DIUTHAME APPLICATION NOTE

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DIUTHAME-MSI for chemorepellent of slime mold using blotting method

To take MSI(Mass Spectrometry Imaging) of bacteria on culture media by MALDI is very difficult because of the following reasons;
a) Not allow to set a agar medium sample itself in MS system due to high humidity and large size.
b) Kill or destroy living samples such as slime mold if a section sample is made
c) Matrix-derived peaks may interfere in low mass region from bacteria
DIUTHAME blotting method is allowed to obtain MSI without these issues. This paper reports that MS imaging of the slime mold cultured on the agar medium is taken by DIUTHAME.
It is thought that when different kinds of slime mold approaches closely the slime mold excretes chemorepellent to avoid each other and take evasive action. The distribution of the chemorepellent was measured by MS imaging.

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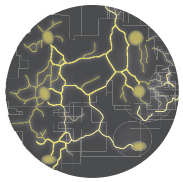
Measurement condition

Measurement mode : Positive ion mode
Sample : Chemorepellent of slime mold

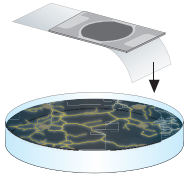
Method

1 **Culturing**



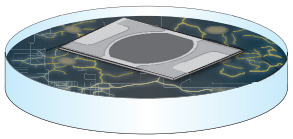
Slime mold was cultured on agar medium.

2 **Setting**



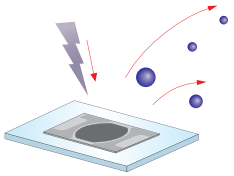
DIUTHAME was placed on the slime mold cultured on agar medium.

3 **Blotting**



The contained materials on the slime mold were blotted.

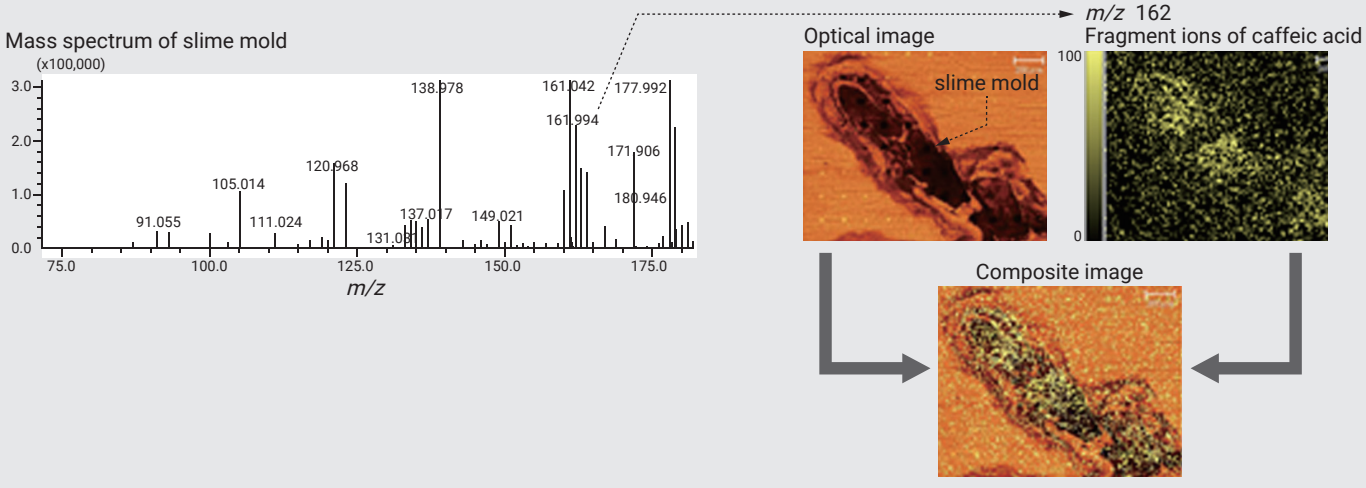
4 **Scaning**



Carefully removed the DIUTHAME from the agar medium. After drying, DIUTHAME was attached on adapter and MS imaging was taken.

Result

The MS imaging results of a slime mold on agar medium taken by blotting method are shown below.
The distribution of fragment ions of caffeic acid (*m/z* 162) indicates that caffeic acid is a slime moled chemorepellent. This suggests that the blotting method of DIUTHAME is also effective for MS imaging of the bacteria on the culture medium.



Measurements were carried out in cooperation with Professor Shunsuke Izumi, Graduate School of Integrated Sciences Hiroshima University

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