

DIUTHAME MS imaging of black rice

DIUTHAME has been found valid for MSI (mass spectrometry imaging) of frozen mouse brain tissue sections, but applying it to a dry sample was difficult because DIUTHAME's operating mechanism is based on capillary action. However, this paper reports the DIUTHAME-MSI results for a dry sample, using a solvent to extract the sample's

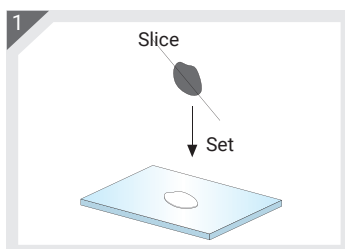


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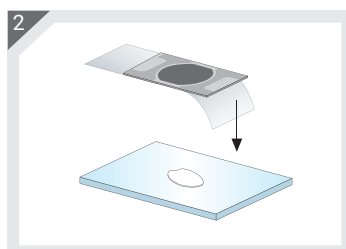
Measurement conditions

Measurement mode: Laser pitch 50 μm
 Linear, positive ion mode
 Sample: Black rice slice, 50 μm thick
 Extraction solvent: 70% AcCN

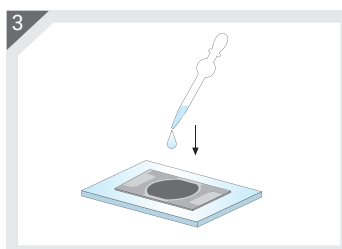
Method



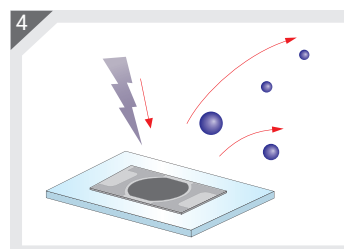
1 Set a slice of black rice on an ITO glass slide.



2 Remove the film and place the DIUTHAME on the black rice.



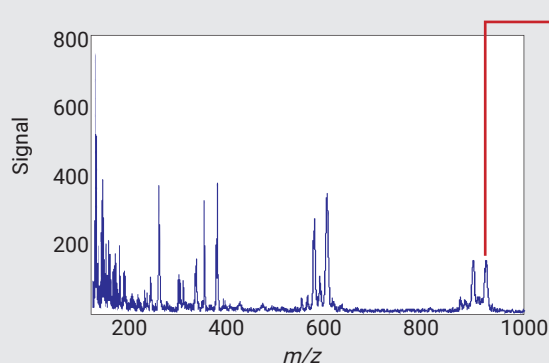
3 Drop 2 μL of 70% AcCN / 30% H_2O solution onto the DIUTHAME to extract the components of interest.



4 Start measurement after the sample dries.

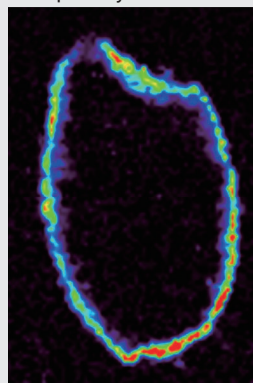
Results

The DIUTHAME-MSI results are shown below. The distribution of phosphatidylcholine was observed along the periphery of the black rice.



These results suggest that DIUTHAME-MSI can be applied to dry samples by adding a solvent to extract a sample's components.

m/z 920
Phosphatidylcholine



Optical image



Measurements were performed in collaboration with Designated Assistant Professor Keiko Kuwata, The Institute of Transformative Bio-Molecules, Nagoya University.

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HAMAMATSU PHOTONICS K.K., Electron Tube Division
 314-5, Shimokanzo, Iwata City, Shizuoka Pref., 438-0193, Japan, Telephone: (81)539/62-5248, Fax: (81)539/62-2205

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