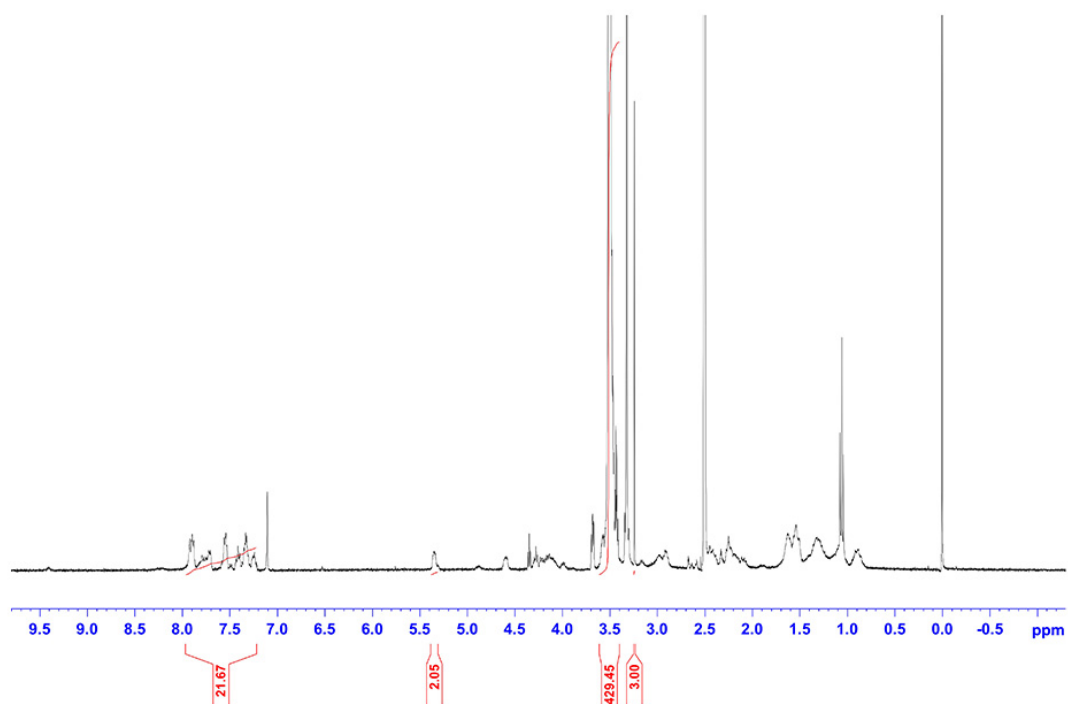
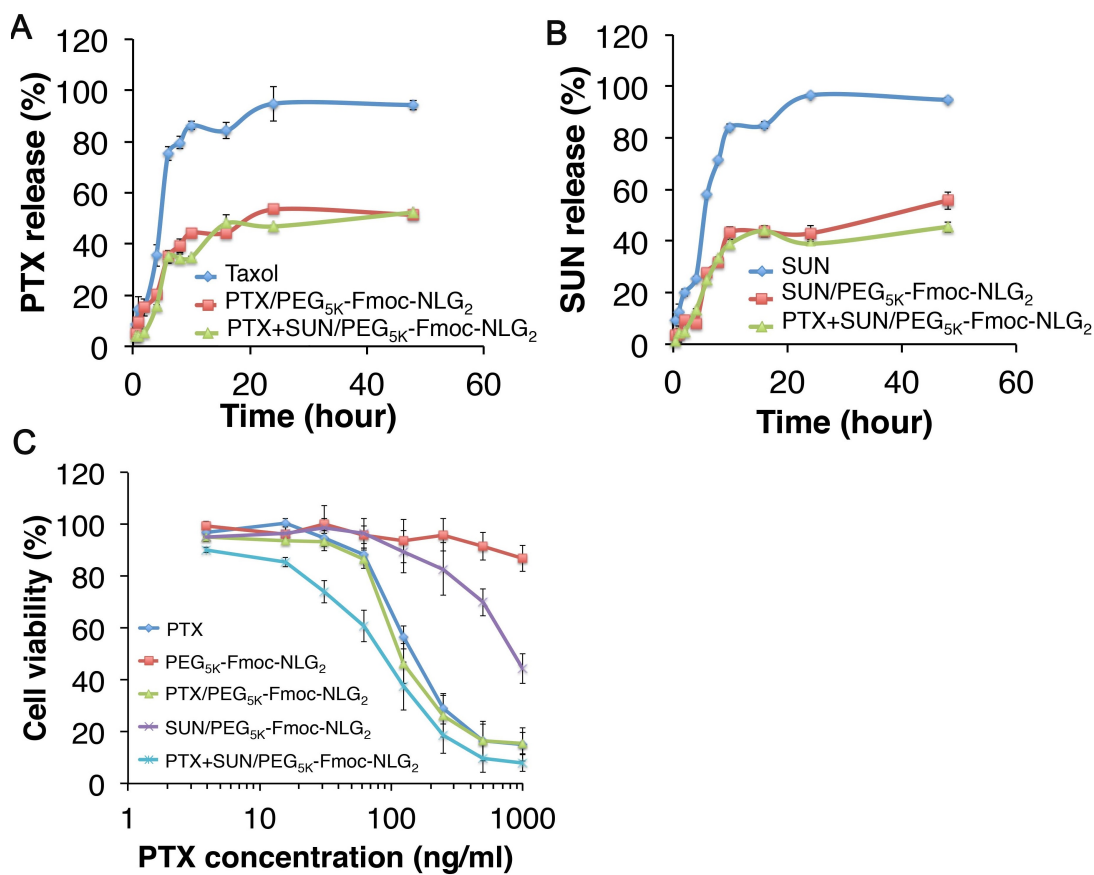


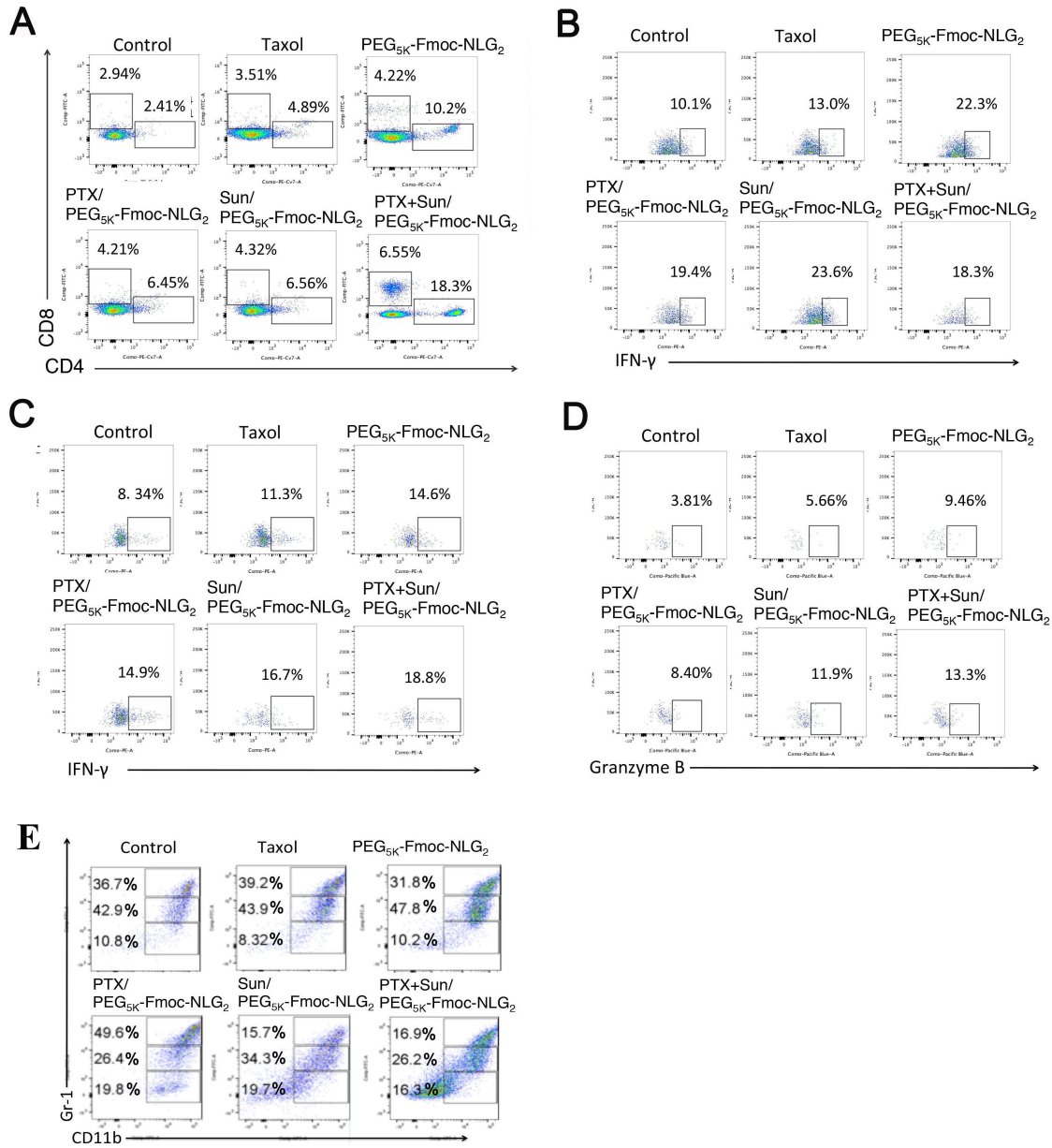
## Supplementary information



**Supplementary Fig. 1.**  $^1\text{H}$  NMR spectra of  $\text{PEG}_{5\text{K}}\text{-Fmoc-NLG}_2$ .



**Supplementary Fig. 2.** *In vitro* drug release of PTX (A) and Sun (B) from drug loaded PEG<sub>5k</sub>-Fmoc-NLG<sub>2</sub> micelles. (C) Cytotoxicity of PEG<sub>5k</sub>-Fmoc-NLG<sub>2</sub> alone, free PTX, PTX/PEG<sub>5k</sub>-Fmoc-NLG<sub>2</sub> mixed micelles, Sun/ PEG<sub>5k</sub>-Fmoc-NLG<sub>2</sub> mixed micelles and PTX+Sun/PEG<sub>5k</sub>-Fmoc-NLG<sub>2</sub> mixed micelles were examined in a 4T1.2 mouse breast cancer cell line. Cells were incubated with various treatments for 3 days and cytotoxicity was determined by MTT assay.



**Supplementary Fig. 3.** Representative flow cytometry gatings of immune cell subsets in tumor tissues after various treatments. Tumoral T-cell infiltration, including (A) CD4<sup>+</sup> and CD8<sup>+</sup>, (B) IFN- $\gamma$ <sup>+</sup>CD4<sup>+</sup> T cells, (C) IFN- $\gamma$ <sup>+</sup>CD8<sup>+</sup> T cells and (D) granzyme B-positive CD8<sup>+</sup> T cells, were measured by flow cytometry. (E) MDSC subsets (Gr-1<sup>high</sup>CD11b<sup>+</sup> granulocytic (G-MDSC) and Gr-1<sup>int</sup>CD11b<sup>+</sup> monocytic (M-MDSC)) were also detected by flow cytometry.