

MALDI-TOF Mass Spectrometry

please read pp 438-439 & 451-453 of text (Granger)

3 main components of MS

(a) ion source → MALDI

(b) mass selector → TOF

(c) detector

MALDI - matrix assisted laser desorption ionization

TOF - time of flight

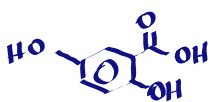
MALDI - is another "soft" ionization technique

- used with heavy, non-volatile compounds

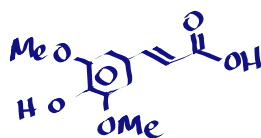
- in contrast to ESI, it does not generate multivalent ions, so if using standard analyzers, limited to masses < 3000 amu

Process:

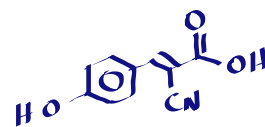
1. Co-dissolve analyte along with a crystal forming compound



2,5-dihydroxy
benzoic acid



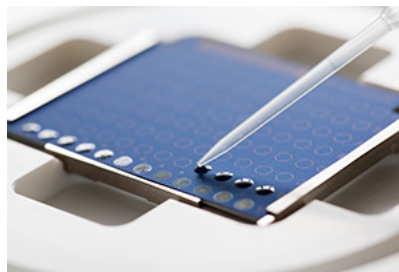
sinapinic
acid



α -cyano-4-hydroxy
cinnamic acid

in CH_3CN or aqueous CH_3CN

2. Add droplets of solution onto metal plate



3. Evaporate the solvent to leave analyte trapped in crystalline matrix