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> Supporting Information Incorporation of poorly soluble drug Cefixime inside the micellar core of conventional and gemini surfactants

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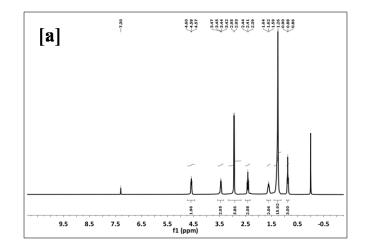
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¹H NMR is as follow:

¹H NMR (CDCl₃, TMS): δ: 0.88[t, 6H, –CH₃], δ: 1.26[s, 36H, –CH₂–], δ: 1.58[m, 2H, – NCH₂CH₂CH₂N–], δ: 2.953[t, 4H, –OCH₂CH₂N–], δ: 4.357[t, 4H, –NCH₂CH₂O–], δ: 2.577[s, 12H, –NCH₃], δ:2.356[t, 4H, –NCH₂CH₂CH₂N–]



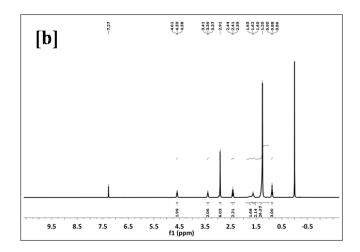


Fig. S1: ¹H NMR spectrum of [a] 12-3-12 and [b] 16-3-16 gemini surfactants.

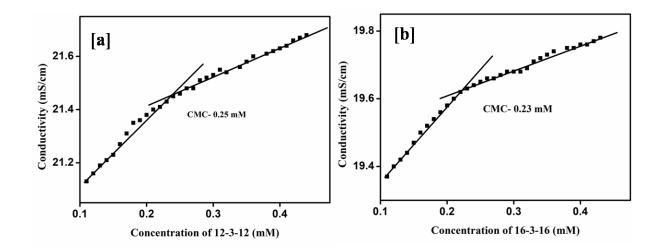


Fig. S2: Conductivity plot for gemini surfactants in distilled water (a) 12-3-12 and (b) 16-3-16 at 298 K

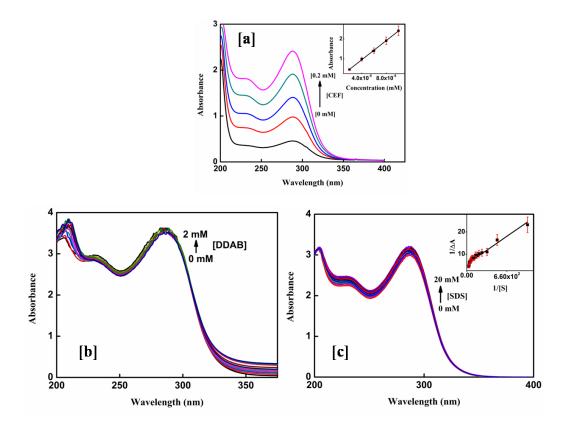


Fig. S3: (a) Absorption spectra of CEF inset: concentration *vs* absorption plot of CEF and UV spectra of CEF (0.15 mM) in presence of varying concentrations of (b): DDAB (c) SDSin phosphate buffer (pH 7.4) at 298 Kinset: Benesi-Hildebrand plot.

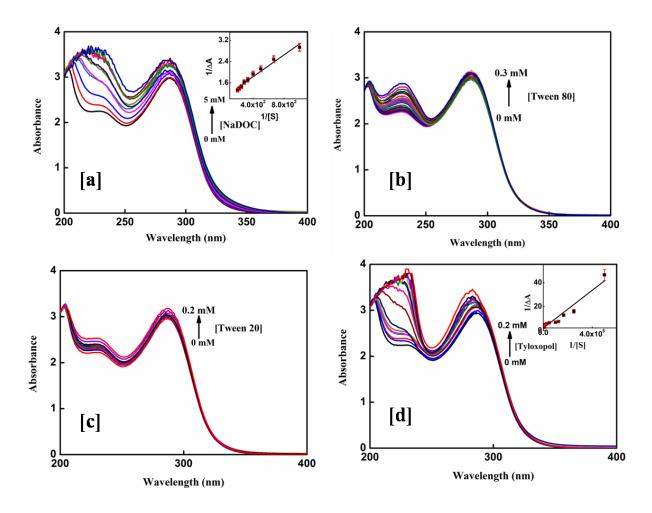


Fig. S4: UV spectra of CEF (0.15 mM) in presence of varying concentrations of (a): NaDOC (b) Tween 80 (c) Tween 20 and (d): Tyloxapol in phosphate buffer (pH 7.4) at 298 Kinset: Benesi-Hildebrand plot.

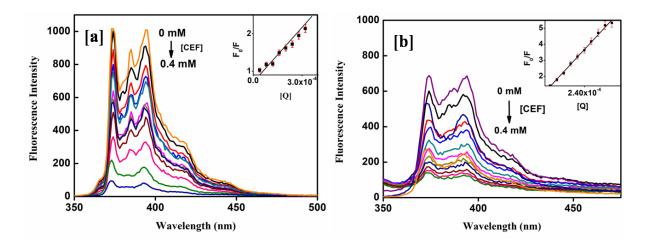


Fig. S5: Fluorescence spectra of pyrene at varying concentrations of CEF in presence of (a): DTAB and (b): DDAB in phosphate buffer (pH 7.4) at 298K inset: Stern-Volmer plot.

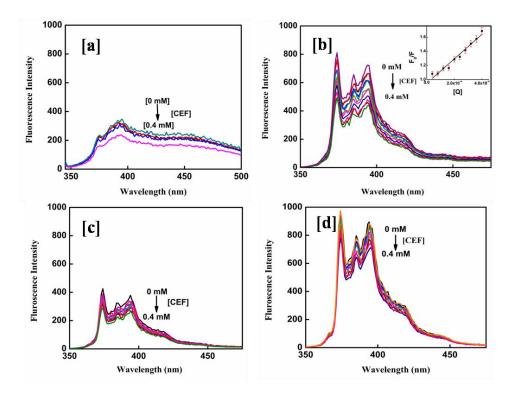


Fig. S6: Fluorescence spectra of pyrene at varying concentrations of CEF in presence of (a): NaDOC(b): Tween 80 (c) Tween 20 and (d) Tyloxapol in phosphate buffer (pH 7.4) at 298K inset: Stern-Volmer plot.

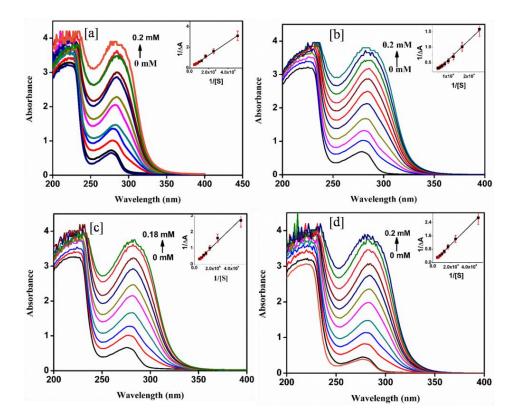


Fig. S7: UV spectrum of BSA at varying concentrations of CEF in presence of [a] CTAB (20 mM) [b] DTAB (20 mM) [c] SDS (20 mM) and [d] Tween-80 (0.3 mM) inset: Benesi-Hildebrand plot in phosphate buffer (pH 7.4) at 298 K.

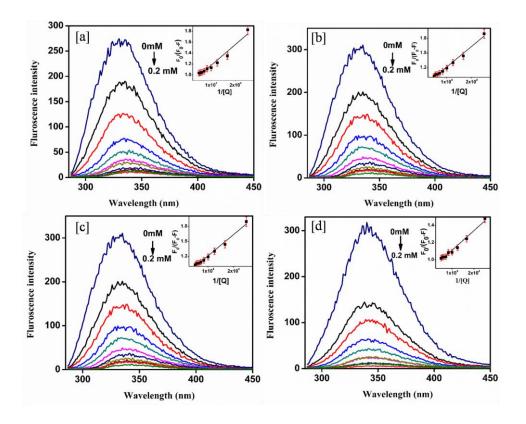


Fig.S8: Fluorescence spectra of BSA at varying concentrations of CEF in presence of [a] CTAB (20 mM) [b] DTAB (20 mM) [c] SDS (20 mM) [d] Tween-80 (0.3 mM) inset: Modified Stern-Volmer plot in phosphate buffer (pH 7.4) at 298 K.

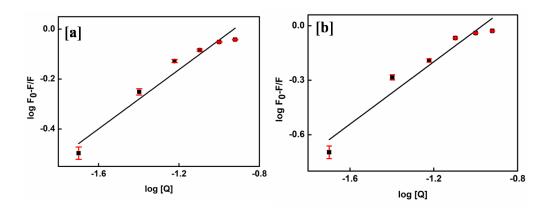


Fig S9: plot of log F_0 -F/F vs log Q for the BSA at varying concentrations of CEF in presence of [a]: 12-3-12 (5 mM) [b]: 12-3-12 (0.5 mM) in phosphate buffer (pH 7.4) at 298K.

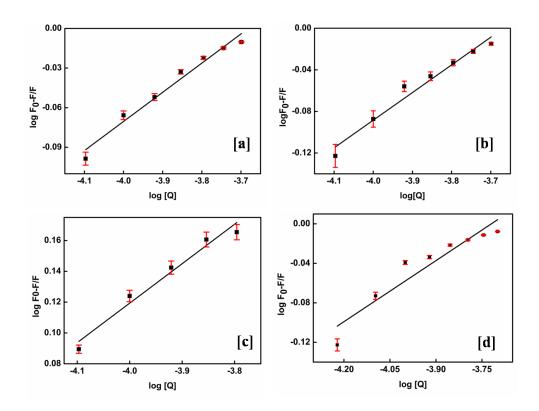


Fig. S10: plot of log F₀-F/F *vs* log Q for the BSA at varying concentrations of CEF in presence of [a]: CTAB (20mM) [b]: DTAB (20 mM) [c]: SDS (20 mM) [d]: Tween 80 (0.3 mM) in phosphate buffer (pH 7.4) at 298K.

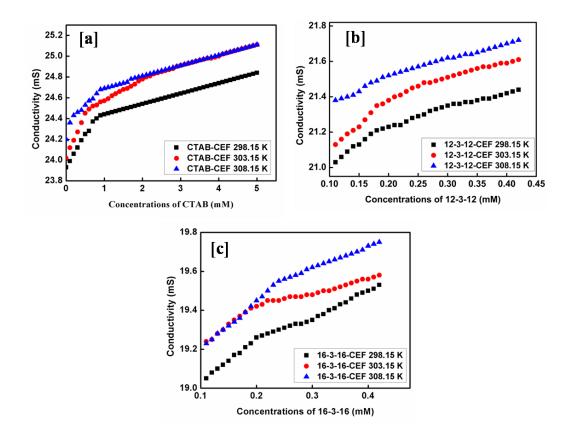


Fig. S11. Conductivity plots of (a) CTAB-CEF (b) 12-3-12-CEF (c) 16-3-16-CEF in pH 7.4 containing 0.15mMCEF.

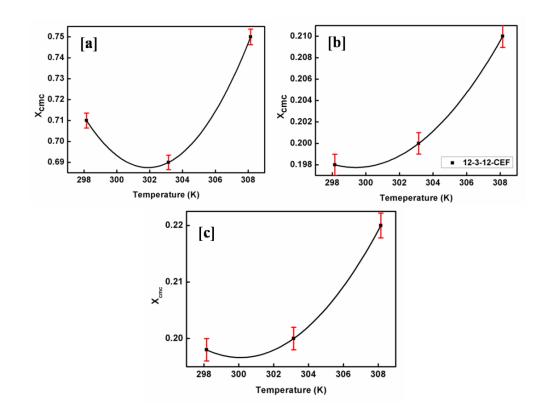


Fig. S12. Representative plots of $X_{cmc}vs$ temperature in pH 7.4 containing 0.15mMCEF for (a) CTAB-CEF (b) 12-3-12-CEF (c) 16-3-16-CEF.

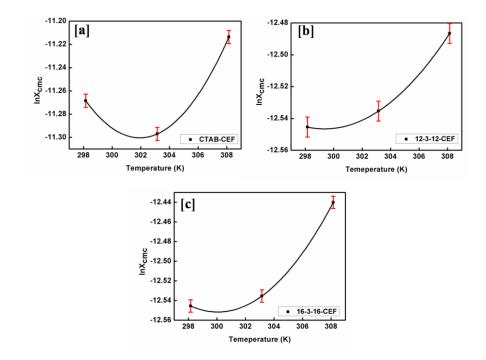


Fig. S13. Representative plots of $ln X_{cmc}$ versus temperature in pH 7.4 containing 0.15mMCEF for (a) CTAB-CEF (b) 12-3-12-CEF (c) 16-3-16-CEF.

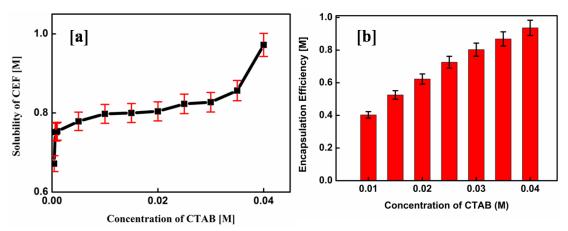


Fig. S14: Solubility plot for CEF with varying concentration of CTAB (0.1 - 40 mM) at 298 K in pH 7.4.

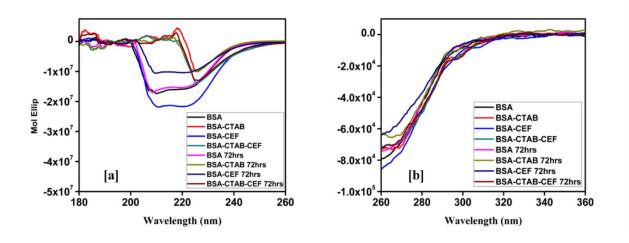


Fig. S15: (a) Far UV and (b) near UV CD spectra of BSA in presence of CEF (0.5 mM) with surfactant CTAB (20 mM) in phosphate buffer (pH 7.4) at 298 K.

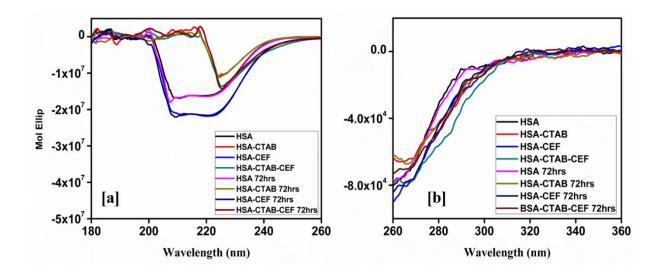


Fig.S16: (a) Far UV and (b) near UV CD spectra of HSA in presence of CEF (0.5 mM) with surfactant CTAB (20 mM) in phosphate buffer (pH 7.4) at 298 K.

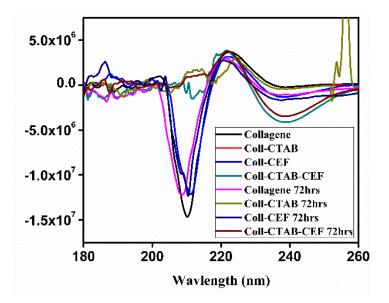


Fig.S17: Collagen spectra in presence of CEF (0.5 mM) with surfactant CTAB (20 mM) in phosphate buffer (pH 7.4) at 298 K