

Supporting Information.**Supplementary Figures:**

Figure 1S. Drift times for the singly, doubly and triply protonated peptides selected for inclusion in QCAL-IM, following tryptic proteolysis of a set of 'standard' proteins.

Figure 2S. Peptide map of QCAL-IM following proteolytic cleavage using either trypsin or Lys-C; included are the peptide numbers and the m/z values of the doubly protonated peptide ions.

Figure 3S. Linear regression comparing measured Ω of doubly charged peptide ions on both the modified Synapt and Q-TOF linear field mobility instruments.

This material is available free of charge via the Internet at <http://pubs.acs.org>.

Figure 1S.

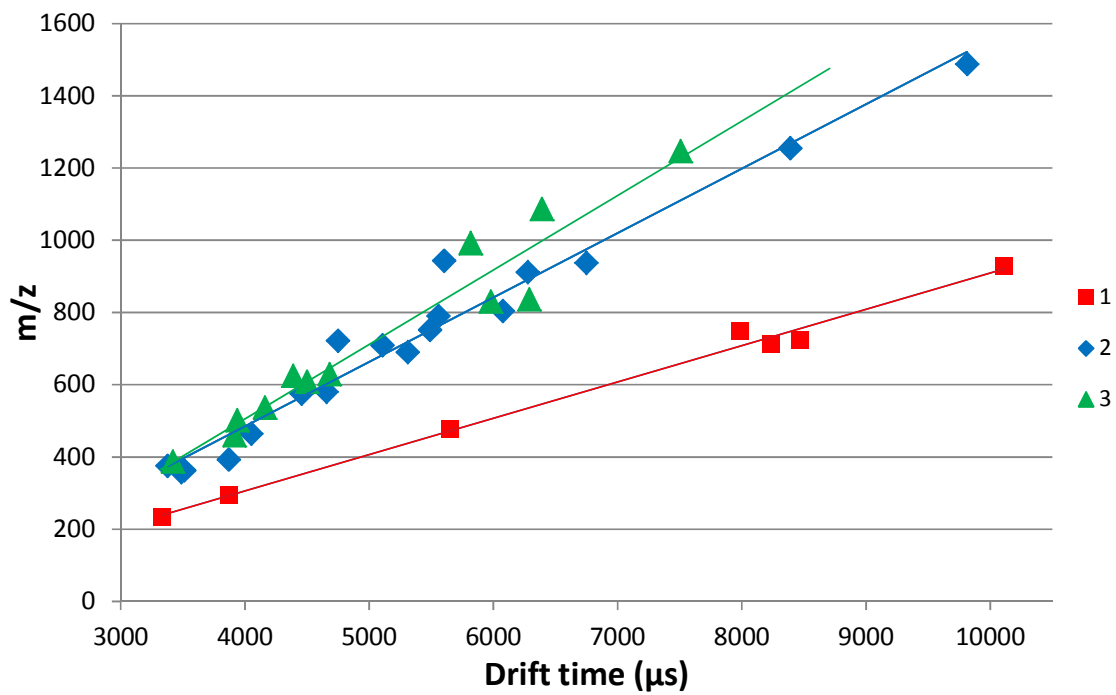


Figure 2S.

QCAL-IM: 368amino acids, ~39.3kDa

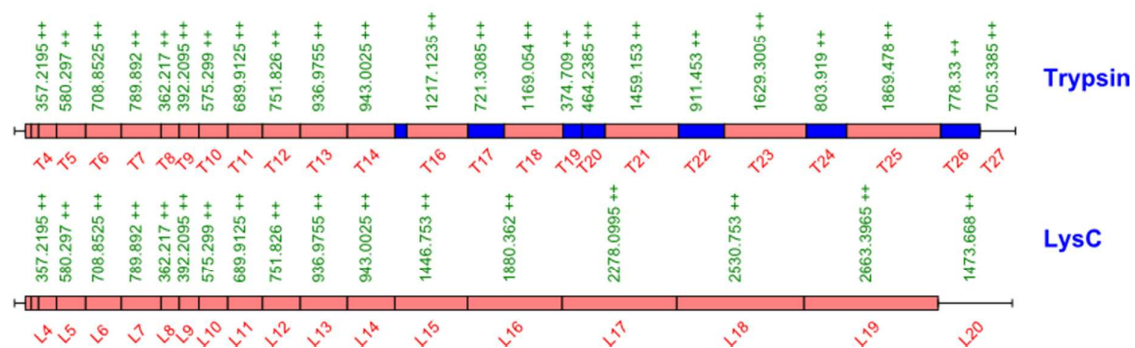


Figure 3S.

