Supporting Information

Self-assembled cationic triblock copolymer mPEG-*b*-PDLLA-*b*-PDMA nanoparticles as nonviral gene vector

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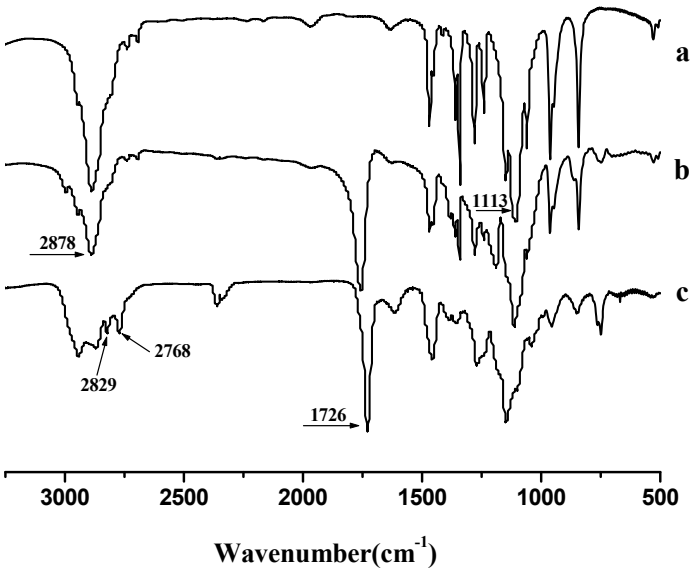

Fig. S1 FT-IR spectra of mPEG (a), mPEG-*b*-PDLLA-OH (b) and mPEG-*b*-PCL-*b*-PDMA (c).

Fig. S1 presents the FT-IR spectra of mPEG, mPEG-*b*-PDLLA-OH and mPEG-*b*-PDLLA-*b*-PDMA, respectively. As shown in Fig. S1a, the peak at 1113

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cm^{-1} is assigned to mPEG (C-O-C). Compared with Fig. S1a, the new peak at 1726 cm^{-1} in Fig. S1b is assigned to the ester group of PDLLA, and the broad peak at 2878 cm^{-1} is the aliphatic -CH_2- stretching band of mPEG and PDLLA. Compared with Fig. S1b, new peaks are found at 2768 cm^{-1} and 2869 cm^{-1} in Fig. S1c, which are the characteristic stretch peaks of -CH_3 and -CH_2- of PDMA. Overall, the results of FTIR spectra confirm that the triblock copolymer mPEG-*b*-PDLLA-*b*-PDMA was synthesized.

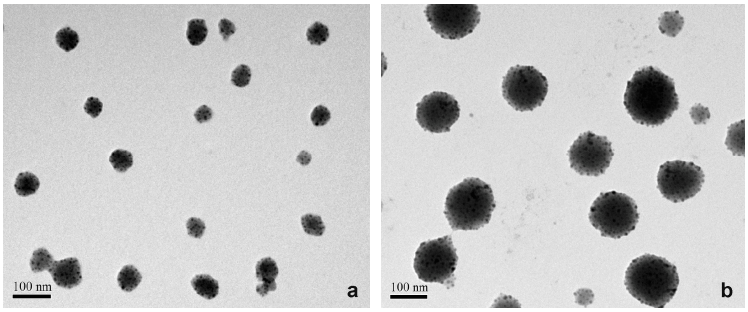

Fig. S2 TEM images of (a) $mPEG_{113}$-*b*-$PDLLA_{10}$-*b*-$PDMA_{60}$ NPs and (b) $mPEG_{113}$-*b*-$PDLLA_{10}$-*b*-$PDMA_{120}$ NPs in PBS buffer solution (pH 7.2). The concentration of samples in PBS buffer solution is 1 mg mL^{-1}.

The size and morphology of mPEG-*b*-PDLLA-*b*-PDMA NPs were further observed by TEM. As shown in Fig. S2, the morphology of NPs is of spherical type, and the particle size distribution is quite uniform. The average diameter of $mPEG_{113}$-*b*-$PDLLA_{10}$-*b*-$PDMA_{120}$ NPs (~ 120 nm, Fig. 2Sb) is larger than that of $mPEG_{113}$-*b*-$PDLLA_{10}$-*b*-$PDMA_{60}$ NPs (~ 70 nm, Fig. 2Sa), which is consistent with the DLS results.