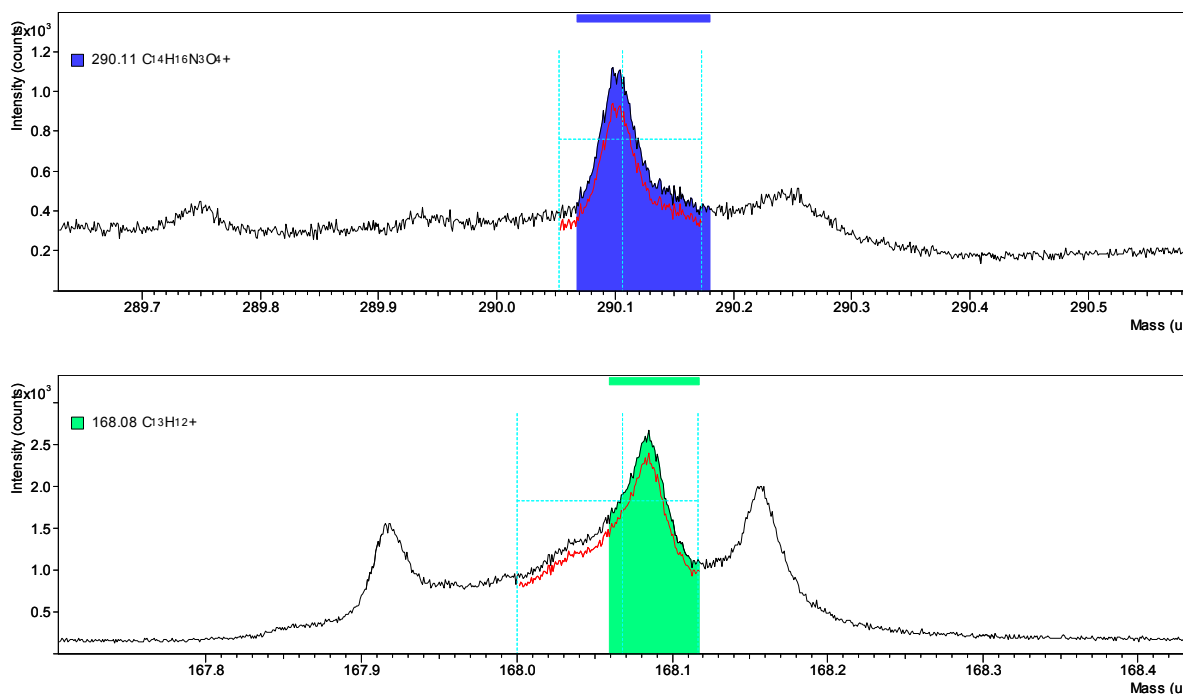


Supplemental Data - Detection of cocaine in fingerprints: dermal contact or administration?

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Supplemental Data Table 1. Calculated monoisotopic masses for analytes detected.

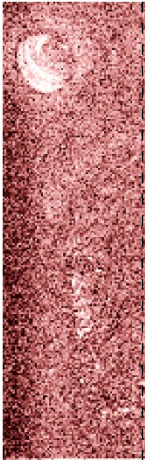
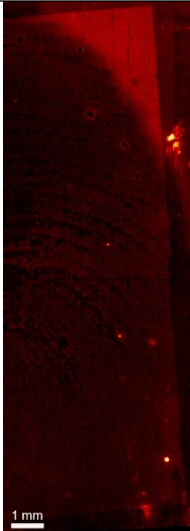
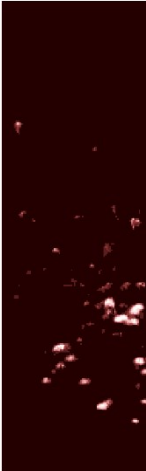
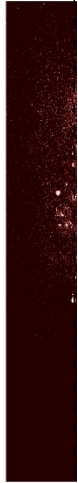
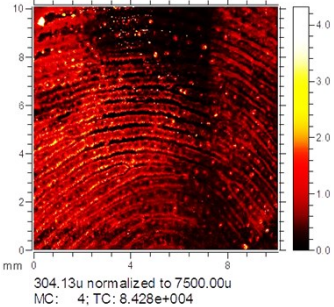

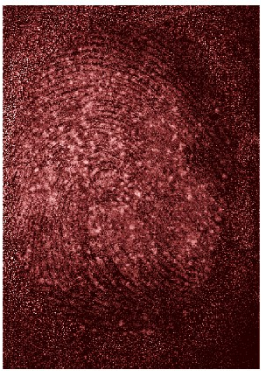
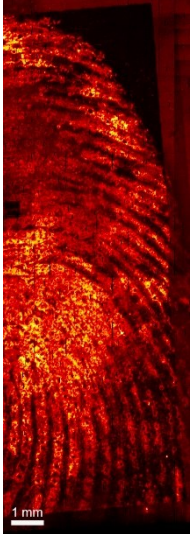
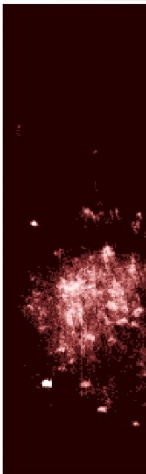
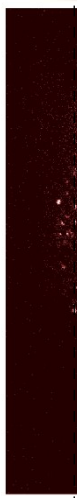
Analyte	Molecular Formula	Calculated Monoisotopic Mass (<i>m/z</i>)
Cocaine	[C ₁₇ H ₂₁ NO ₄ +H] ⁺	304.154
Benzoylecgonine	[C ₁₆ H ₁₉ NO ₄ +H] ⁺	290.139
Silicon	Si ⁺	27.977
Sodium	Na ⁺	22.990
Ceramide (40:1(2OH))	[C ₄₀ H ₇₉ NO ₄ +H] ⁺	638.608
Ditallowdimethylammonium Ions	[C ₃₄ H ₇₂ N] ⁺	494.566
	[C ₃₆ H ₇₆ N] ⁺	522.597
	[C ₃₈ H ₈₀ N] ⁺	550.629



Supplemental Data Figure 1. ToF-SIMS spectra showing peaks at *m/z* 290.11 and *m/z* 168.08, consistent with BZE and the main BZE fragment, respectively, taken from the fingerprint collected as presented from a cocaine user.

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Supplemental Data Table 2. Comparison of cocaine and BZE ion images obtained with DESI, MALDI and SIMS on fingerprints collected as presented from participants who touched or ingested cocaine.

	Ingestion			contact		
	DESI	MALDI	Water cluster SIMS	DESI	MALDI	ToF-SIMS
Cocaine		N/D				
BZE						N/D

Supplemental Data Table 3. Comparison of cocaine and BZE ion images obtained with MALDI on fingerprints collected after handwashing from participants who touched or ingested cocaine.

