Electronic Supplementary Material (ESI) for Journal of Analytical Atomic Spectrometry.

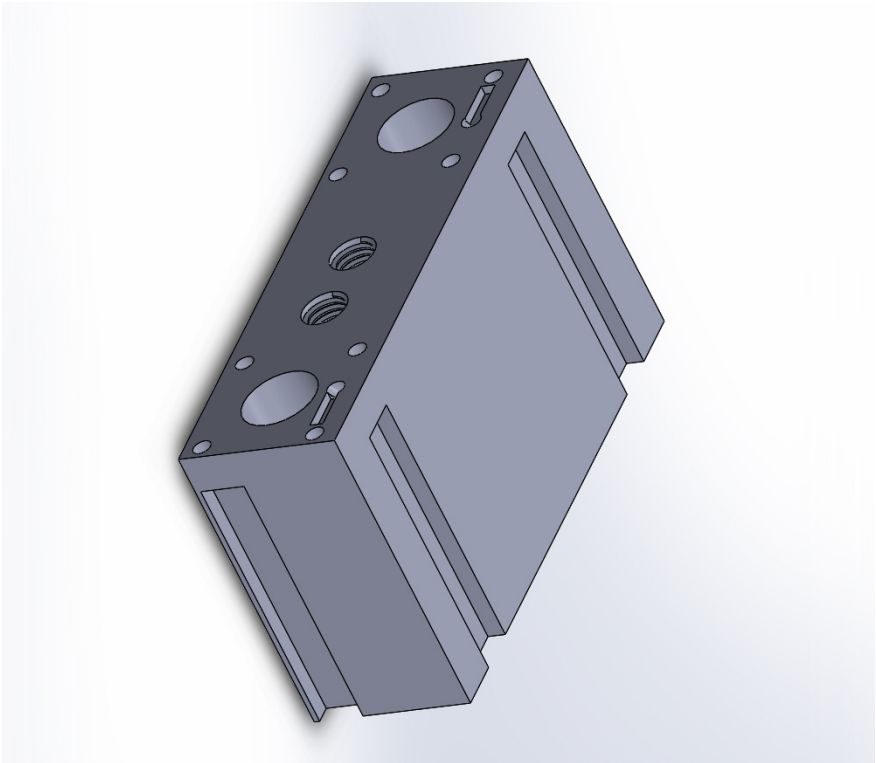
Electronic Supplementary Information Figure Legends

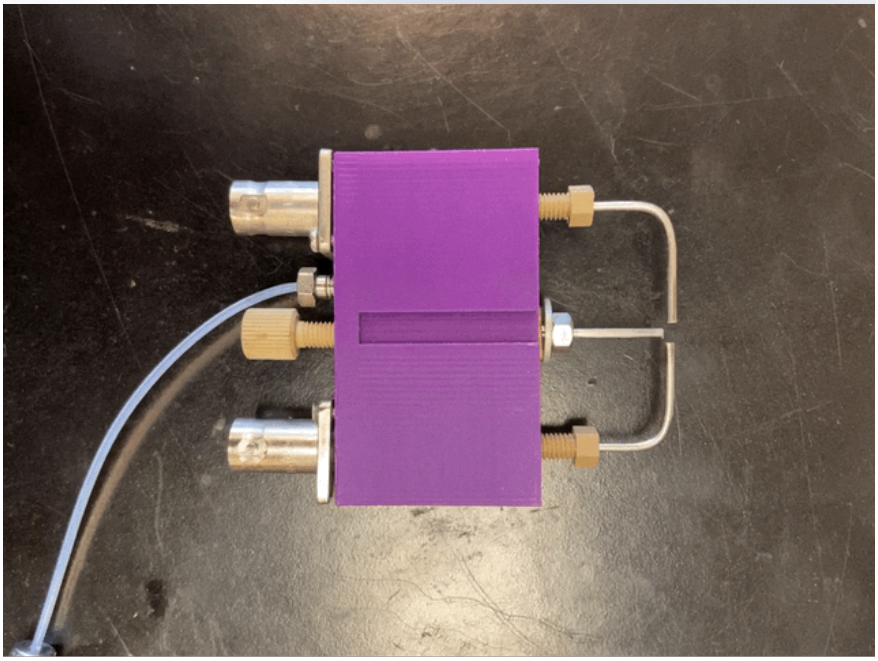
Electronic Supplementary Information Figure 1. Photograph of 3D-printed LS-APGD dual-electrode ion source. This ion source was used in Advion Expression Compact MS experiments.

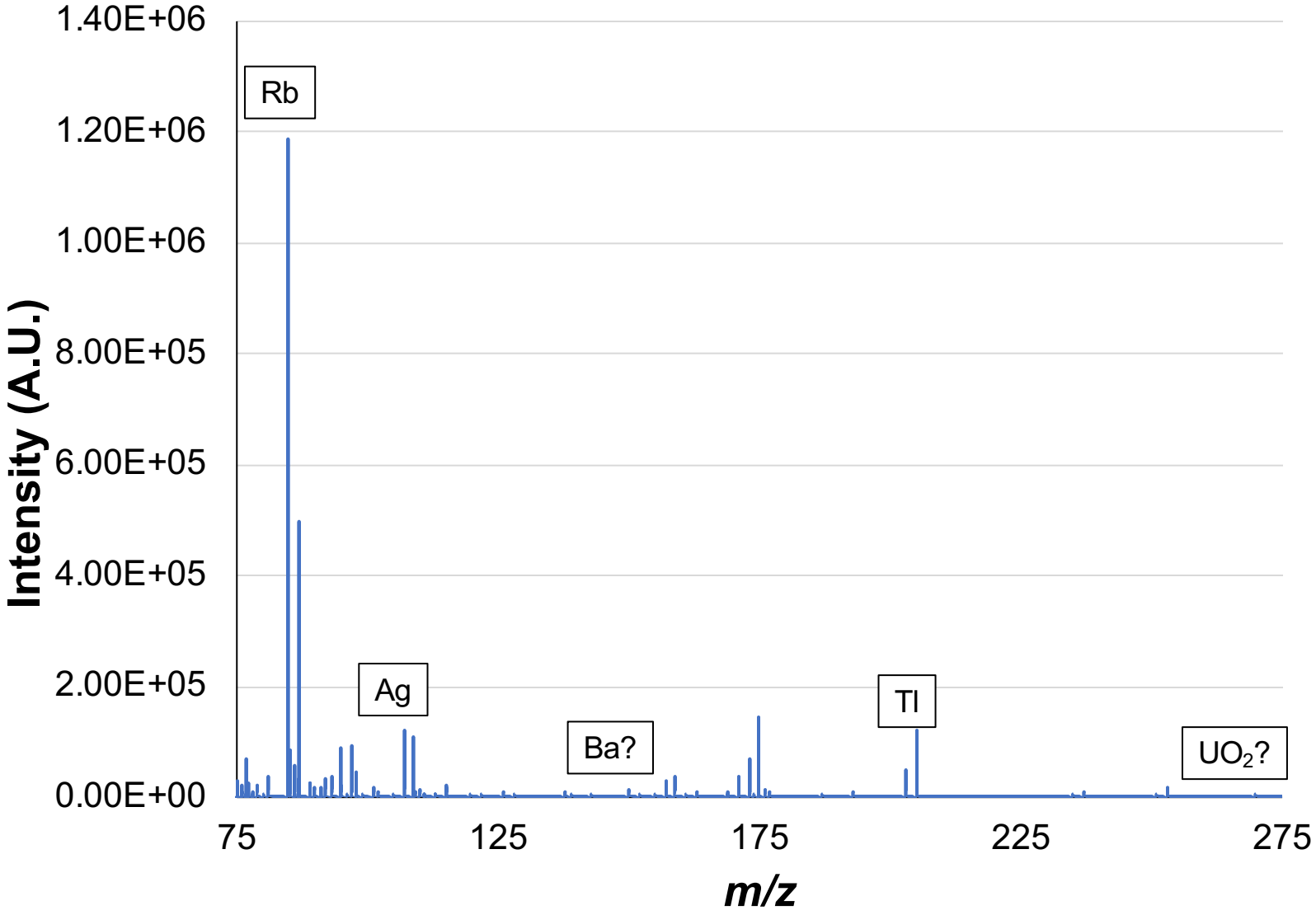
Electronic Supplementary Information Figure 2. Spectra of a multi-element solution containing 500 ng mL-1 of Rb, Ag, Ba, Tl and U taken using the single and dual electrode designs on a Q Exactive Orbitrap mass spectrometer. a) Single electrode LS-APGD and a wide digitization range, b) dual electrode LS-APGD and a wide digitization range, c) Single electrode LS-APGD and a narrow digitization range, d) dual electrode LS-APGD and a narrow digitization range. Wide digitization range includes Rb ions, narrow range excludes Rb ions.

Electronic Supplementary Information Figure 3. Response curves generated using the single electrode design operated at 30 and 60 mA and the dual electrode design with each electrode operated at 30 mA. Three elements were analyzed, and the minor isotope was plotted; a) ^{204}Pb, b) ^{65}Cu, and c) ^{133}Cs.

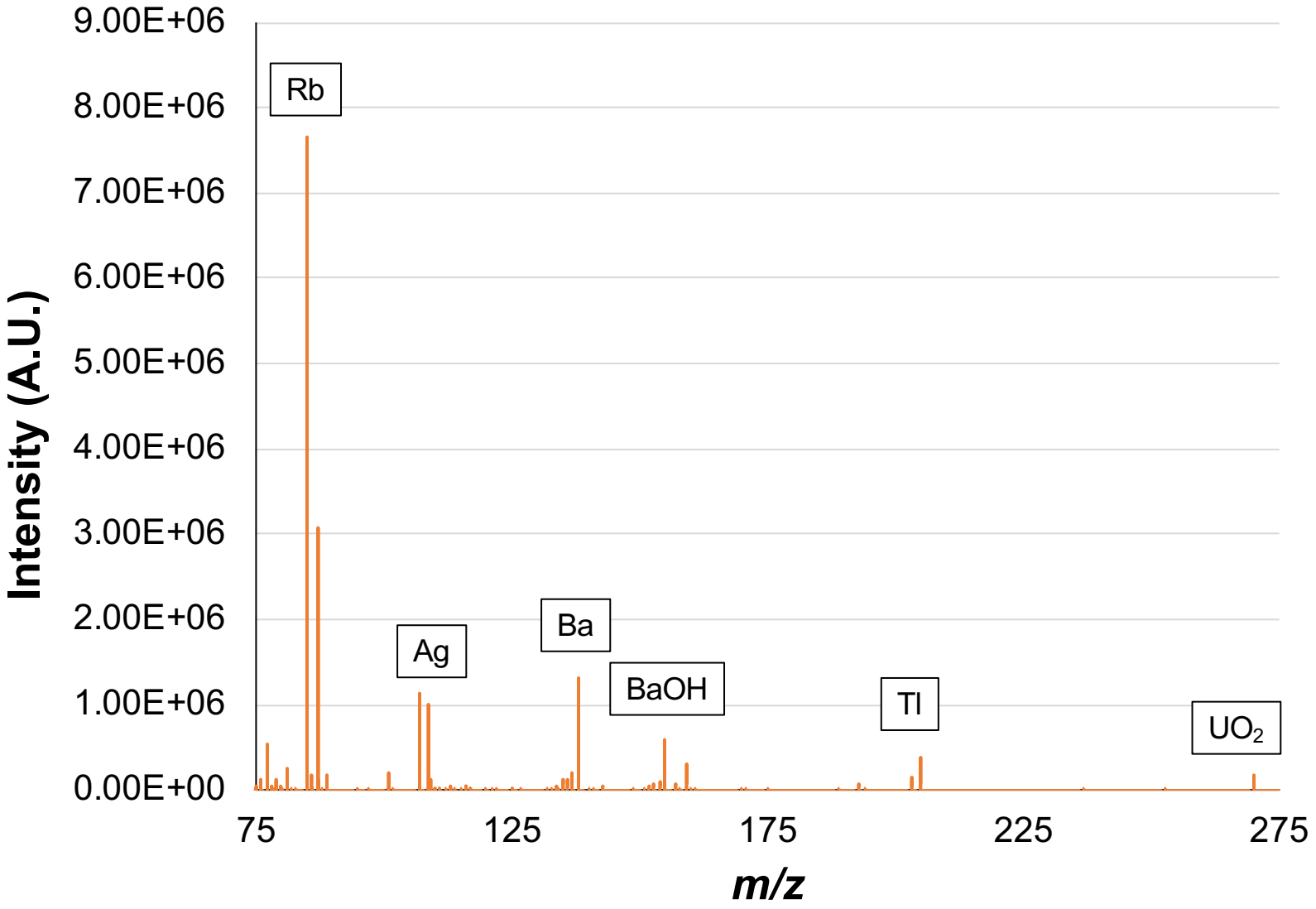
Supplemental Figure 1



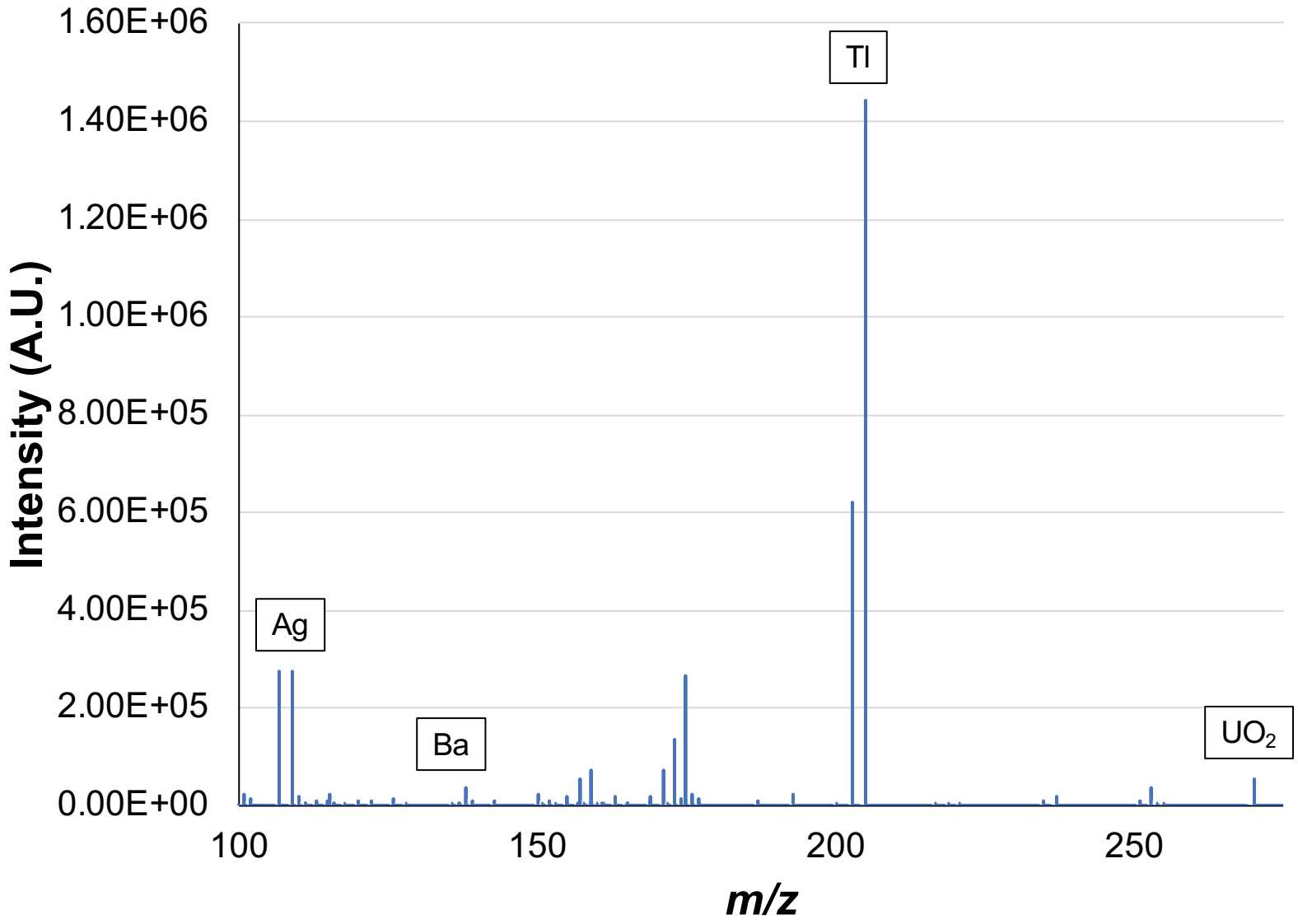




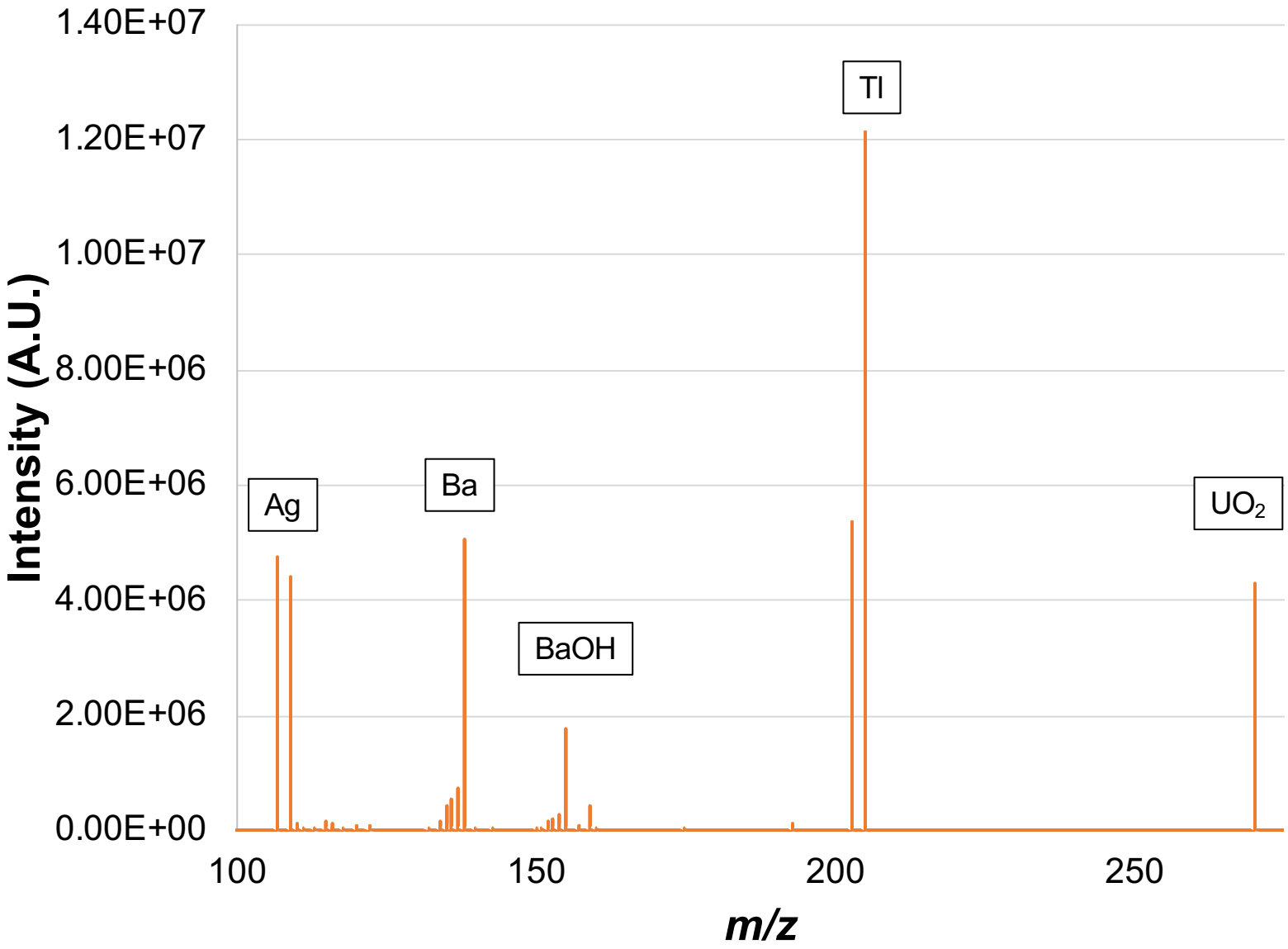
Supplemental Figure 2a



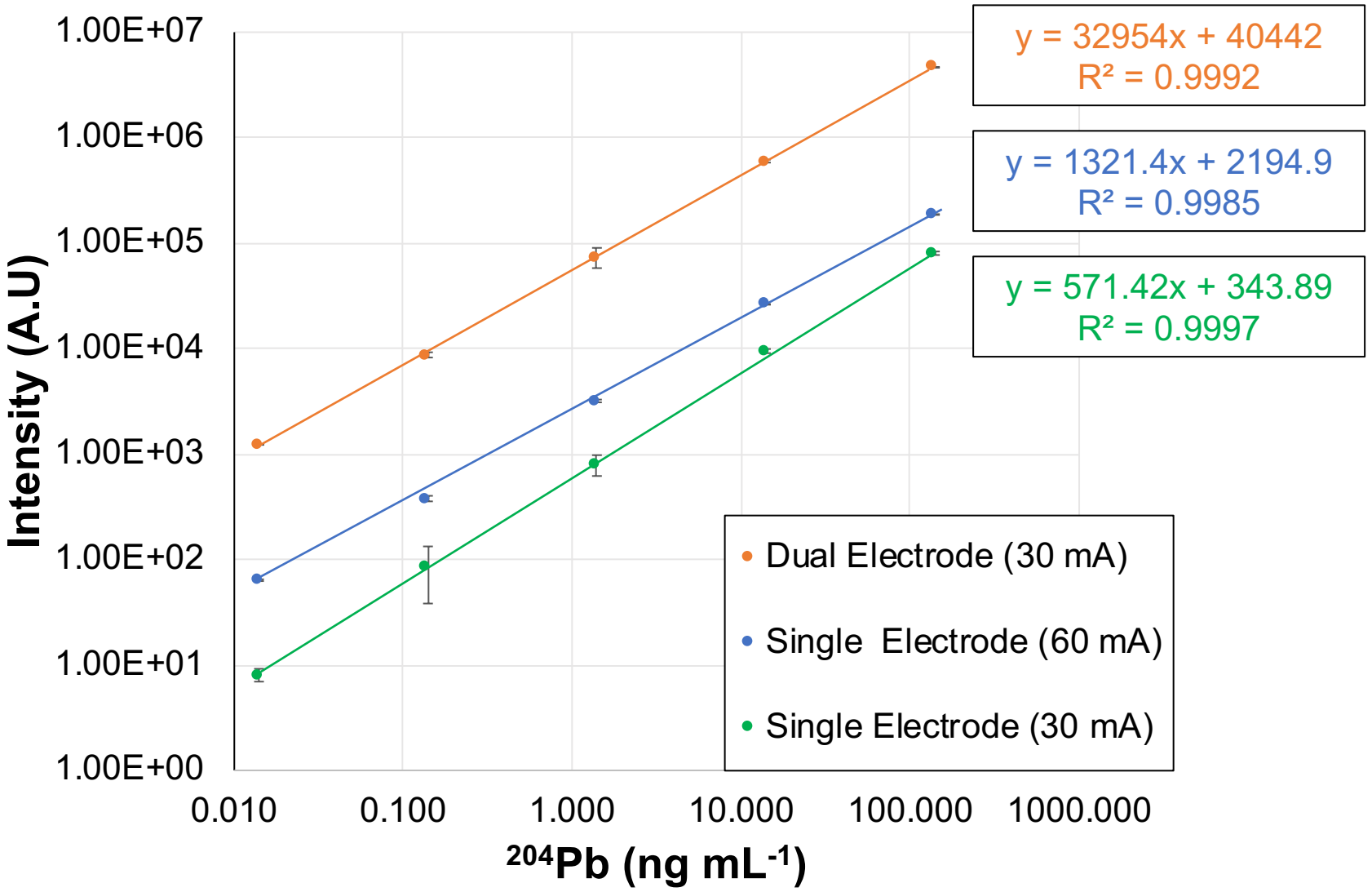
Supplemental Figure 2b



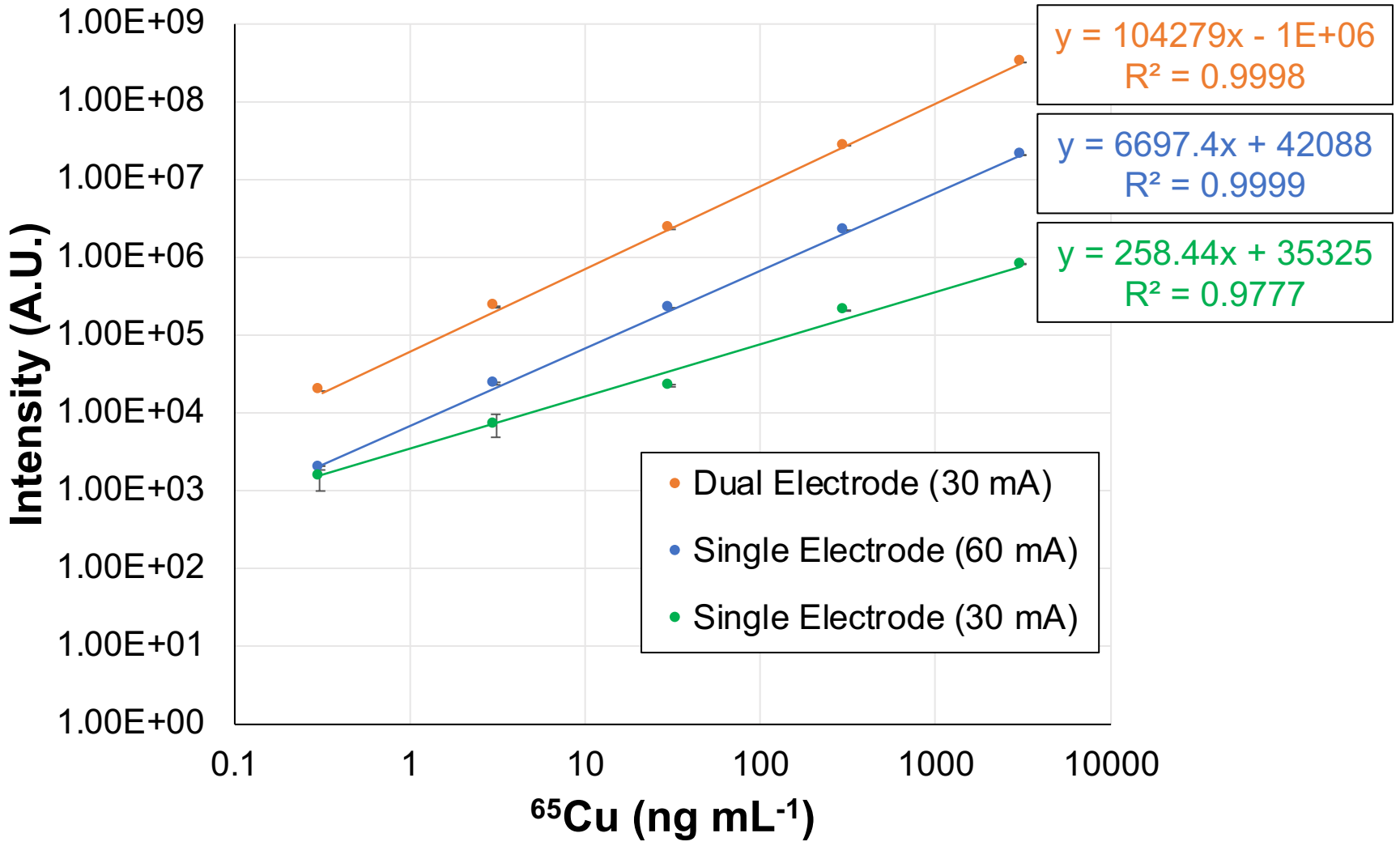
Supplemental Figure 2c



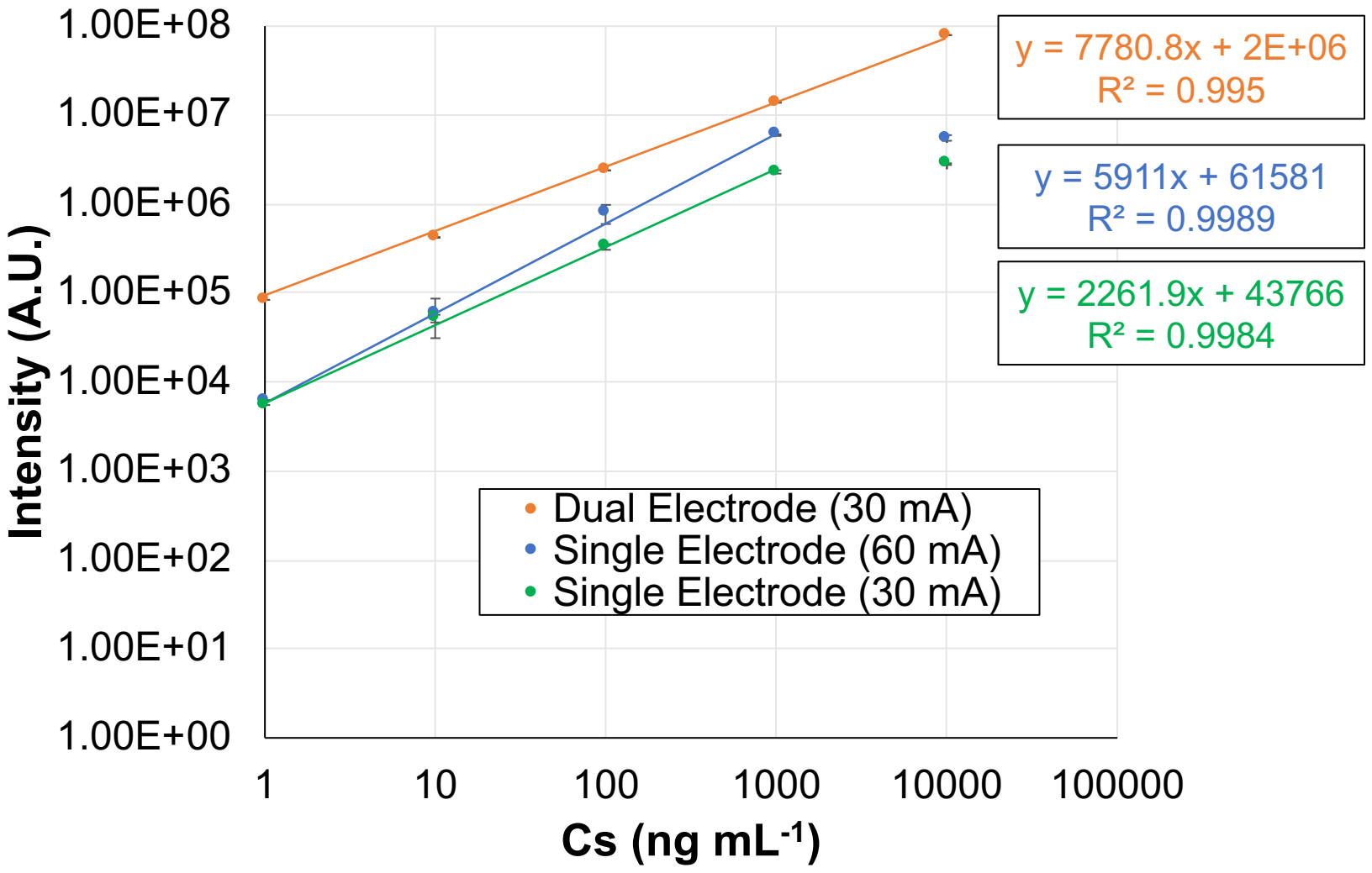
Supplemental Figure 2d



Supplemental Figure 3a



Supplemental Figure 3b



Supplemental Figure 3c