Electronic Supplementary Information

Antifouling hydrogel coating magnetic nanoparticles for selective isolation and recovery of circulating tumor cells

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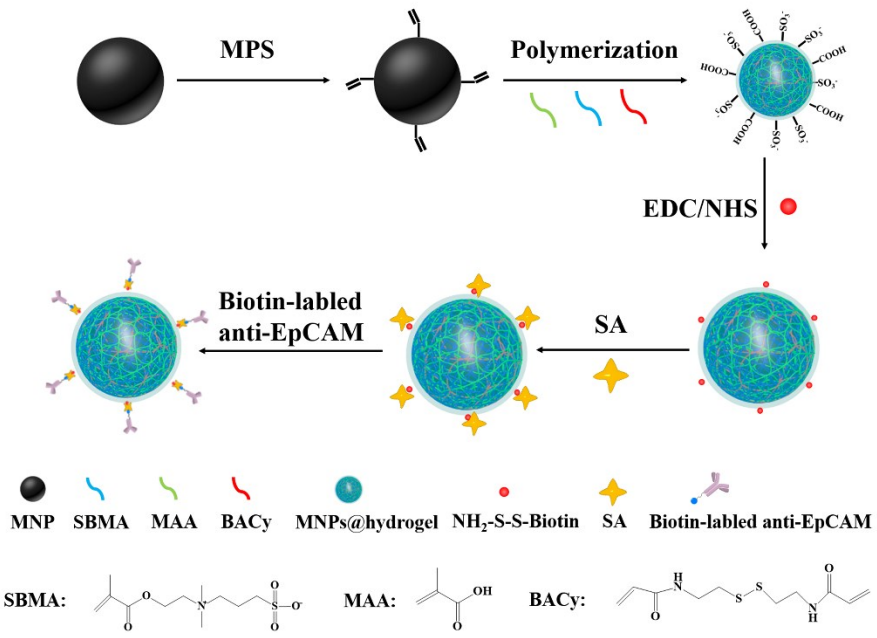

Fig. S1 Schematic illustration of the preparation of anti-EpCAM antibody modified MNPs@hydrogel.

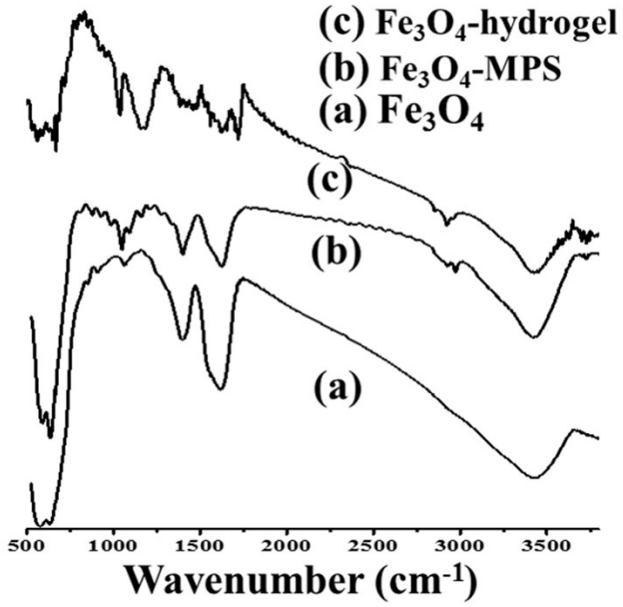

Fig. S2 FT-IR spectra of MNPs, MNPs-MPS, MNPs@hydrogel. The FTIR spectrum of hydrogel was shown in Figure 2d, displaying the vibrations of C=O (1635 cm^{-1}) and N-H (1535 cm^{-1}) bands of BACy crosslinker, the C=O stretching vibration (1720cm^{-1}) and the O=C-OH stretching vibration (2440 cm^{-1}) bands of MAA, and the

O-C=O stretching vibration (1720cm^{-1}) and the -SO_3 stretching vibration (1184cm^{-1}, 1039 cm^{-1}) bands of SBMA, which suggested that the hydrogel were successfully modified by BACy crosslinker, SBMA monomer and MAA monomer.

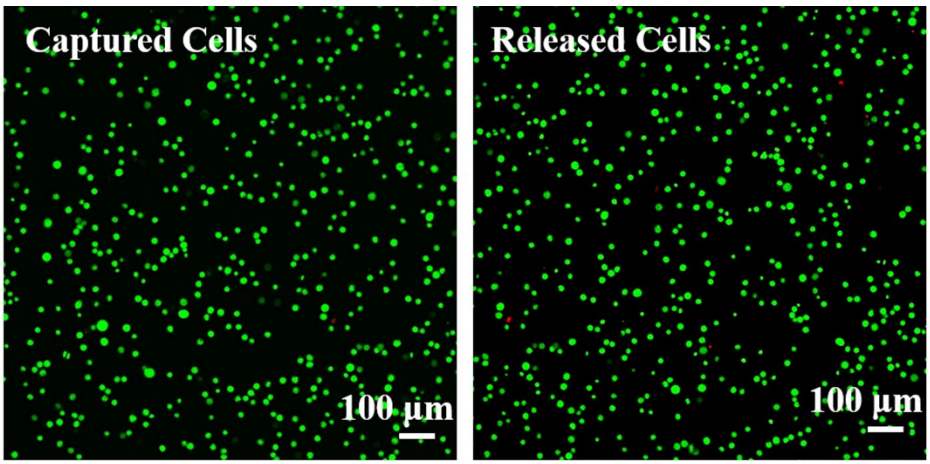

Fig. S3 Fluorescence imaging of cell viability of captured MCF-7 cells as well as released cells using a live/dead staining (green: live; red: dead). The viability percentages were presented in Figure 3d.

Table S1. Clinical information of patients and healthy donors enrolled in this study.

Sample No.	Gender	Age	Type	Volume of Blood (mL)	CTCs Number
1	Female	31	N/A	1	0
2	Female	35	N/A	1	0
3	Female	25	N/A	1	0
4	Male	29	N/A	1	0
5	Female	27	N/A	1	0
6	Female	56	Breast cancer	1	6
7	Female	66	Breast cancer	1	7
8	Female	55	Breast cancer	1	5
9	Male	85	Prostate cancer	1	12
10	Male	74	Prostate cancer	1	1