

Supplementary Figures Captions

Figure S1. Chemical structure and molecular weights of the investigated surfactants.

Figure S2. Mass spectrum of sodium stearate using CTS@Fe₃O₄ MNPs

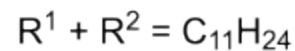
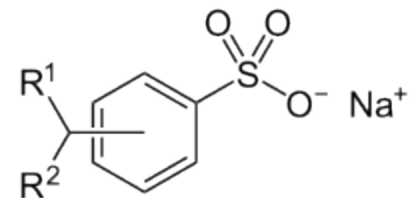
Figure S3. Tap water analysis of mixed surfactants using DHB

Figure S4. Tap water analysis of mixed surfactants using CTS@Fe₃O₄ MNPs

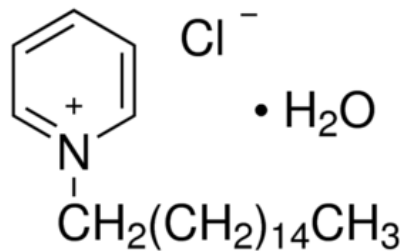
Figure S1.



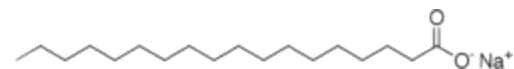
**Hexadecyl trimethyl ammonium bromide
(364 Da)**



**Sodium dodecylbenzenesulfonate (SDBS)
(348 Da)**



**Cetylpyridinium chloride
(358 Da)**



**Sodium stearate
(306 Da)**

Figure S2.

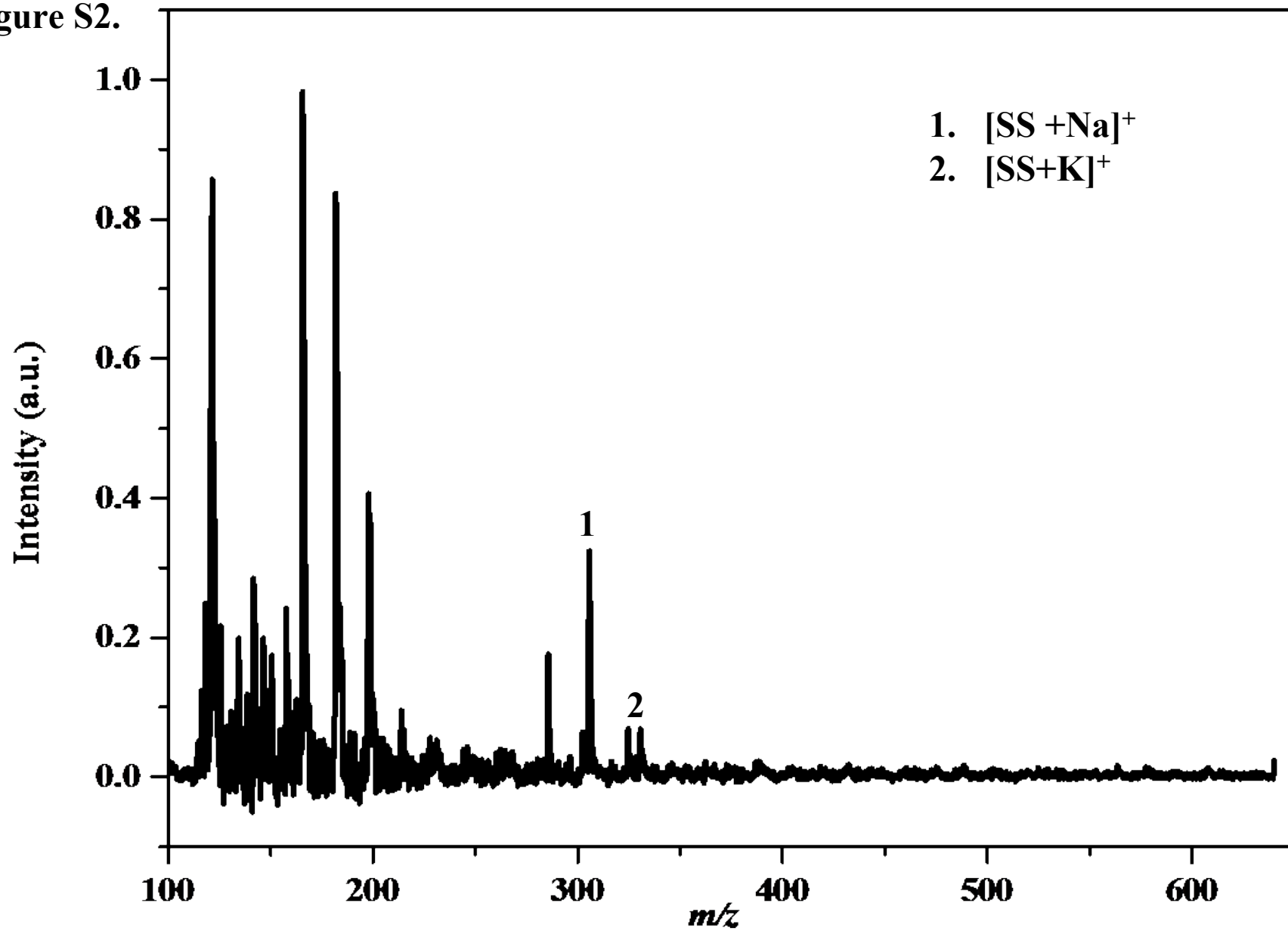


Figure S3.

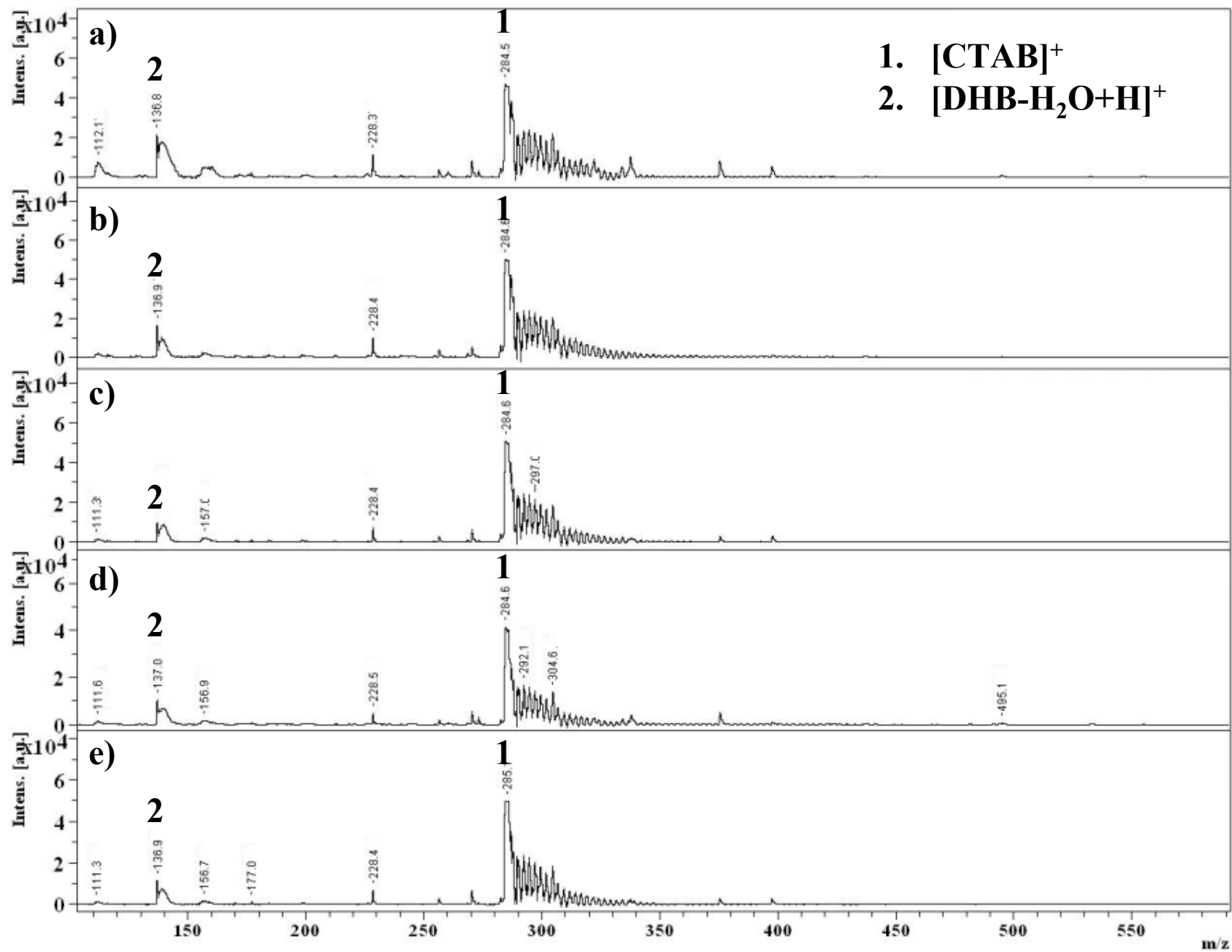


Figure S4.

