SUPPORTING INFORMATION for "Analytical Performance of a Venturi-assisted Array of Micromachined UltraSonic Electrosprays (AMUSE) Coupled to Ion Trap Mass Spectrometry for the Analysis of Peptides and Proteins" by Christina Y. Hampton, Thomas P. Forbes, Mark J. Varady, J. Mark Meacham, Andrei G. Fedorov, F. Levent Degertekin, Facundo M. Fernández.

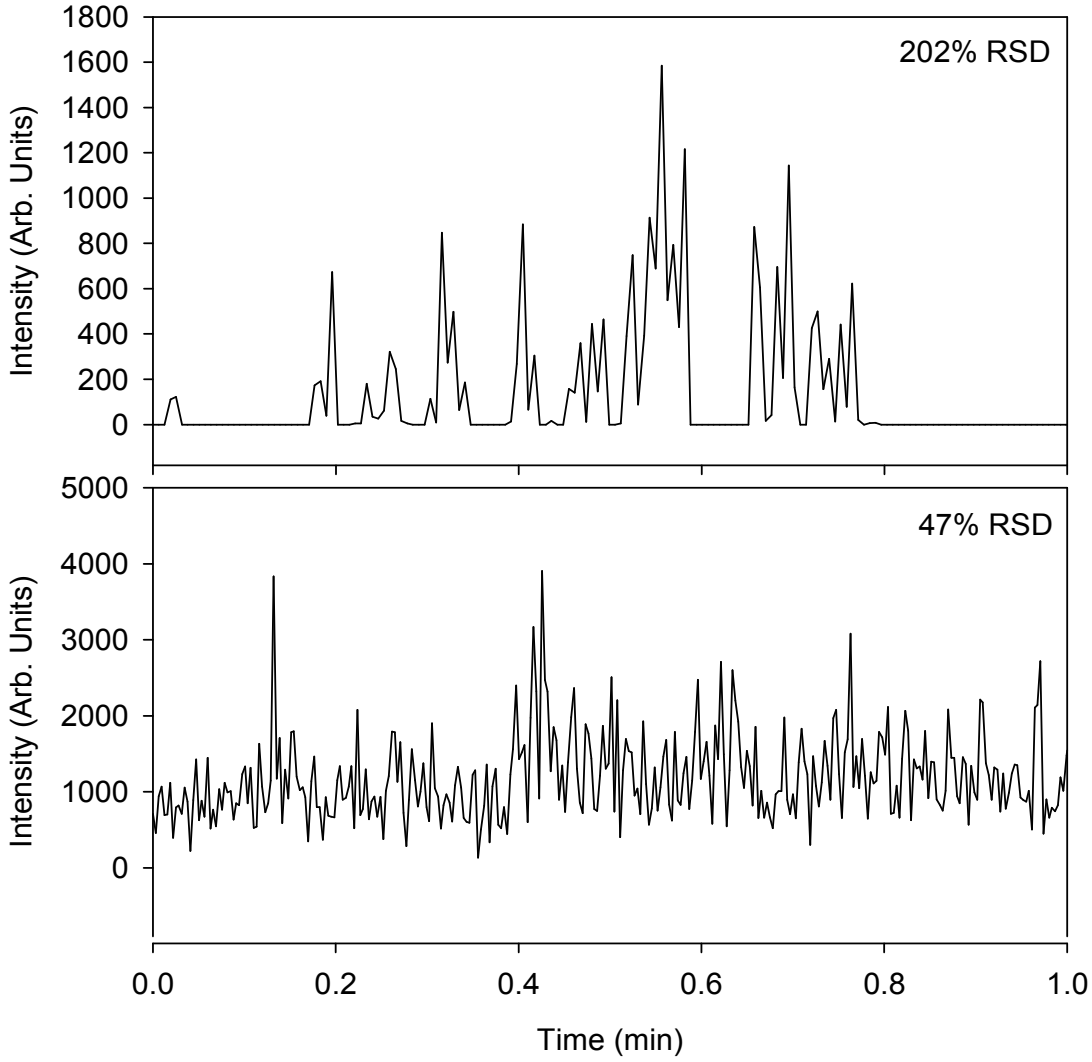

Figure S-1: Total ion trace for ~4 pmols reserpine/nozzle ionized by a 400-nozzle AMUSE chip (5-μm apertures) with the air amplifier turned off (top) and with 9.3 L min^{-1} nitrogen flowing through the air amplifier (bottom). The solvent used was 10:89.9:0.1 (v:v:v) methanol:water:acetic acid. Operating conditions: 100 V_{DC}, 40 μL min^{-1} liquid flow rate, LiT detection.

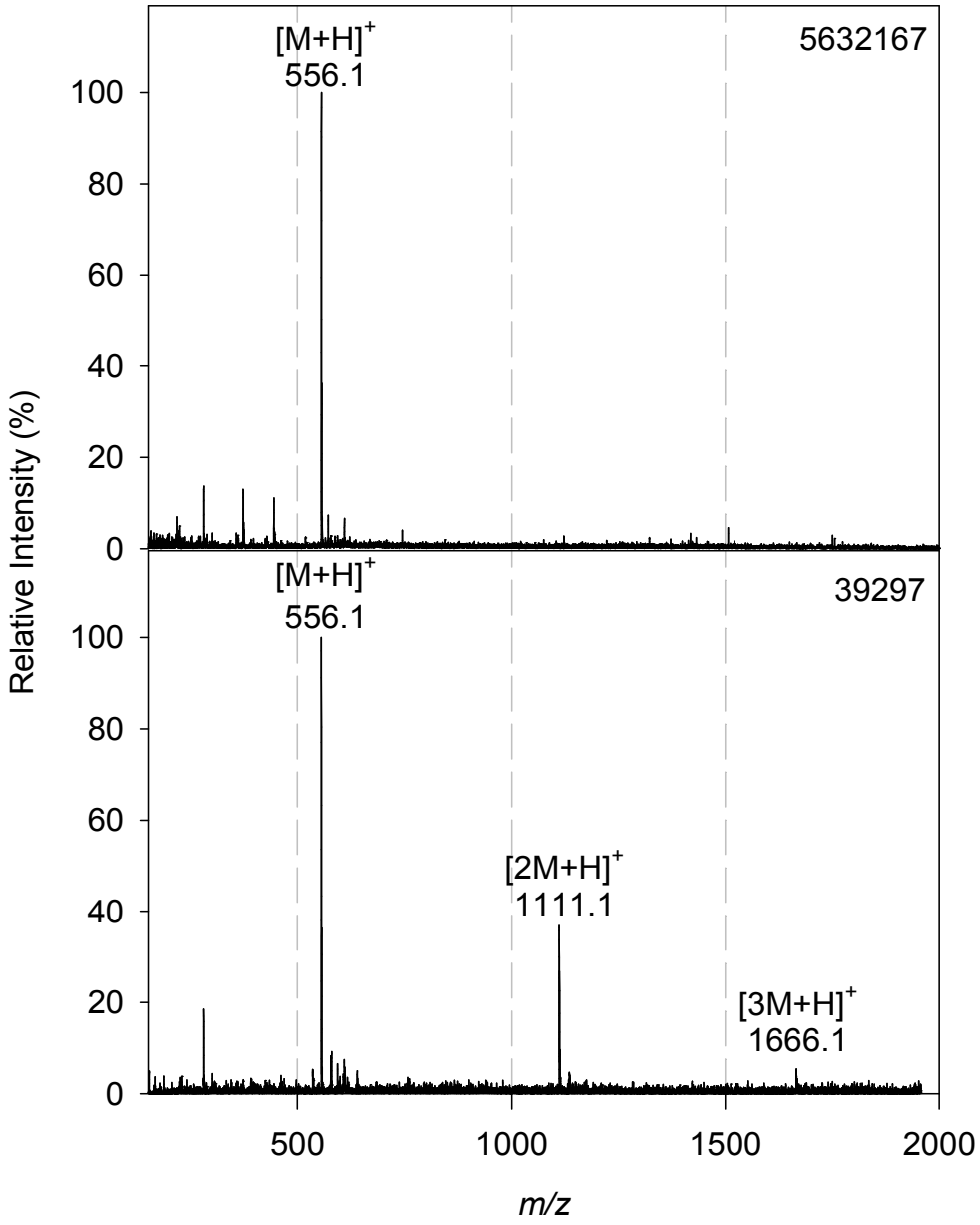

Figure S-2: Mass spectra for a 1 μM leucine enkephalin solution prepared in 99.9:0.1 (v:v) water:acetic acid obtained using (top) conventional ESI (10 pmol; 10 μL min^{-1}, 4500 V_{DC}, QiT detection) and (bottom) AMUSE ionization by a 3-μm nozzle device (35 pmol/array, ~ 175 fmol/nozzle; 100 V_{DC}, 35 μL min^{-1} liquid flow rate, 8.2 L min^{-1} N_2, QiT detection).

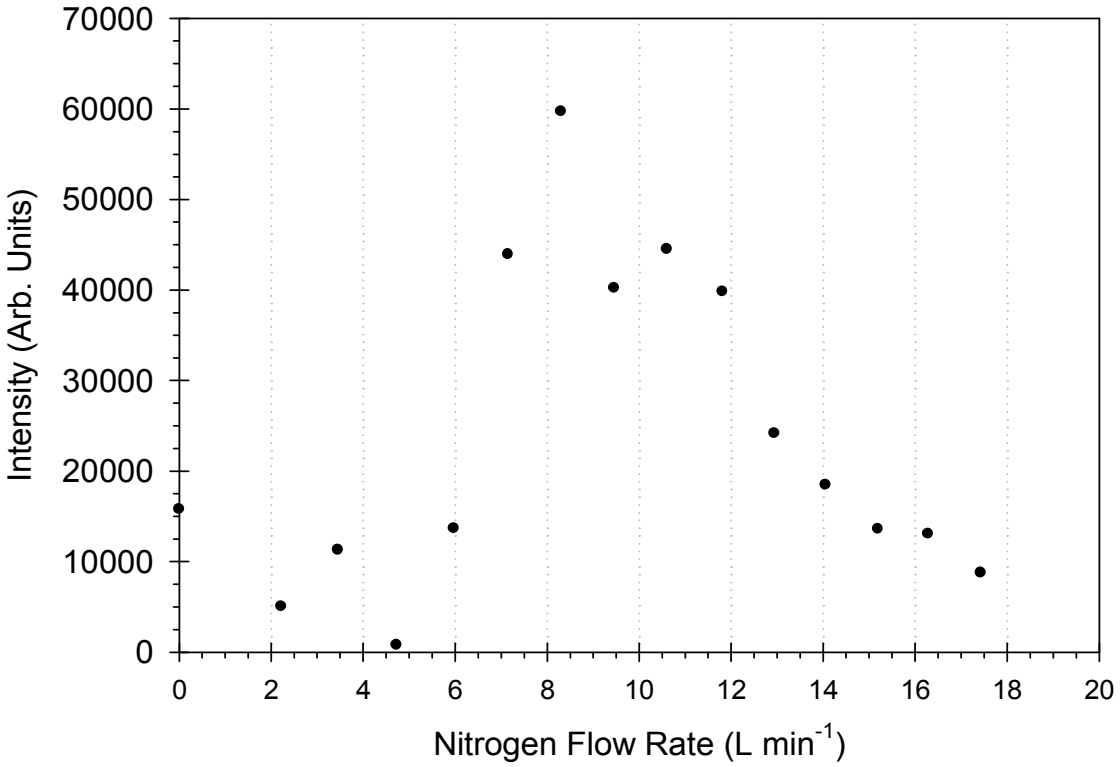

Figure S-3: Intensity of the protonated molecule peak ($[M+H]^+$ = 556.1) vs. air amplifier nitrogen flow rate for a 1 μM leucine enkephalin solution in 99.9:0.1 (v:v) deionized water:acetic acid. An AMUSE chip with 3-μm nozzles was used. Operating conditions: 100 V_{DC}, 35 μL min^{-1} liquid flow rate, QiT detection.

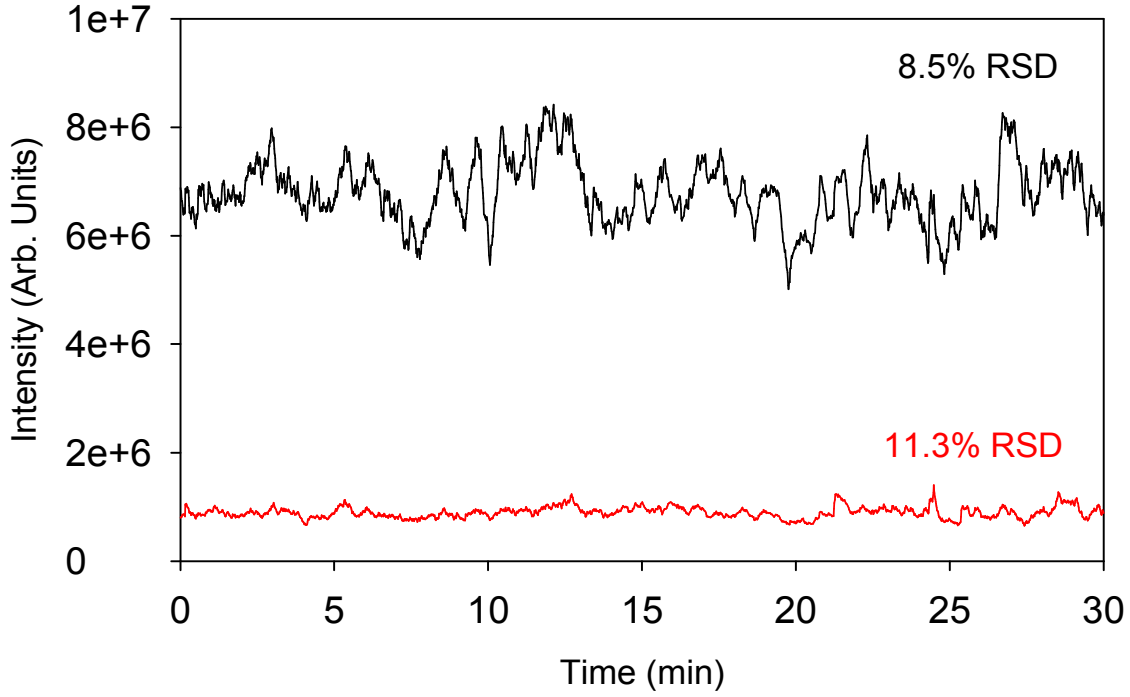

Figure S-4: Total ion trace (black) and extracted ion trace for $[M+H]^+$ = 556.1 (red) from the continuous ejection of 5 μM leucine enkephalin in 99.9:0.1 (v:v) water:acetic acid using a 3-μm AMUSE chip. Operating conditions: 100 V_{DC}, 30 μL min^{-1} liquid flow rate, 4.0 L min^{-1} N_2, QiT detection.

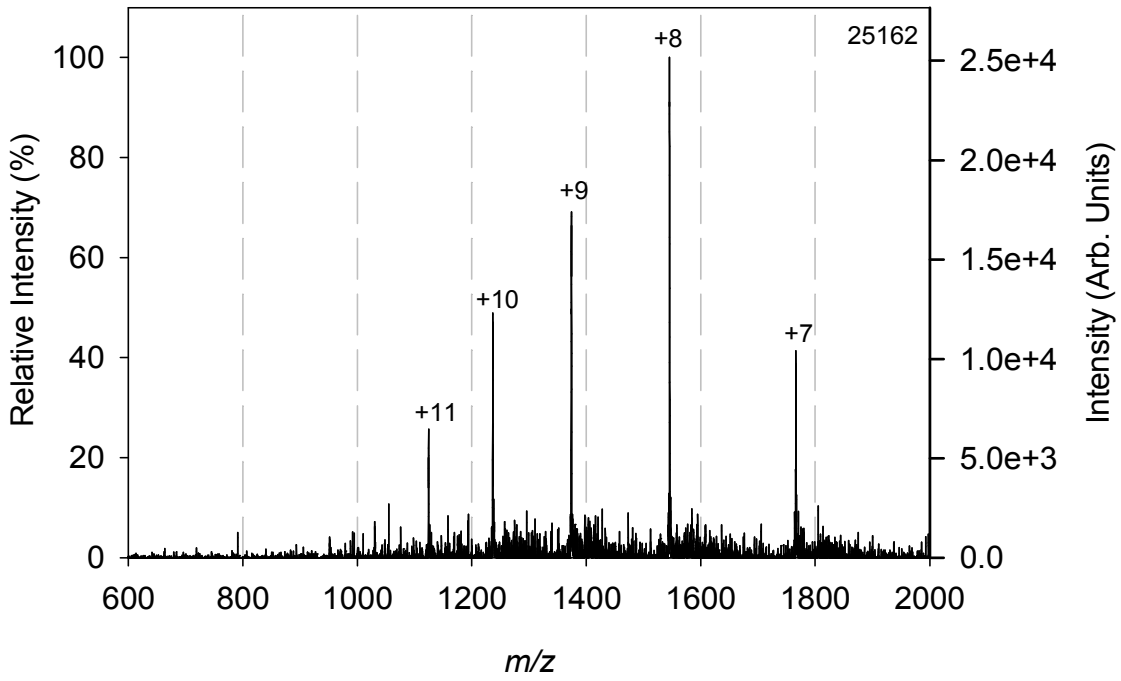

Figure S-5: AMUSE RF-only mode mass spectrum of cytochrome C in 99.9:0.1 (v:v) water:acetic acid obtained with a 3-μm nozzle-device (240 pmol total). Operating conditions: 0 V_{DC}, 60 μL min^{-1} liquid flow rate; 8 L min^{-1} N_2 heated to 40 °C, QiT detection.

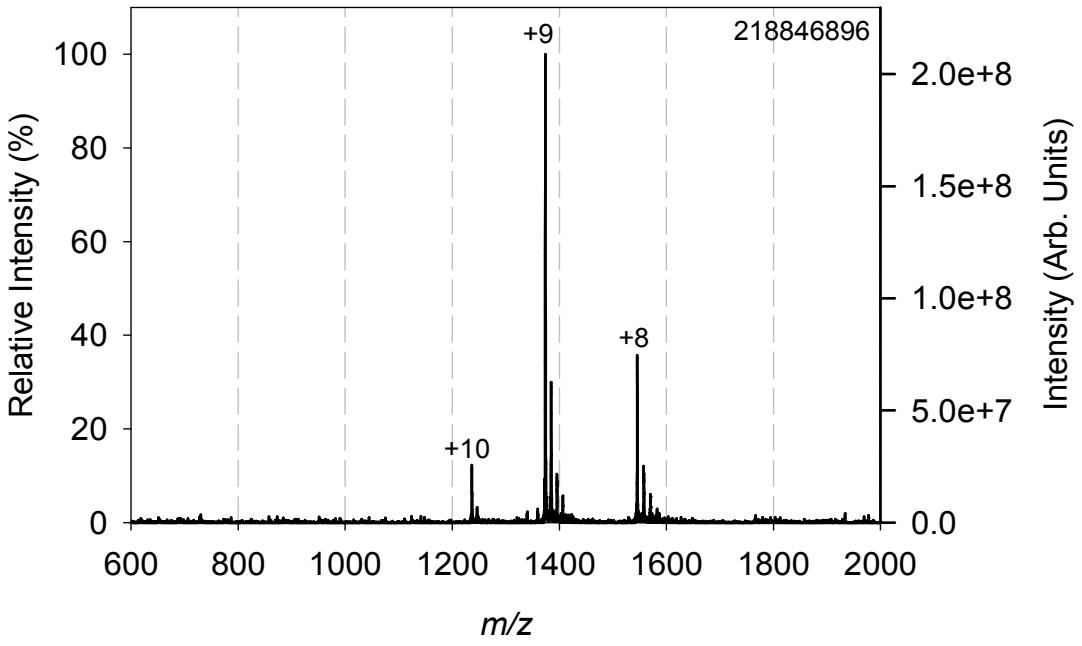

Figure S-6: Mass spectrum of cytochrome C in 99.9:0.1 (v:v) water:acetic acid obtained with standard nanospray ionization (0.8 pmol; 0.8 μL min^{-1}; 2500 V_{DC}, QiT detection).

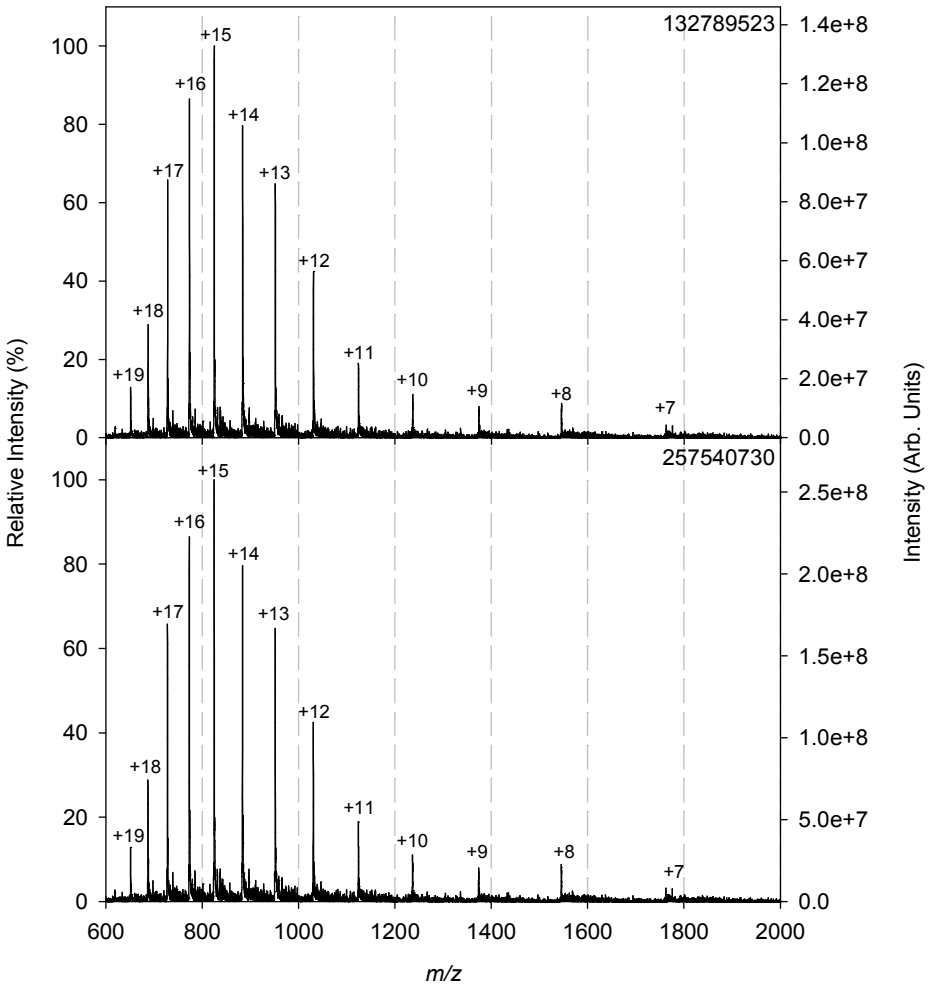

Figure S-7: Mass spectra of cytochrome C in 1:1 (v:v) methanol:water with 0.1% acetic acid obtained with (top) standard electrospray ionization (10 pmol; 10 μL min^{-1}; 4500 V_{DC}, QiT detection) and (bottom) standard nanospray ionization (0.8 pmol; 0.8 μL min^{-1}; 2500 V_{DC}, QiT detection).