Supporting Information

Supramolecular Hydrogel based on High Solid Content mPECT Nanoparticles and Cyclodextrins for Local and Sustained Drug Delivery

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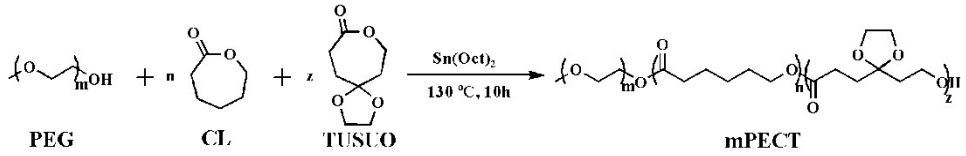
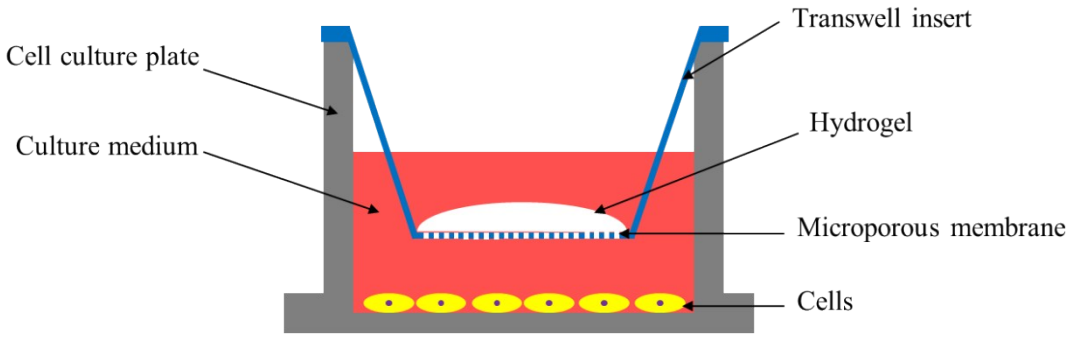
Supplemental methods

1、 Synthesis of mPECT

mPECT was prepared by a ring-opening copolymerization of CL and TOSUO as reported previously using $mPEG_{2k}$ as macroinitiator and stannous octoate as catalyst. A typical mPECT copolymer was synthesized as follows: 7.82 g (68.6 mmol) of ε-CL, 1.179 g (6.85 mmol) of TOSUO, 3.0 g (5.45 mmol) of $mPEG_{2k}$, and 0.06 g of Sn(Oct)2 (0.5 wt.% of total reactants) were added into a reaction vessel under dry nitrogen atmosphere, and the reaction system was kept at 130 °C for 12 h. The product of reaction was first dissolved in methylene chloride, and then added dropwise into excess cold diethyl ether to precipitate mPECT. After filtering, mPECT was dried at room temperature under vacuum until a constant weight was obtained (yield: 90.5 %).



Scheme S1 Synthesis route of mPECT.



Scheme S2 Transwell for simulation the hydrogel erosion.

Supplemental tables and figures

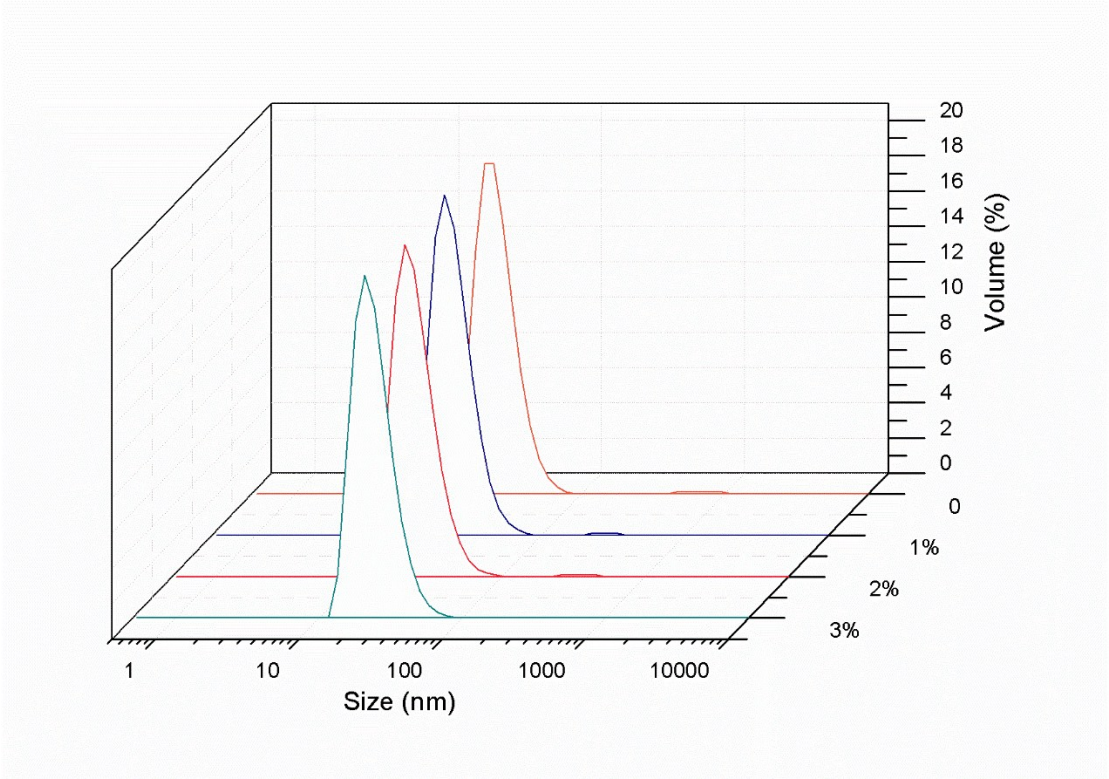


Figure S1 The size of PTX-mPECT NPs with different DLC (0-3%)

Table S1 Complex of blank and PTX-loaded mPECT NPs aqueous dispersion with cyclodextrin

polymer	α-CD[a]	β-CD[a]	γ-CD[a]
mPECT	Y	N	N
PTX-mPECT	Y	N	N

a Y means could form hydrogel and N means not.

The solid content of NPs was 25 wt%, CD concentrations were 6 wt% in all mixtures were listed in table.

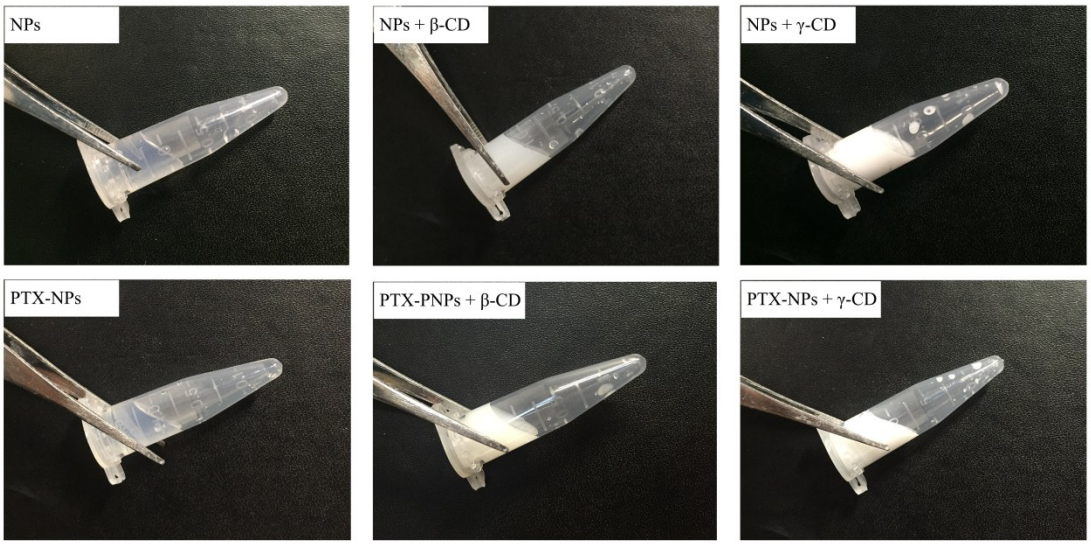


Figure S2 Optical photographs of blank and PTX-loaded mPECT NPs aqueous dispersion and its complex with β- and γ-CD.

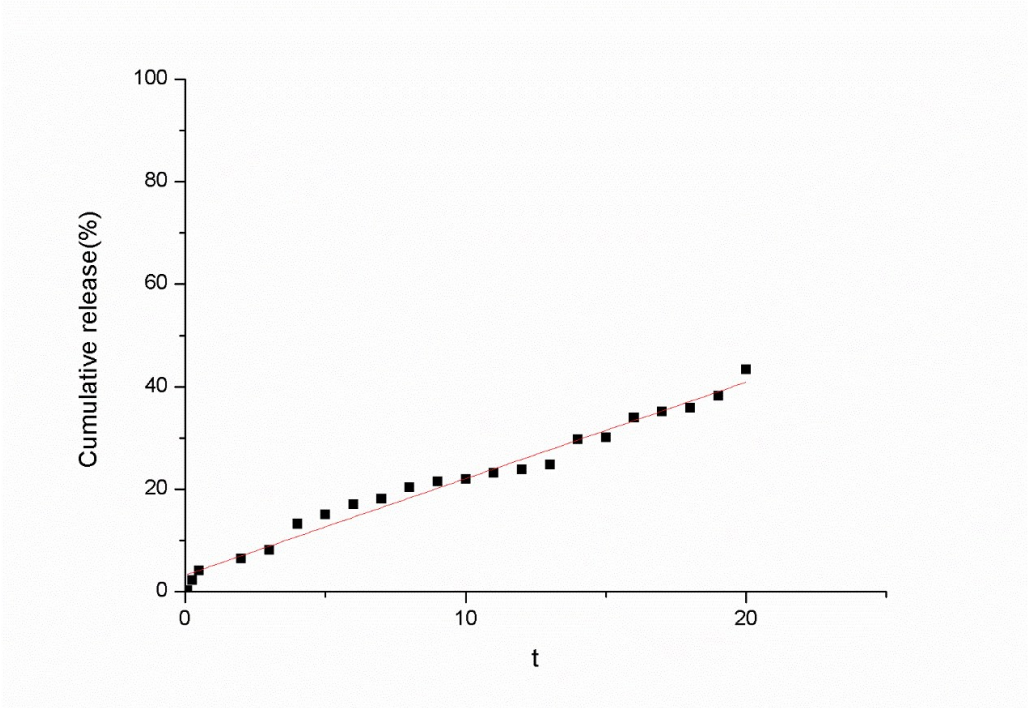


Figure S3 Zero-order release profile simulation. The fitting equation is Y=1.881x+3.283, R=0.989.

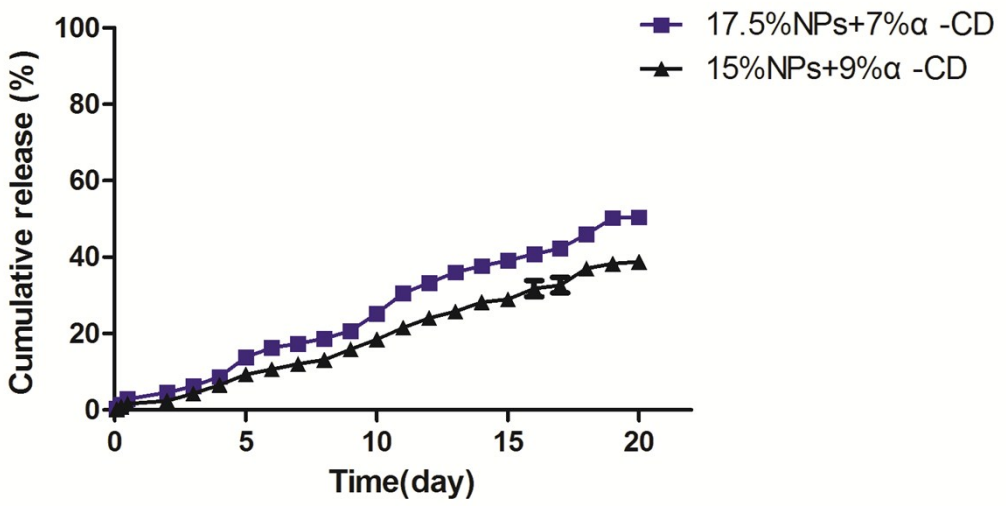


Figure S4 PTX release profiles from PTX-mPECT NP/α-CD^{gel} with different composition.

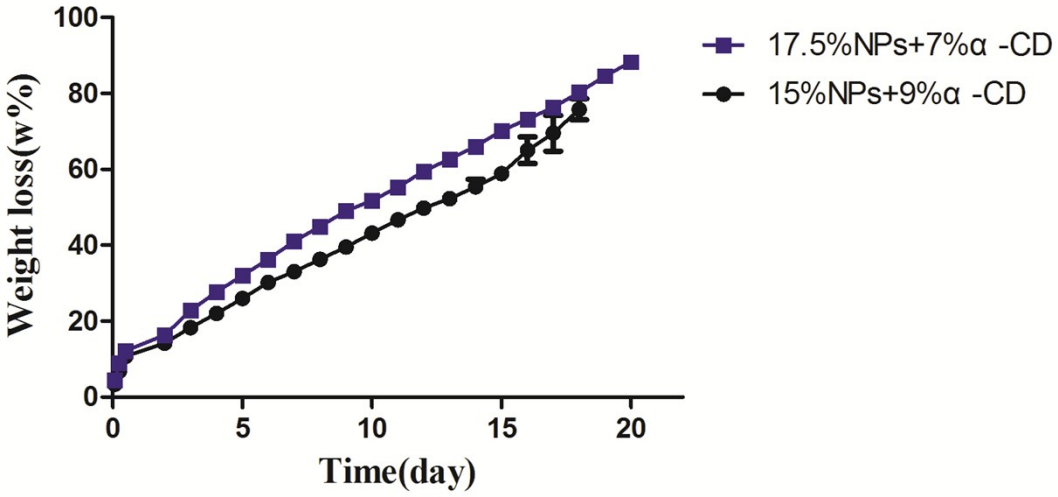


Figure S5 In vitro degrading profiles of mPECT NP/α-CD^{gel} with different compositions.