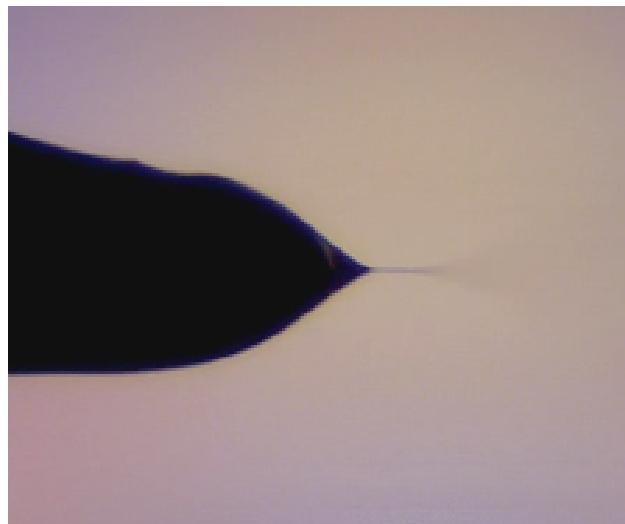


Supplemental Information

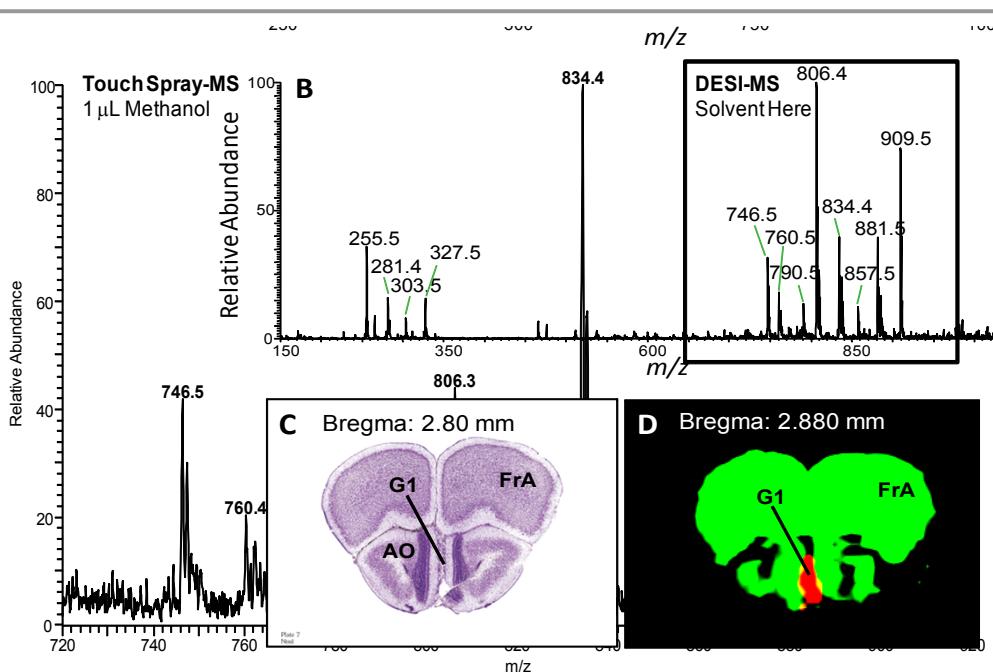
Touch Spray Mass Spectrometry for In Situ Analysis of Complex Samples

Kevin S. Kerian, Alan K. Jarmusch, and R. Graham Cooks

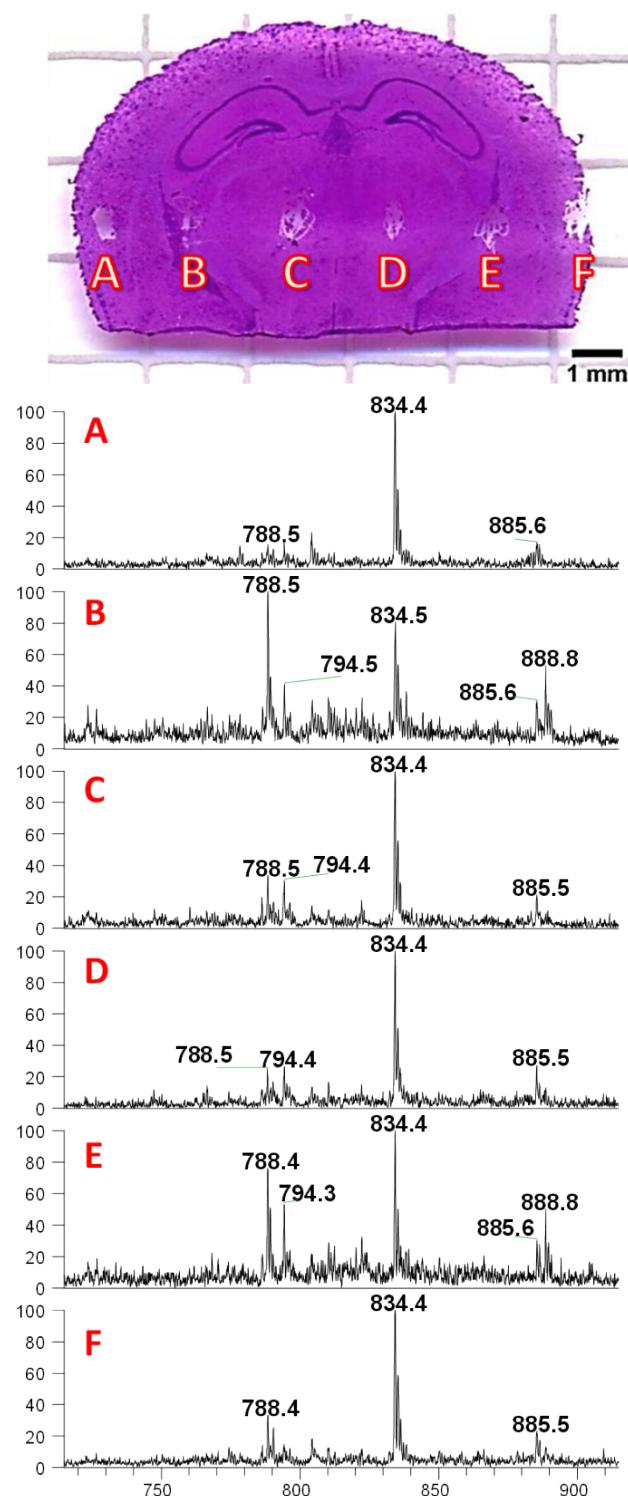
Purdue University, Department of Chemistry, 560 Oval Drive, West Lafayette, IN, USA. Fax: 7654949421;
Tel: 7654969583; E-mail: cooks@purdue.edu



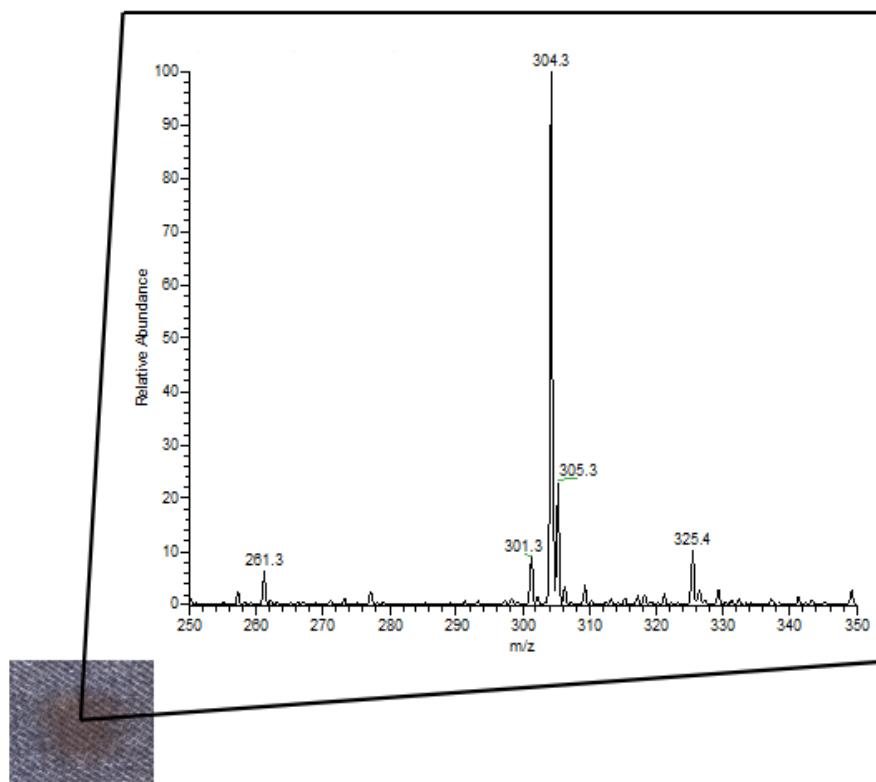
Supplemental Fig 1 Emitted droplets observed under bright-field microscopy.



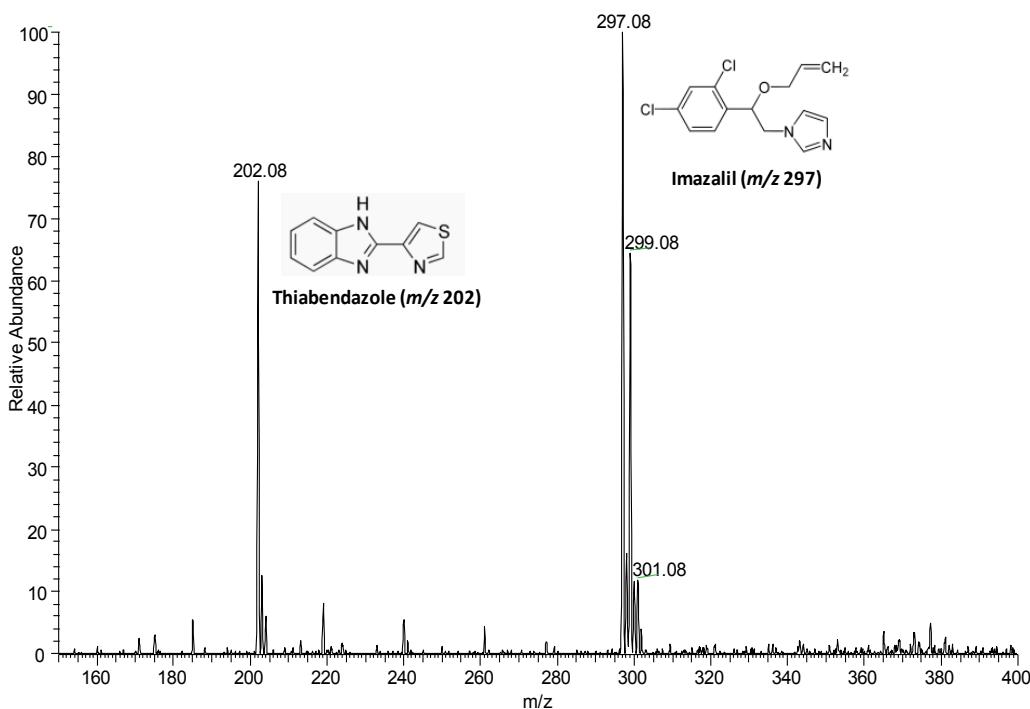
Supplemental Fig 2 Negative ion mode TS-MS spectra of a mouse olfactory bulb with DESI-MS spectra from the same region (inset). Modified from reference Eberlin et al.²³



Supplemental Fig 3 Coronal mouse brain section with six evenly spaced spots depicting the symmetry of the brain and reproducibility of TS.



Supplemental Fig 4 Positive mode TS-MS produced by touching a dried blood spot containing 10 ng of cocaine on blue cloth.

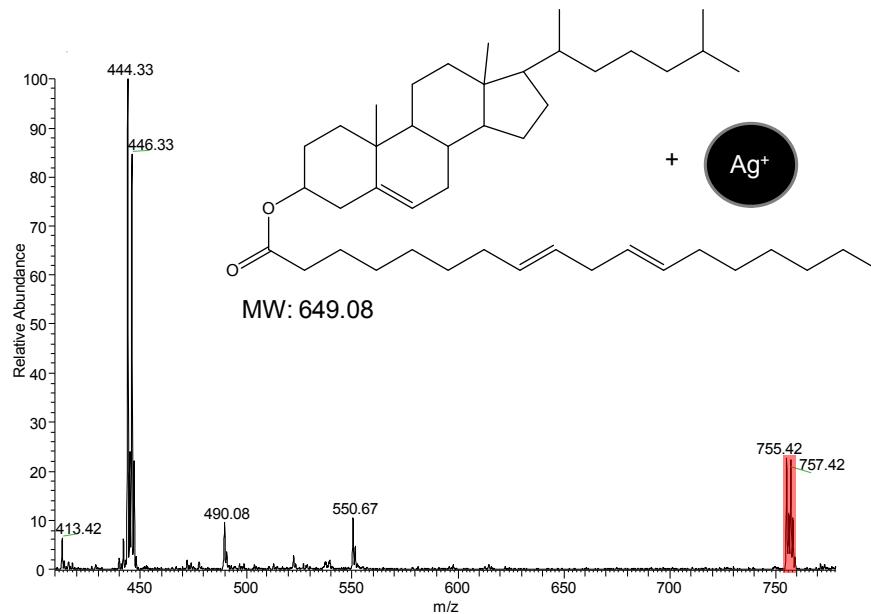


Supplemental Fig 5 Detection of imazalil and thiabendazole in positive mode TS-MS obtained from a non-organic orange.

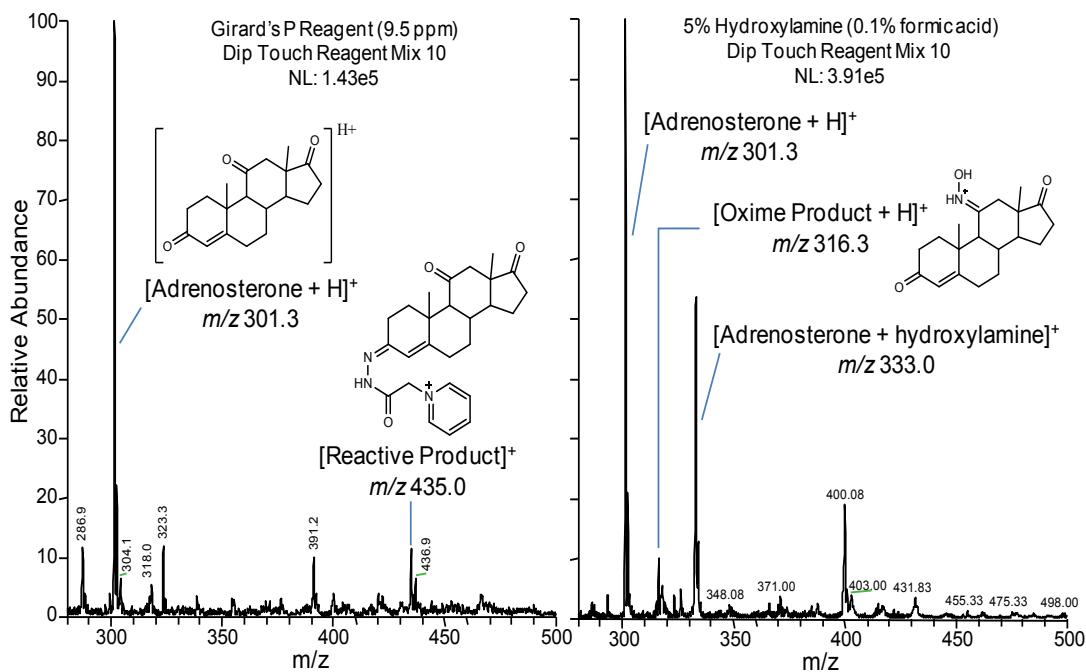
Cholesteryl linoleate – Ag⁺ adduct

8

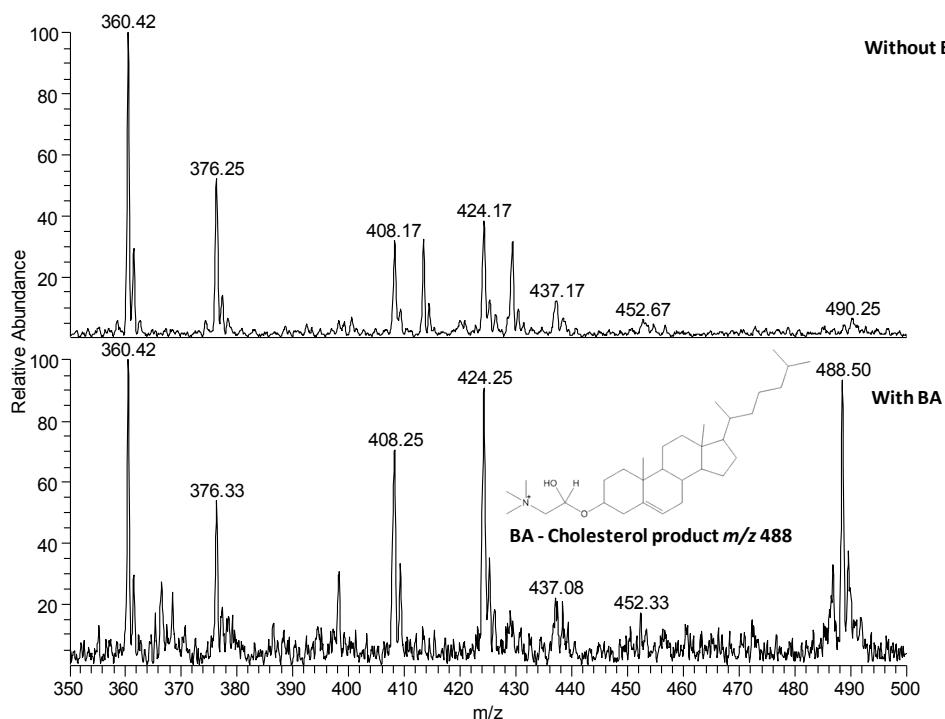
4 ppm Silver Nitrate in ACN



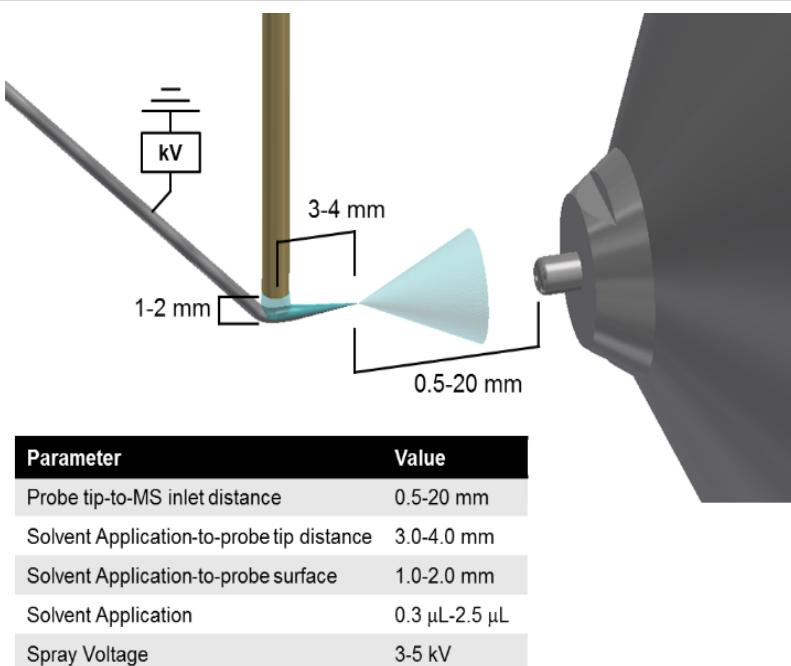
Supplemental Fig 6 Positive mode TS-MS of cholesteryl linoleate with a silver adduct from the addition of silver nitrate into the spray solvent.



Supplemental Fig 7 Positive mode reactive TS-MS using Girard's P reagent (left) and hydroxylamine (right) with adrenosterone.



Supplemental Fig 8 The top spectrum depicts positive mode TS-MS of human blood using pure MeOH as the solvent. The bottom, a positive mode TS-MS spectrum of human blood where betaine aldehyde has been added to the spray solvent to react with cholesterol, m/z 488.5.



Supplemental Fig 9 Typical values and geometries used in TS experiments.

Supplemental Table 1 Percent Error Calculations of Imatinib Calibration Curve

Concentration Imatinib (ppm)	Percent Error (%)
1.00	8.94
1.67	0.688
3.33	0.309
6.67	1.62
13.3	-2.05