Experimental

Chemicals

Polyethylene oxide-*block*-polyacrylic acid ($PEO_{(6000)}$-*b*-$PAA_{(8000)}$) with polydispersity index 1.3 was purchased from Polymer Source (the numbers in the parentheses indicate the molecular weights of each block). Ferric Chloride ($FeCl_3$: Aldrich), urea (Nacalai), cis-diamineplatinum (II) dichloride (Aldrich), o-phenylenediamine (Sigma) were used without purification.

Loading of drug

5 mg of each cisplatin and magnetic microspheres were dispersed in 5 mL of water. The solution was stirred for 24 hours at 500 rpm. After that, magnetic microspheres were washed two times with subsequent centrifugation in order to remove the drug that was not adsorbed. Cisplatin loading capacity was calculated as described earlier (B. P. Bastakoti, K. C. W. Wu, M. Inoue, S. Yusa, K. Nakashima, Y. Yamauchi *Chem. Eur. J.* 2013, **19**, 4812-4817.). Briefly, the cisplatin concentration was determined by mixing the supernatant solution with o-phenylenediamine in DMF (1.2 $g \cdot L^{-1}$) at a volume ratio of 1:1. The supernatant solution was diluted before mixing. The mixture was heated at 100 ^{o}C for 10 min, and then the absorbance at 704 nm was measured spectrophotometrically after cooling to room temperature.

Cell experiments

Liver cancer cell line (HepG2) was purchased from the National Health Research Institutes (NHRI), Taiwan. HepG2 cells were incubated in flasks with DMEM at 37 °C, 5% CO_2, and 95% humidified atmosphere and were sub-cultured every 3 days. Cell viability was measure by MTT assay. HepG2 cells were seeded onto 96-well plates at a density of 2×10^4 $cells \cdot well^{-1}$ and allowed to attach overnight. The medium was then removed, and each well was washed twice with 200 μL PBS. Media containing samples with various concentrations were added to each well, and the cells were incubated at 37 °C for 24 hours. The medium was then removed, and the wells were washed twice with 0.2 mL PBS. To each well 20 μL of MTT solution (5 $g \cdot L^{-1}$ in water) was added, and the cells were incubated for an additional 4 hours. The medium was then replaced with 150 μL DMSO. The plates were left stationary for 4 hours to dissolve the blue crystals, and the absorbance was recorded by a microplate reader at a wavelength of 570 nm. Cell viability was expressed as the average absorbance of treated samples, relative to untreated ones.

Figure S1

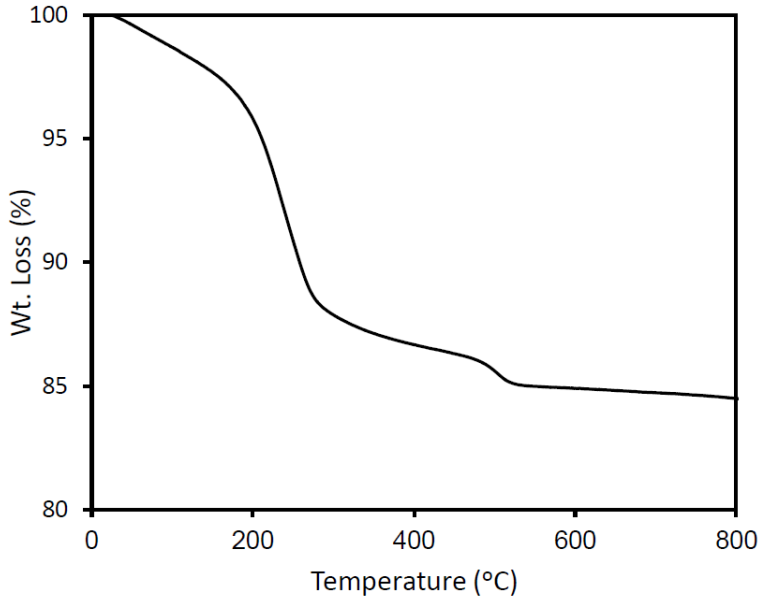

Figure S1 Thermogravimetric analysis of as-prepared Fe_2O_3 microspheres.

Figure S2

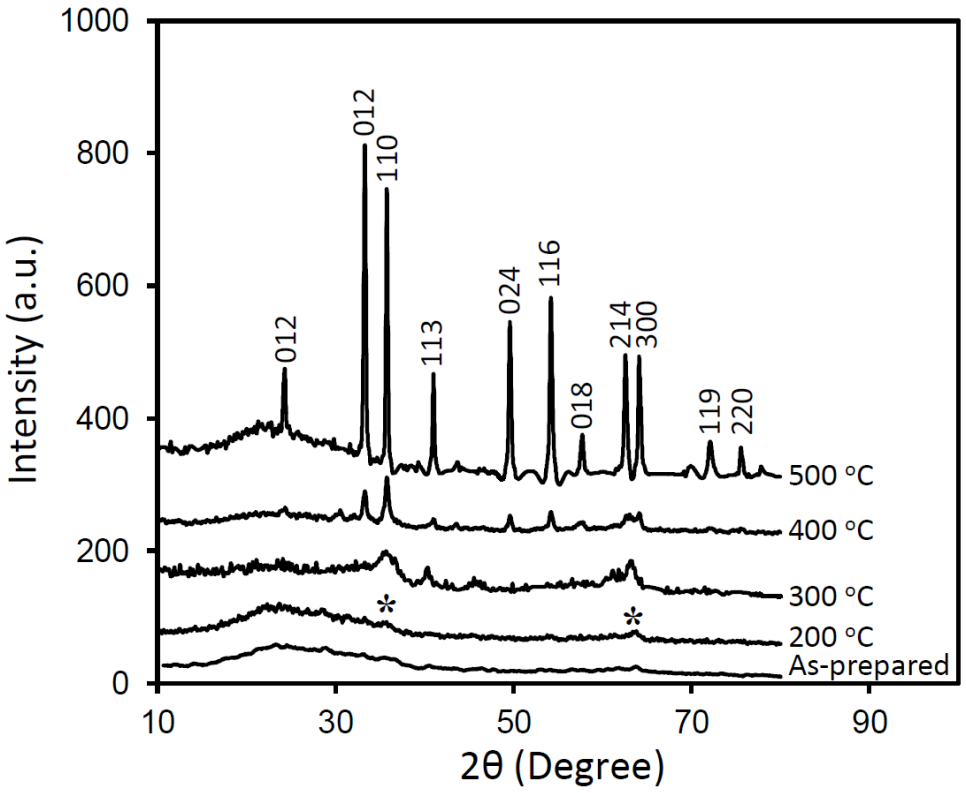

Figure S2 Wide angle XRD of Fe_2O_3 microspheres as-prepared and calcined at different temperatures. The peaks from γ- Fe_2O_3 were noted by * sign.

Figure S3

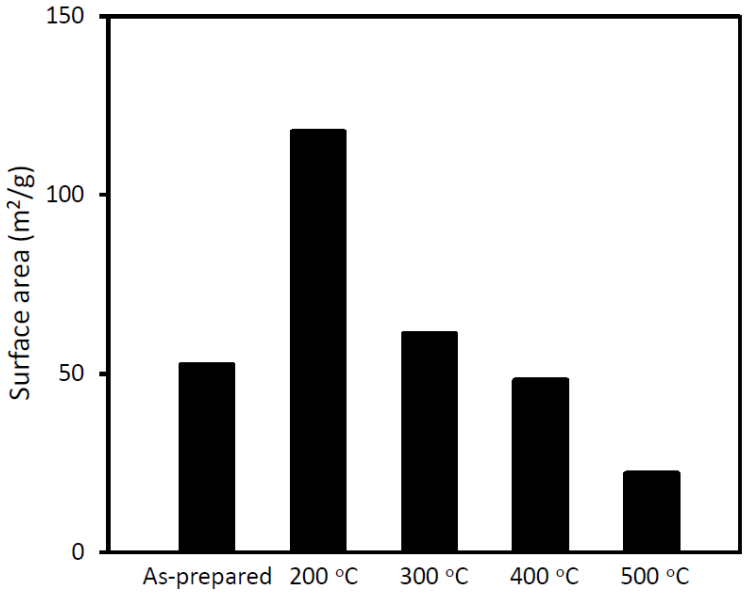

Figure S3 Surface area of Fe_2O_3 microspheres as-prepared and calcined at different temperatures.

Figure S4

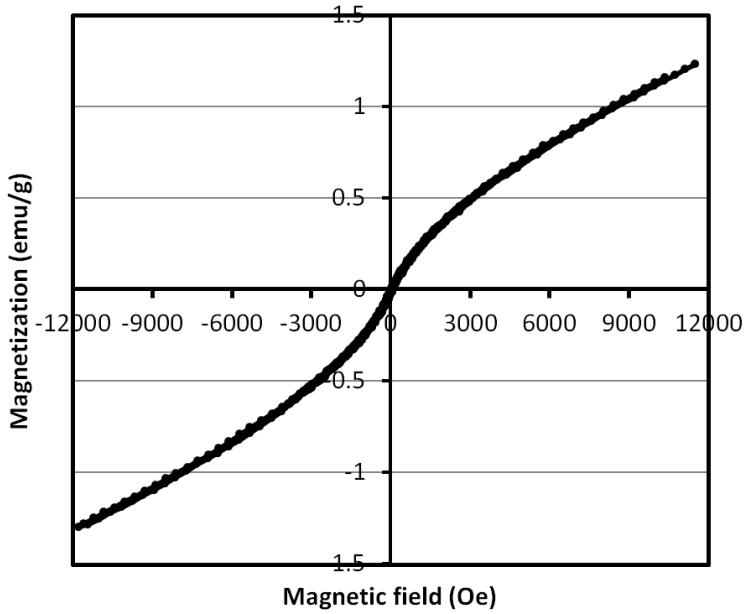

Figure S4 Room-temperature magnetization curve of Fe_2O_3 microspheres calcined at 200 °C.