

Supporting Information

***In vitro* magnetic hyperthermia properties of angle-shaped superparamagnetic iron oxide nanoparticles synthesized by bromide-assisted polyol method**

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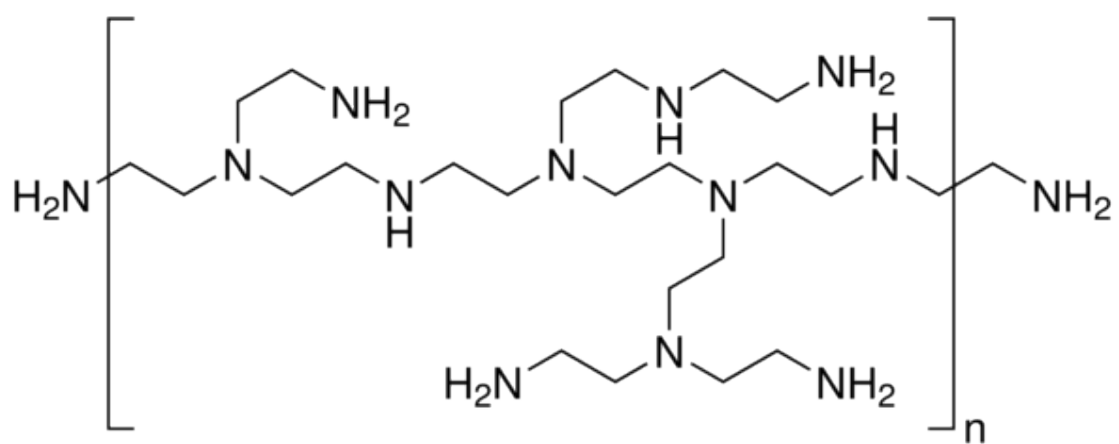


Fig. S1 Chemical structure of branched polyethyleneimine (b-PEI).

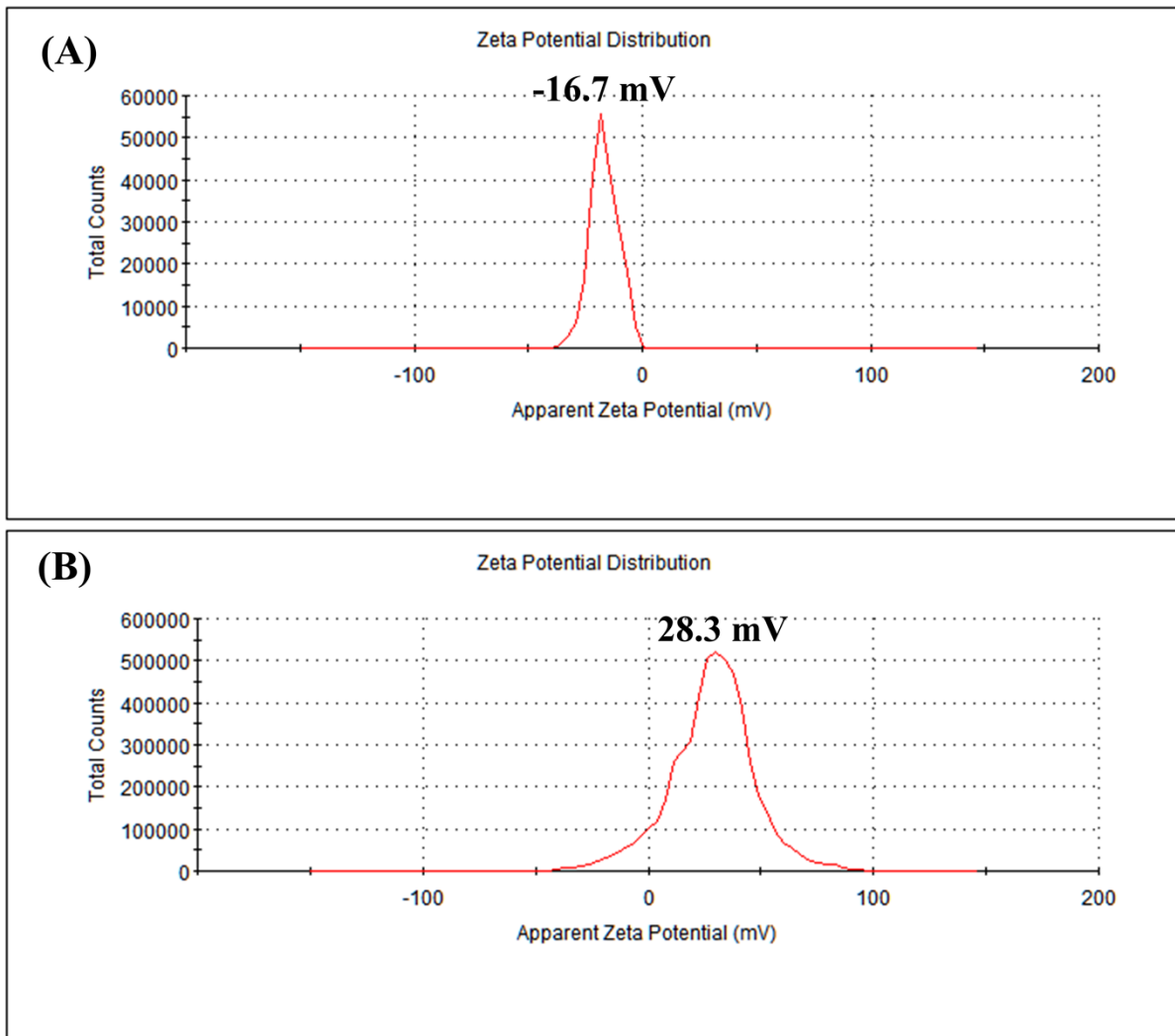


Fig. S2 Surface charges of angle-shaped SPIONs synthesized (A) without b-PEI and (B) by adding b-PEI in D.W..

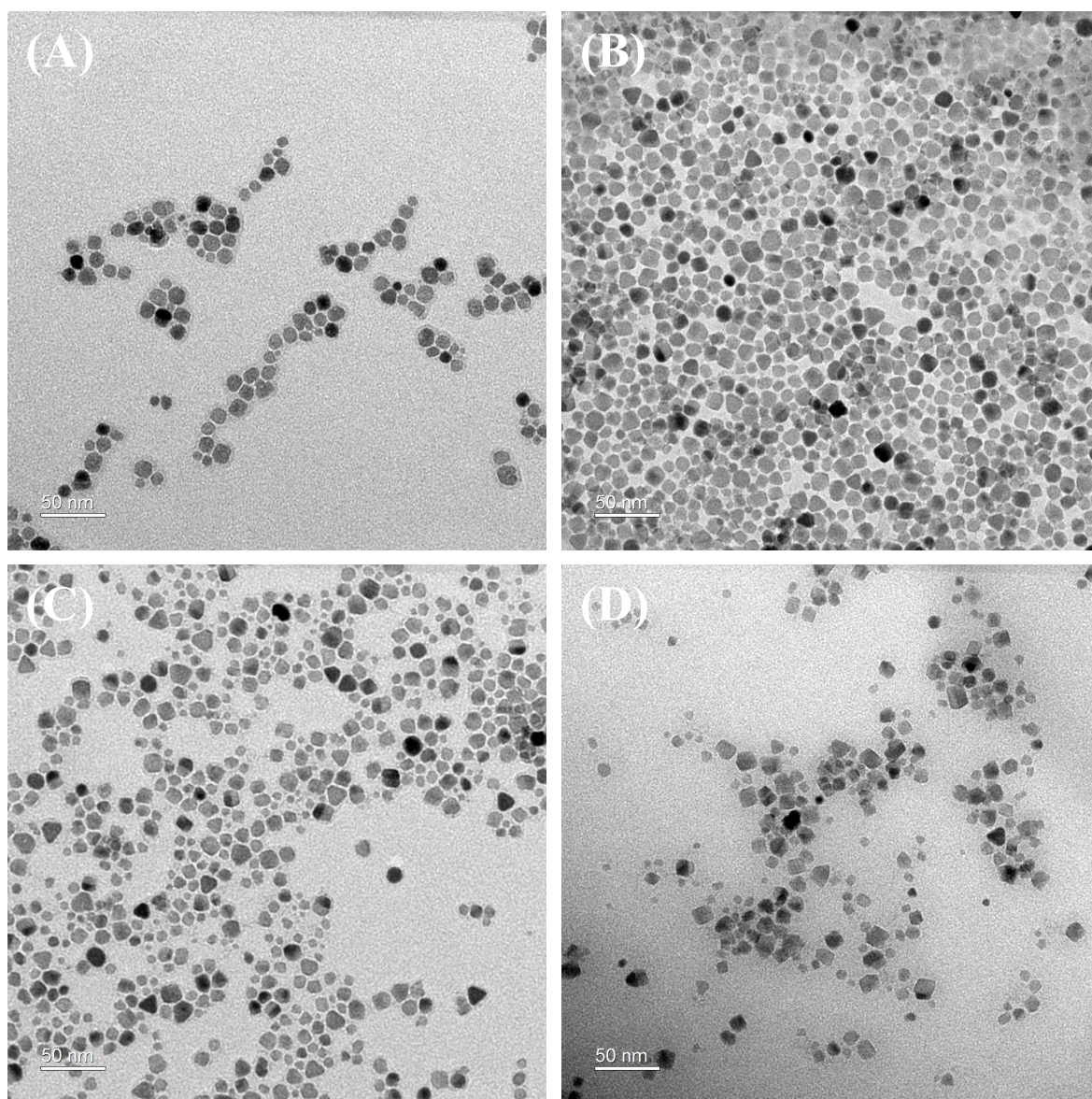


Fig. S3 TEM images of angle-shaped SPIONs synthesized with (A) 20.8 mM, (B) 62.5 mM, (C) 83.3 mM, and (D) 333.3 mM KBr.

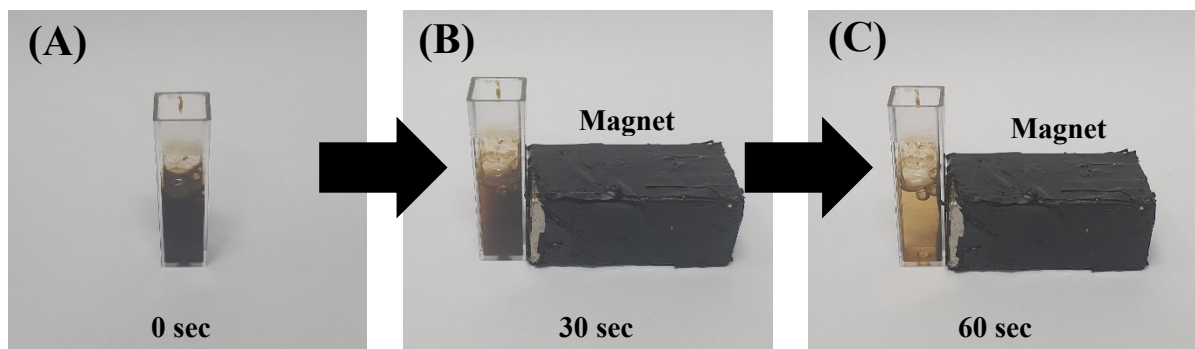


Fig. S4 Photographs of the water suspension of angle-shaped SPIONs in magnetic field after (A) 0 sec, (B) 30 sec, and (C) 60 sec.

Concentration of KBr (mM)	0	20.8	62.5	83.3	333.3	666.7
Specific absorption rate(SAR) (W/g)	2.092	8.368	14.644	25.104	50.208	4.184
Intrinsic loss power(ILP) (nH*m²/kg)	0.0168	0.0671	0.1174	0.2012	0.4024	0.0335

Fig. S5 Values of specific absorption rate and intrinsic loss force calculated using the initial slope of Fig. 5A.

· Specific absorption rate (SAR)

$$SAR = \frac{C_p}{m_{NP}} * \frac{\Delta T}{\Delta t} W/g$$

$$C_p = C_{water} = 4.184 J/g * K$$

$$m_{NP} = 0.02 g$$

$\Delta T/\Delta t =$ initial slope of delta temperature graph

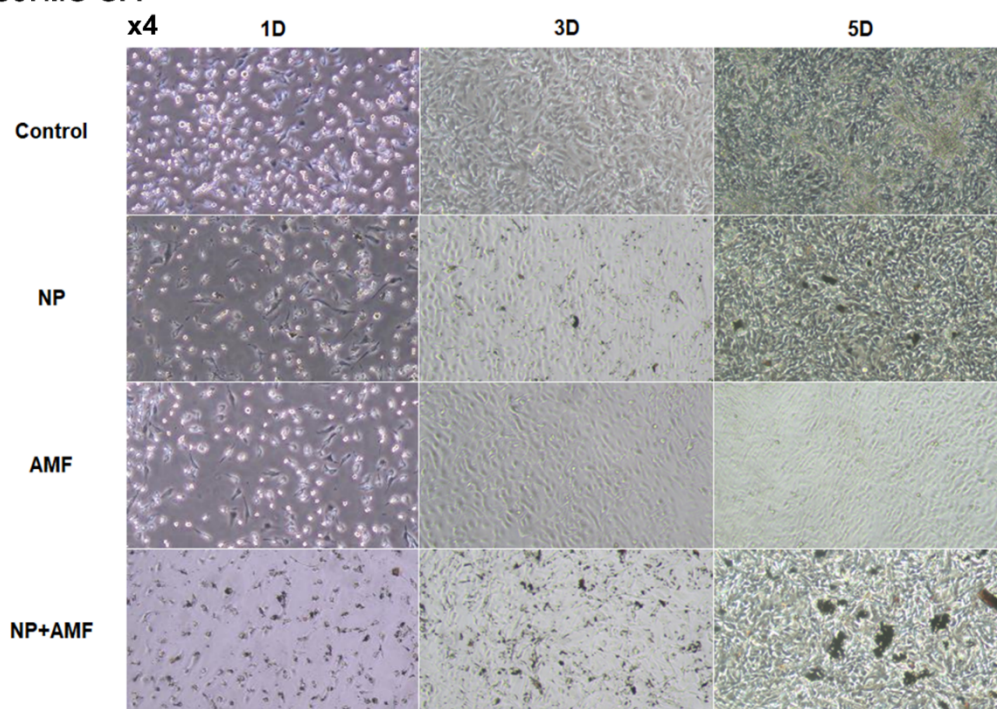
· Intrinsic loss power (ILP)

$$ILP = \frac{SAR}{f * H^2} nH * m^2/kg$$

$$f = 100 kHz$$

$$H = 140 Oe = 11.17 kA/m$$

(A) U87MG-GFP



(B) FSall-GFP

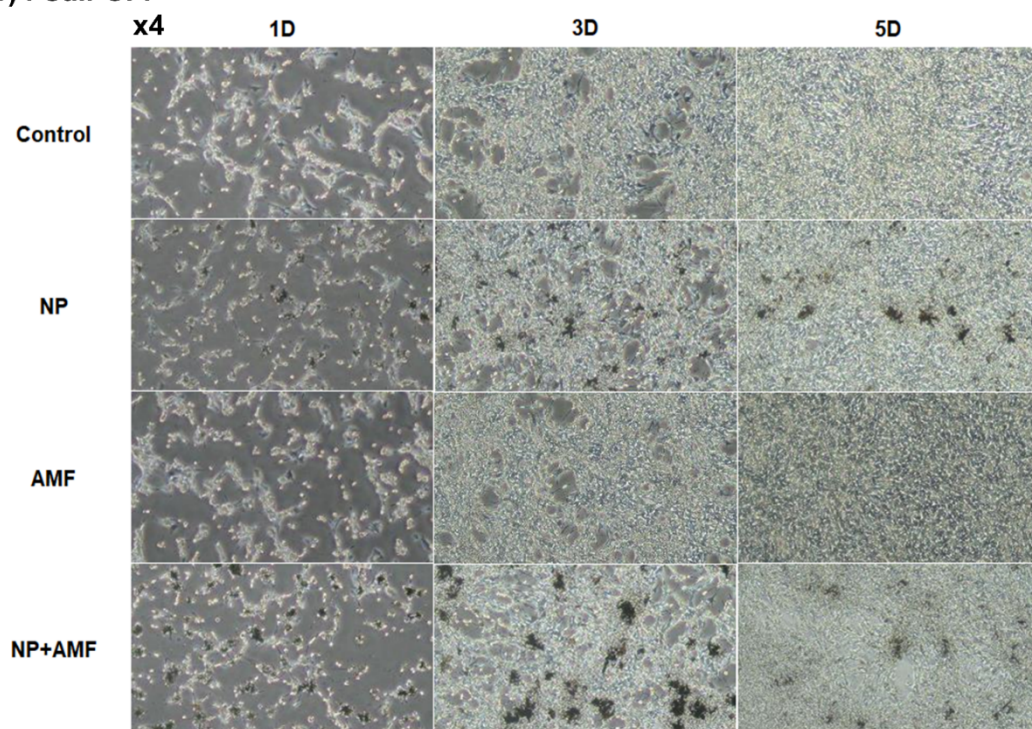


Fig. S6 Cell images of cancer cell lines after magnetic hyperthermia. (A) is images of U87MG-GFP cell lines, and (B) is FSall-GFP cell lines. AMF and NP+AMF groups are applied 100 kHz, 140 Oe. NP and NP+AMF groups were added angle-shaped SPIONs (100 $\mu\text{g}/\text{mL}$) to the medium.