

**ESI Fig. 1†.**

PMF spectra of lysozyme (A) and guanidinated lysozyme (B). Peptides appeared containing guanidinated lysine residues (denoted with K<sup>#</sup>), including K<sup>#</sup>VFGR, CELAAAMK<sup>#</sup>R and CK<sup>#</sup>GTDVQAWIR, but not corresponding peptides cleaved at K<sup>#</sup> in the PMF spectra of guanidinated lysozyme (B). The peptides with a lysine residue (K) as the N-terminal cleavage site, such as (K)GTDVQAWIR, (K)FESNFNTQATNR, and (K)IVSDGNGMNAAVVAWR, appeared in the PMF of lysozyme (A) but disappeared after guanidination. The pair of peaks gave a good example: after guanidination, (K)GTDVQAWIR (A) was changed into CK<sup>#</sup>GTDVQAWIR (B) because of the discleavage at K<sup>#</sup>.

