+$ Average
Angiotensin II	1046.5418	1047.19
Angiotensin I	1296.6848	1297.49
Substance P	1347.7354	1348.64
Bombesin	1619.8223	1620.86
ACTH clip 1-17	2093.0862	2094.43
ACTH clip 18-39	2465.1983	2466.68
Somatostatin 28	3147.4710	3149.57

The Peptide Calibration Standard allows calibration and testing MALDI-TOF MS. It is designed for calibration of method parameter files of MALDI-TOF mass spectrometers in a low mass range between 1000 and 3500 Da. The mixture contains seven standard peptides shown in the table below.

It is recommended to use this calibration standard in combination with α-Cyano-4-hydroxycinnamic acid (HCCA) (Part No. 8201344) as matrix.

The Peptide Calibration Standard is supplied in five tubes per package allowing 5x250 calibration spots.

Peptide Calibration Standard II

(Part No. 8222570)

Peptide	$[M+H]^+$ Monoisotopic	$[M+H]^+$ Average
Bradykinin 1-7	757.3992	757.86
Angiotensin II	1046.5418	1047.19
Angiotensin I	1296.6848	1297.49
Substance P	1347.7354	1348.64
Bombesin	1619.8223	1620.86
ACTH clip 1-17	2093.0862	2094.43
ACTH clip 18-39	2465.1983	2466.68
Somatostatin 28	3147.4710	3149.57

The Peptide Calibration Standard II allows calibration and testing of MALDI-TOF MS. It is designed for calibration of method parameter files of MALDI-TOF mass spectrometers in a low mass range between 700 and 3200 Da. The compounds are listed in the following table together with their molecular weights.

It is recommended to use this calibration standard in combination with α-Cyano-4-hydroxycinnamic acid (HCCA) (Part No. 8201344) as matrix.

The Peptide Calibration Standard II is supplied in five tubes per package allowing 5x250 calibration spots.

Protein Calibration Standard I

(Part No. 8206355)

Protein	Ion	Average m/z
Insulin	$[M+H]^+$	5734.51
Ubiquitin I	$[M+H]^+$	8565.76
Cytochrom C	$[M+H]^+$	12360.97
Myoglobin	$[M+H]^+$	16952.30
Cytochrom C	$[M+2H]^{2+}$	6180.99
Myoglobin	$[M+2H]^{2+}$	8476.65

The Protein Calibration Standard I allows calibration and testing of MALDI-TOF MS. It is designed for calibration of method parameter files of MALDI-TOF mass spectrometers in a low mass range between 4000 and 20000 Da. The mixture contains four standard proteins. The compounds are listed in the following table together with their molecular weights.

It is recommended to use this calibration standard in combination with α-Cyano-4-hydroxycinnamic acid (HCCA) (Part No. 8201344) as matrix.

The Protein Calibration Standard I is supplied in five tubes per package. Each tube is sufficient for approximately 250 calibration spots.

Protein Calibration Standard II

(Part No. 8207234)

Protein	Ion	Average m/z
Trypsinogen	$[M+H]^+$	23982
Protein A	$[M+H]^+$	44613
Albumin-Bovine (BSA)	$[M+H]^+$	approx. 66.5 kDa
Protein A	$[M+2H]^{2+}$	22307
Albumin-Bovine (BSA)	$[M+2H]^{2+}$	approx. 33.3 kDa

The Protein Calibration Standard II allows calibration and testing of MALDI-TOF MS. It is designed for calibration of method parameter files of MALDI-TOF mass spectrometers in a low mass range between 10000 and 70000 Da. The mixture contains three standard proteins. The compounds are listed in the following table together with their calculated mass numbers.

It is recommended to use this calibration standard in combination with sinapinic acid (Part No. 8203073) as matrix.

The Protein Standard II is supplied in five tubes per package allowing 5x250 calibration spots. The tube box is shipped at ambient temperatures.

fleXstandard Polymers

(Part No. 1880825)

Oligomer	[M+H]⁺ Monoisotopic	[M+H]⁺ Average
$H(C_5H_8O_2)_4H$	425.2146	425.48
$H(C_5H_8O_2)_{14}H$	1425.7389	1426.63
$H(C_5H_8O_2)_{24}H$	2426.2632	2427.79
$H(C_5H_8O_2)_{34}H$	3426.7875	3428.95
$H(C_5H_8O_2)_{44}H$	4427.3118	4430.11
$H(C_5H_8O_2)_{54}H$	5427.8361	5431.27
$H(C_5H_8O_2)_{64}H$	6428.3604	6432.43
$H(C_5H_8O_2)_{74}H$	7428.8847	7433.59
$H(C_5H_8O_2)_{84}H$	8429.4090	8434.75
$H(C_5H_8O_2)_{94}H$	9429.9332	9435.91

The fleXstandard Polymers is a dedicated standard for polymer analysis using MALDI-TOF MS. It allows calibration and testing of MALDI-TOF MS. The PMMA mixture is designed for calibration of method parameter files of MALDI-TOF mass spectrometers in the mass range between 300 and 10000 Da.

It is recommended to use this calibration standard in combination with DCTB as matrix.

The fleXstandard Polymers is supplied in 15 tubes per package allowing 15x250 calibration spots.

Tryptic Digest of Bovine Serum Albumin

(Part No. 8217498)

Typical Fragments	$[M+H]^+$ Monoisotopic	$[M+H]^+$ Average
Albumin Bovine (overall)		66431.00
[161 - 167]	927.493	928.06
[66 - 75]	1163.631	1164.33
[361 - 371]	1283.711	1284.49
[402 - 412]	1305.716	1306.49
[569 - 580]	1399.693	1400.62
[360 - 371]	1439.812	1440.67
[421 - 433]	1479.795	1480.69
[347 - 359]	1567.743	1568.71
[437 - 451]	1639.938	1640.90
[469 - 482, carbami-domethylated]	1724.835	1726.01
[508 - 523]	1880.921	1882.13

The Tryptic Digest of Bovine Serum Albumin allows testing of MALDI-TOF MS in the mass range between 900 and 2100 Da. The standard can be used as a quality control standard. It is a mixture of proteolytic polypeptide produced by digestion of bovine serum albumin with the protease trypsin (bovine). Cysteines were reduced and carbamidomethylated before digestion. The following table lists the main fragments of the tryptic digest and their molecular masses.

It is recommended to use this calibration standard in combination with α-Cyano-4-hydroxycinnamic acid (HCCA) (Part No. 8201344) as matrix.

The Tryptic Digest of Bovine Serum Albumin is supplied in five tubes per package allowing 5x250 calibration spots. The tube box is shipped at ambient temperatures. It is recommended to store the standard on arrival at less than 0 °C.

BAMS Multiplexed Assay Platform

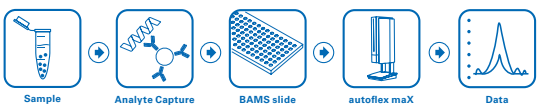
New targeted technology for speed and confidence in results

Features and benefits

- Multiplexed, high specificity immuno-affinity capture
- Label-free high-throughput microarray technology with MALDI-TOF detection
- Specifically detect multiple proteoforms and PTMs
- Kits for oncology, neurology, epigenetics and other dynamic areas of biomedical research
- Custom assay development service

ADEPTRIX

An integrated solution



Bead Assisted Mass Spectrometry (BAMS™) assay platform is an approach for developing targeted proteomic assays of almost any protein target for which a specific affinity reagent (i.e., antibody) is available.

Order Information

autoflex maX
Part No. 1858201

Adeptrix Store:
https://www.adeptrix.com/store

Target Plates

Bruker provides different targets which fits to your instrument and applications. The targets are a part of the straightforward workflows in flexImaging software, which helps you to improve the efficiency of your MALDI experiments. Bruker MALDI targets were designed to simplify and automate your measurements and to improve the traceability of your results. The available targets are presented below.

If you are unsure of which type of MALDI target is the best for your application, please contact Bruker Support.

In order to maximize the lifetime of your MALDI target we defined a protocol for cleaning MALDI target plates used in general research applications. This can be found in "Bruker Guide to MALDI Sample Preparation" available under

https://www.bruker.com/en/resources/certificates-data-sheets/ifu.html?q0=8702557

Which plate to use?

Bruker provides various target plates perfectly suited to a wide range of applications. These are ground steel MALDI target plates and patented AnchorChip targets. The AnchorChip targets differ in the spot diameter, which finally has an impact on the number of sample and calibrant spots.

1. Ground steel MALDI target plates

   It is a standard MALDI target plate for fast, simple and robust MALDI preparation of virtually any type of sample. These MALDI target plates have a highly regular fine structure on the plate surface, enabling highly homogenous co-crystallized preparations (dried droplet method).

2. AnchorChip MALDI target plates (anchor diameter 800 µm)

   It is the preferred MALDI target plate type for high-throughput MALDI measurements that are performed in unattended, fully automatic mode. Such applications include MALDI peptide mapping and subsequent MS/MS sequencing of 2D gel digests and LC-MALDI analyses of complex peptide mixtures. Sample positions on AnchorChip MALDI target plates contain "anchors"; hydrophilic patches surrounded by a hydrophobic ring. The "anchor" localizes droplets at the sample position and the hydrophobic ring prevents sample spreading and concentrates the sample into a spot 800 µm in diameter. Concurrently a significant increase in sensitivity is achieved. Also automatic measurements are facilitated due to the clear localization of the samples.

3. BigAnchor MALDI target plates (anchor diameter 2000 µm)

   BigAnchor MALDI target plates feature a wider spot diameter (2000 µm). These MALDI target plates are intended for use and provide enhanced preparation quality with MALDI matrices that are difficult to prepare on the narrow spots featured on the 800 µm AnchorChip MALDI target plates (e.g. 2,5-DHAP matrix).

4. SmallAnchor MALDI target plates (anchor diameter 400 µm)

   Preferred MALDI target plate type for the preparation of oligonucleotides and similar samples using 3-HPA as matrix.

Plain HTS MALDI Plate 1.0 mm disposable

(Part No. 1847006)

The "Plain HTS MALDI plate 1.0 mm" is used for sample deposition for MALDI time of flight mass spectrometers. The plate is made from ferritic steel and its surface is cleaned and non-polished. Small optical scratches do not affect the analytical performance. It needs to be mounted in the HTS MALDI Adapter 1.0 mm (Part No. 1847571).

This product is compatible with autoflex®, ultrafleXtreme, rapifleX®, timsTOF fleX, scimaX® and solariX series instruments.

The package contains 24 plates.

HTS MALDI Plate 1.0 mm, BC

(Part No. 1833280)

The "HTS MALDI plate 1.0 mm, BC" is used for sample deposition for MALDI time of flight mass spectrometers. The plate is made from ferritic steel and has a flatness of better than 30 µm across the plate. It has an individual barcode and teach marks. It needs to be mounted in the HTS MALDI Adapter 1.0 mm (Part No. 1847571).

This product is compatible with autoflex®, ultrafleXtreme, rapifleX®, timsTOF fleX, scimaX® and solariX series instruments.

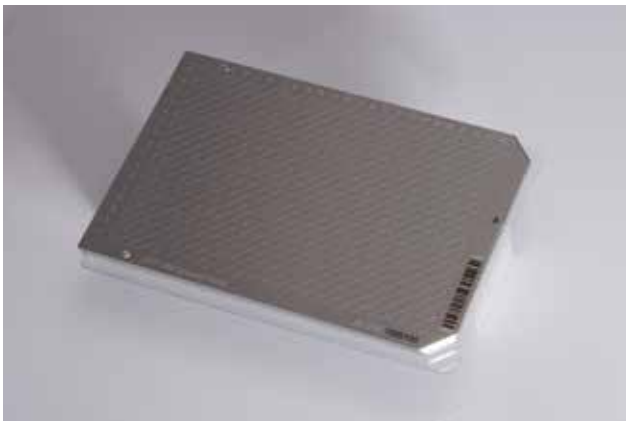
MTP 384 Target Plate

(Part No. 8280784 and 8280781)

MTP targets are reusable steel plates for MALDI-TOF MS analysis. They are used in the ScoutMTP ion source that is found in autoflex and ultraflex series instruments. The MTP target frame III (Part No. 8074115) is required to mount MTP targets in the ScoutMTP source. The target plates are delivered with transponder and barcode.

The MTP 384 target plates is available in two variants:

MTP 384 target plate ground steel BC (Part No. 8280784) used for a wide variety of applications.



MTP 384 target plate polished steel BC (Part No. 8280781) used preferably for samples dissolved in volatile organic solvents.

MTP Ion Source Shower Target

(Part No. 8226054)

With time, a MALDI-TOF ion source will become contaminated with residual MALDI matrix. MALDI matrix is an insulator and may become charged and interfere with ion optical focusing. This interference may divert parts of the ion beam away from the detector and lead to a decrease in the resolution and sensitivity of the instrument.

To restore normal performance the ion source must be cleaned. The MTP Ion Source Shower Target (patent pending) offers an easy and convenient way to clean the ion source. A stream of liquid ethanol is used to clean the first two electrodes in the instrument: the extraction plate P2 and the ground plate.

The MTP Ion Source Shower Target has an ethanol reservoir that is linked to a thin nozzle. Before loading the target into the instrument, the reservoir is half-filled with ethanol. Exerting pressure onto the surface of the liquid ethanol presses the ethanol out of the nozzle, forming a thin fluid stream that washes the source like a shower.

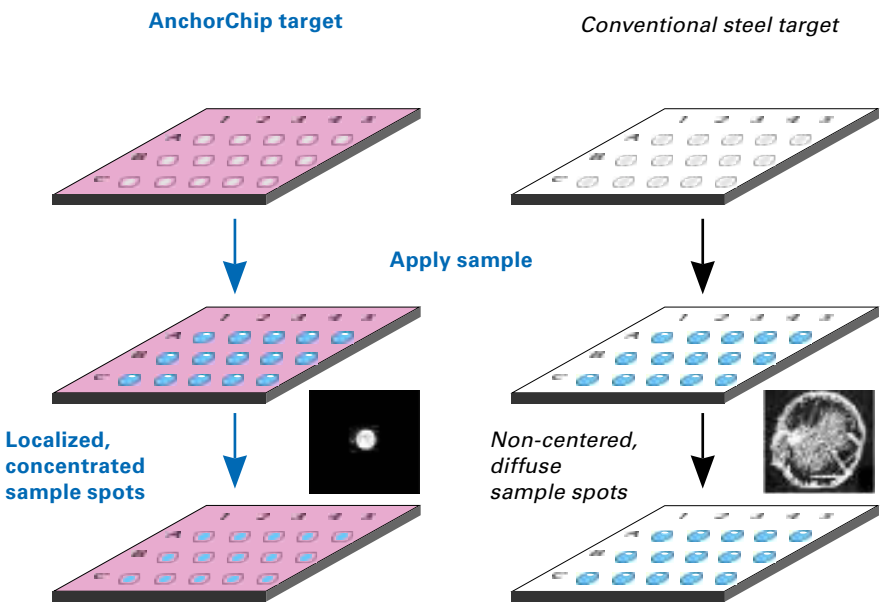
AnchorChip Targets Overview

Bruker provides a wide range of MALDI targets for the sample preparation in MALDI-TOF MS. The unique patented design simplifies the sample preparation and significantly improves the reproducibility and sensitivity of your MALDI measurements.

Sample positions on patented Bruker AnchorChip targets contain "anchors" - hydrophilic patches surrounded by a hydrophobic ring. The "anchor" localizes droplets at the sample position and the hydrophobic ring prevents sample spreading and concentrates the sample into a spot between 0.4 and 2 mm in diameter.

After correct adjustment of the target in the MALDI ion source, the localization effect ensures that every single laser shot fired throughout an automatic run will hit a sample spot. This significantly increases the efficiency of the MALDI acquisition process.

In addition, the concentration effect provides enhanced sensitivity when analyzing dilute samples. The hydrophobic coating not only repels aqueous liquids, but also polar organic solvents (for example, alcohols, acetonitrile and acetone). Therefore, AnchorChip are well-suited for use with sample solutions with a high organic solvent content, which would otherwise spread over the target.



All targets are equipped with an individual barcode for an improved traceability of results. The barcode on the target consists of a ten-digit number: the first three digits indicate the target type, and the last seven digits constitute a unique serial number.

MTP AnchorChip Targets

MTP AnchorChip targets are compatible with autoflex®, ultrafleXtreme, rapifleX®, timsTOF fleX, scimaX® and solariX series instruments.

The MTP target frame III (Part No. 8074115) is required to mount MTP targets in Bruker MALDI ion sources.

The comparison of different targets is shown in the table below.

Part No.	8280790	8280787	8280788	8280792
Product Name	MTP AnchorChip 384 BC	MTP AnchorChip 1536 BC	MTP BigAnchor 384 BC	MTP SmallAnchor 384 BC
Spot diameter (µm)	800	800	2000	400
Sample spots	384	1536	384	384
Calibrant spots	90	176	96	96
Autoteaching	Yes	No	Yes	Yes

MSP AnchorChip Targets

MSP AnchorChip Targets BC are used in the microScout ion source that is found in microfleX series instruments.

They can also be used in autoflex and ultrafleX series instruments when mounted in the MTP MSP Adapter (Part No. 8226413).

The comparison of different targets is shown in the table below.

Part No.	8280824	8280848	8280823	8280799
Product Name	MSP BigAnchor 24 BC	MSP BigAnchor 96 BC	MSP AnchorChip 96 BC	MSP 96 target ground steel BC
Spot diameter (µm)	2000	2000	800	3000
Sample spots	24	96	96	96
Calibrant spots	n/a	24	24	24

Slides

Bruker provides various single use slides for MALDI Imaging applications tailored to your needs.

Following slides are available for Bruker MALDI instruments:

- *Glass slides in standard size*
- *Big slides for large samples*
- *IntelliSlides® for simplified imaging workflows with improved traceability*

All MALDI Imaging slides are single use consumables to avoid potential sources of contamination.

Following table provides a detailed overview of the available slides

	IntelliSlides®	BigSlides	Glass Slides
Barcode	✓	n/a	n/a
Serial number	✓	n/a	n/a
Registration mark	✓	n/a	n/a
Size	75 x 25 mm	75 x 55 mm	75 x 25 mm
Quantity	50 slides	100 slides	100 slides
Adapter	MTP Slide Adapter II (Part No. 8235380)	MTP TLC Adapter (Part No. 8255595)	MTP Slide Adapter II (Part No. 8235380)
Typical applications	MALDI Guided SpatialOMx; MALDI Imaging	For larger tissue samples	For MALDI Imaging

IntelliSlides®

(Part No. 1868957)

Pre-inscribed IntelliSlides® streamline and simplify experimental set up processes in the lab and on all of Bruker's MALDI Imaging instruments.

IntelliSlides® are a single-use consumable to avoid potential sources of contamination. They fulfill all requirements for reliable MALDI ionization. With all inscriptions on the conductive slide surface, permanent registration marks (teach marks) indicate where to place the sample for alignment within the MALDI instrument.

With a unique serial number and barcode to simplify sample tracking, IntelliSlides® are also compatible with histology and microscopy techniques.

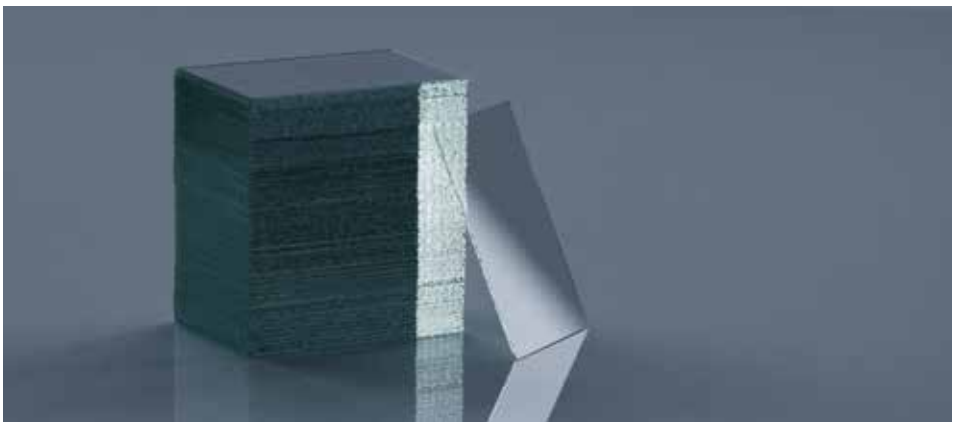
Automated image acquisition is available on Bruker's timsTOF fleX and rapifleX® platforms with flexImaging 5.1 and above.

Features

- The process of MALDI sample preparation is vastly simplified with Bruker IntelliSlides®.
- Slide markings include barcode and serial number information for sample tracking and linking with other parts of the workflow.
- Etched registration marks on IntelliSlides® indicate the conductive surface as well where to place sections onto the slide. Registration marks will not wash away in wash/staining solvents.
- With specialized software on the timsTOF fleX, IntelliSlides® allow automation of the experiment set up and registration process. Simply load prepared samples into your MALDI instrument and define regions to measure three minutes later.
- Use Bruker IntelliSlides® for accurate, high-spatial resolution SpatialOMx® mass spectrometry imaging experiments.

BigSlides for MALDI Imaging

(Part No. 8259387)



Dedicated 75 x 50 mm glass slides used for MALDI Imaging applications. These transparent slides are equipped with a transparent electrically conductive ITO coating on one side. The slides are ideally suited for the preparation of tissue sections. The slides are also compatible with histology and microscopy techniques.

The slides are used in combination with MTP TLC Adapter (Part No. 8255595).

The product is supplied as a box of 100 slides.

Glass Slides for MALDI Imaging

(Part No. 8237001)

Dedicated glass slides used for MALDI Imaging applications. Because MALDI targets must provide an electrically conductive surface, the glass slides have a transparent conductive ITO coating on one surface. Otherwise, electrostatic charges will occur. The slides are ideally suited for the preparation of tissue sections.

The slides are also compatible with histology and microscopy techniques.

The slides are used in combination with MTP Slide Adapter II (Part No. 8235380).

The product is supplied as a box of 100 slides.

Accessories

Different accessories are available for the selected instruments and applications.

The overview of the provided accessories is available in the following table:

The overview of the provided accessories is available in the following table:

Part No.	Product name	Usage
8074115	MTP Target Frame III	Required to mount MTP targets
1847571	HTS MALDI Adapter	Required to mount HTS MALDI plates
8226413	MTP MSP Adapter	Required to mount MSP target plates in the MTP ion source
8235380	MTP Slide Adapter II	Adapter for imaging applications frequently used in combination with Glass Slides (Part No. 8237001) and Cover Slips (Part No.8267942)
8255595	MTP TLC Adapter	Adapter for the hyphenation of thin-layer chromatography (TLC) and MALDI as well as for MALDI Imaging applications
8267942	Cover slips (9 x 25 mm) for ImagePrep	Used to optimize the reproducibility of the sensor readout in ImagePrep sample preparations
8261614	Spray Generator II Set	Replacement spray sheet for the MALDI Imaging sample preparation device ImagePrep

MTP Target Frame III

(Part No. 8074115)

The MTP target frame III is required to mount MTP targets in the ScoutMTP source. It is compatible with all MTP target plates except high throughput targets.

Compatible plates:

- MTP 384 target plate ground steel BC
- MTP 384 target plate polished steel BC
- MTP AnchorChip 384 BC
- MTP AnchorChip 1536 BC
- MTP BigAnchor 384 BC
- MTP SmallAnchor 384 BC

HTS MALDI Adapter

(Part No. 1847571)

The HTS MALDI Adapter 1.0 mm (P/N 1847571) is used for inserting the HTS MALDI plate, BC (P/N 1833280) or the Plain HTS MALDI plate 1.0 mm (P/N 1847006) for measuring in MALDI-TOF mass spectrometers.

The HTS MALDI Adapter is compatible with autoflex®, ultrafleXtreme, rapifleX®, timsTOF fleX, scimaX® and solariX series instruments.

MTP MSP Adapter

(Part No. 8226413)

The MTP MSP Adapter is used for entering MSP target plates. Using this adapter, all MSP target plates, which were developed for microflex series instruments, can be used on other Bruker MALDI instruments.

This adapter is compatible with autoflex®, ultrafleXtreme, rapifleX®, timsTOF fleX, scimaX® and solariX series instruments.

MTP Slide Adapter II

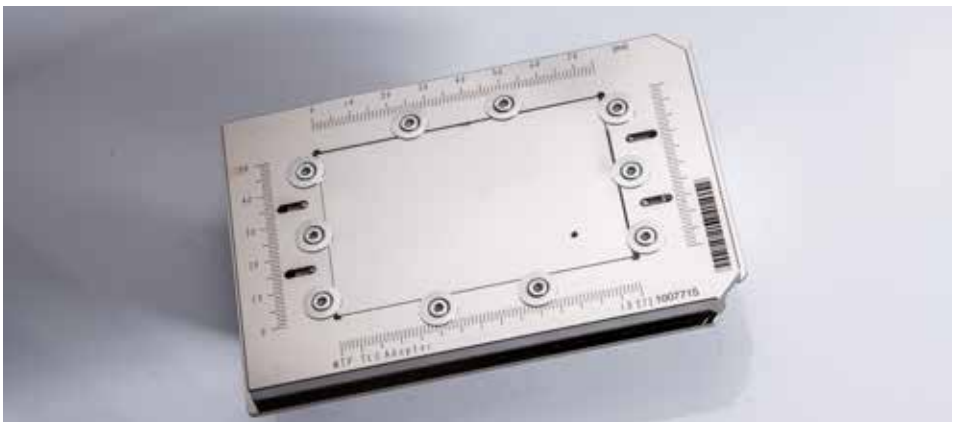
(Part No. 8235380)

MTP Slide Adapter II is a dedicated adapter for tissue imaging using the ImagePrep device. This adapter is used in combination with Glass Slides (Part No. 8237001) and Cover Slips (Part No. 8267942).

It is used for the mounting of glass slides and improves significantly the sample preparation.

MTP TLC Adapter

(Part No. 8255595)



The MTP TLC Adapter is a dual-use adapter for the hyphenation of thin-layer chromatography (TLC) and MALDI as well as for MALDI Imaging applications. This accessory enables the measurement of thin layer chromatography (TLC) with a Bruker ScoutMTP source MALDI instrument. The product is used with autoflex/ultrafleXtreme/rapifleX MALDI-TOF and TOF/TOF systems as well as MRMS and timsTOF fleX systems.

Product includes software license for TLC-MALDI. TLC plates with aluminum backing are not included. The product is compatible with BigSlides for MALDI Imaging (Part No. 8259387). MTP TLC Adapter requires Compass 1.2 SR1 (FlexControl 3.0.158) or higher.

The coupling of thin-layer chromatography and mass spectrometry is covered by the patents no. DE 199 37 438 C2, GB 2 355 581 B, and US6,414,306 B1

Cover Slips (9 x 25 mm) for ImagePrep

(Part No. 8267942)

Cover slips (9 x 25 mm) are size-optimized and recommended for use in all ImagePrep sample preparations to optimize the reproducibility of the sensor readout. The product is supplied as a box of 200 slips.

Cover slips are compatible with

- MTP Slide Adapter II (Part No. 8235380)
- Glass Slides for MALDI Imaging (Part No. 8237001)

Spray Generator II Set

(Part No. 8261614)

Spray generator II Set is a replacement spray sheet for the MALDI Imaging sample preparation device ImagePrep.

The product includes 10 pcs of spray sheets.

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