

Supporting information

Continuous Hydrothermal Synthesis of 3,4-Dihydroxyhydroxycinnamic Acid-Modified Magnetite Nanoparticles with Stealth-Functionality against Immunological Response

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### Stability of dispersed solutions of the synthesized $\text{Fe}_3\text{O}_4$ nanoparticles

Fig. S1 shows photographs of 1 mg/ml of synthesized  $\text{Fe}_3\text{O}_4$  nanoparticles dispersed in water and in 0.9% NaCl aqueous solution (**Fig. S1**). Both solutions were well dispersed. Precipitation and aggregation could not be confirmed after one month.

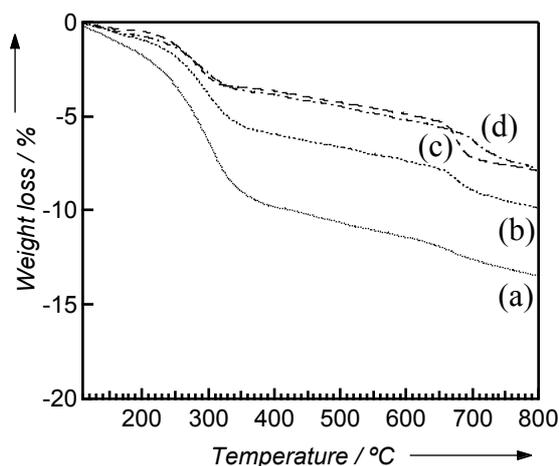


**Figure S1.** Photographs of magnetite nanoparticles synthesized at 300 °C: (a) Dispersed in water solution; (b) Dispersed in 0.9% NaCl solution

## Evaluation coverage of DHCA on the Fe<sub>3</sub>O<sub>4</sub> nanoparticle

The amount of DHCA molecules attached on Fe<sub>3</sub>O<sub>4</sub> was evaluated with thermogravimetric measurement (**Fig. S2**) that were performed on a TGDTA T8120 (Rigaku, Japan). All measurements were taken under a constant argon flow of 30 mL/min. The temperature was first kept for 30 min at 105 °C to remove most of the water and then increased to 800 °C at a rate of 10 °C/min. The initial weight of each sample was about 5 mg. All the reported TGA curves were normalized with respect to the weight at 105 °C to ensure that only the solid fraction was measured.

Fig. S2 shows the thermogravimetric measurement data of the synthesized Fe<sub>3</sub>O<sub>4</sub> nanoparticles. Significant decrease of the weight was observed for 280 °C, which is considered as desorption and decomposition of DHCA, according to previous report.<sup>[1]</sup> In addition, the coverage of DHCA on the all synthesized Fe<sub>3</sub>O<sub>4</sub> was about 4 molecules/nm<sup>2</sup> and was not change drastically with changing the reaction temperature (Table S1).



**Figure S2.** Thermogravimetric measurement of synthesized Fe<sub>3</sub>O<sub>4</sub> at various temperatures: (a) 230 °C; (b) 260 °C; (c) 300 °C; (d) 360 °C

**Table S1.** Evaluated coverage of DHCA synthesized Fe<sub>3</sub>O<sub>4</sub> at various temperatures.

Temperature (°C)	Diameter (nm)	Average mass contribution of DHCA (%)	Surface area (nm <sup>2</sup> /particle)	Coverage ratio (DHCA/nm <sup>2</sup> )
230	10.5	13.4	346	4.3
260	13.2	9.8	547	4.1
300	16.2	7.9	824	3.9
350	17.6	7.7	972	4.2

[1]A. L. Petrou, M. V. Koromantzou, *Transition. Met. Chem.*, **1991**, 16, 48-52