Supporting Information for

Thermo-Reversible Capture and Release of DNA by Zwitterionic Surfactants

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Figure S1. a) Variation of the intensity of the absorbance at 260 nm of DNA as a function in tris-HCl buffer solution with a pH of 6.8 at 25 °C; b) melting curves obtained in the presence of a tris-HCl buffer solution, pH=6.8, $c_{DNA} = 0.5 \text{ mmol} \cdot \text{L}^{-1}$; c) Variation of zeta-potential ($\zeta$) for $C_n$DMAOH$^+$ samples with varying temperatures, samples of $C_{14}$DMAO, $C_{12}$DMAO and $C_{10}$DMAO were prepared using tris-HCl buffer solutions with pH = 7.2, 6.8 and 6.6, respectively; d) FT-IR spectra of
$C_{14}$DAMO in tris-HCl solutions at different temperatures; e) Turbidity of $C_{14}$DAMO and $C_{12}$DAMO in tris-HCl solutions at different temperatures.

Table 1. cmcs of $C_n$DMAO in tris-HCl buffer solutions.

<table>
<thead>
<tr>
<th></th>
<th>$a_{\text{cmc}}$</th>
<th>$b_{\text{cmc}}$</th>
<th>$c_{\text{cmc}}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$C_{10}$DMAO</td>
<td>6 mmol·L$^{-1}$</td>
<td>10 mmol·L$^{-1}$</td>
<td>15 mmol·L$^{-1}$</td>
</tr>
<tr>
<td>$C_{12}$DMAO</td>
<td>0.9 mmol·L$^{-1}$</td>
<td>1.6 mmol·L$^{-1}$</td>
<td>4 mmol·L$^{-1}$</td>
</tr>
<tr>
<td>$C_{14}$DMAO</td>
<td>0.25 mmol·L$^{-1}$</td>
<td>0.4 mmol·L$^{-1}$</td>
<td>0.6 mmol·L$^{-1}$</td>
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</table>

Samples of $C_{14}$DMAO, $C_{12}$DMAO and $C_{10}$DMAO were prepared using tris-HCl buffer solutions with pH = 7.2, 6.8 and 6.6, respectively.

$a$ CMC: The onset concentration for the change of $I_1/I_3$ ratio

$b$ CMC: The mid-point concentration for the change of $I_1/I_3$ ratio

$c$ CMC: The leveling off concentration for the change of $I_1/I_3$ ratio

Figure S2. A comparison in hydrodynamic radii ($R_h$) of DNA/$C_{12}$DMAO system at different temperatures for the filtered and centrifuged samples. $c_{\text{DNA}} = 0.5$ mmol·L$^{-1}$ and $R = 20$. 
**Figure S2.** Fluorescence spectra of 0.5 mmol·L⁻¹ DNA in tris-HCl buffer solution at different temperatures. The samples were prepared using tris-HCl buffer solution with pH = 7.2.

**Figure S4.** Variations of a) UV-vis absorbance, b) turbidity, c) fluorescence intensity (450 nm) and d) gel electrophoresis performance of DNA/C₁₄DMAO system at 25 °C and 37 °C as a function of cycle number. The samples were prepared using tris-HCl buffer solutions with pH = 7.2.