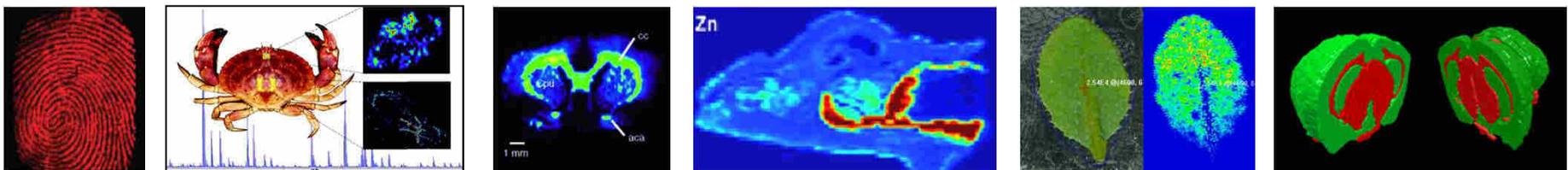
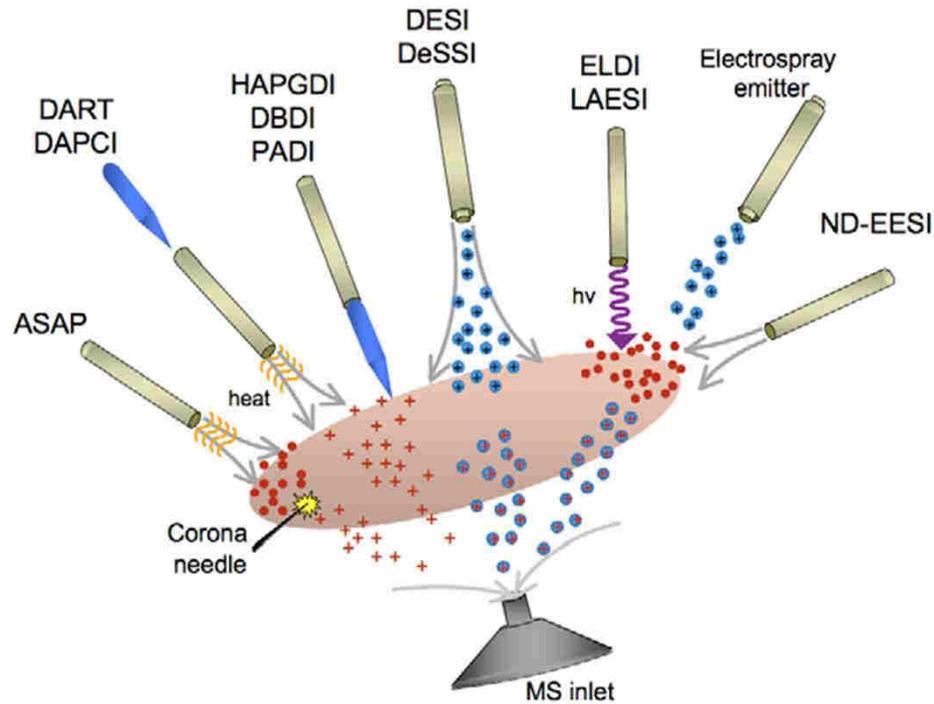
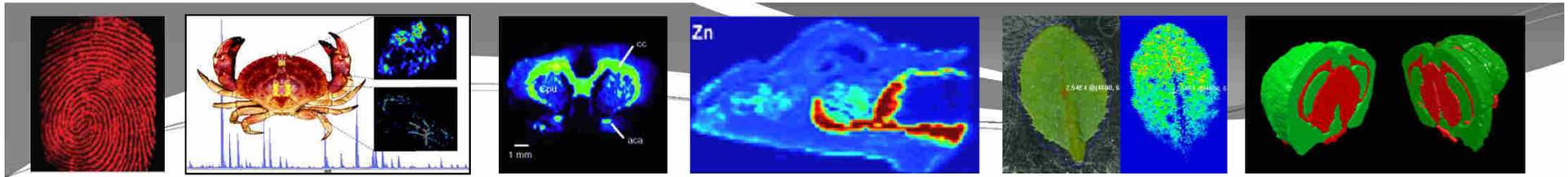


PROSPETTIVE FUTURE: UN ESEMPIO





- ❖ **Analisi diretta**
- ❖ **No preparazione campione**
- ❖ **Ambiente aperto (in-situ)**
- ❖ **In tempo reale**
- ❖ **Alta produttività**

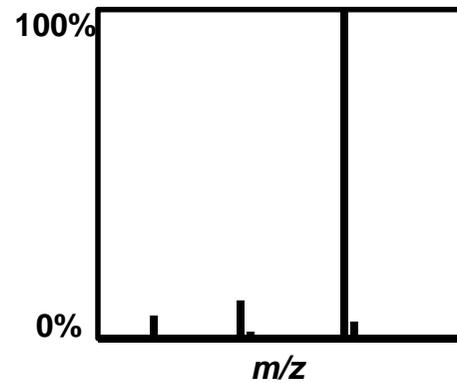
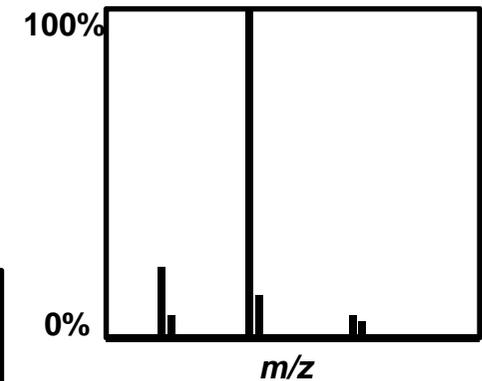
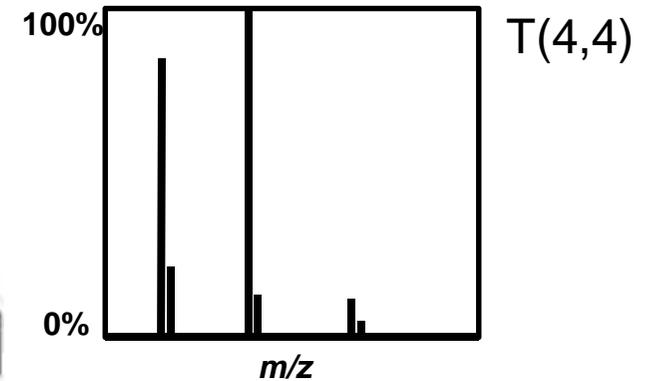
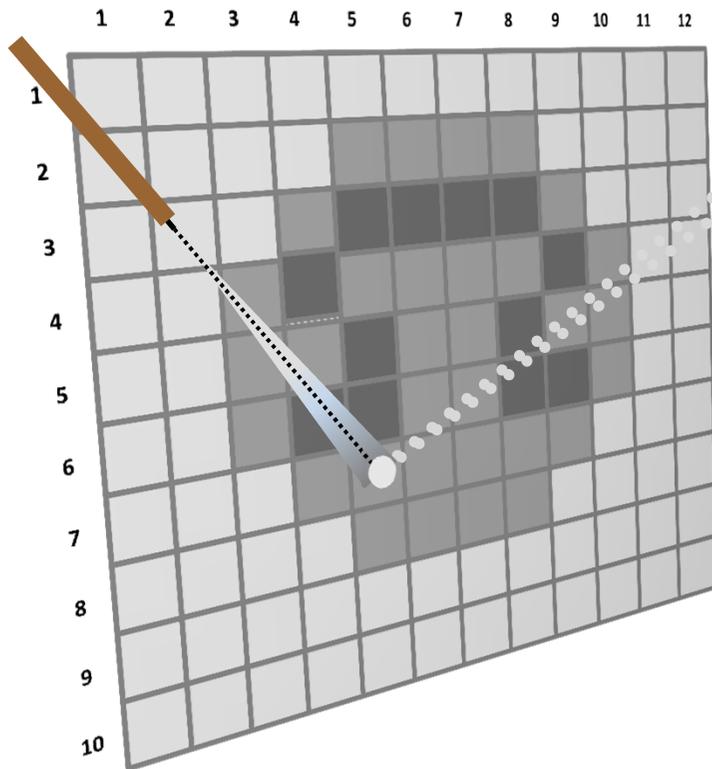
AMBIENT IONIZATION MASS SPECTROMETRY

DESI, SSP, DART, ASAP, ELDI, FD-ESI, DAPCI, AP-IR-MALDI, MALDESI, JeDI, EESI, DeSSI, APTDI, LAFAPA, PADI, DBDI, ND-EESI, LDTD, LAESI, IR-LAESI, DAPPI, APGDDI, EASI, RASTIR, PESI, FA-APGD, LTP, DEMI, LMJ-SSP/ESI, SPAMS, LTP, DICE, LAMICI, EASI, PESI, Paper Spray....

What is mass spectrometry imaging?

❖ Mass Spectra linked
Spatial Coordinates (X,Y)

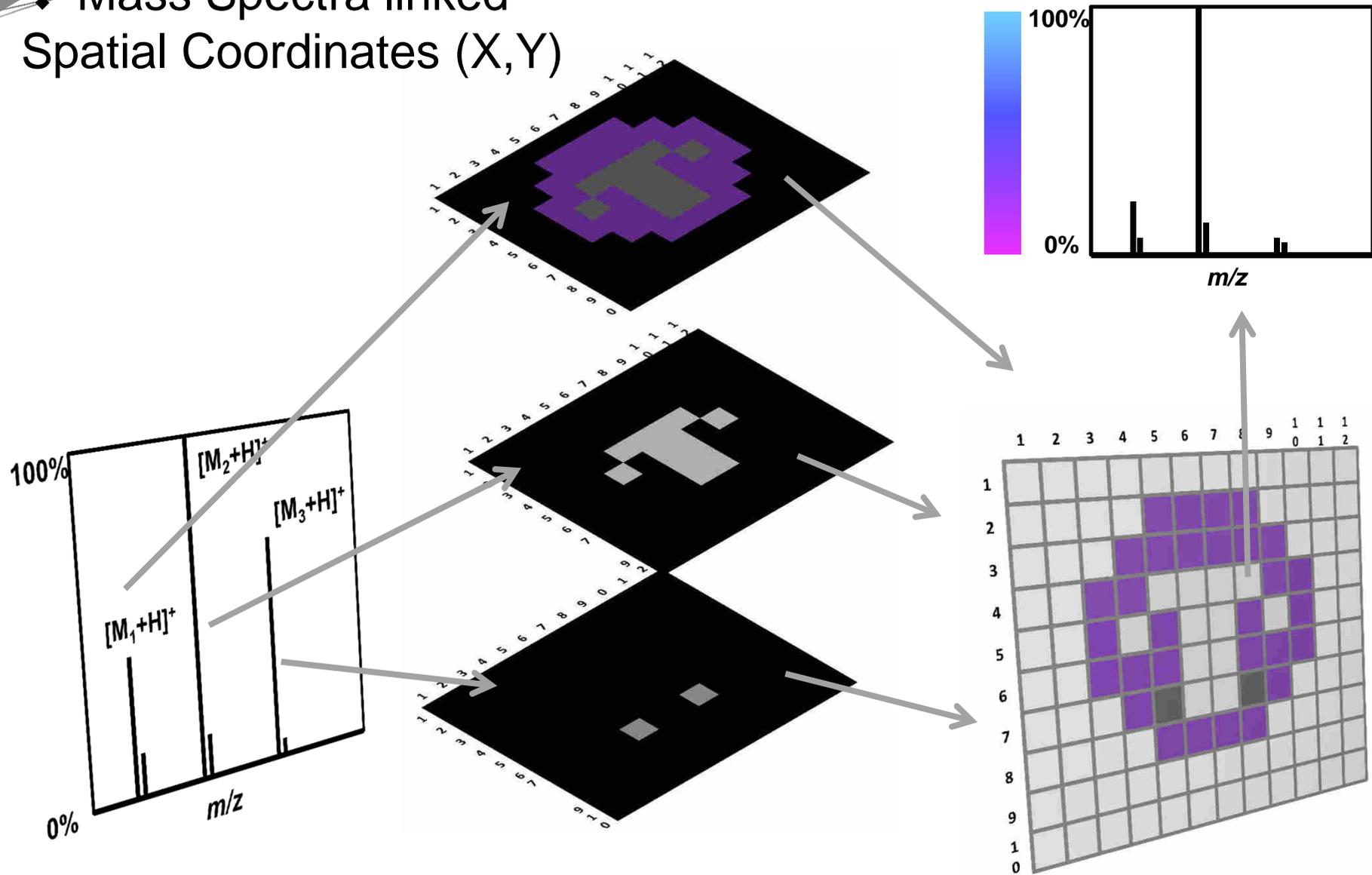
MS analysis, detection and storage

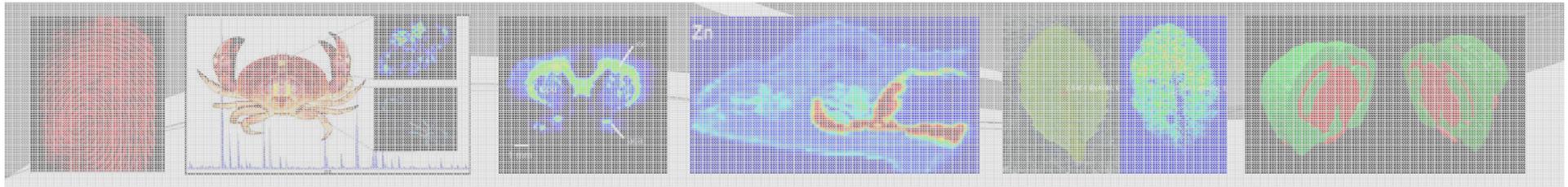


T(5,4)

T(5,7)

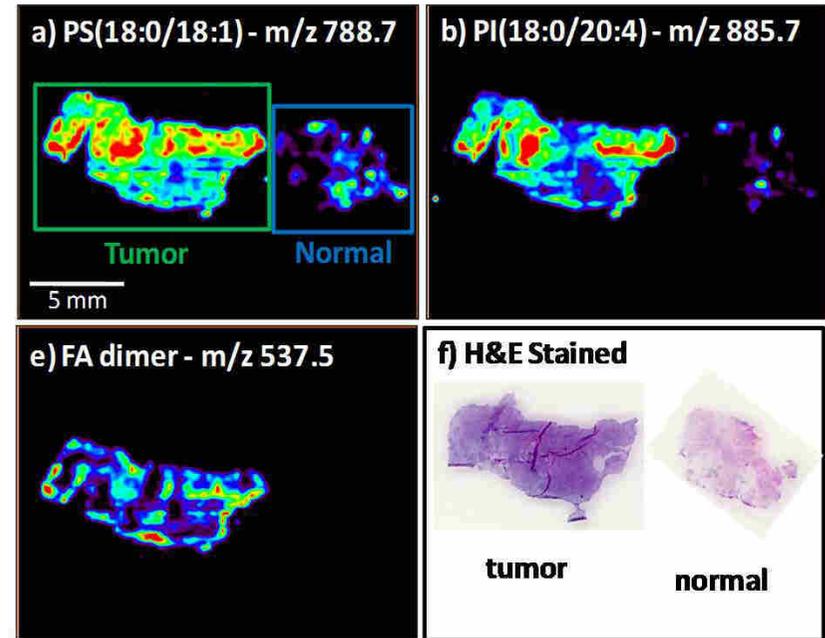
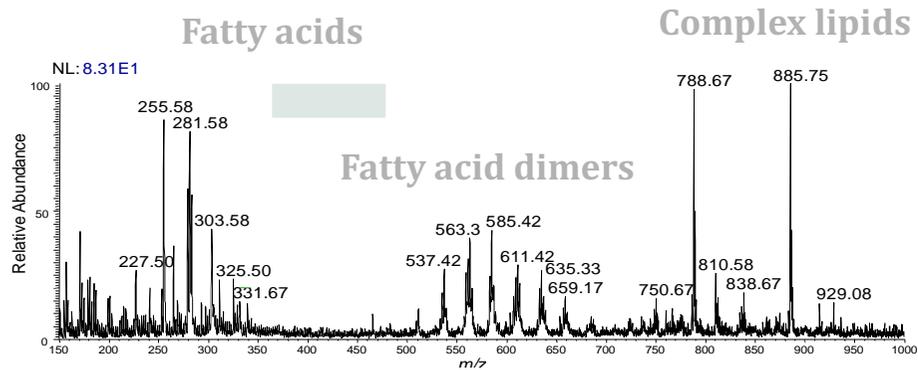
❖ Mass Spectra linked
Spatial Coordinates (X,Y)



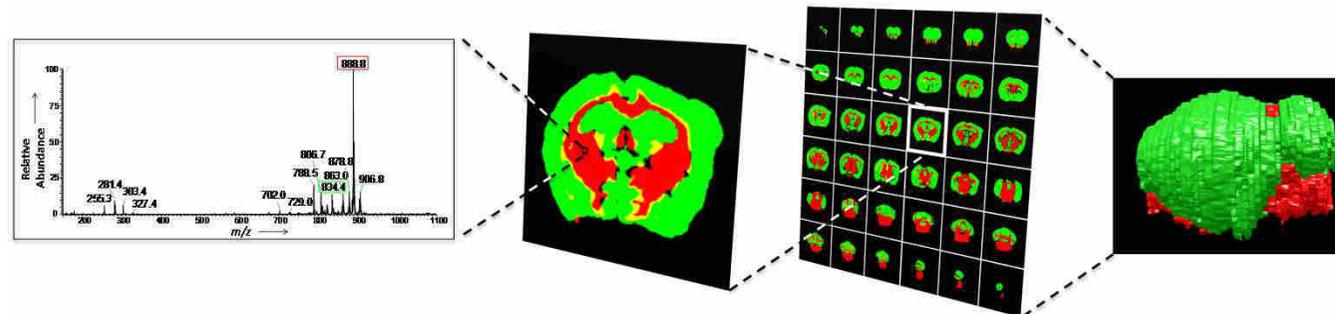


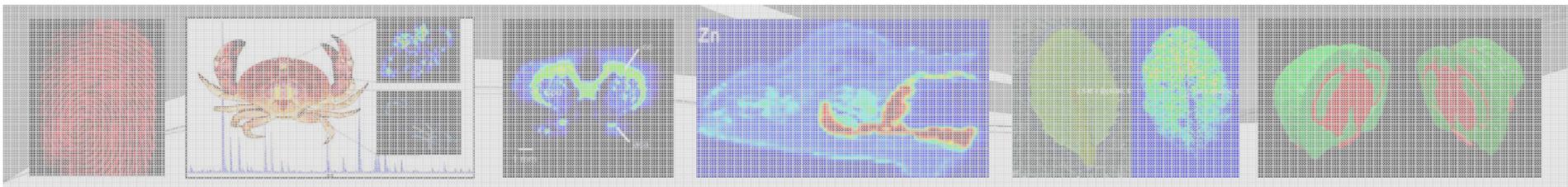
DESI-MS APPLICATIONS

Tumor diagnostics



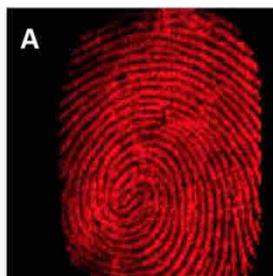
3D molecular images





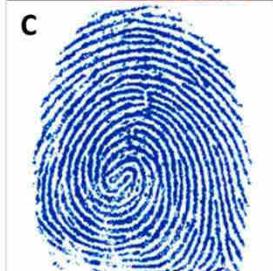
APPLICAZIONI DESI-MS

Chemical fingerprint

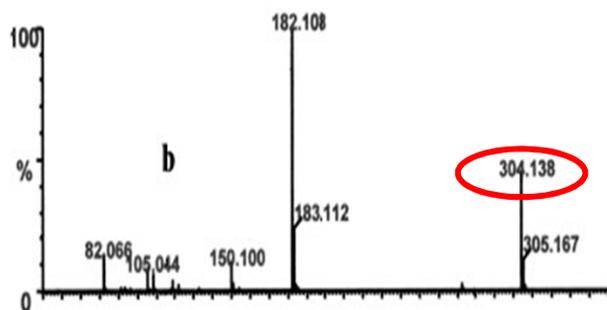
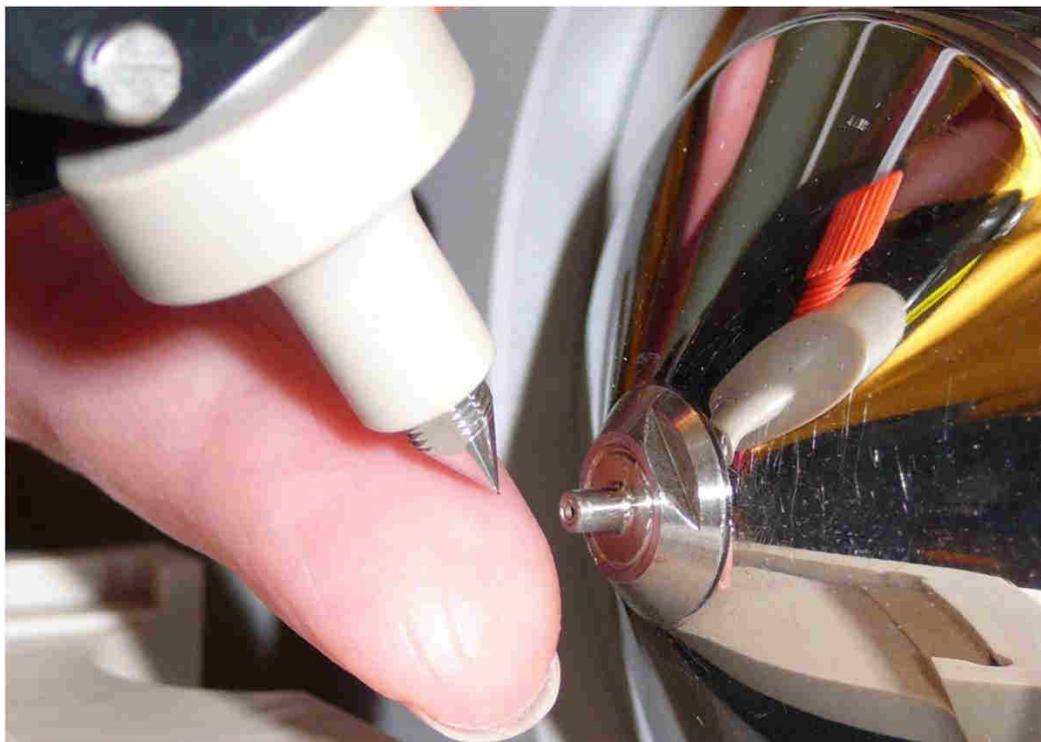


DESI image: m/z 304

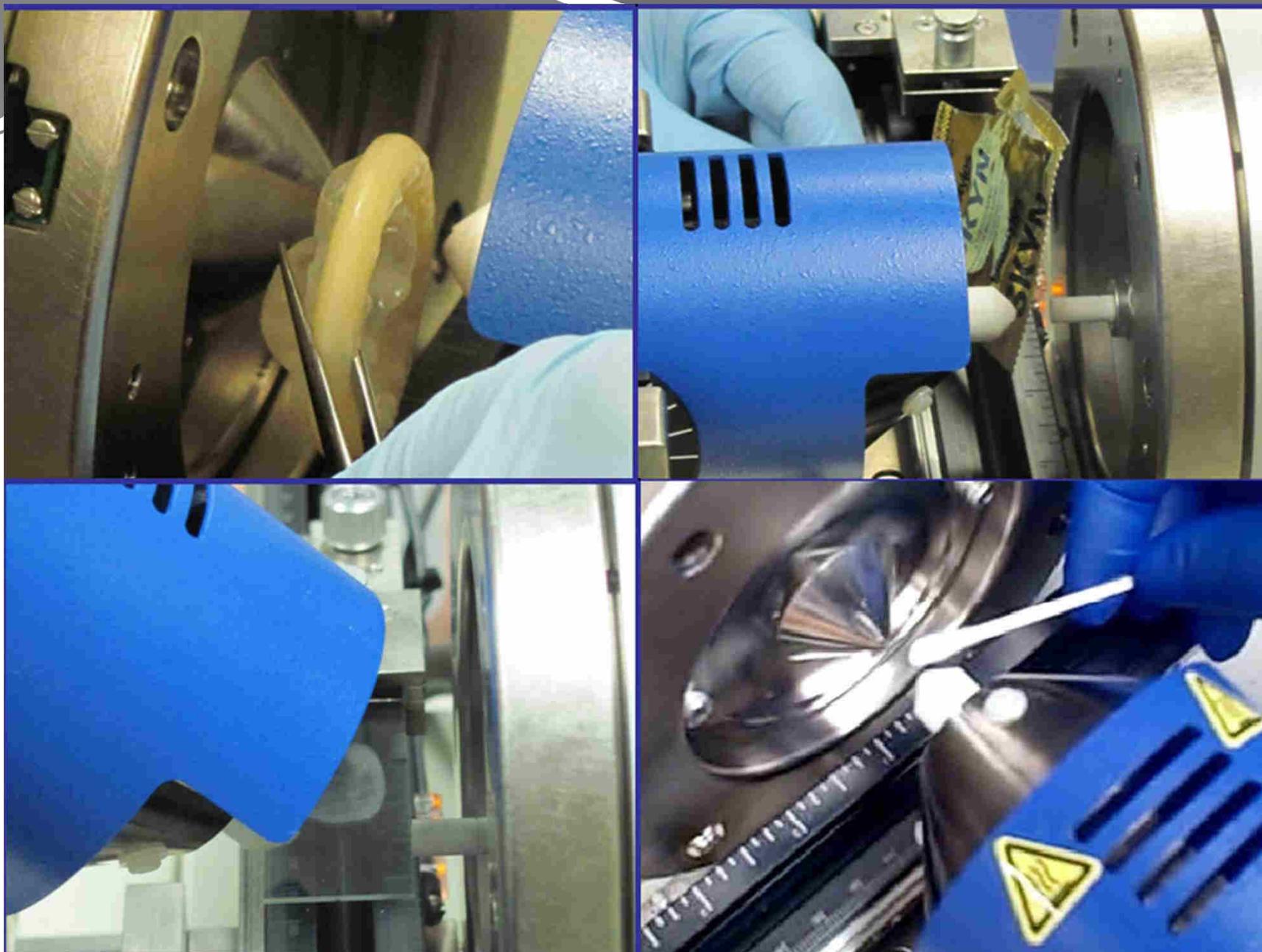
Cocaine



Ink scanned image



D Ifa, N Manicke, A Dill, RG Cooks,
 Science, 2008, 321, 805.



Direct analysis in real time mass spectrometry for analysis of sexual assault evidence. R.A. Musah et al. – Rapid Commun. Mass Spectrom. 2012, 26, 1039

Saliva (fluido orale)

Vantaggi

- Prelievo non invasivo “a vista”
- Concentrazioni correlate con quelle ematiche
- Indice di esposizione recente

Svantaggi

- Indice di esposizione recente
- Campione instabile e difficilmente conservabile
- Difficoltà di campionamento (piccoli volumi)
- Pochi dati di letteratura di farmacocinetica
- Piccole tracce delle sostanze assunte

Indicazioni

Alcune sostanze, in particolare quelle assunte per via orale o attraverso fumo, possono dare una contaminazione passiva della cavità orale e quindi determinare una positività in saliva. Per distinguere tra una contaminazione passiva e una attiva è necessario analizzare anche l'urina: si dimostra il consumo attivo se si riscontra una positività in entrambe le matrici biologiche.

