New Reagents for Enhanced Liquid Chromatographic Separation and Charging of Intact Protein Ions for Electrospray Ionization Mass Spectrometry

Santosh G. Valeja[1,2], Jeremiah D. Tipton[1], Mark R. Emmett[1,2,*] and Alan G. Marshall[1,2,*]

[1]*Ion Cyclotron Resonance Program, National High Magnetic Field Laboratory, Florida State University, 1800 East Paul Dirac Drive, Tallahassee, FL, 32310-4005, U.S.A.*

[2]*Department of Chemistry and Biochemistry, Florida State University, Tallahassee, FL, 32306*

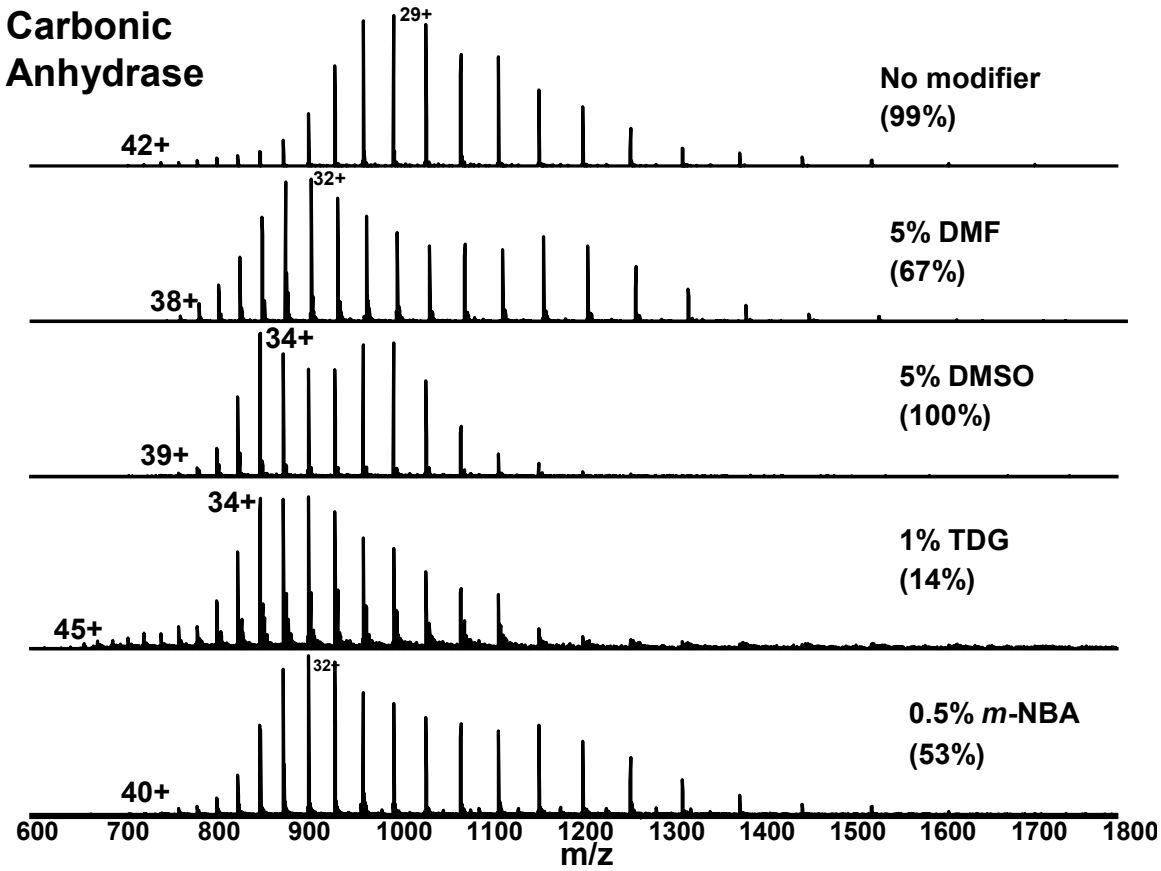

Figure S-1. Representative positive-ion electrospray FT-ICR mass spectra of carbonic anhydrase. The base solution was 50%/50%/0.5% water/acetonitrile/formic acid. TDG gave maximum charging of intact protein, whereas DMSO gave much higher S/N for higher charge states relative to other modifiers. The highest peak in each spectrum is reported as a percentage of the highest peak in the DMSO spectrum.

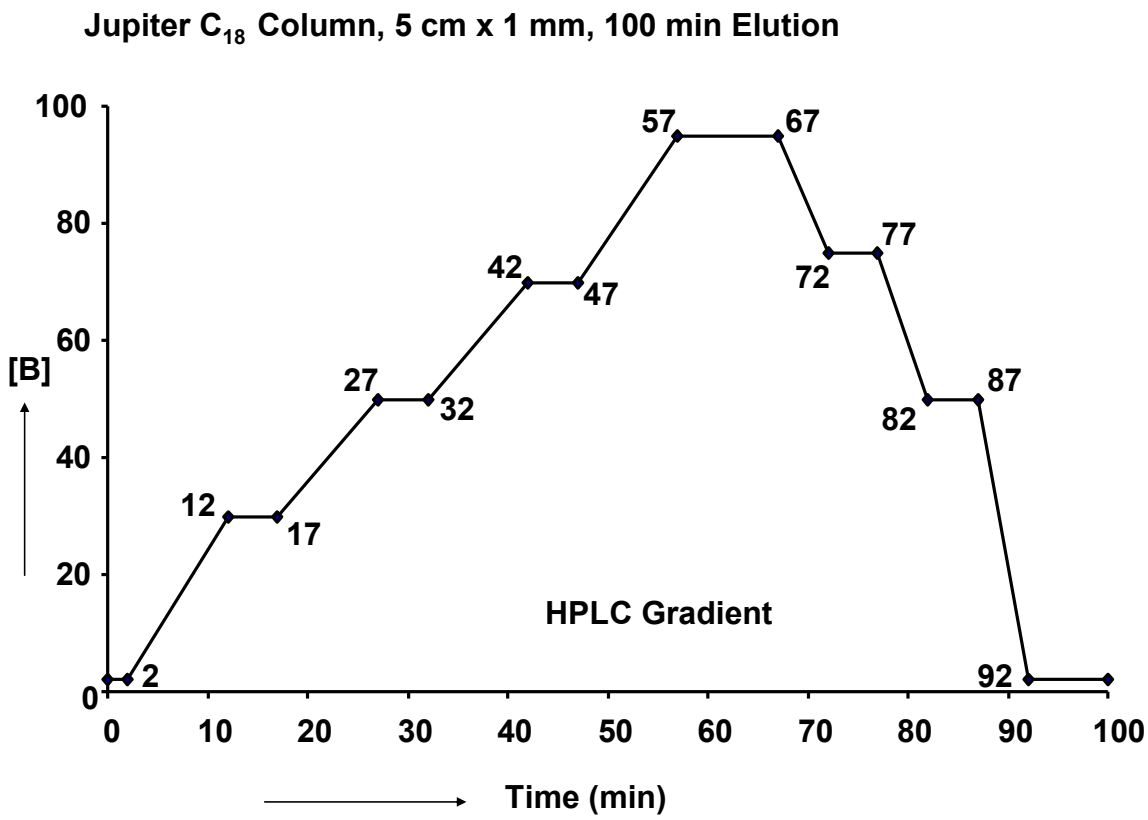

Figure S-2. Stepwise gradient profile for separation of protein standards with a Jupiter C_{18} column (Figure S-3).

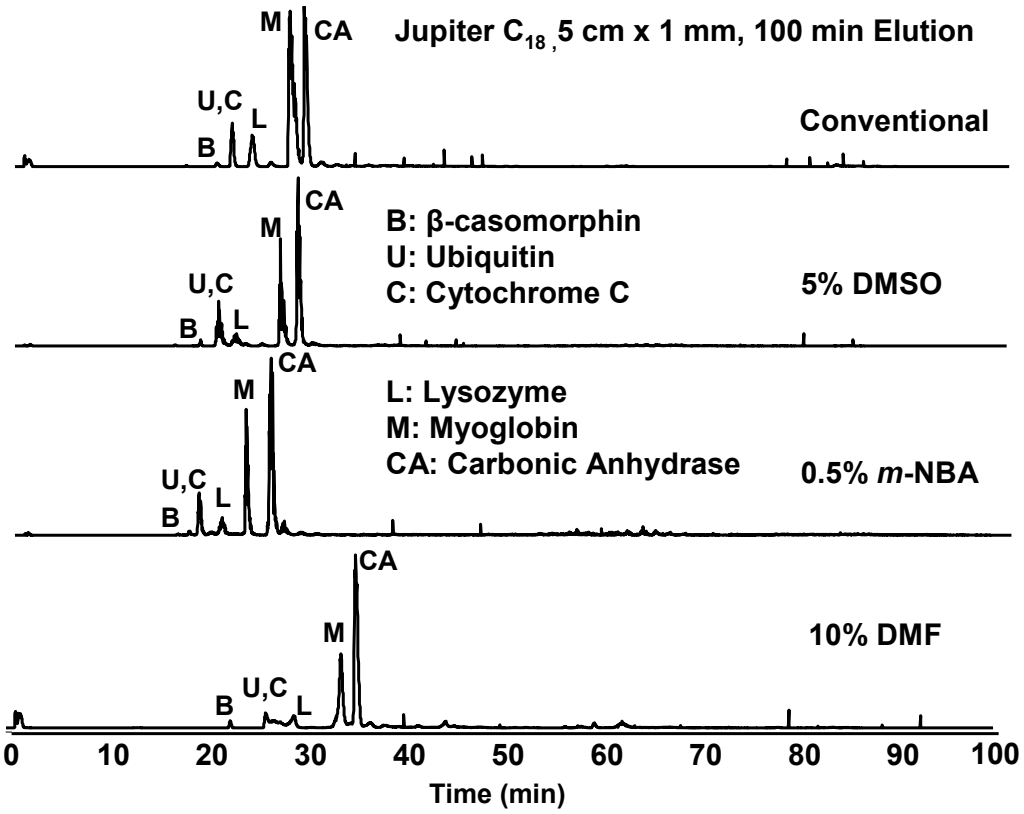

Figure S-3. Total ion elution profiles for a mixture of protein standards for each of four solvent systems.