

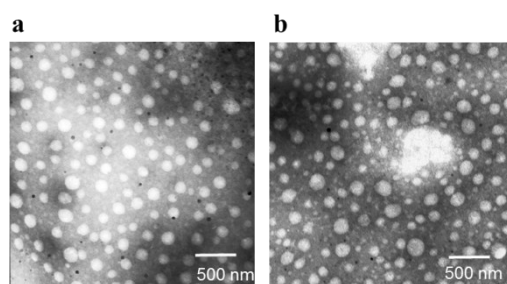
Supplementary Materials

SUPPLEMENTARY METHODS

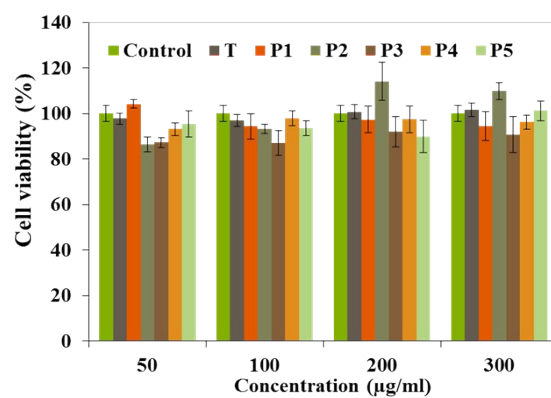
Synthesis of FQS modified polymer

TMC and pHPMA were conjugated with FQS peptide via amide bond formed among the amino groups on TMC/pHPMA and carboxyl groups on FQS peptide. TMC or pHPMA (0.25mmol), EDC.HCl (0.3mmol) and NHS (0.3mmol) were dissolved in water. Then FQS peptide was added in the solution. The reaction was conducted for 3 day at 4 °C. Subsequently, the product was dialyzed (Mw cut off 8-14 kDa) and lyophilized. The obtained polymer was identified by ^1H NMR.¹

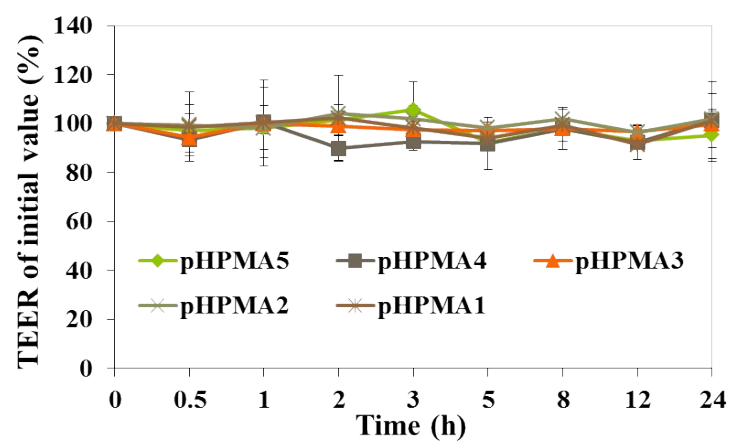
SUPPLEMENTARY FIGURES



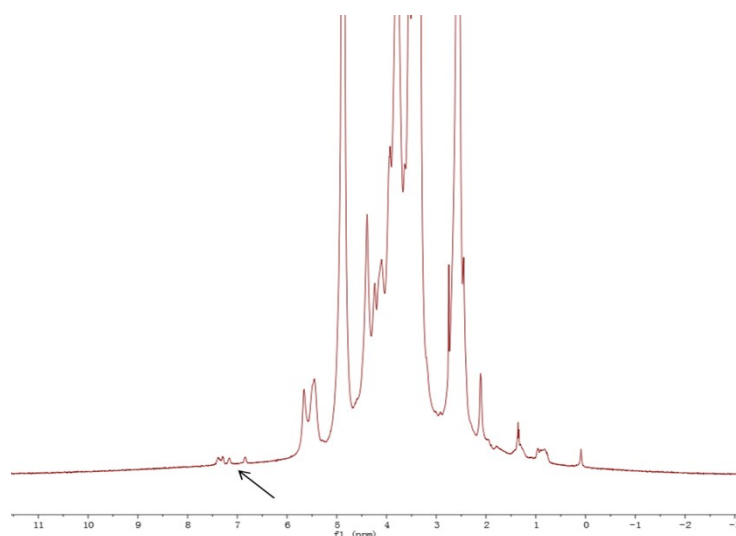
Supplementary Figure S1. Transmission electron microscope of (a) TMC NP core and (b) pHPMA coated NP.



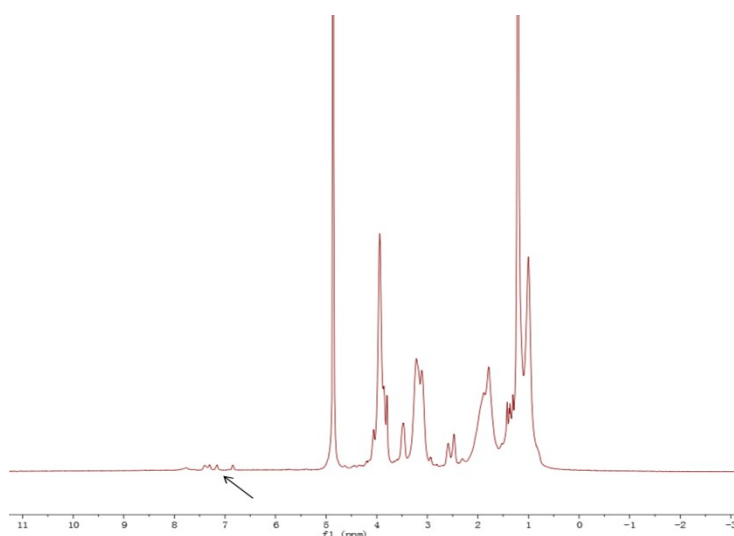
Supplementary Figure S2. Cytotoxicity of different NPs on E12 cells at different concentration.



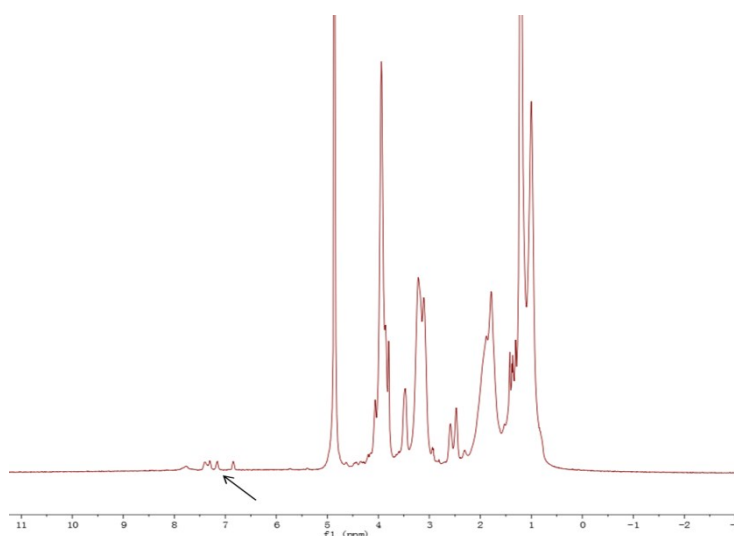
Supplementary Figure S3. Effects of different Mw of pHPMA on TEER values of E12 cells.



Supplementary Figure S4. The ¹H-NMR (400 MHz, D₂O) spectrum of FQS modified TMC. The peaks at 6.8 and 7.1 ppm (black arrow) belong to four protons of benzene ring of phenylalanine and tyrosine in FQS peptide sequence.



Supplementary Figure S5. The ^1H -NMR (400 MHz, D_2O) spectrum of FQS modified pHPMA 1. The peaks at 6.8 and 7.1 ppm (black arrow) belong to four protons of benzene ring of phenylalanine and tyrosine in FQS peptide sequence.



Supplementary Figure S6. The ^1H -NMR (400 MHz, D_2O) spectrum of FQS modified pHPMA 2. The peaks at 6.8 and 7.1 ppm (black arrow) belong to four protons of benzene ring of phenylalanine and tyrosine in FQS peptide sequence.

SUPPLEMENTARY TABLES

Table S1. Characteristics of the NPs (n=3).

| Samples | Size (nm) | Zeta potential (mV) | Drug Loading % |
|--------------|------------|---------------------|----------------|
| T | 127.8±2.1 | 39.6±0.8 | 28.9±0.4 |
| P1 | 166.6±4.7 | 2.05±0.7 | 24.1±0.8 |
| P2 | 166.9±4.1 | 2.08±0.4 | 25.2±2.2 |
| P3 | 165.2±5.0 | -4.88±0.3 | 25.5±1.8 |
| P4 | 165.8±7.3 | 0.69±0.7 | 25.2±0.9 |
| P5 | 169.8±5.1 | -4.85±0.2 | 24.5±0.8 |
| T/F-core | 133.4±10.5 | 37.9±0.7 | 27.0±1.0 |
| P1/FQS-core | 185.9±14.3 | -3.17±2.4 | 23.4±0.6 |
| P1/FQS-shell | 166±10.9 | -0.68±3.3 | 22.3±3.4 |
| P2/FQS-core | 183.5±9.2 | -3.53±2.0 | 24.4±2.5 |
| P2/FQS-shell | 172±14.7 | -0.89±3.7 | 22.2±2.6 |

SUPPLEMENTARY REFERENCES

1. C. Liu, W. Shan, M. Liu, X. Zhu, J. Xu, Y. Xu and Y. Huang, *Drug Deliv.*, 2015, 1-11.