

Detection and mapping of illicit drugs and metabolites in fingerprints by MALDI MS and compatibility with forensic techniques

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Supplemental material

Supplemental Figures

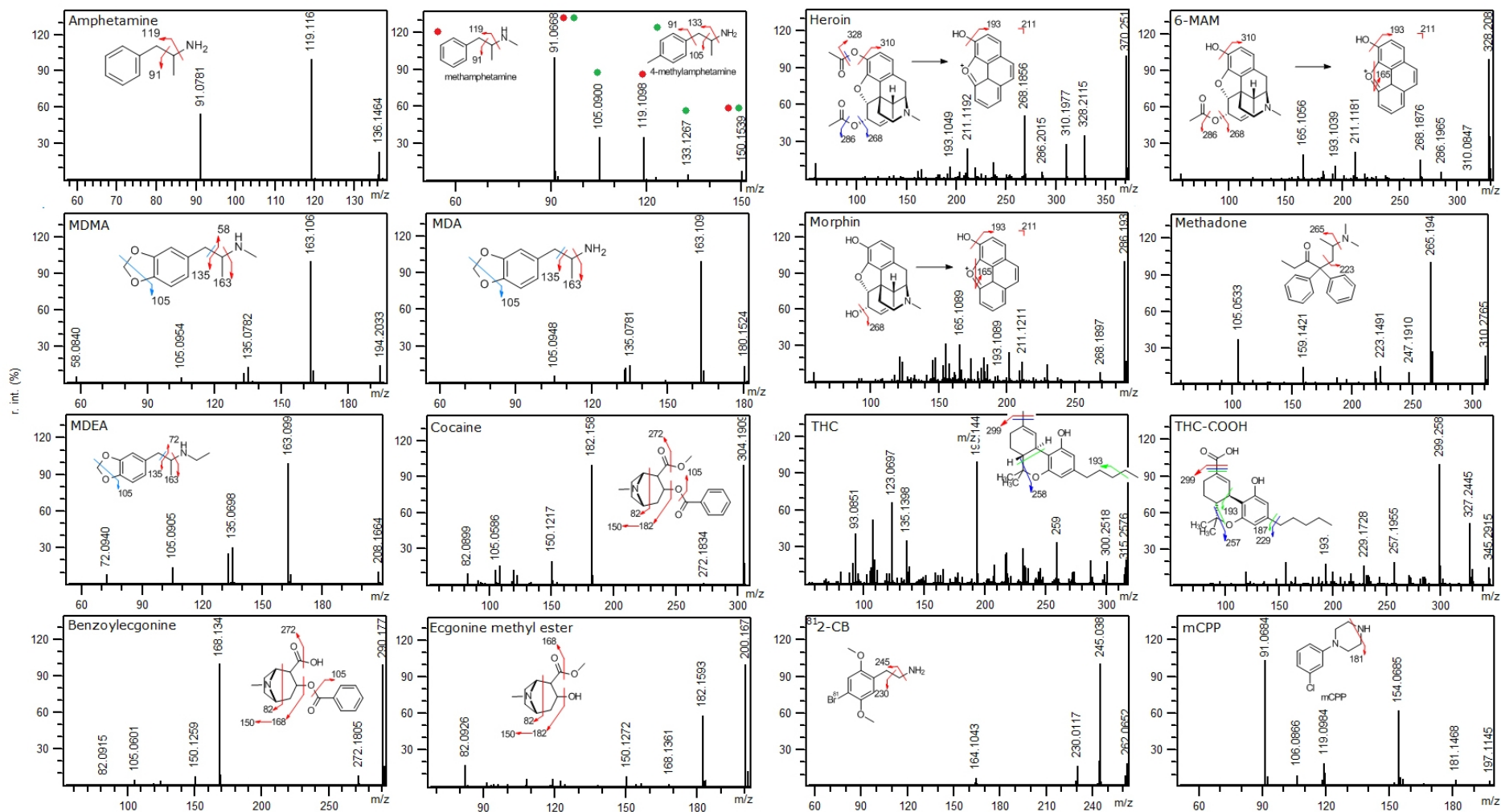


Fig. S1. MALDI MS/MS spectra of drug/metabolite precursor ions, showing distinct fragmentation pathways. The proposed fragmentation pattern and corresponding structures are shown. Red arrows indicate the one-step fragmentation of the parent ion, while blue and green arrows show two and three-step fragmentation respectively (progressive fragmentation of a fragmented ion).

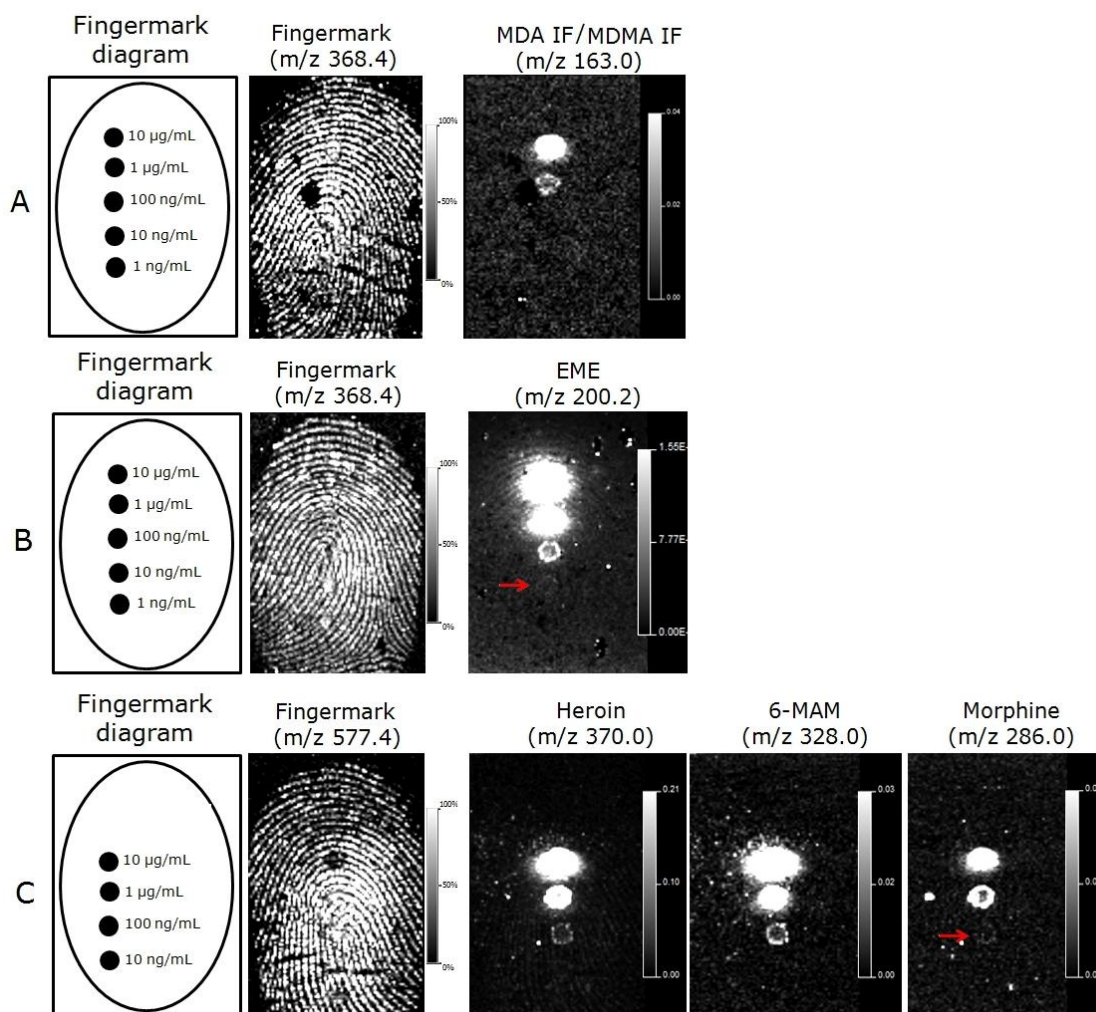


Fig. S2. Reprocessing of the data shown in Figure 3 and illustrating MALDI MSI data of drug classes serial dilutions ranging from 10 µg/mL – 1 ng/mL, spotted on top of a fingerprint and subsequently spray-coated. Here images have been brightness-saturated to investigate if additional concentration spots were visible. Images were preliminarily normalised to the matrix peak at m/z 190. Out of all the species investigated, only MDA/MDMA, EME, Heroin, 6-MAM and morphin showed additional concentration spots with respect to Fig 3. In particular, with this reprocessing, MDA/MDMA becomes visible also in the spot at a concentration of 1µg/mL, whereas the remaining species could be mapped in the spots down to 100 ng/mL in concentration.