

Supporting Information

Electrothermal Supercharging in Mass Spectrometry and Tandem Mass Spectrometry of Native Proteins

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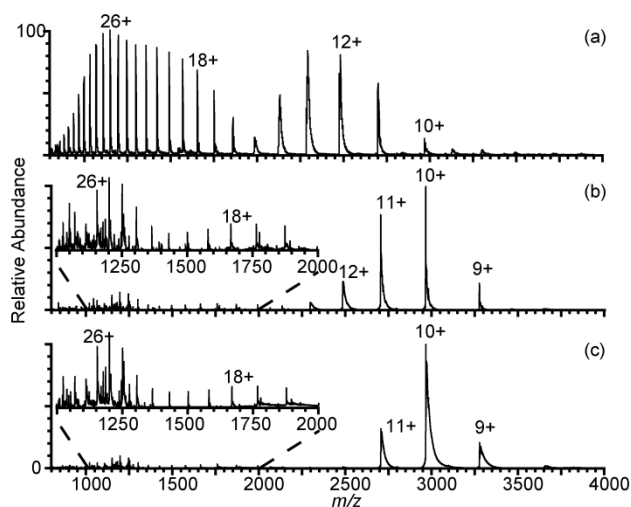


Figure S-1. Positive ion nano-electrospray mass spectra of 10 μM EF_N (30 kDa) in 100 mM ammonium bicarbonate, pH 7, (a) obtained using a Thermo LTQTM mass spectrometer at +0.7 kV spray potential, and (b) using a Waters Q-TOF mass spectrometer. (c) Mass spectrum of 10 μM EF_N in 100 mM ammonium acetate, pH 7, obtained using a Waters Q-TOF mass spectrometer. Insets in (b) and (c) show that even under the less activating conditions used with the Q-TOF instrument, some high charge states of EF_N are present, an indication of a population of unfolded structures in solution.

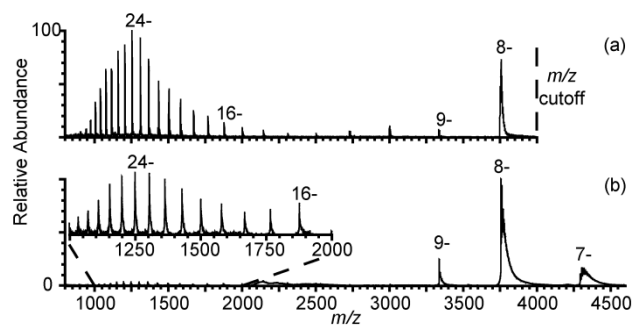


Figure S-2. Negative ion nano-electrospray mass spectra of 10 μM EF_N (30 kDa) in 100 mM ammonium bicarbonate, pH 7, obtained using (a) a Thermo LTQTM mass spectrometer at -0.7 kV spray potential, and (b) using a Waters Q-TOF mass spectrometer. The inset shows a population of unfolded conformers of EF_N formed even under optimized soft source conditions.

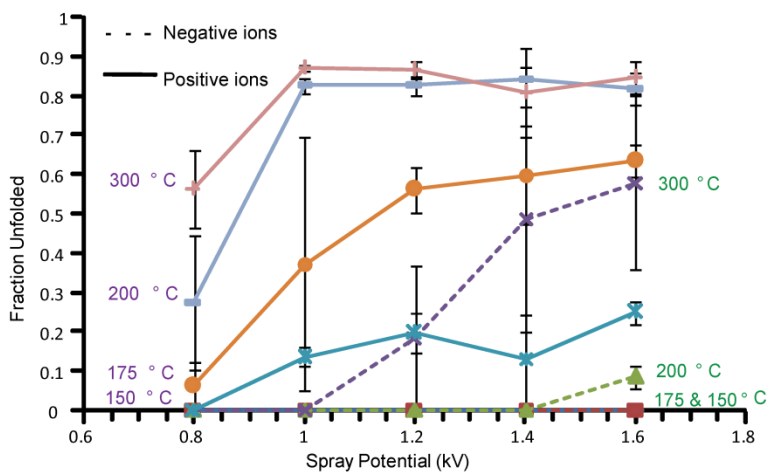


Figure S-3. The population of unfolded ions of cytochrome *c* produced from a 100 mM ammonium bicarbonate, pH 7, solution calculated by assigning the 9 – 6+ and 6 – 4- charge states as “folded” conformers and all other charge states as “unfolded” conformers. More electrothermal supercharging occurs for positive ions than for negative ions for a given heated inlet capillary temperature and spray potential.