DIU THAME®
APPLICATION NOTE

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MS imaging of chocolate

DIUTHAME, used as an alternative to matrices, consists of regularly aligned through holes of sub-micron diameters. A sample, such as chocolate, that melts due to the heat of a laser will have a laser irradiation mark with an area larger than the laser beam diameter, but if the sample is drawn into DIUTHAME's hole, there is no problem. This paper reports the MS imaging results of a chocolate cross-section using DIUTHAME (A13331-5019-1).

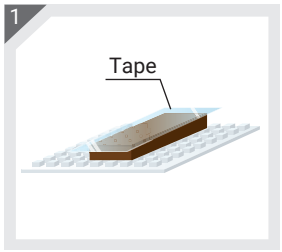
▲ Laser irradiation on chocolate slice
Laser beam setting: Φ 80 μm
Irradiation marks: Φ 170 μm

▲ A13331-5019-1

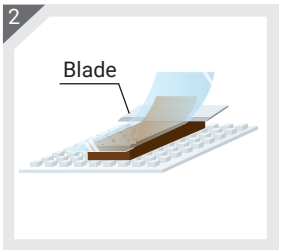
Measurement conditions

Measurement mode: Laser pitch 80 μm, positive ion, reflectron mode
Sample: Chocolate

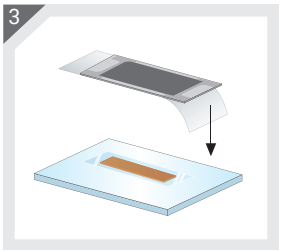
Method



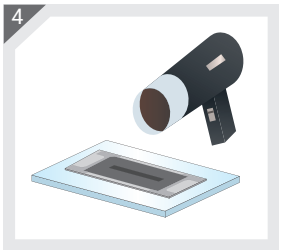
Put tape on the chocolate.



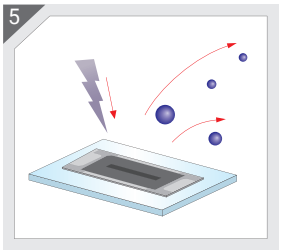
Prepare a thin-section sample by cryostat.



Place the DIUTHAME on the section.



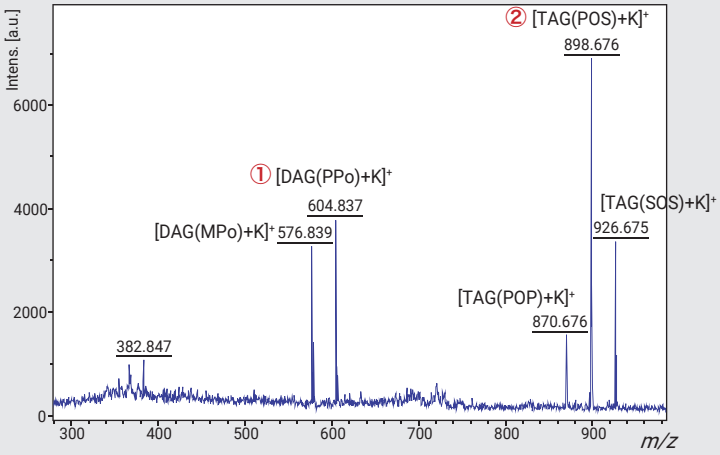
Apply heat from a blow dryer to melt the sample.

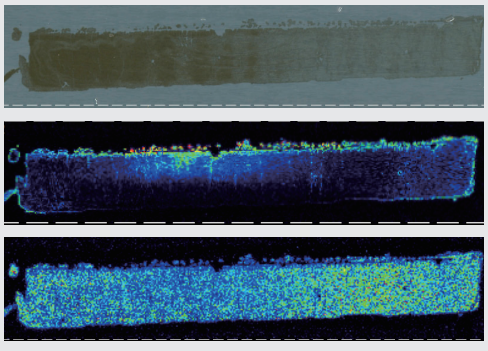


Start measurement after the sample dries.

Results

The mass spectrum and MS imaging results are shown below. DIUTHAME-MSI succeeded in obtaining a good distribution even for samples that melt with the heat of a laser, such as chocolate.





HAMAMATSU PHOTONICS K.K. www.hamamatsu.com

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

APR. 2020