

MS imaging of a flower petal using blotting method

A blotting method using DIUTHAME enables MSI (mass spectrometry imaging) without thin-sectioning a sample, which is DIUTHAME's biggest advantage. This paper reports the surface analysis of a flower petal using the DIUTHAME blotting method. Petal and leaf samples contain a high percentage of water, so it takes a long time for a MALDI mass spectrometer to reach a high vacuum level when analyzing these samples. However, the DIUTHAME blotting method does not have this problem.



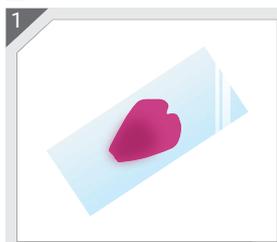
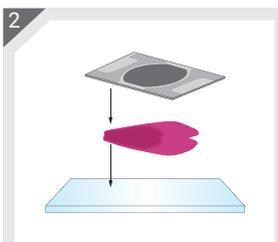
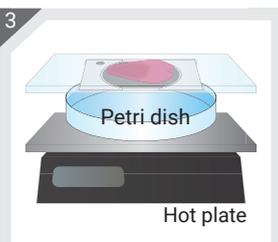
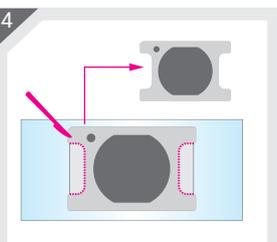
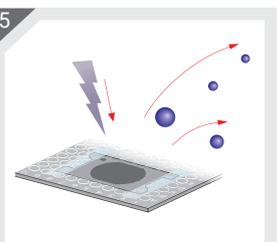
▲ A13331-18-2B
(For blotting)

Measurement conditions

Measurement mode: Laser pitch 80 μm , positive ion, reflectron mode
 Extraction solvent: 75% MeOH in 3% TFA at 70 degrees, 30 seconds
 Sample: Moss phlox petal

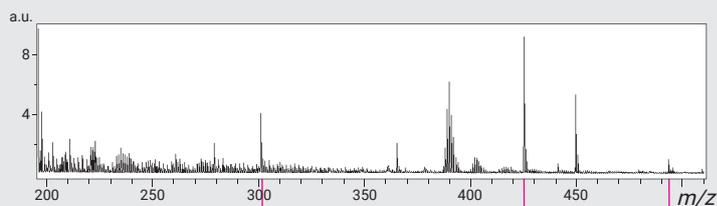


Method

- 
Stick a petal on the tape to make it flat and cut the excess tape area.
- 
Place DIUTHAME with the petal on a glass slide.
- 
Extract the sample's molecular components by utilizing the vapor emitted from the heated solvent.
- 
After the solvent dries, cut the adhesive part of DIUTHAME.
- 
Fix DIUTHAME on the measurement plate using tape and start MS imaging.

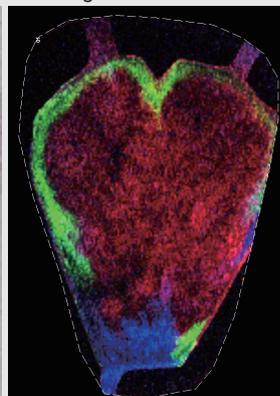
Results

The MSI results are shown below. The distribution of anthocyanin in a petal was obtained by using the DIUTHAME blotting method. These results also suggest that DIUTHAME-MSI can be conducted using tape on non-flat samples such as flower petals.

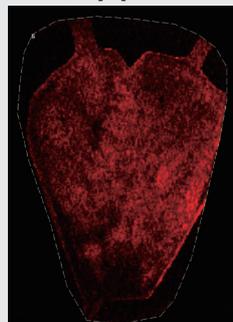


Optical image

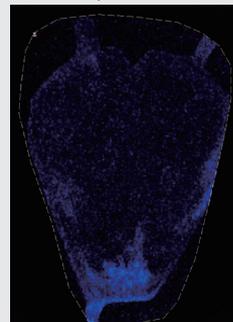
MS image



m/z 301,
Peonidin $[M]^+$



m/z 441,



m/z 493,
Malvidin + sugar $[M]^+$



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