Supporting Information

Natural Solvent-Assisted Synthesis of Amphiphilic Co-Polymeric Nanomicelle for
Prolonged Release of Camptothecin Delivery

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S.Figure1. FT-IR frequencies of (A) Choline chloride; (B) Citric acid; (C) DES-I solvent and (D) DES-II solvent.
S. Figure 2. NMR spectrum of (A) Choline chloride; (B) Citric acid; (C) DES-I solvent and D) DES-II solvent
S. Figure 3. A) Encapsulation efficiency of CPT on the poly (ε-cap-co-CA) carrier; B) Encapsulation pattern of CPT loaded poly (ε-cap-co-CA), C) Drug loading capacity of poly (ε-cap-co-CA) carrier.
S. Figure 4. Zeta potential of the (A) poly (ε-cp-co-CA) micelle and (B) CPT drug loaded poly (ε-cp-co-CA) micelle.
S.Figure 5. *In-vitro* drug releasing UV-Visible spectroscopy pattern of CPT loaded poly (ε-cap-co-CA) carrier in various physiological environments (A) pH 2.6; (B) pH 5.5; (C) pH 6.8 and (D) 7.4.
S. Figure 6. *In-vitro* drug releasing profile of CPT loaded poly (ε-cap-co-CA) carrier in various physiological environments (A) pH 2.6; (B) pH 5.5; (C) pH 6.8 and (D) 7.4
S. Figure 7. (A) cytotoxicity and (B) cell viability of Poly (ɛ-cp-co-CA) micelle and CPT loaded Poly (ɛ-cp-co-CA) carrier with different concentrations like 25 µg, 50 µg, and 100 µg on the A549 lung cancer cells and normal L929 cell line respectively, C) line graph of the IC$_{50}$ value, P<0.005, (n=3).
**Table 1.** Chemical shifts values from $^1$H NMR spectrum with the reference solvent DMSO-$d_6$ of (A) Choline chloride; (B) Citric acid, and DESs mixtures C) DES-I, D) DES-II.

<table>
<thead>
<tr>
<th>Samples</th>
<th>Choline chloride</th>
<th>Citric acid</th>
<th>DES-I</th>
<th>DES-II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choline chloride (A)</td>
<td>OH-CH$_2$(5.57), N-CH$_3$, N(CH$_3$)$_3$</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Citric acid (B)</td>
<td>-</td>
<td>Double of doublet Methylene protons (2.70, 2.60)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>DES-I (C)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>DES-II (D)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
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δ (ppm)