Supporting Information

A novel MPEG-PDLLA-PLL copolymer for docetaxel delivery in breast cancer therapy

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Supporting figures and tables

Figure S1 ^{1}H-NMR spectrum of the MPEG-PDLLA, MPEG-PDLLA-NH_2 and MPEG-PDLLA-PLL block copolymers. MPEG-PDLLA-NH_2 and MPEG-PDLLA-PLL were in Dimethyl Sulfoxide-D6, and the MPEG-PDLLA was in $CDCL_3$.

Figure S2 FTIC spectra of the MPEG-PDLLA (A), MPEG-PDLLA-PLL (B) H-Lys (Z)-OH (C), and Lys-NCA (D).

Figure S3 Plots of the intensity ratio I338/I333 (from pyrene excitation spectra at λ_{em}=390 nm) vs. log C for $MPEG_{2k}$-$PDLLA_{4k}$-PLL_{1k} (A) and $MPEG_{2K}$-$PDLLA_{1.7k}$ (B).

Figure S4 The powder X-ray diffraction patterns for DTX, $MPEG_{2k}$-$PDLLA_{4k}$-PLL_{1k} and DTX/$MPEG_{2k}$-$PDLLA_{4k}$-PLL_{1k}.

Figure S5. Hemolytic test: (a)normal saline as negative control; (i)distilled water as positive control; 0.1 mg/ml (b), 0.2 mg/ml (c), 0.5 mg/ml (d), 1 mg/ml (e), 2 mg/ml (f), 5 mg/ml (g) and 10 mg/ml (h) of $MPEG_{2k}$-$PDLLA_{4k}$-PLL_{1k} in normal saline.

Figure S6 The HEK293 cells and HUVEC cells cytotoxicity of blank $MPEG_{2k}$-$PDLLA_{4k}$-PLL_{1k} micelles.

Figure S7 The HE sections of heart, liver, spleen, lung and kidney after different administration in MCF-7 model**.** Each group was Control (1); blank $MPEG_{2k}$-$PDLLA_{4k}$-PLL_{1k} (2), Free DTX (3), DTX/$MPEG_{2k}$-$PDLLA_{1.7k}$ (4), DTX/$MPEG_{2k}$-$PDLLA_{4k}$-PLL_{1k} (5), respectively.

Figure S8. The HE sections of heart, liver, spleen, lung and kidney after different administration in 4T1 model**.** Each group was Control (1); blank $MPEG_{2k}$-$PDLLA_{4k}$-PLL_{1k} (2), Free DTX (3), DTX/$MPEG_{2k}$-$PDLLA_{1.7k}$ (4), DTX/$MPEG_{2k}$-$PDLLA_{4k}$-PLL_{1k} (5), respectively.

Table S1 The hemolytic rate of the $MPEG_{2k}$-$PDLLA_{4k}$-PLL_{1k}.

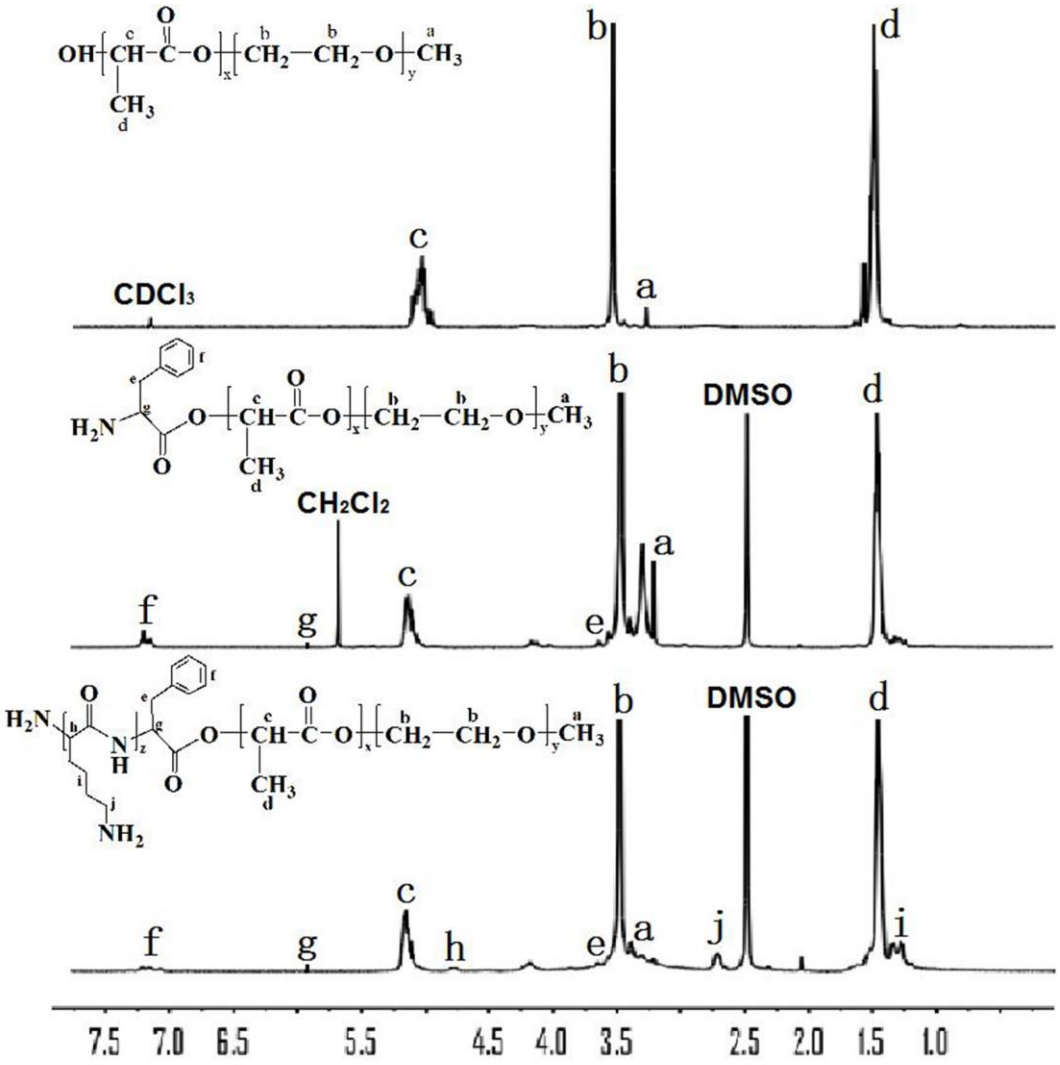
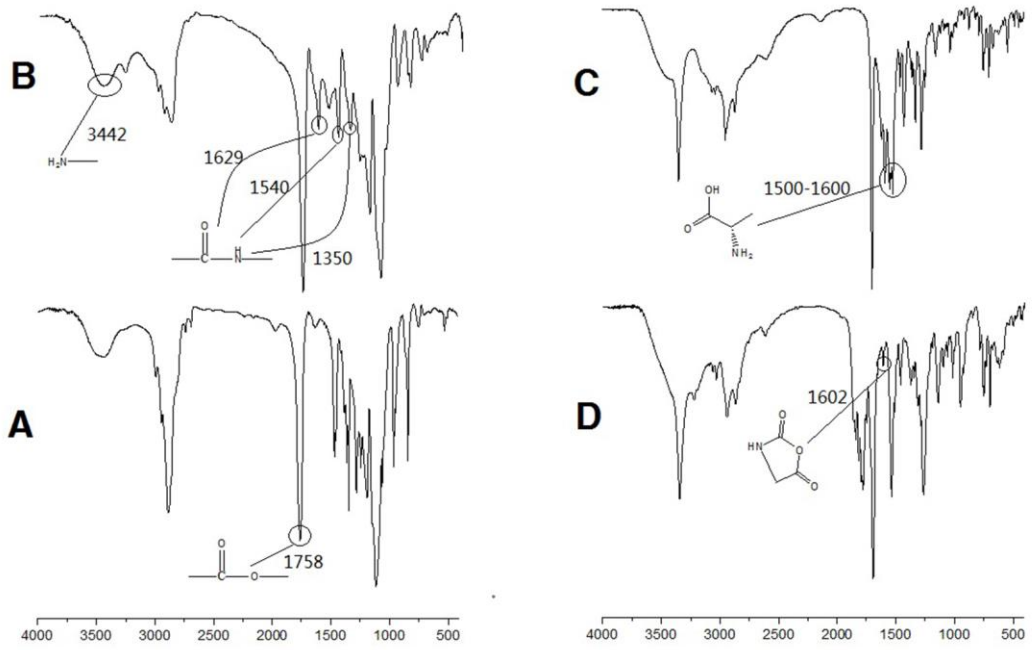


Figure S1 ^{1}H-NMR spectrum of the MPEG-PDLLA, MPEG-PDLLA-NH_2 and MPEG-PDLLA-PLL block copolymers. Solvent of the MPEG-PDLLA-NH_2 and MPEG-PDLLA-PLL was Dimethyl Sulfoxide-D6, and MPEG-PDLLA was $CDCL_3$.



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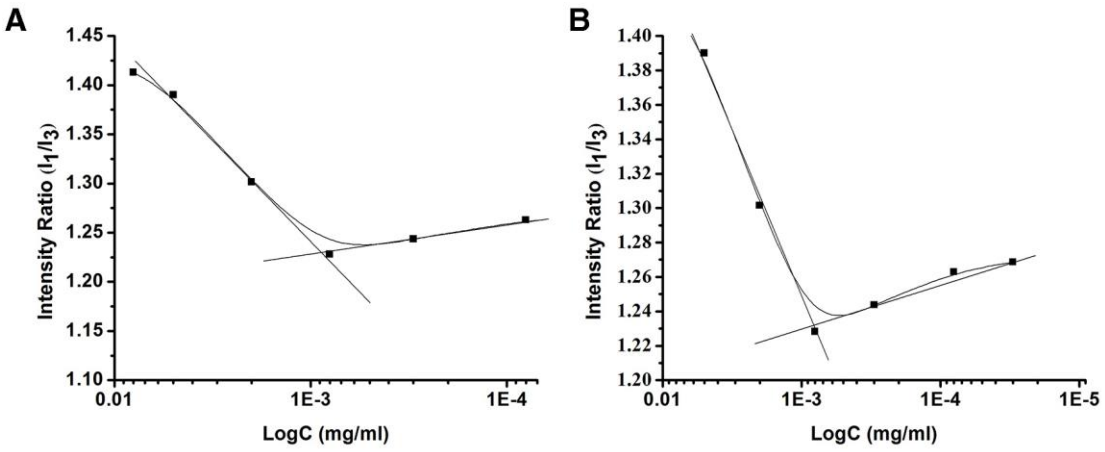

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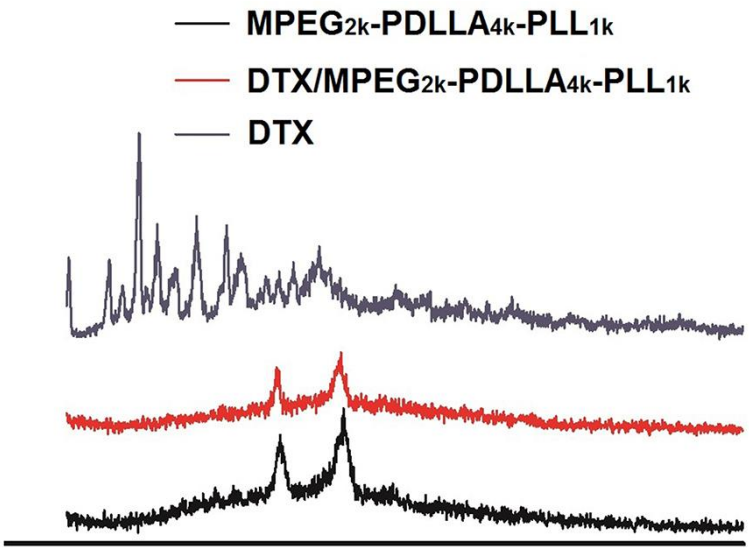

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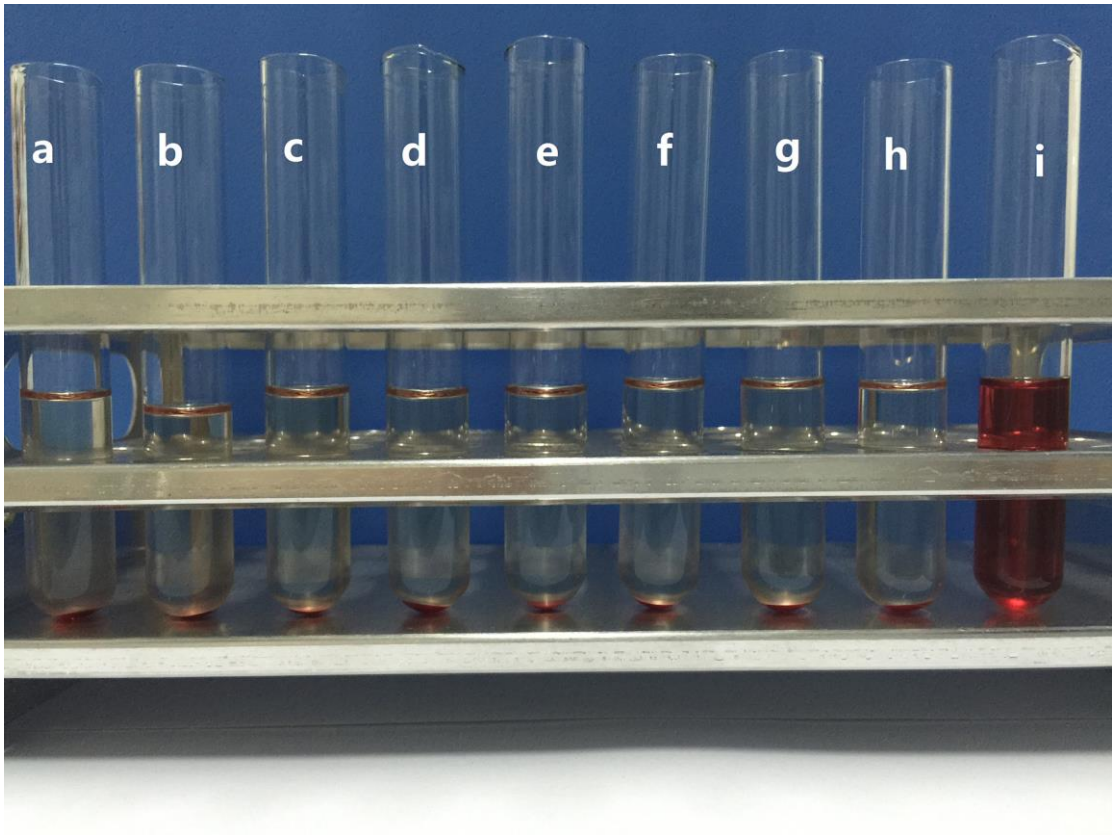

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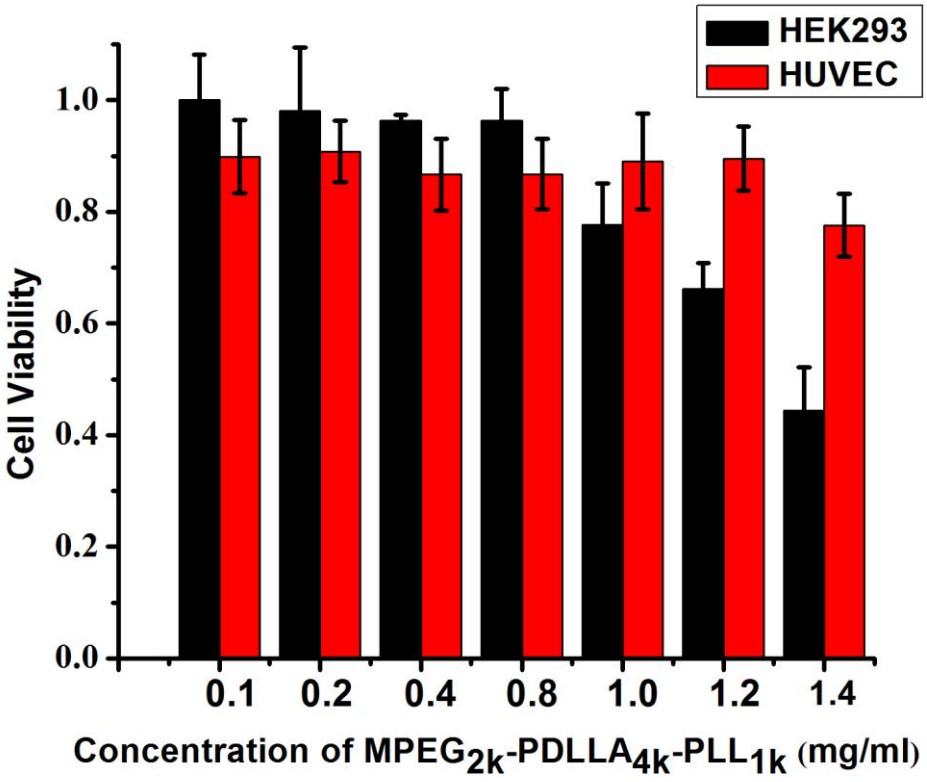
Table S1: The hemolytic rate of the $MPEG_{2k}$-$PDLLA_{4k}$-PLL_{1k}

Code	Concentration of $MPEG_{2k}$-$PDLLA_{4k}$-PLL_{1k} (mg/ml)	Hemolysis ratio (%)	The international standard(%)
b	0.1	0	
c	0.2	0.49	
d	0.5	0.47	
e	1	0.69	≤5
f	2	1.31	
g	5	2.50	
h	10	3.10	



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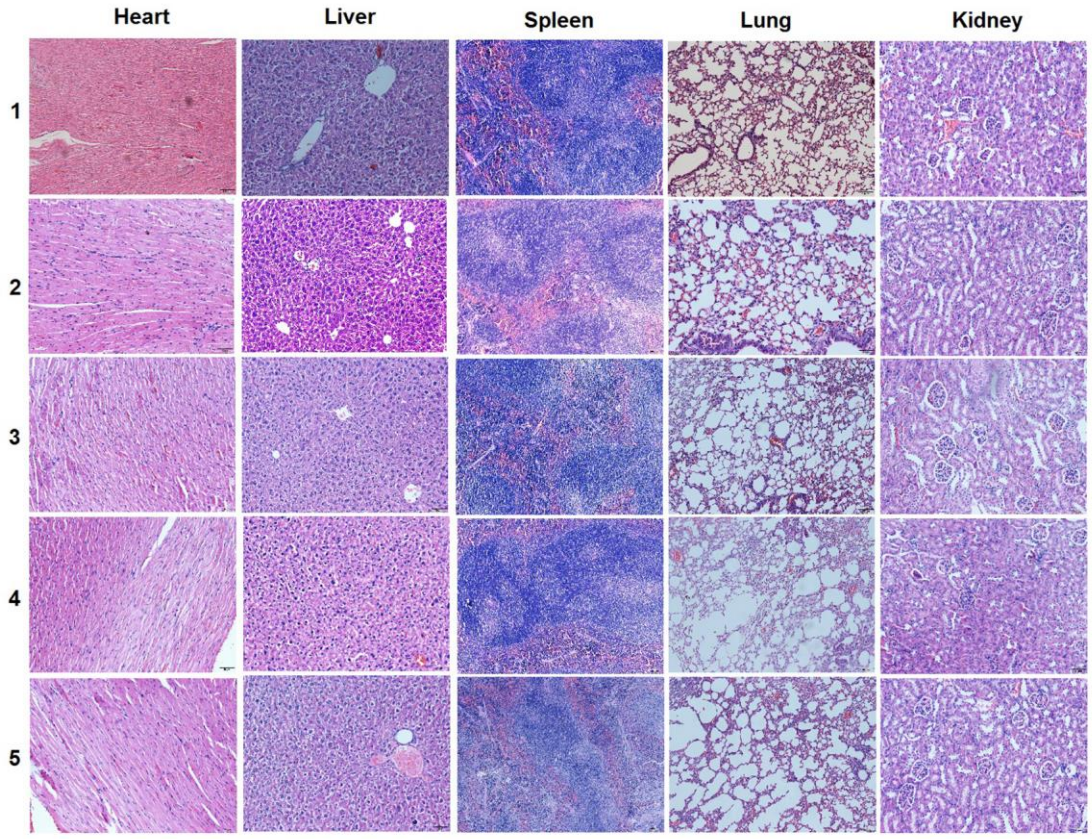
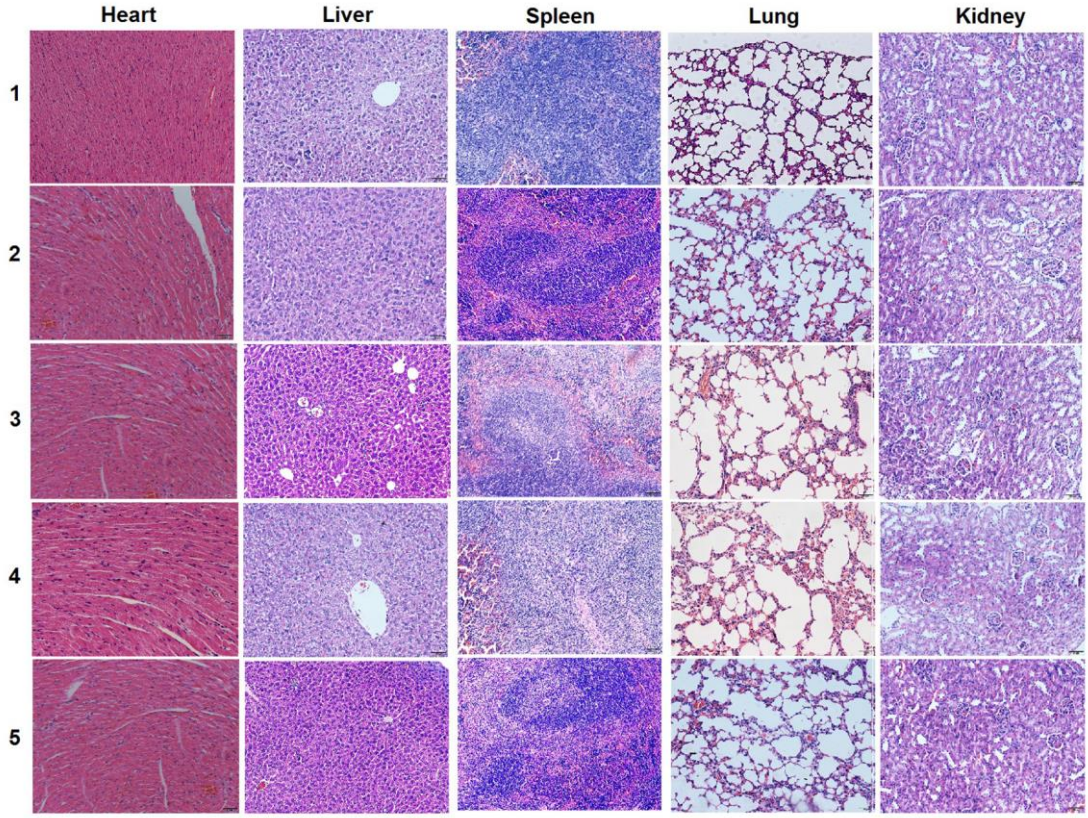


Figure S7. The H&E sections of heart, liver, spleen, lung and kidney after different administration in MCF-7 model**.** Each group was Control (1), blank $MPEG_{2k}$-$PDLLA_{4k}$-PLL_{1k} (2), Free DTX (3), DTX/$MPEG_{2k}$-$PDLLA_{1.7k}$ (4), DTX/$MPEG_{2k}$-$PDLLA_{4k}$-PLL_{1k} (5), respectively.



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