Supporting Information

for:

One-Step Solid-Phase Synthesis of Ultrasmall Homogeneous Face-Centered Tetragonal FePt Nanoparticles Encapsulated in Thin Carbon Shells

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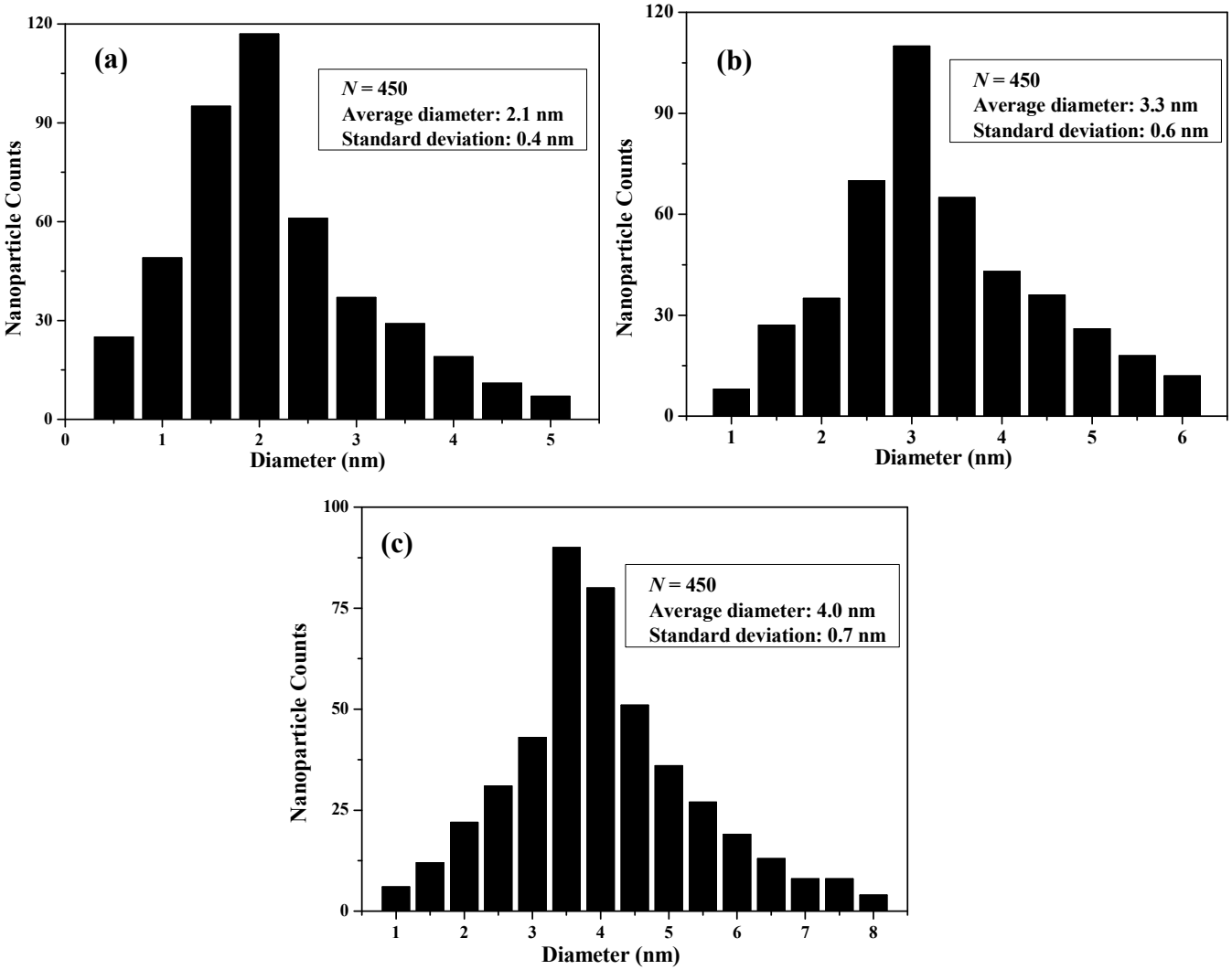

Figure S1. The diameter distribution of (a) 2.1 ± 0.4 nm, (b) 3.3 ± 0.6 nm and (c) 4.0 ± 0.7 nm FePt@C nanoparticles determined by high-resolution TEM.

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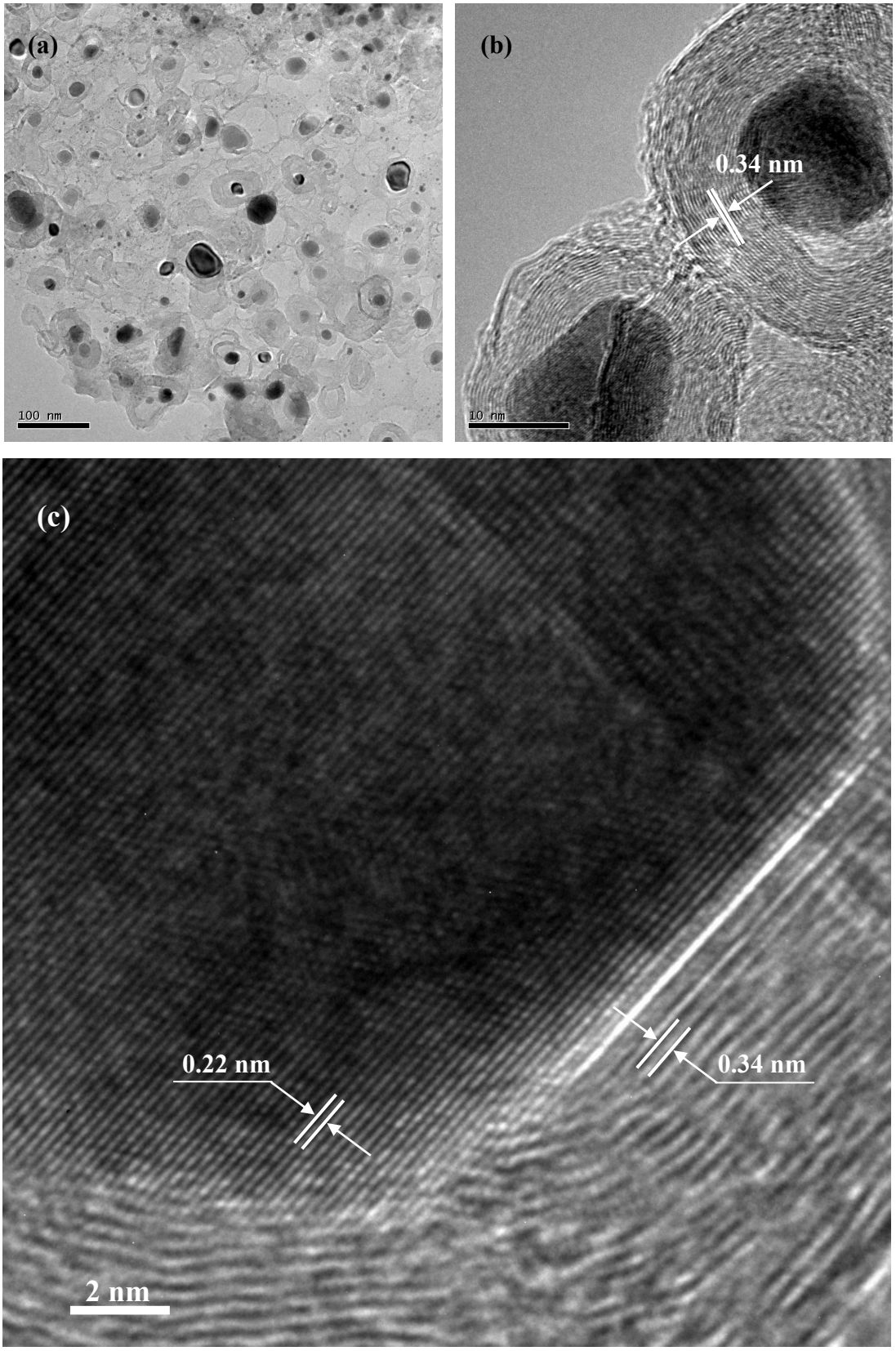

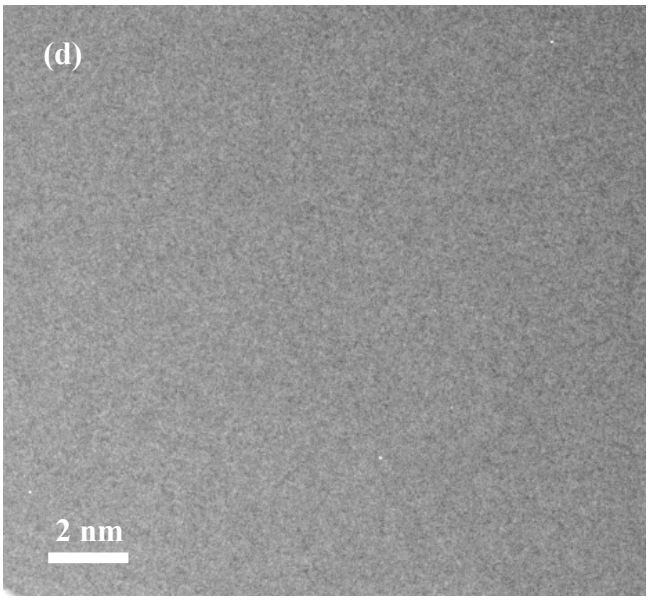

Figure S2. (a) (b) TEM and (c) HRTEM images of FePt@C nanoparticles prepared by using the molar ratio of metal to citric acid of 0.1, showing a very apparent core–shell nanostructure consisting of thick and ordered graphene layers with little amorphous carbon, (d) TEM image of a blank Cu grid dipped into the ethanol.

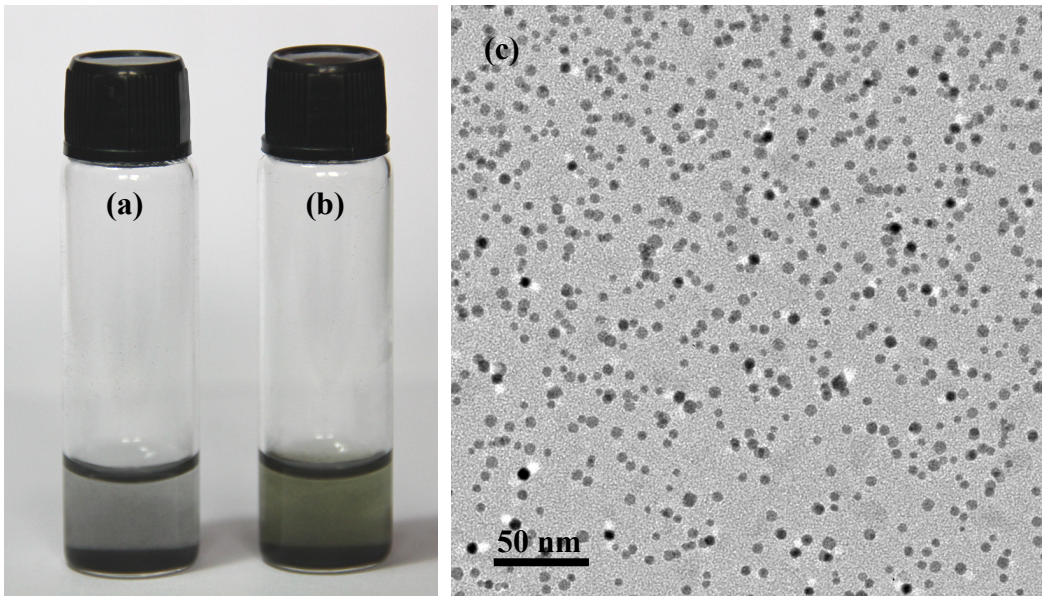

Figure S3. Photographs of (a) 3.3 ± 0.6 nm FePt@C nanoparticles and (b) FePt nanoparticles encapsulated in broken carbon shells in 10 M HCl solutions, (c) Typical TEM image of large area

of the discrete and homogenous 3.3 ± 0.6 nm FePt@C nanoparticles exposed to the air for 6 months, which shows that they have the same core–shell structure and almost the same size distribution as the nanoparticles just produced, indicating that these nanoparticles are very stable.

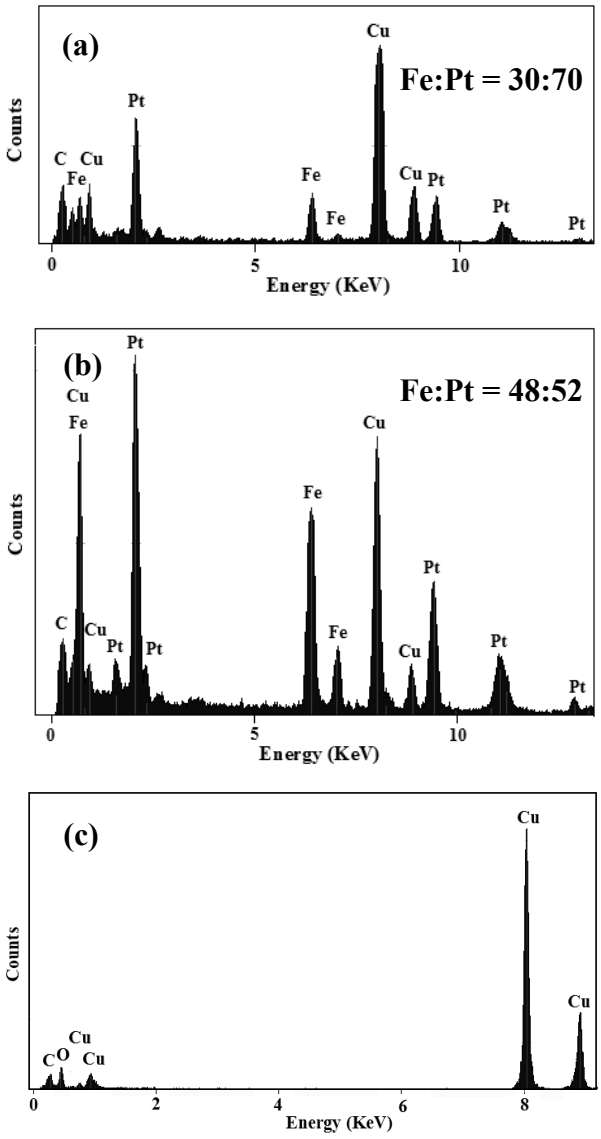

Figure S4. EDX spectra of (a) 2.1 ± 0.4 nm and (b) 3.3 ± 0.6 nm FePt@C nanoparticles, (c) EDX spectra of a blank Cu grid dipped into the ethanol.

Table S1. Influence of iron content on the nanoparticle size.

Sample	Fe : Pt atomic ratio[a]	Nanoparticle size (nm)
1	26 : 74	2.1 ± 0.4
2	45 : 55	3.3 ± 0.6
3	49 : 51	4.0 ± 0.7

The atomic ratio of Fe to Pt was determined by inductively coupled ICP-AES**.**

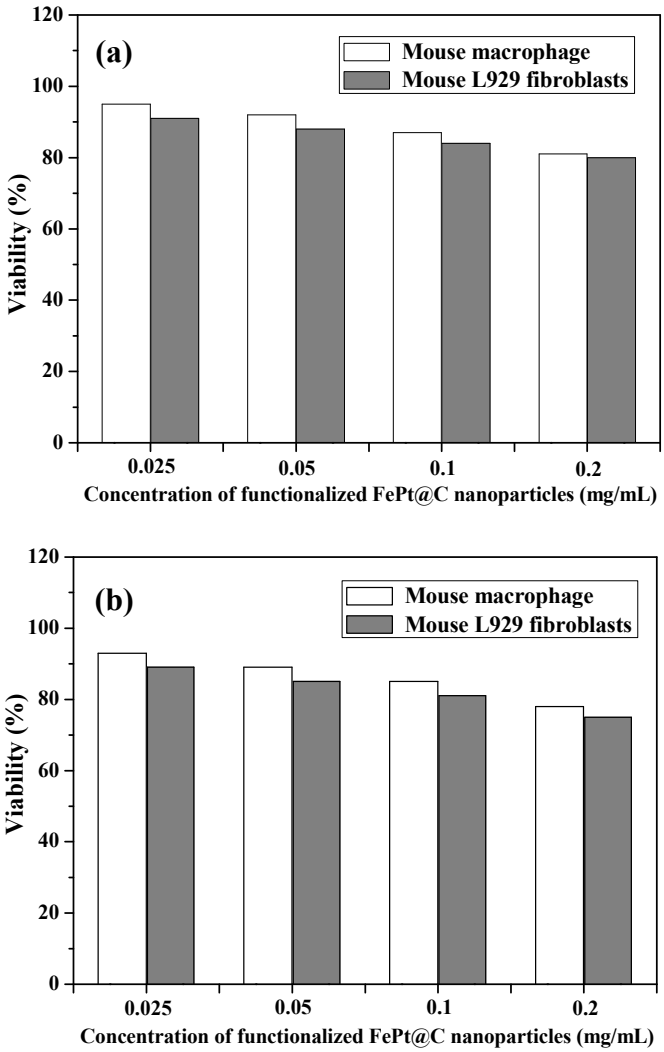

Figure S5. Effect of (a) 2.1 ± 0.4 nm and (b) 3.3 ± 0.6 nm functionalized FePt@C nanoparticles on the viability of mouse macrophage and mouse L929 fibroblasts cells.

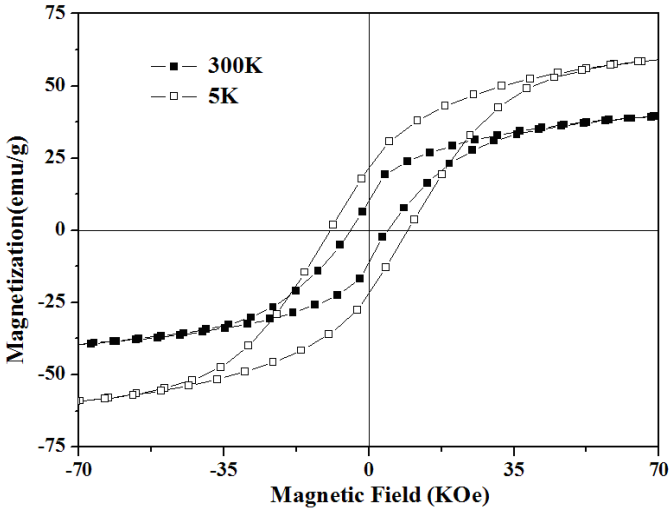

Figure S6. Magnetic hysteresis loops of the 3.3 ± 0.6 nm FePt nanoparticles exposed to the air for 6 months, showing that the coercivities and magnetizations are very close to the values of the nanoparticles just produced.