

## Supporting Information

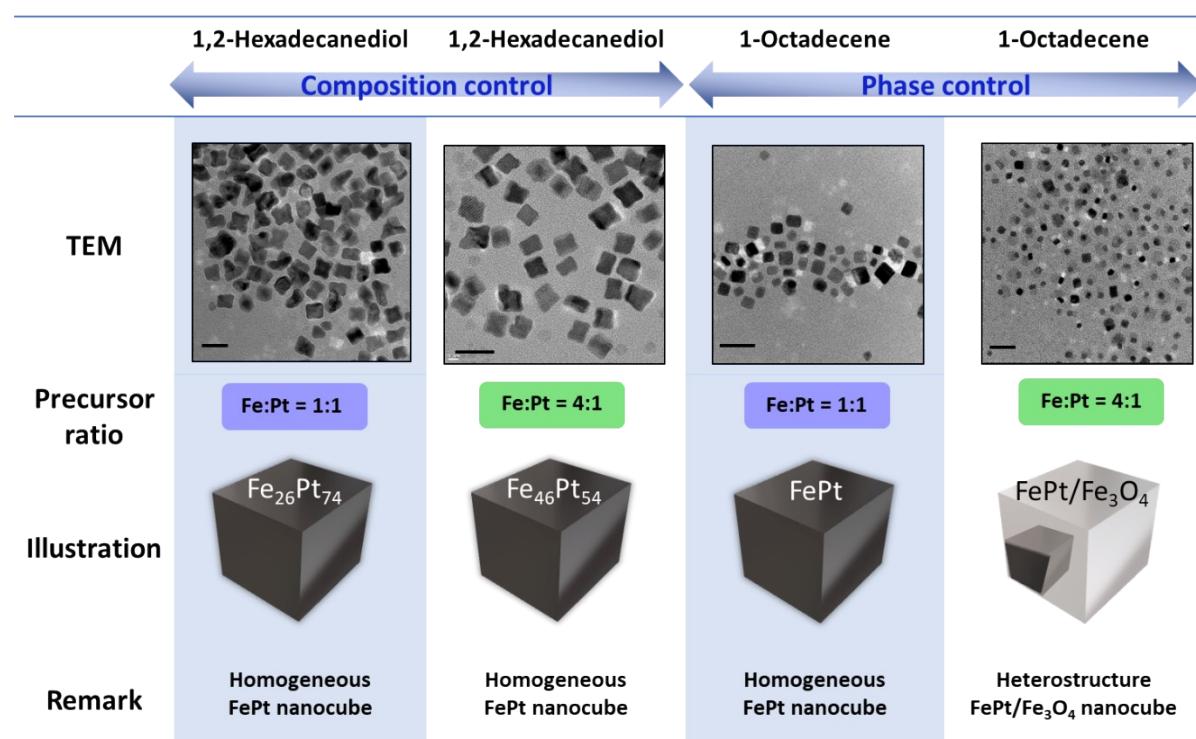
### Phase controlled one-pot synthesis of heterostructure FePt-Fe<sub>3</sub>O<sub>4</sub> nanocubes with excellent biocompatibility

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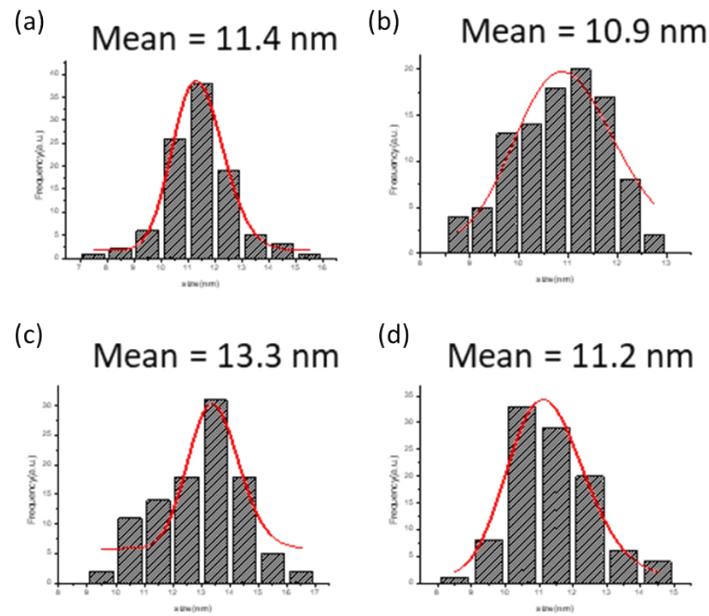
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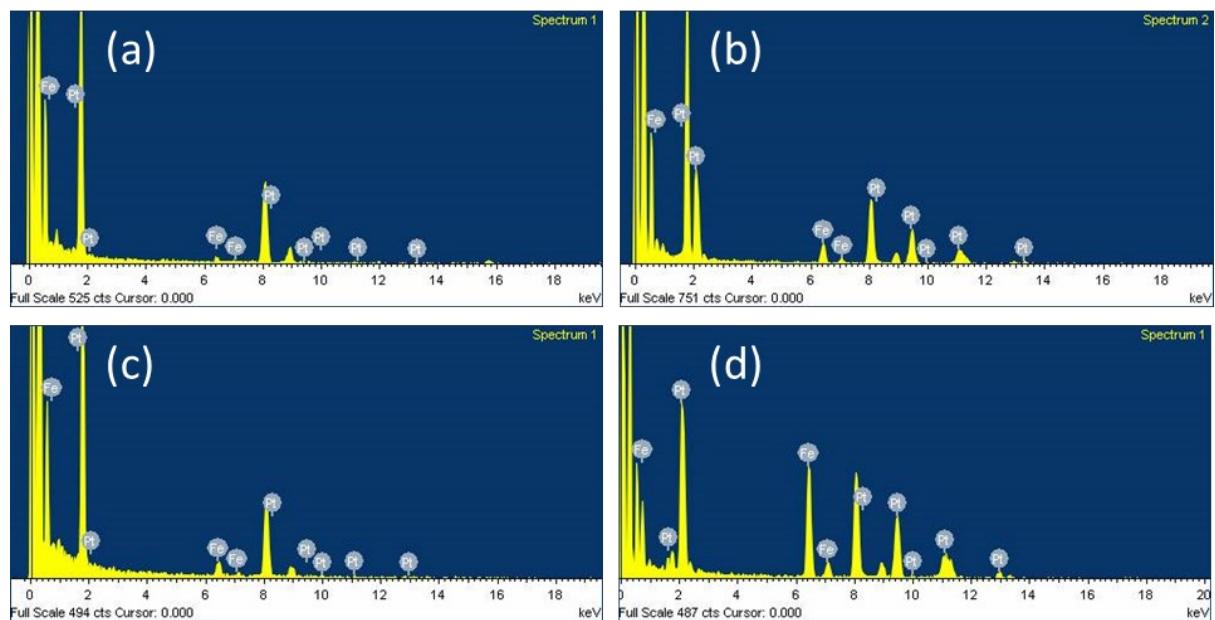
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**Fig. S1.** Summary of composition and phase-controlled FePt/Fe<sub>3</sub>O<sub>4</sub> NCs.



**Fig. S2.** Size distribution of FePt NCs with different precursor ratio of Fe to Pt (a) 1:1 (b) 2:1 (c) 3:1 (d) 4:1



**Fig. S3.** EDS spectra of FePt NCs with different precursor ratio of Fe to Pt (a) 1:1 (b) 2:1 (c) 3:1 (d) 4:1 using 1, 2-hexadecanediol.

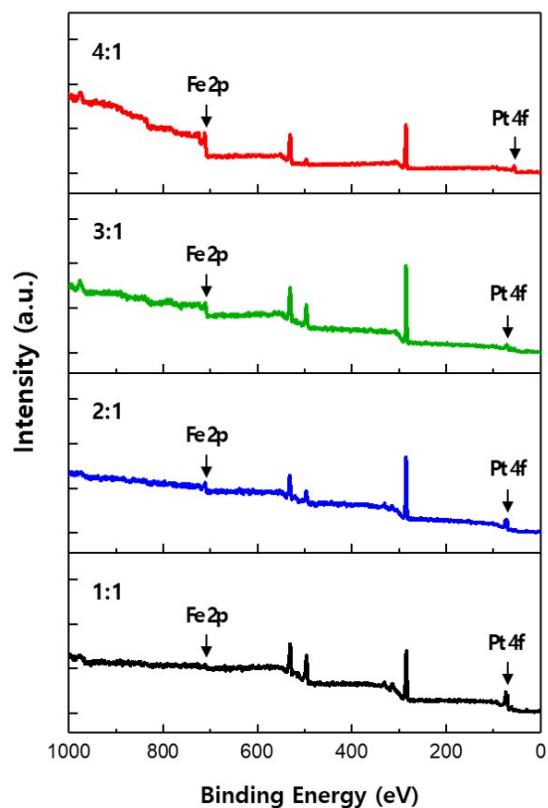


Fig. S4. XPS spectra of FePt NCs synthesized at various precursor ratio of Fe:Pt from 1:1 to 4:1.

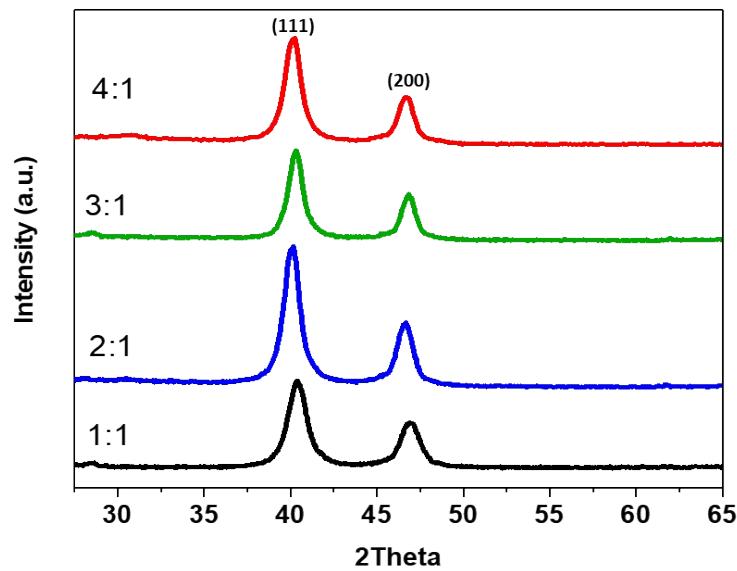
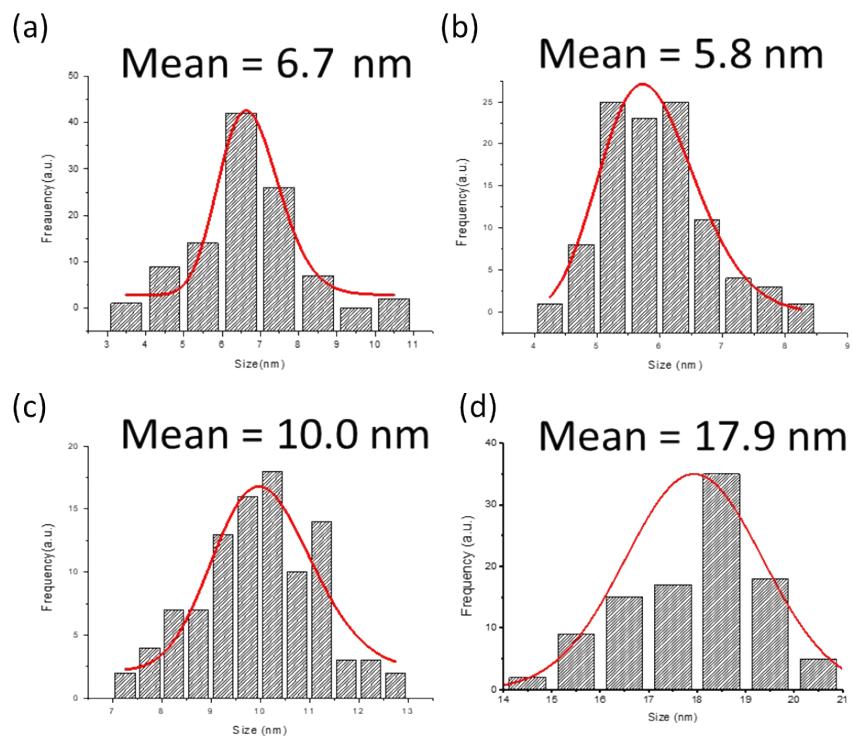
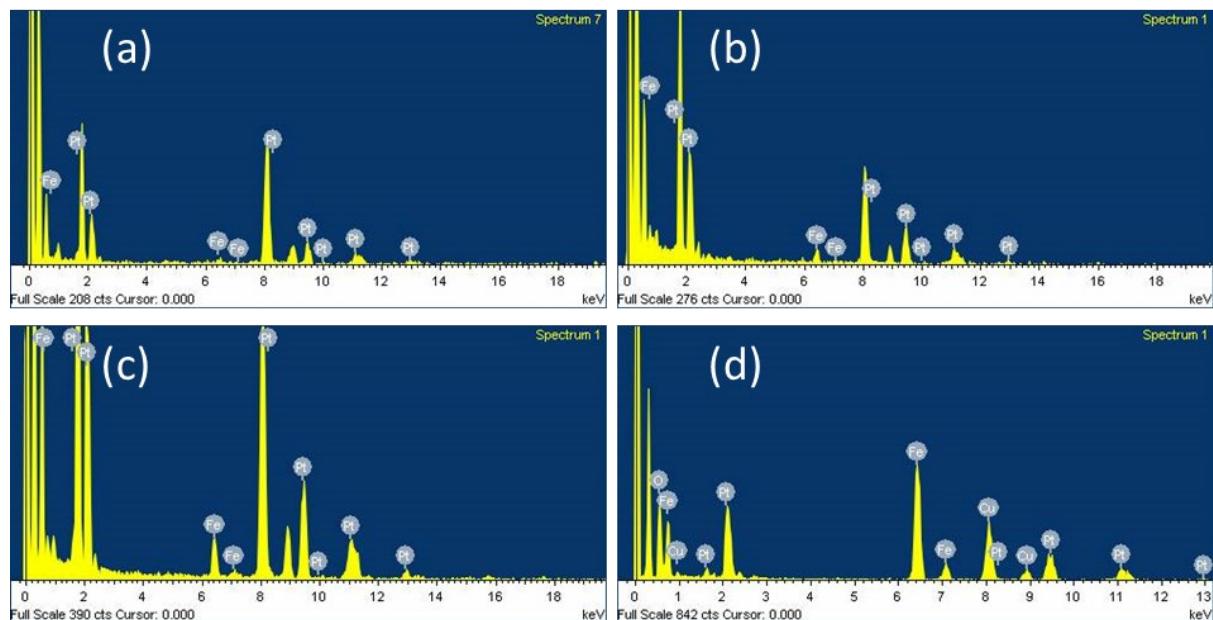


Fig. S5. The XRD patterns of FePt NCs synthesized at different precursor ratio of Fe:Pt from 1:1 to 4:1.



**Fig. S6.** Size distribution of FePt and FePt/Fe<sub>3</sub>O<sub>4</sub> NCs with different precursor ratio (a) 1:1 (b) 2:1 (c) 3:1 (d) 4:1.



**Fig. S7.** EDS spectra of FePt NCs with different precursor ratio of Fe to Pt (a) 1:1 (b) 2:1 (c) 3:1 (d) 4:1 using octadecene.

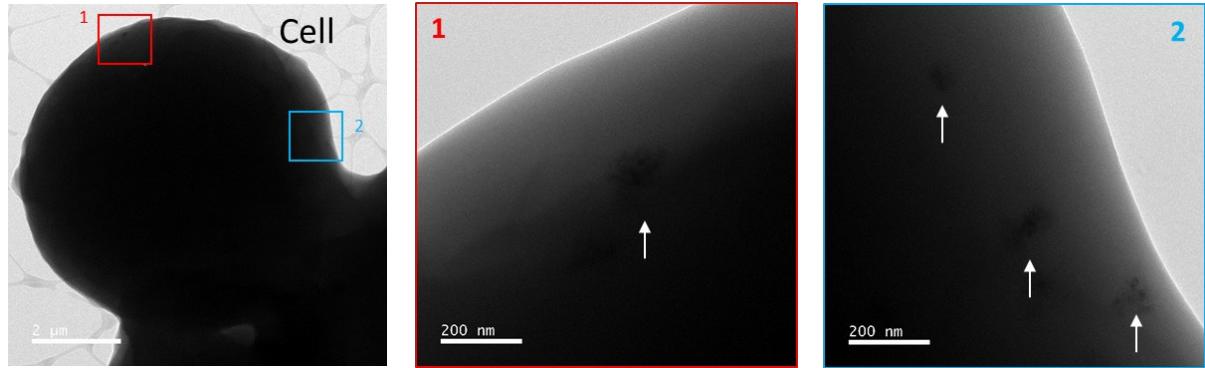


Fig. S8. TEM image of THP-1 cells treated with FePt NCs, clearly showing the internalization of particles.