

## SUPPORTING INFORMATION

### One-pot fabrication of carboxyl-functionalized biocompatible magnetic nanocrystals for conjugation with targeting agents

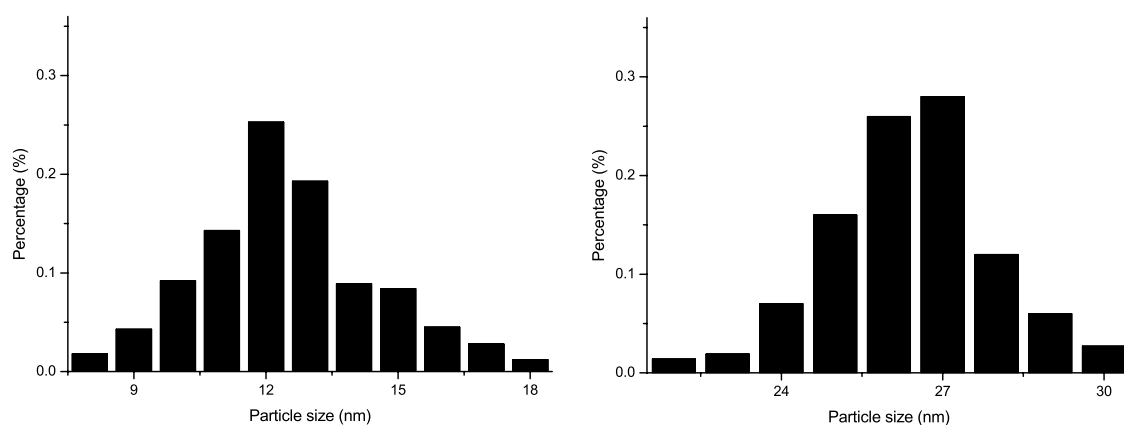
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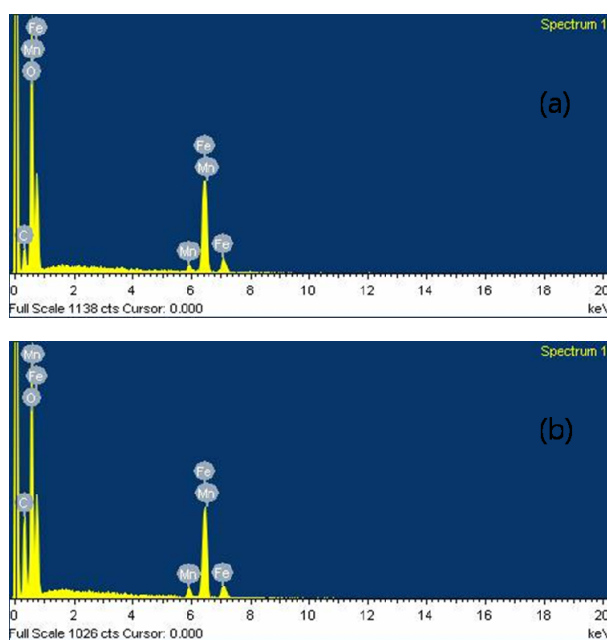
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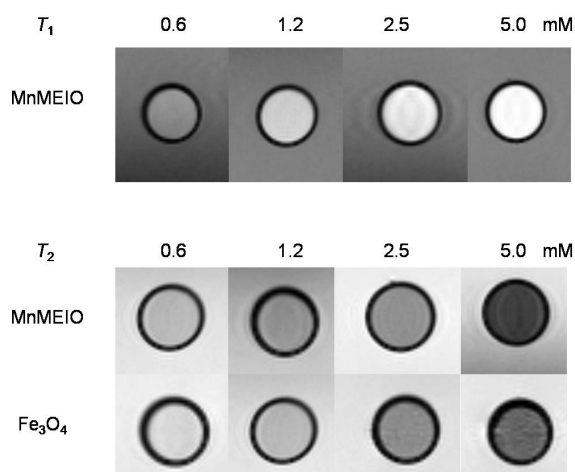
<sup>d</sup> Department of Nuclear Medicine, Chonbuk National University Medical School and Hospital, Jeonju, Jeonbuk 561-712, Korea.



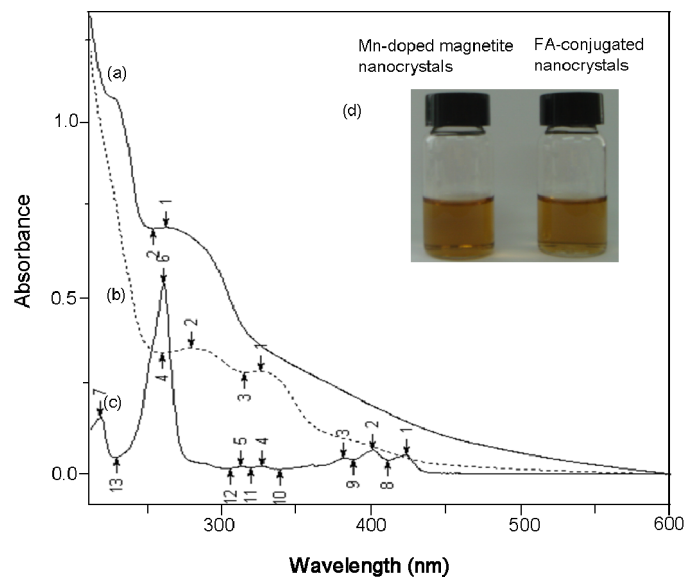
**Fig S1.** Histograms show the size distribution of the (a) 12-nm and (b) 27-nm MnMEIO nanocrystals.



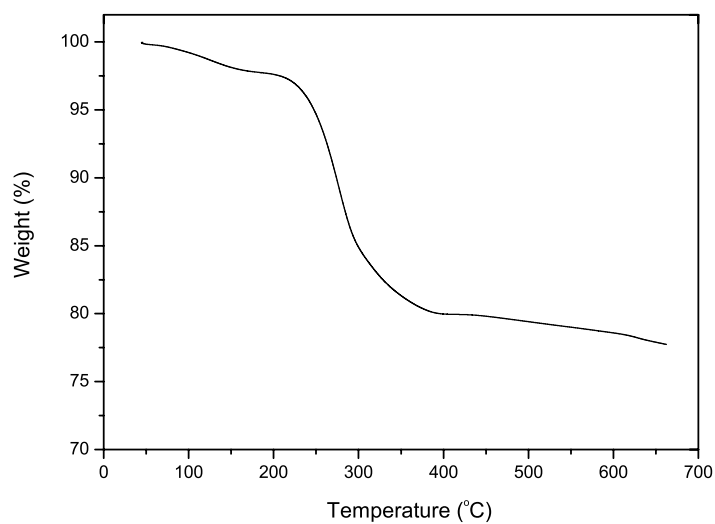
**Fig. S2.** EDX data of (a) 12-nm and (b) 27-nm MnMEIO nanocrystals.



**Fig. S3.**  $T_1$  and  $T_2$ -weighted MR images of phantoms at various concentrations with different contrast magnetic fluids. The 12-nm MnMEIO exhibited much stronger enhancement in both  $T_1$ - and  $T_2$ -weighted MRI than the  $Fe_3O_4$  nanocrystal.



**Fig. S4.** UV-vis absorption spectra of a) 9-AA, b) 12-nm MnMEIO nanocrystals, and c) 9AA-conjugated nanocrystals, shown together with a d) photograph of the 12-nm MnMEIO nanocrystals and folic acid-conjugated nanocrystals dispersed in phosphate-buffered saline (pH = 7.4).



**Fig. S5.** Thermal analysis curve of 12-nm MnMEIO nanocrystals.

**Table S1.** Elemental composition in wt % obtained from elemental analysis of the 12 nm MnMEIO nanocrystals and 9-AA conjugated nanocrystals

	<i>W</i> (wt %)	
	MnMEIO nanocrystals	9-AA conjugated nanocrystals
Nitrogen	2.6	2.9
Carbon	37.5	25.1

### MR imaging

The MnMEIO contrast fluids, including the control sample of Fe<sub>3</sub>O<sub>4</sub>, were diluted in test tubes for different concentrations. MR imaging of phantoms was performed with a standard knee coil using a 1.5T clinical MR scanner (Bruker) to obtain  $T_2$ -axial images. The measurement parameters were as follows: field of view, 4 cm × 4 cm; matrix size, 256 × 256; repetition time (TR), 3500 ms; and echo time (TE), 36 ms.