

Supporting information

Supporting figure 1

Tandem MSMS of the $83n^{5+}$ ions of 8TAB (a) 10TAB (b) and 12TAB (c). The precursor ions (P) are highlighted in grey. The various intermediate ion populations with -1 and -2 charges are highlighted in red and blue respectively. The italicised values represent the total loss in aggregation number of the respective ions. The collision voltage applied is indicated. 5-fold (50 V) and 10-fold (60 V) magnifications have applied (b) and 50-fold (80V) (c) to the 5000/6000 to 9000 m/z region of these spectra.

Supporting figure 2

A comparison of the dissociation patterns of the $53n^{4+}$, $31n^{3+}$ and $47n^{3+}$ ions of detergent clusters of 6TAB (a, b and c) and 16TAB (d, e and f). Five different MSMS spectra are shown for each cluster, each acquired at a different collision energy as indicated in parenthesis. The m/z value of the precursor ion is indicated (P) for each cluster. The main cluster populations during dissociation are highlighted with coloured strips as follows -1+ (red) -2+ (blue) and -3+ (green) and the singly charged monomer and dimer ions (light blue).

Supporting figure 3

Concentration dependence on the average cluster size of 12TAB gas-phase micelles at each charge state. The charge state is indicated in parentheses.

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