

## Supplementary Materials

### Poly(methacrylate citric acid) as a dual functional carrier for tumor therapy

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Table S1. Zeta potential of the free drug without nanocarrier

| Sample       | RES            | NIF            | IBU            | DOX            | HCPT            | CSL             | HK              | POD             |
|--------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|
| $\zeta$ (mV) | $10.5 \pm 1.1$ | $11.1 \pm 0.7$ | $15.5 \pm 0.9$ | $39.2 \pm 0.9$ | $-9.62 \pm 0.5$ | $-13.5 \pm 1.3$ | $-38.7 \pm 1.1$ | $-8.43 \pm 0.4$ |

a)



b)



Figure S1. The images of drug-loaded nanoparticles: after preparation (a), storage for 24 h (b).

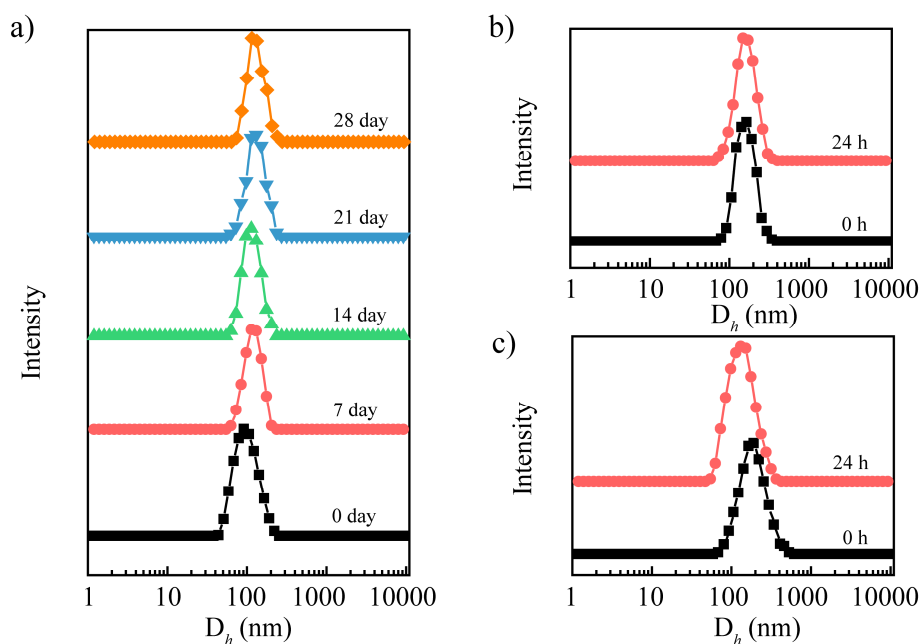


Figure S2. Particle size distribution curves of PCA/DOX NPs: storage stability at different times (a), glucose stability at different times (b), and plasma stability at different times (c).

Table S2. Drug release kinetic model for PCA/DOX NPs

| Sample          | pH | Zero-order model      |                | First-order model             |                | Higuchi model              |                | Ritger-Peppas model    |                |
|-----------------|----|-----------------------|----------------|-------------------------------|----------------|----------------------------|----------------|------------------------|----------------|
|                 |    | Equation              | R <sup>2</sup> | Equation                      | R <sup>2</sup> | Equation                   | R <sup>2</sup> | Equation               | R <sup>2</sup> |
| PCA/D<br>OX NPs | 5. | $Q_t = 0.46t + 11.09$ | 0.90           | $Q_t = 63.46(1 - e^{-0.03t})$ | 0.95           | $Q_t = 5.90t^{1/2} + 0.54$ | 0.98           | $Q_t = 5.56(t^{0.52})$ | 0.98           |
| PCA/D<br>OX NPs | 7. | $Q_t = 0.40t + 5.73$  | 0.97           | $Q_t = 70.72(1 - e^{-0.01t})$ | 0.96           | $Q_t = 4.86t^{1/2} - 2.37$ | 0.98           | $Q_t = 3.36(t^{0.57})$ | 0.98           |

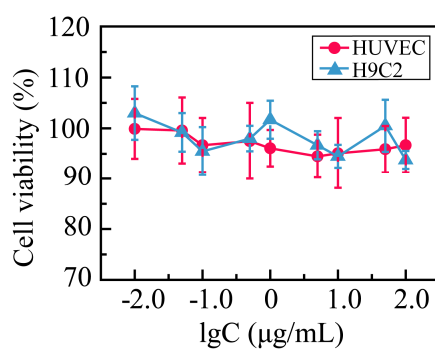


Figure S3. Cell viability of PCA against normal HUVEC and H9C2 cell lines for incubation 48 h at 37 °C, n = 5.

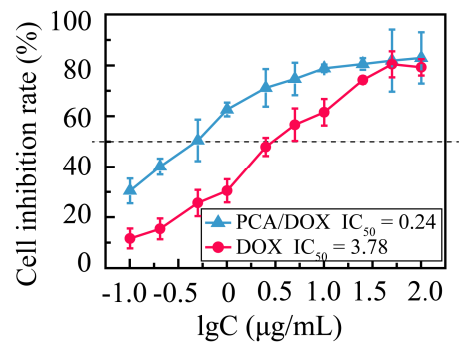


Figure S4. Cell viability of PCA/DOX NPs against 4T1 cell line for incubation 72 h at 37 °C, n = 5.