

## Supporting information for:

### **Efficient Targeted Cancer Cell Detection, Isolation and Enumeration using Immuno-Nano/hybrid Magnetic microgels**

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Supporting information contains 7 figures:

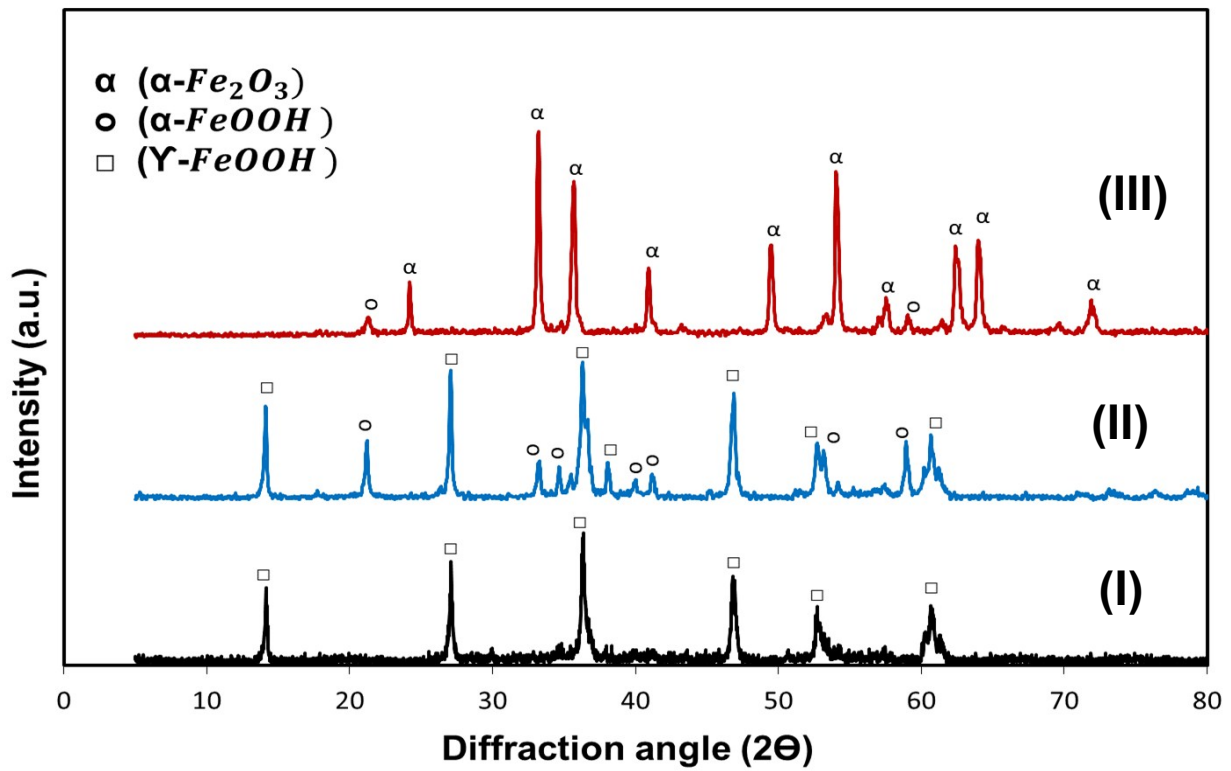


Fig. S1 : B) XRD patterns of the samples with different hydrolysis temperature I) T=70, II) T=85 and III) T=100.

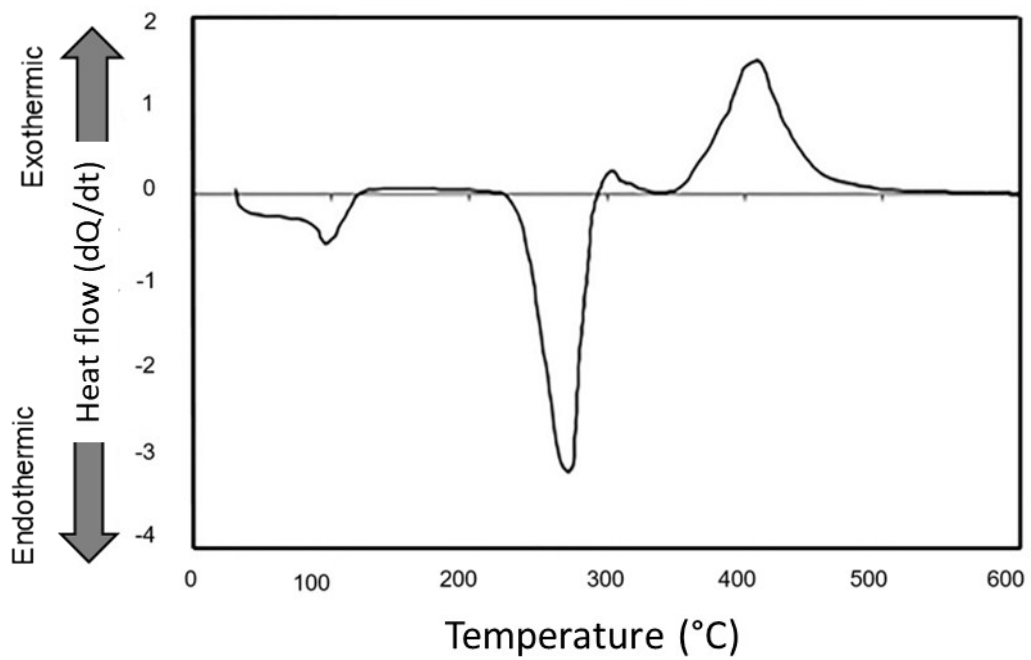


Fig. S2: DSC profile for lepidocrocite nanorods heating up to 600 °C in air atmosphere.

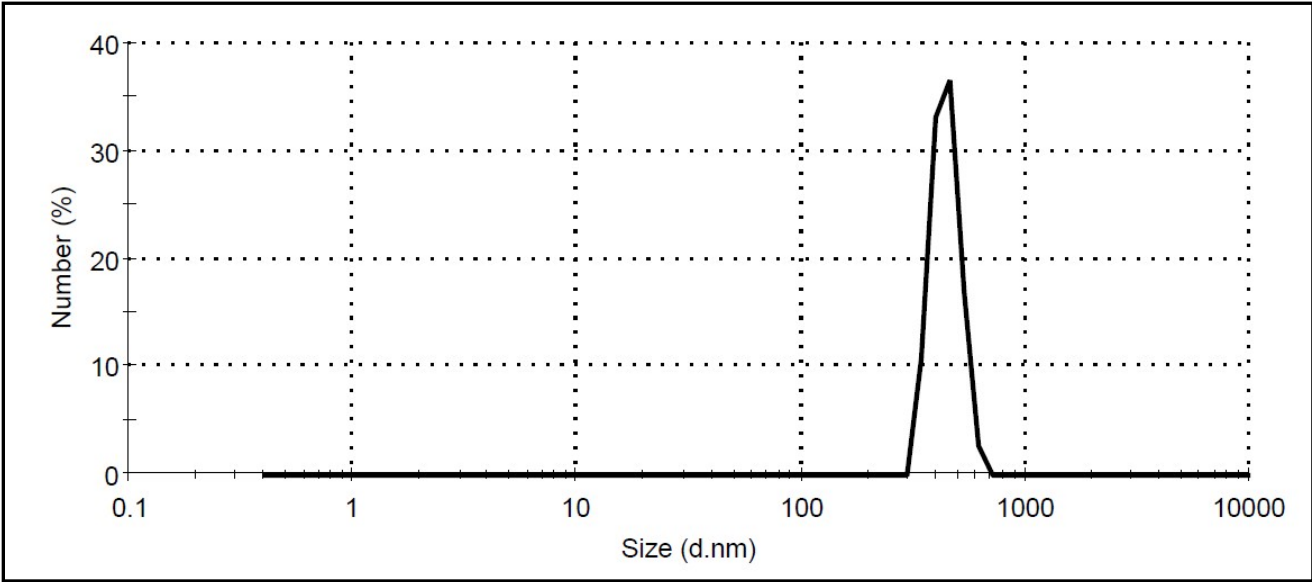


Fig. S3: DLS analysis of the pure synthesized PNIPAM-AA microgel

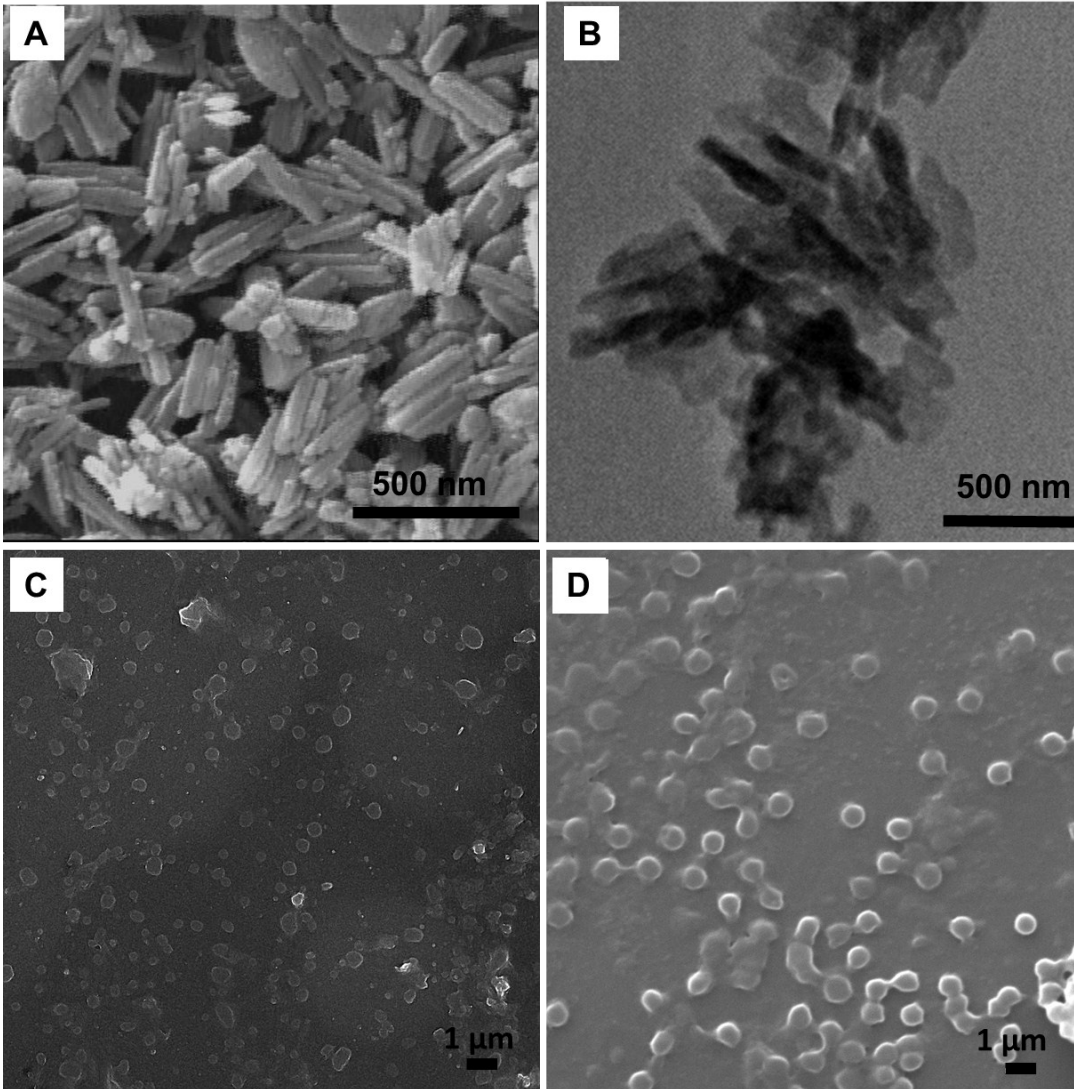


Fig. S4. A) SEM image and B) TEM image of the chitosan coated mNRs. C) SEM image of the synthesized PNIPAM-AA microgels and D) hybrid microgels after mNR attachment.

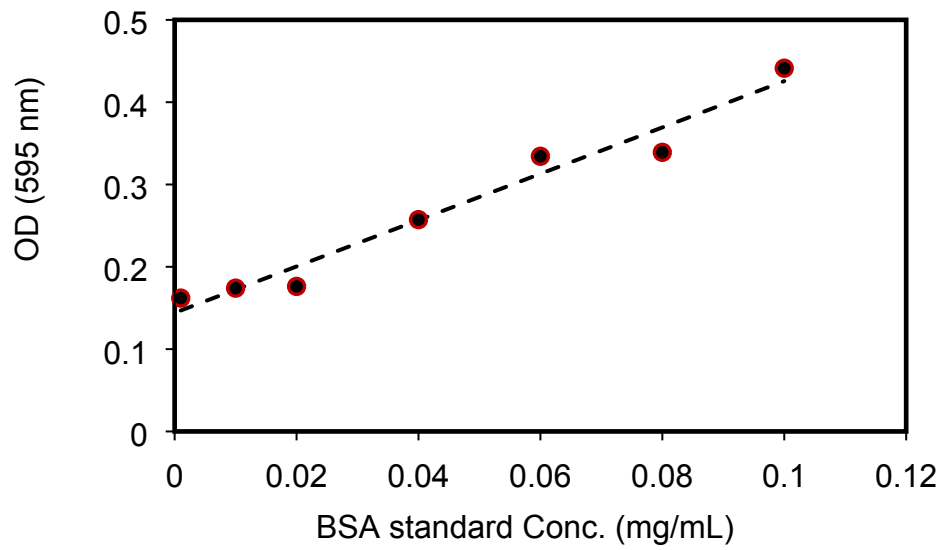


Fig. S5. Standard curve of the BSA protein using Bradford assay for antibody quantification.



Fig. S6: MACS apparatus for CTC isolation containing separation column and permanent magnet

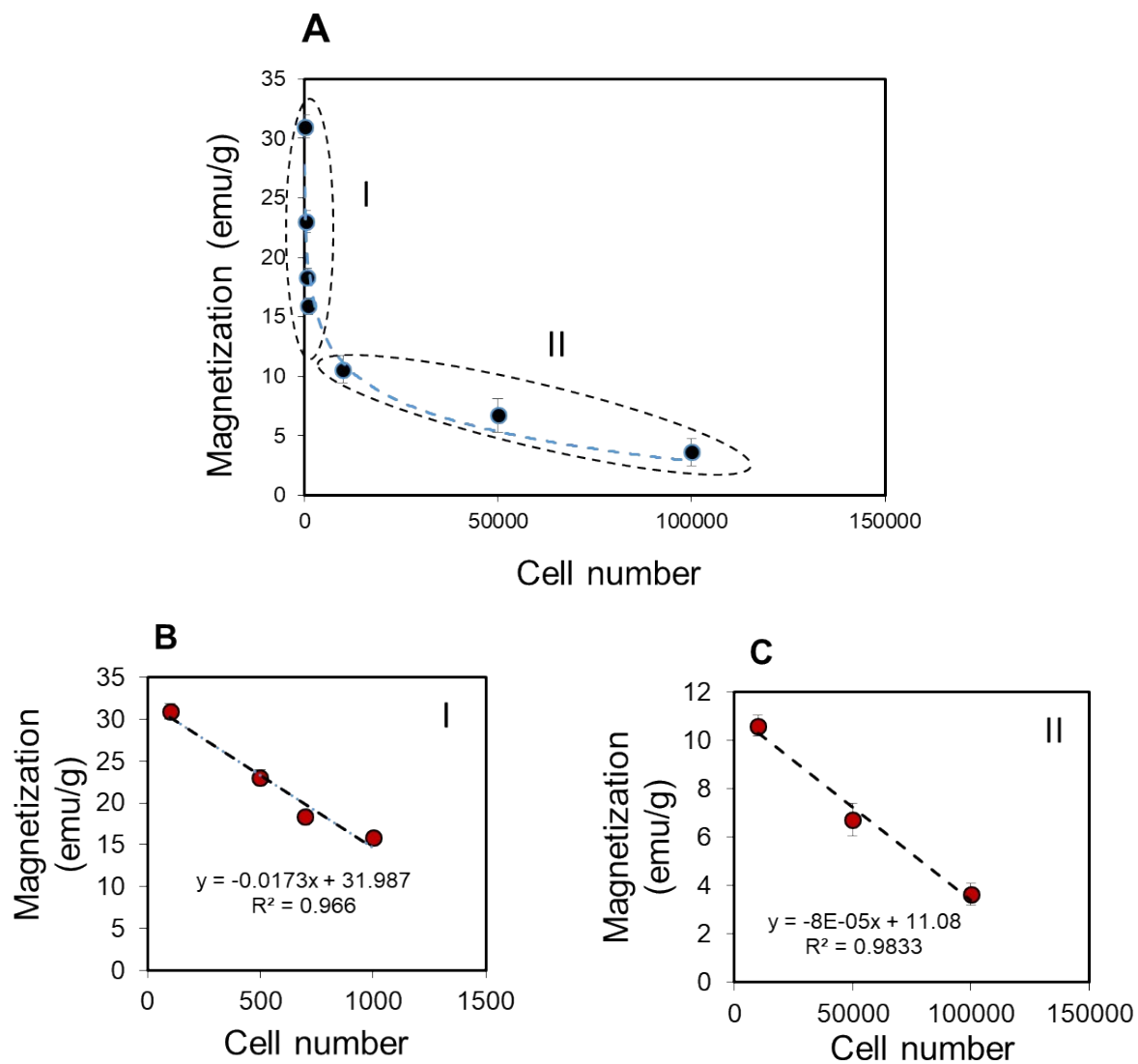


Fig. S7: A) Calibration plot between the magnetization of the labeled cells versus different SKBR-3 cell numbers. Error bars represent the standard deviations of five replicates. B,D) Calibration curve at 2 different linear range of the main curve.