

MALDI-2 – now faster and easier with specialized fleXmatrix for MALDI-2!

Introducing the new addition to Bruker's fleXmatrix product range dedicated to high-resolution MALDI Imaging. fleXmatrix for MALDI-2 allows you to generate more images and extract more information from your samples with the unsurpassed sensitivity and ability of the timsTOF fleX with MALDI-2.



Challenge

MALDI-2 is a novel two-laser technology that significantly boosts the sensitivity of many compounds and is fully integrated and available on Bruker's timsTOF fleX platform. However, investigating and troubleshooting not only the correct reagents but also which protocols to use for experiments when setting up new techniques in a laboratory is a time consuming and potentially expensive exercise. It is therefore highly desirable to have clearly defined chemicals and protocols as a starting off point.

Solution

Bruker has taken the guesswork out of knowing what matrix to use for MALDI-2 experiments: fleXmatrix for MALDI-2 is conveniently pre-portioned allowing for simple sample preparation on using the TM Sprayer, simply dissolve the matrix and apply to your samples following our optimized instructions. Specifically developed for use with the timsTOF fleX MALDI-2, Bruker's fleXmatrix for MALDI-2 aids the detection of compounds typically suppressed in MALDI. Like other fleXmatrix products, fleXmatrix for MALDI-2 is optimized for high-resolution MALDI Imaging, with the ultra-high purity allowing for easy use and removing the introduction of artifacts and adduct ions that can interfere with data analyses, leaving your instrument to run better for longer periods of time.

Caution!

timsTOF fleX with MALDI-2 Technology will revolutionize your imaging experiments by delivering more images at higher sensitivity. fleXmatrix for MALDI-2 is the recommended matrix for MALDI-2 experiments.

Authors: Alice Ly, Annika Nyhuis;
Bruker Daltonik, Bremen.

The combination of our timsTOF fleX with MALDI-2 and specialized fleXmatrix for MALDI-2 allows for the detection of different compounds that are difficult to detect when using MALDI alone. In this example, 10 μ m thick sections from a fresh-frozen rat brain were mounted on IntelliSlidesTM. These sections were then coated with fleXmatrix for MALDI-2 (Part No. #1877109) using an established spraying protocol on the TM sprayer from HTX Technologies (Figure 1). All investigated compounds show a much higher sensitivity with MALDI-2 compared to MALDI (Figure 2). We observed a sensitivity boost by up to 2-3 orders of magnitude depending on analyte. Some analytes are detected in much higher sensitivity (A and B), while other analytes which are not detectable with traditional MALDI become visible (C). Most importantly, no information is lost with MALDI-2 (D).

Temp (°C)	# Passes	Conc (mg/ml)	Flow rate (ml/ min)	Velocity (mm/ min)	Track spacing (mm)	Pattern	Pres- sure (psi)	Gas flow rate (l/min)	Drying time (s)	Nozzle height (mm)
70	20	15	0.125	1200	3	CC	10	2	5	40

Figure 1:
TM Sprayer pro-
gram parameters
for fleXmatrix for
MALDI-2.

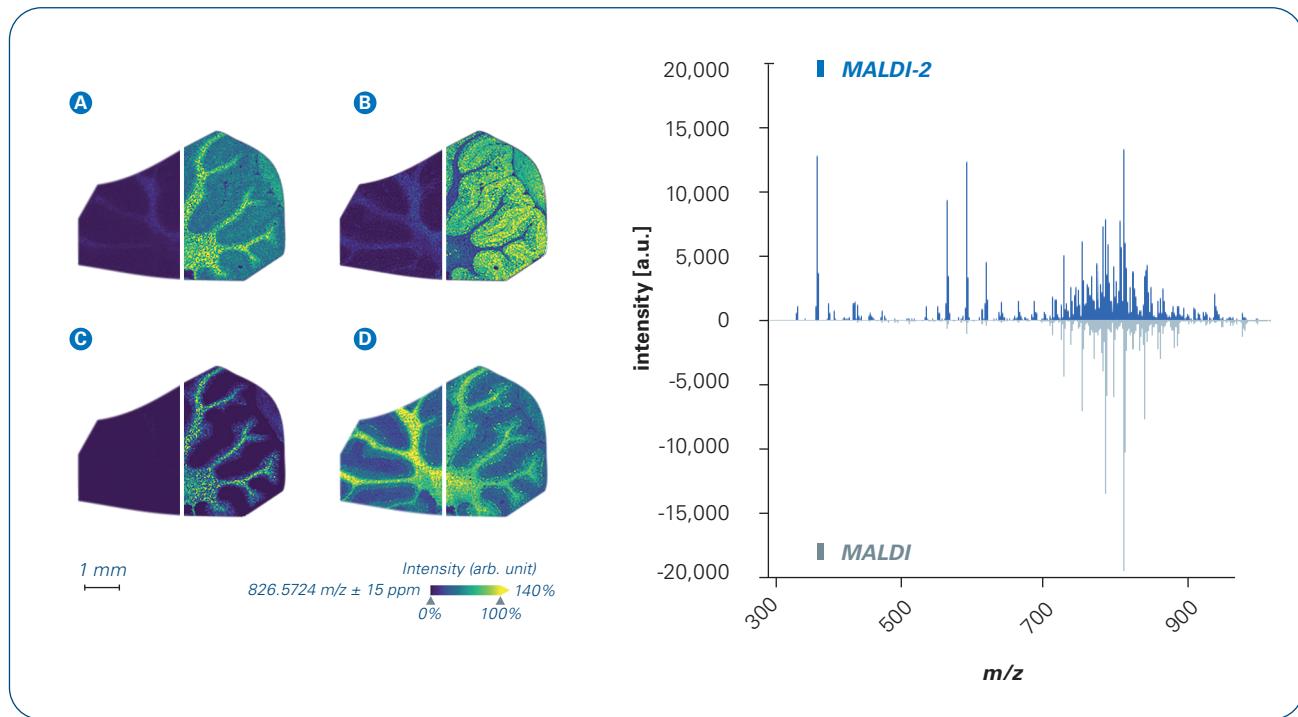


Figure 2: Example MALDI-2 data using fleXmatrix for MALDI-2.

 **Bruker Daltonics GmbH & Co. KG**

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

Bruker Scientific LLC

Billerica, MA · USA
Phone +1 (978) 663-3660



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