

**Table S1.** IC<sub>50</sub> of PTX-loaded PEG-FTS micelles compared to free PTX in 4T1.2 mouse breast cancer cell line.

|       | IC <sub>50</sub> (ng/mL)                 |  |  |  |
|-------|--|--|--|--|
| PTX   | PEG <sub>2K</sub> -FTS <sub>2</sub> /PTX | PEG <sub>2K</sub> -FTS <sub>4</sub> /PTX | PEG <sub>5K</sub> -FTS <sub>2</sub> /PTX | PEG <sub>5K</sub> -FTS <sub>4</sub> /PTX |
| 202.0 | 72.8                                     | 181.8                                    | 59.3                                     | 33.2                                     |

### Figure legends

**Figure S1.** <sup>1</sup>H NMR spectra (400MHz) of PEG<sub>2K</sub>-FTS<sub>2</sub> (A), PEG<sub>2K</sub>-FTS<sub>4</sub> (B), PEG<sub>5K</sub>-FTS<sub>2</sub> (C) and PEG<sub>5K</sub>-FTS<sub>4</sub> (D) conjugates in CDCl<sub>3</sub>.

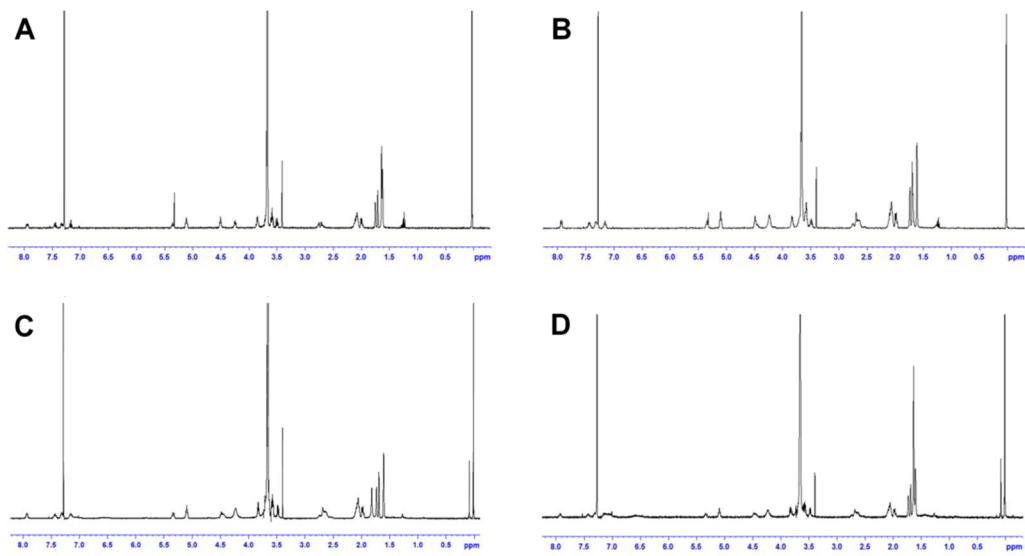
**Figure S2.** MADLI-TOF of PEG<sub>2K</sub>-FTS<sub>2</sub> (A), PEG<sub>2K</sub>-FTS<sub>4</sub> (B), PEG<sub>5K</sub>-FTS<sub>2</sub> (C) and PEG<sub>5K</sub>-FTS<sub>4</sub> (D) conjugates.

**Figure S3.** The size distribution of free PEG<sub>2K</sub>-FTS<sub>2</sub> (A), PEG<sub>2K</sub>-FTS<sub>4</sub> (C), PEG<sub>5K</sub>-FTS<sub>2</sub> (E) micelles and PTX-loaded PEG<sub>2K</sub>-FTS<sub>2</sub> (B), PEG<sub>2K</sub>-FTS<sub>4</sub> (D), PEG<sub>5K</sub>-FTS<sub>2</sub> (F) micelles in PBS measured by dynamic light scattering (DLS).

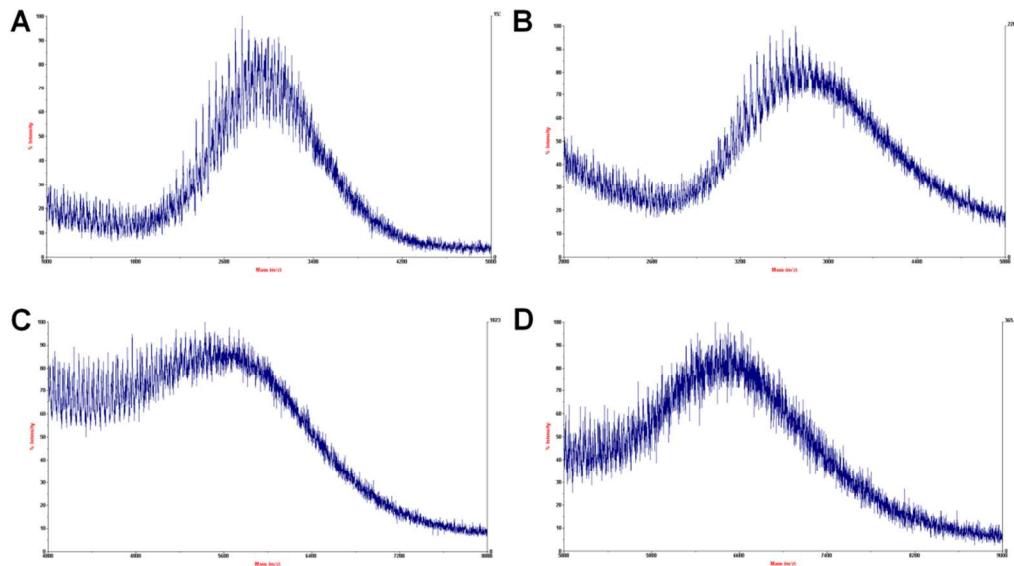
**Figure S4.** Transmission electron microscopy (TEM) of free PEG<sub>2K</sub>-FTS<sub>2</sub> (A), PEG<sub>2K</sub>-FTS<sub>4</sub> (C), PEG<sub>5K</sub>-FTS<sub>2</sub> (E) micelles and PTX-loaded PEG<sub>2K</sub>-FTS<sub>2</sub> (B), PEG<sub>2K</sub>-FTS<sub>4</sub> (D), PEG<sub>5K</sub>-FTS<sub>2</sub> (F) micelles.

**Figure S5.** Critical micelle concentration (CMC) of PEG<sub>2K</sub>-FTS<sub>2</sub> (A), PEG<sub>2K</sub>-FTS<sub>4</sub> (B), PEG<sub>5K</sub>-FTS<sub>2</sub> (C) and PEG<sub>5K</sub>-FTS<sub>4</sub> (D) micelles.

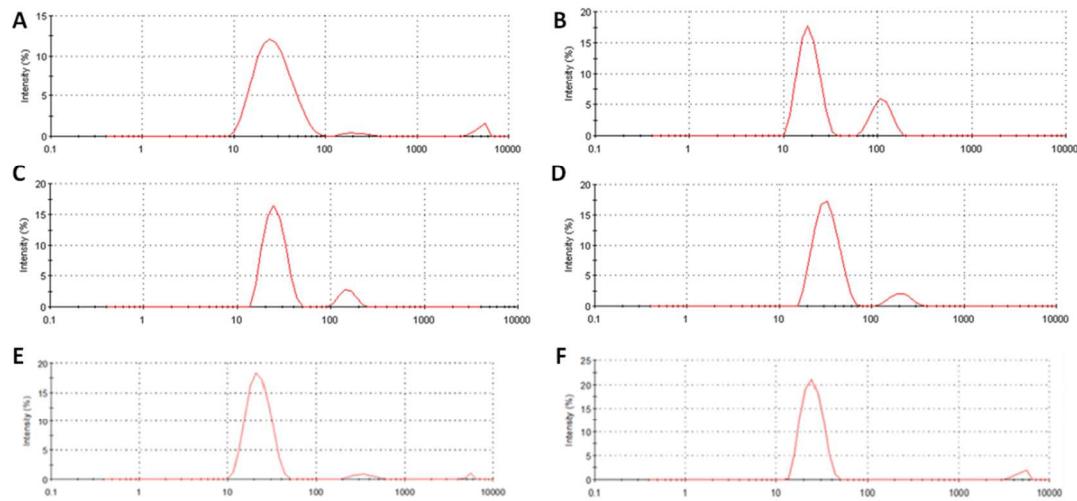
**Figure S1.**  $^1\text{H}$  NMR spectra (400MHz) of PEG<sub>2K</sub>-FTS<sub>2</sub> (A), PEG<sub>2K</sub>-FTS<sub>4</sub> (B), PEG<sub>5K</sub>-FTS<sub>2</sub> (C) and PEG<sub>5K</sub>-FTS<sub>4</sub> (D) conjugates in  $\text{CDCl}_3$ .



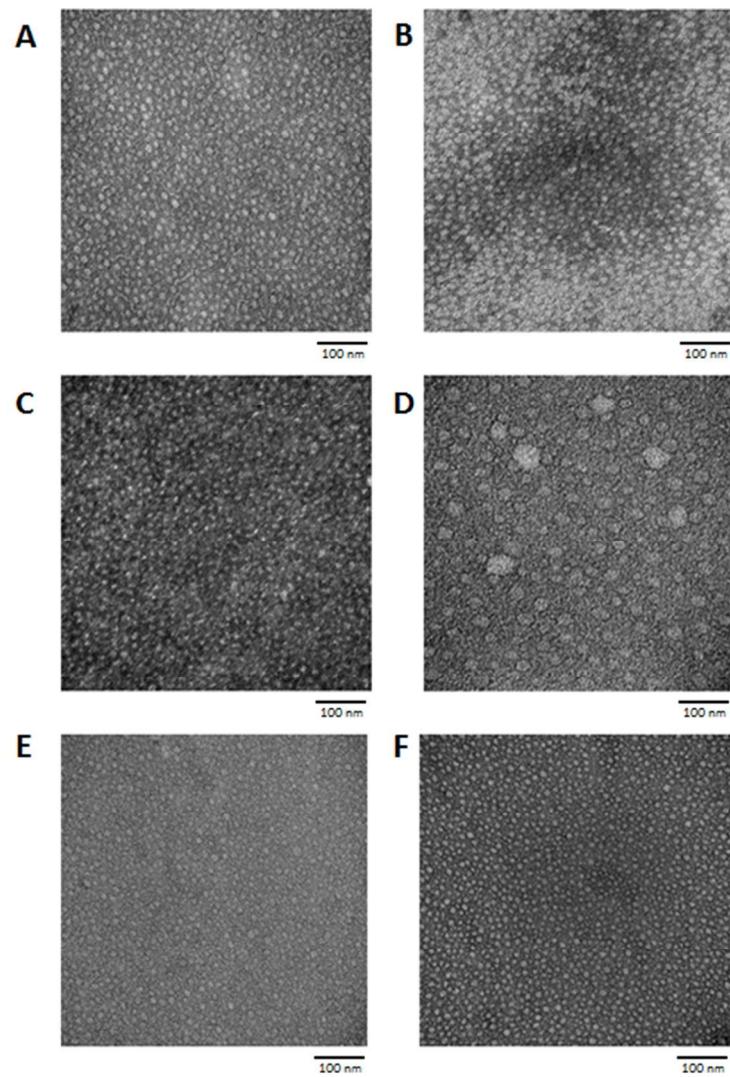
**Figure S2.** MADLI-TOF of PEG<sub>2K</sub>-FTS<sub>2</sub> (A), PEG<sub>2K</sub>-FTS<sub>4</sub> (B), PEG<sub>5K</sub>-FTS<sub>2</sub> (C) and PEG<sub>5K</sub>-FTS<sub>4</sub> (D) conjugates.



**Figure S3.** The size distribution of free PEG<sub>2K</sub>-FTS<sub>2</sub> (A), PEG<sub>2K</sub>-FTS<sub>4</sub> (C), PEG<sub>5K</sub>-FTS<sub>2</sub> (E) micelles and PTX-loaded PEG<sub>2K</sub>-FTS<sub>2</sub> (B), PEG<sub>2K</sub>-FTS<sub>4</sub> (D), PEG<sub>5K</sub>-FTS<sub>2</sub> (F) micelles in PBS measured by dynamic light scattering (DLS).



**Figure S4.** Transmission electron microscopy (TEM) of free PEG<sub>2K</sub>-FTS<sub>2</sub> (A), PEG<sub>2K</sub>-FTS<sub>4</sub> (C), PEG<sub>5K</sub>-FTS<sub>2</sub> (E) micelles and PTX-loaded PEG<sub>2K</sub>-FTS<sub>2</sub> (B), PEG<sub>2K</sub>-FTS<sub>4</sub> (D), PEG<sub>5K</sub>-FTS<sub>2</sub> (F) micelles.



**Figure S5.** Critical micelle concentration (CMC) of PEG<sub>2K</sub>-FTS<sub>2</sub> (A), PEG<sub>2K</sub>-FTS<sub>4</sub> (B), PEG<sub>5K</sub>-FTS<sub>2</sub> (C) and PEG<sub>5K</sub>-FTS<sub>4</sub> (D) micelles.

