Supporting Information

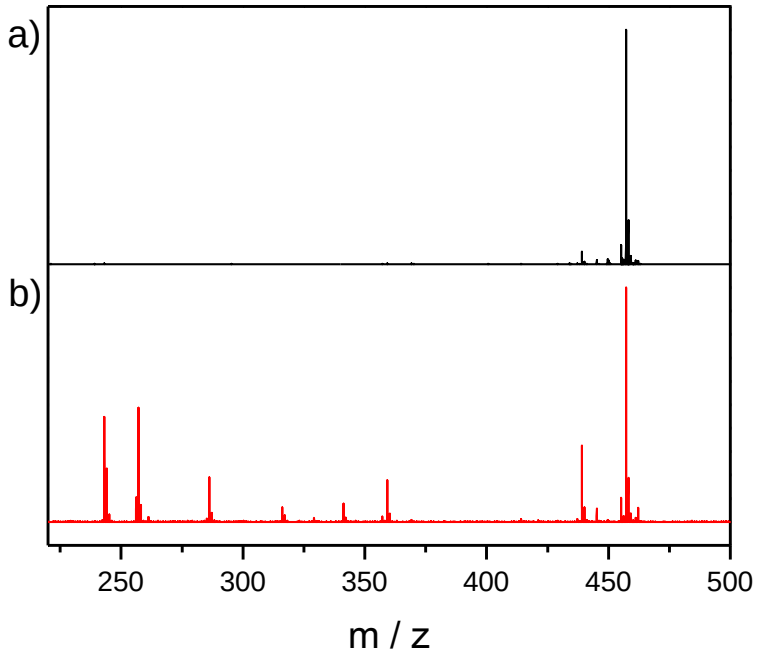
UV Photo-Dissociation of trapped ions following ion mobility separation in a Q-ToF mass spectrometer

Bruno Bellina,[a] Jeffery. M. Brown,[b] Jakub Ujma,[a] Paul Murray,[b] Kevin Giles,[b] Mike Morris,[b] Isabelle Compagnon*[c] and Perdita. E. Barran* [a]

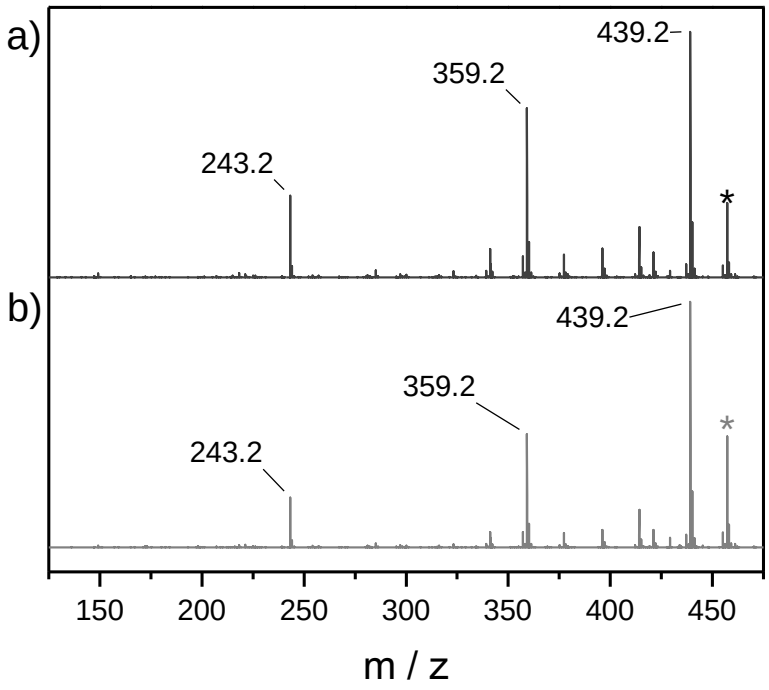
[a] Michael Barber Centre for Collaborative Mass Spectrometry, Manchester Institute for Biotechnology University of Manchester, United Kingdom.

[b] Waters, Wilmslow, United Kingdom.

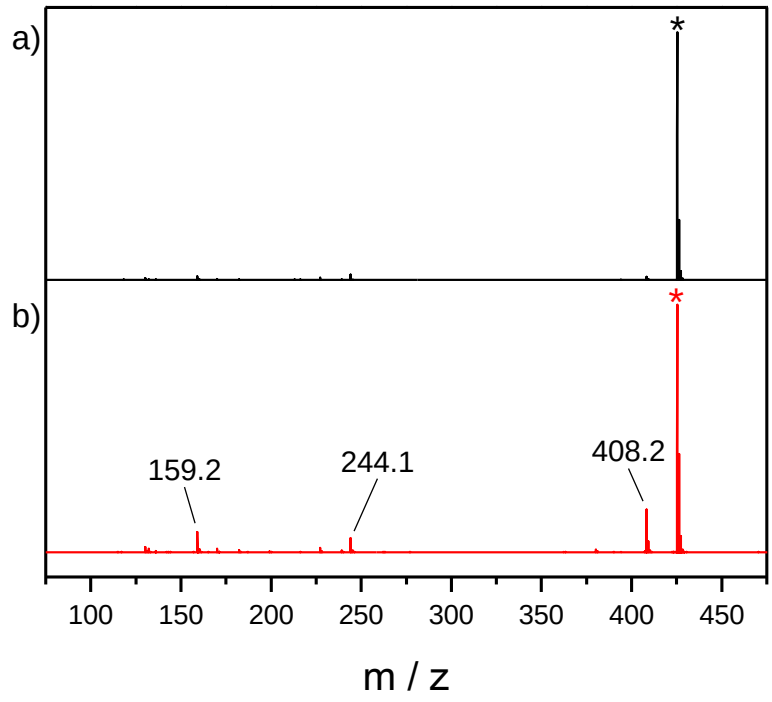
[c] Université LYON1, Institut Lumière Matière, France.



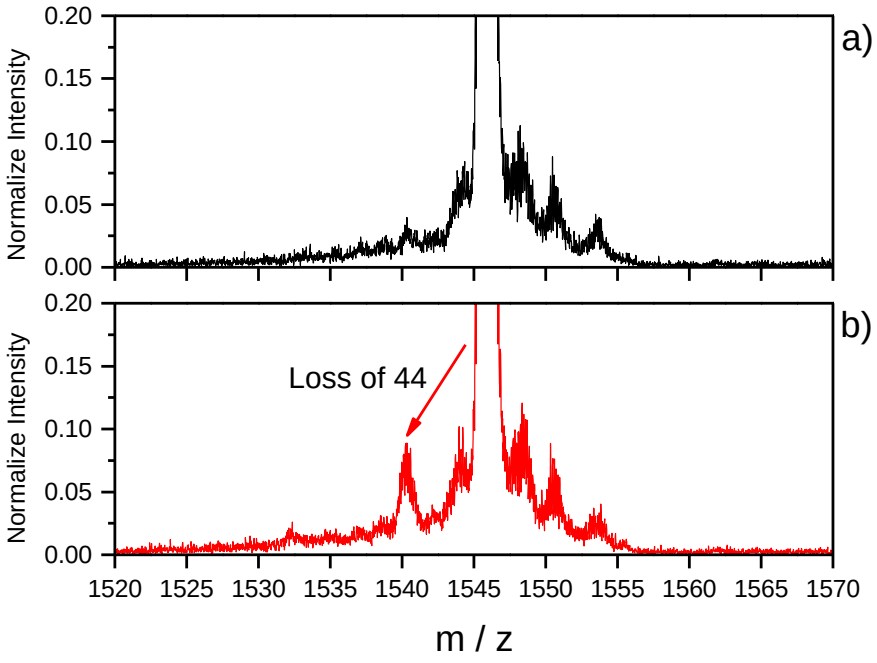
SUP. 1: UVPD comparison between trapped and non-trapped ions. The [FMN+H]+ was first mass selected with the quadrupole. The 266 nm laser power was set to 0.4 mJ per pulse and continuously firing at a repetition rate of 10 Hz. (a) The ions are not trapped (b) The ions are trapped for 1 second. Fragments due to photo-dissociation were only observed when the ions were trapped.



SUP. 2 CID comparison. The [FMN+H]+ is first mass selected with the quadrupole. (a) The ions are activated by collision energy in the transfer cell. (b) The ions are activated by collision energy in the trap cell. The fragmentation pattern in the two spectra appears to be equivalent.



SUP. 3 The protonated tripeptide [GWY+H]+ (marked with a star)is first mass selected with the quadrupole and then trapped in the Transfer Cell for 500 ms. (a) No laser excitation and (b) 266 nm UV excitation induced photo-dissociation, UVPD. The three mains fragments are: 408 *m/z* (loss of ammonia), 244 *m/z* (b_2 fragment) and 159 *m/z* (loss of Tryptophan).



SUP. 4 Charged state 8^+ of the Cytochrome C mass selected with the quadrupole and then trapped in the transfer cell for 2 seconds (a) No laser excitation and (b) 266 nm Laser excitation at 0.5 mJ in the transfer cell. We observed a small fragmentation channel corresponding to a loss of 44 *m/z*, carboxylic group.