Supporting information for:

Curcumin-loaded, folic acid-functionalized magnetite particles for targeted drug delivery

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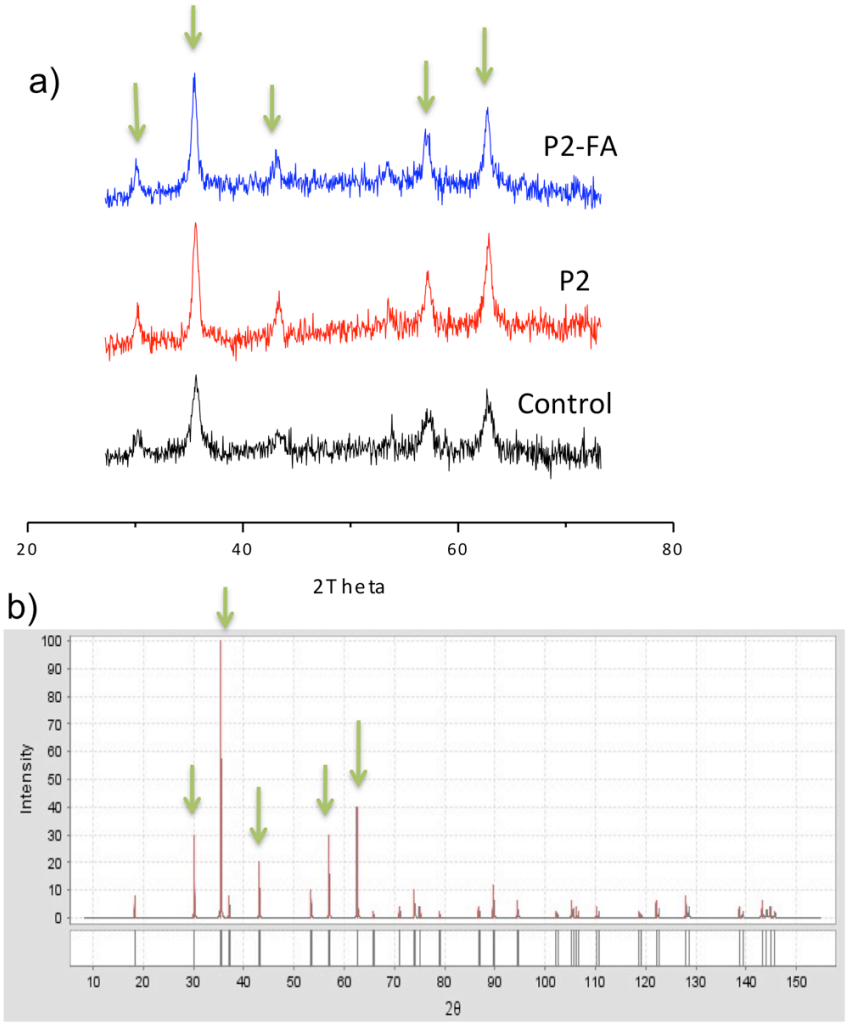

Figure S1. a) X-ray diffraction (XRD) analysis of control particles, **P2**, and **P2-FA**; b) Standard XRD pattern of magnetite (ICCD card number 00-019-0629). The crystal structures of the samples were analyzed using a Rigaku-Miniflex X-ray diffractometer (The Woodlands, TX). The samples were exposed to radiation (CuKα (30 kV, 15 mA)) at a wavelength of 1.54 Å, and scanned over a 2θ range of 5 - 90° with a step size of 0.05°.

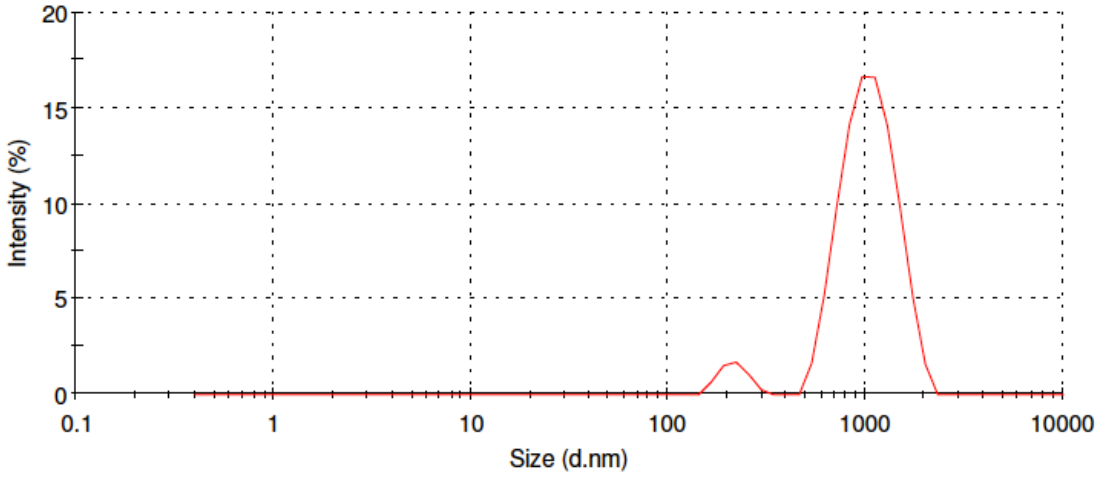

Figure S2. Intensity distribution of the **P1** aggregate hydrodynamic diameter obtained from dynamic light scattering.

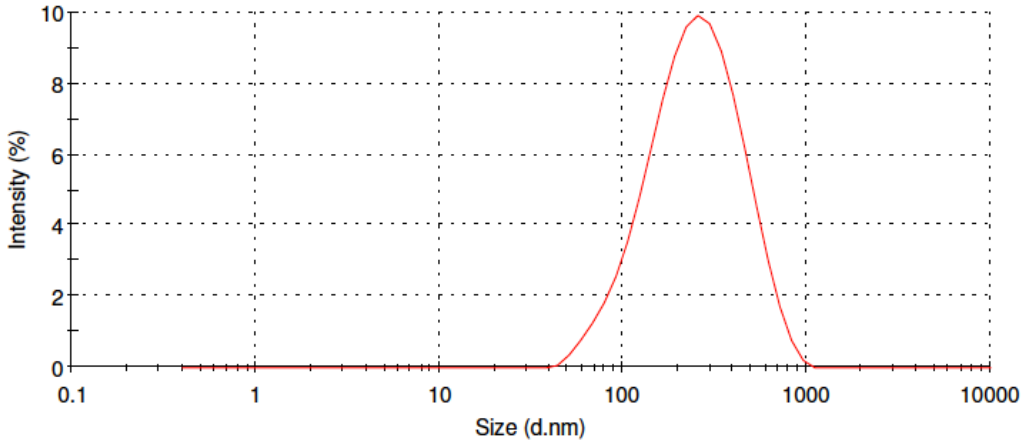

Figure S3. Intensity distribution of the **P2** aggregate hydrodynamic diameter obtained from dynamic light scattering.

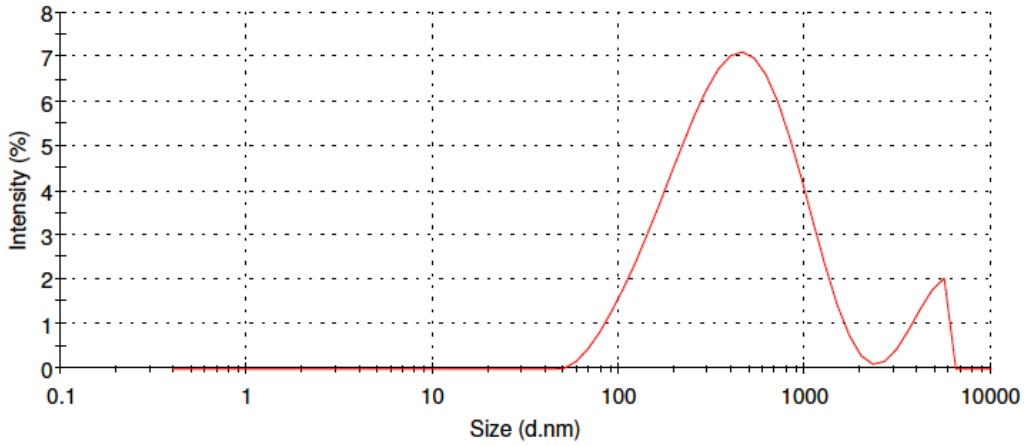

Figure S4. Intensity distribution of the **P3** aggregate hydrodynamic diameter obtained from dynamic light scattering.

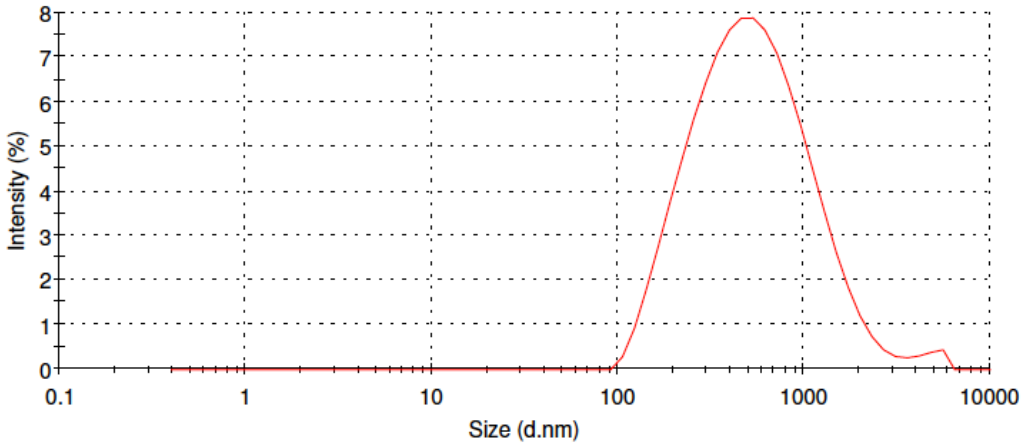

Figure S5. Intensity distribution of the **P4** aggregate hydrodynamic diameter obtained from dynamic light scattering.

		Size (d.nm):	% Intensity	Width (d.nm):
Z-Average (d.nm): 261.4	Peak 1:	175.1	64.6	57.32
PdI: 0.428	Peak 2:	461.8	35.4	133.8
Intercept: 0.920	Peak 3:	0.000	0.0	0.000
Result quality : Good				

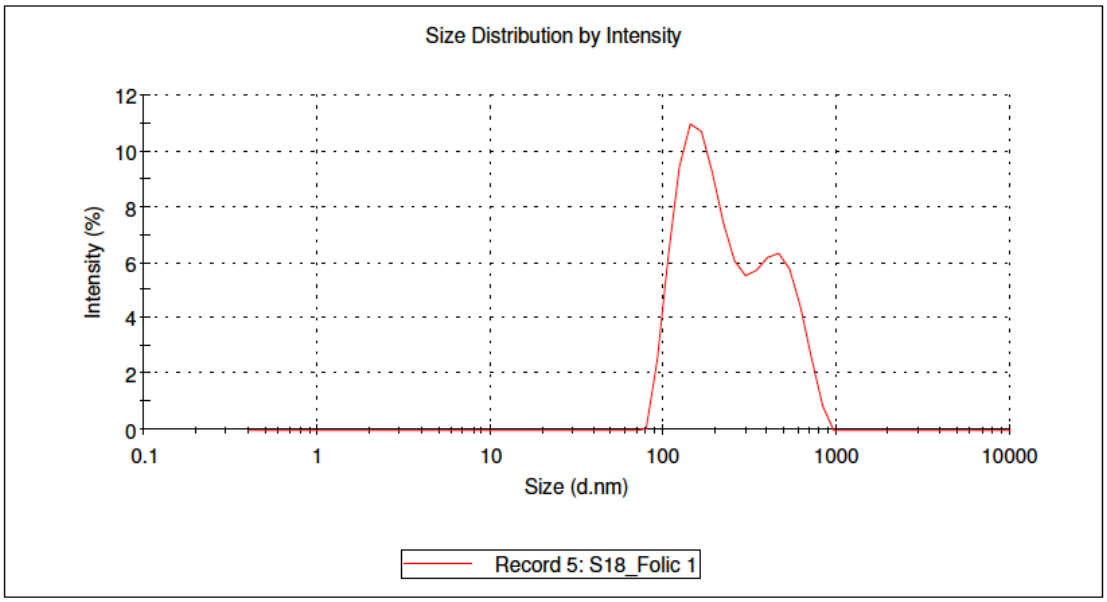

Figure S6. Intensity distribution of the **P2-FA** aggregate hydrodynamic diameter obtained from dynamic light scattering.

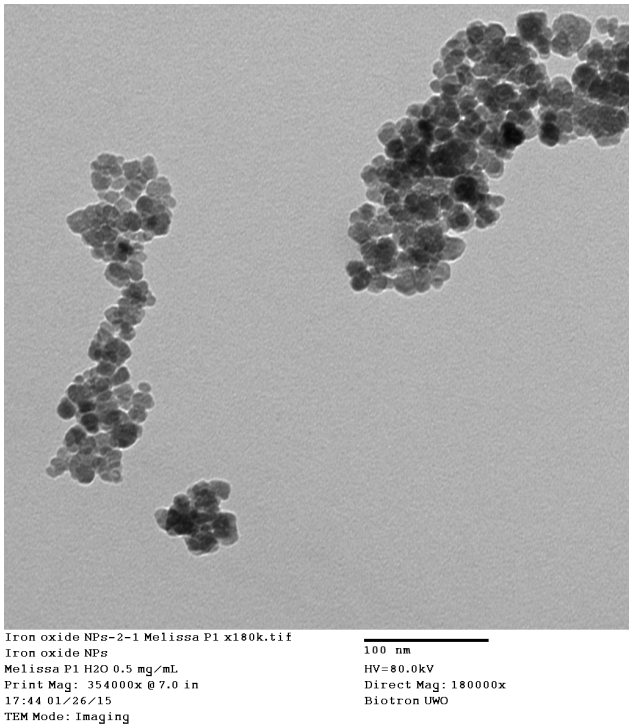

Figure S7. Transmission electron microscopy image of **P1**.

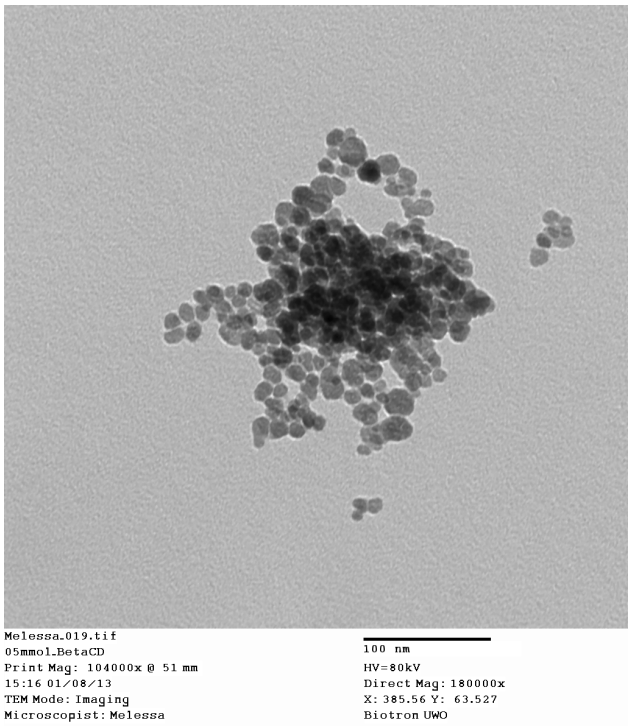

Figure S8. Transmission electron microscopy image of **P3**.

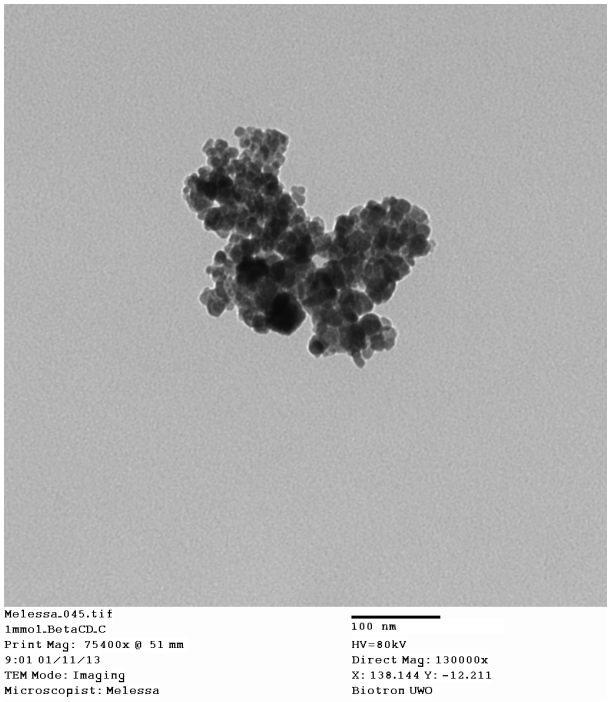

Figure S9. Transmission electron microscopy image of **P4**.

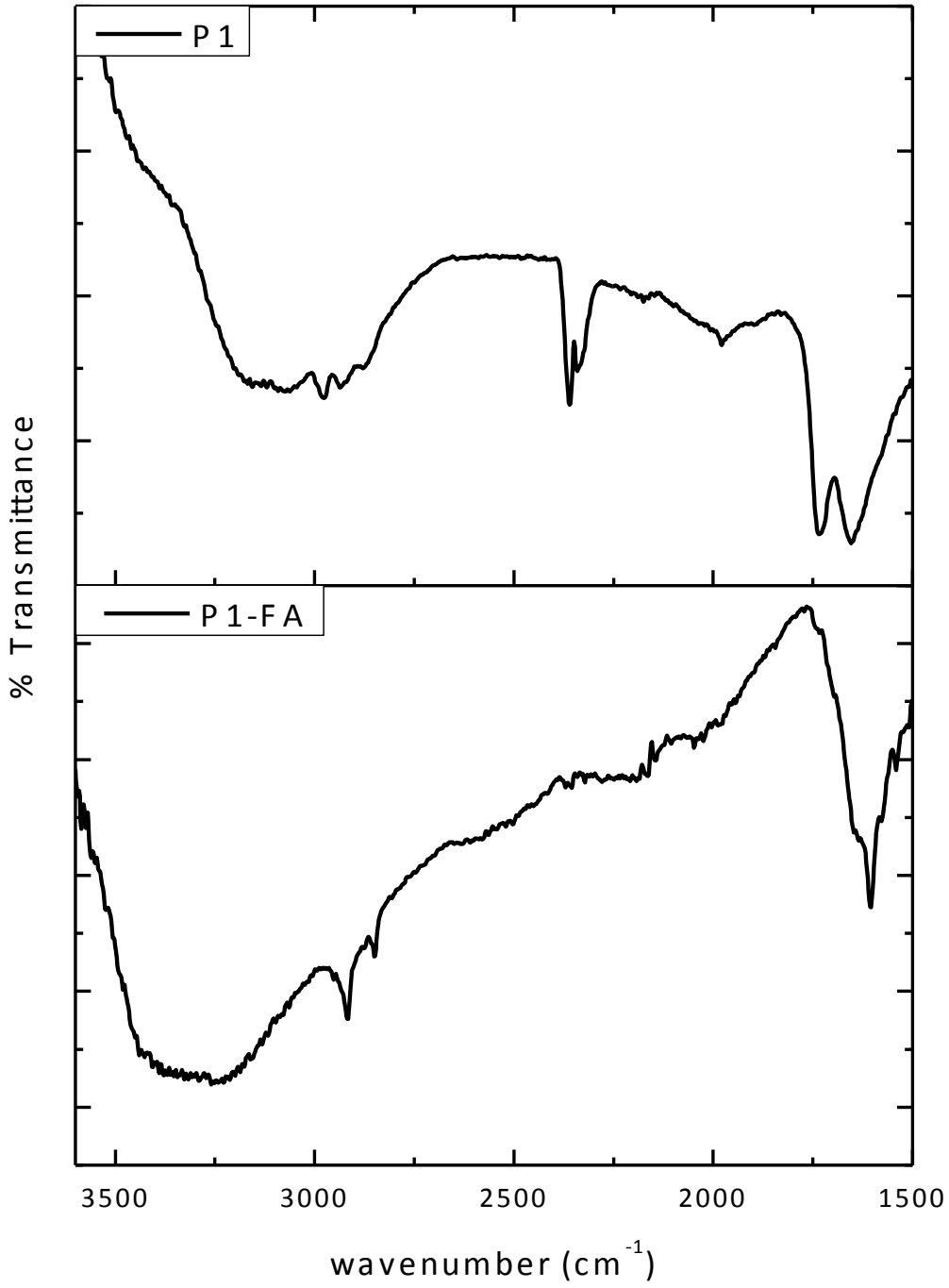

Figure S10. IR spectra of **P1** and **P1-FA**.

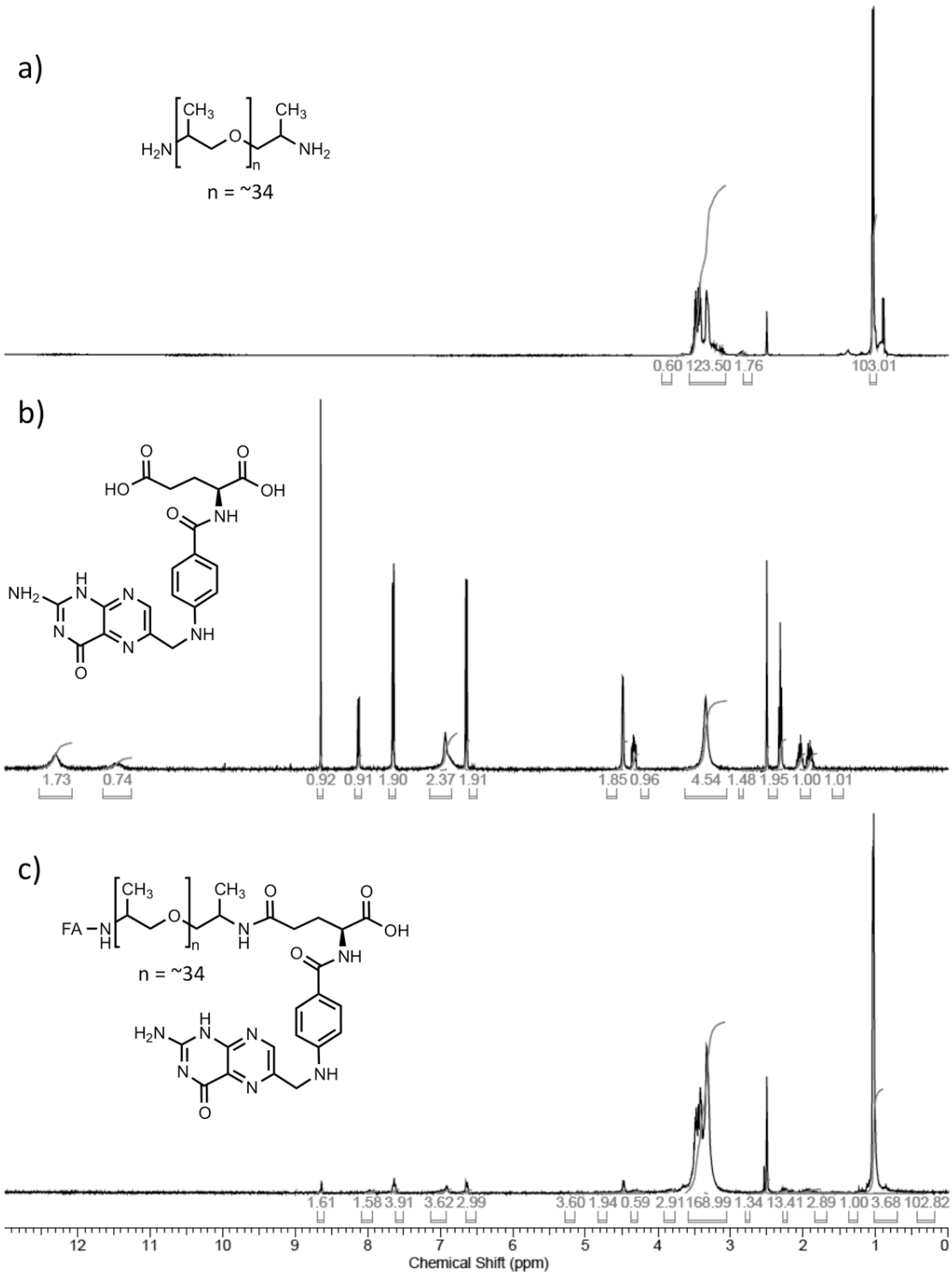

Figure S11. ^{1}H NMR spectra (DMSO-d_6, 400 MHz) of a) PPG-NH_2; b) FA; and c) a conjugate of PPG-NH_2 and FA. The conjugate was prepared under the same conditions as described for P1-FA in the manuscript, except that 8 mg (estimated amount of PPG-NH_2 in 20 mg of particles such as P2) of PPG-NH_2 was used instead of the 20 mg of particles.

The polymer conjugate was purified by dialysis against DMSO, followed by methanol using a 1 kg/mol Spectra/Por® regenerated cellulose membrane. ^{1}H NMR spectroscopy demonstrated that at least 75% of the terminal amines on PPG-NH_2 were coupled to FA based on the relative integrations of the FA aromatic peaks from 6.5 – 9.0 ppm and the peak at 1.0 ppm corresponding to the CH_3 groups on the PPG-NH_2.

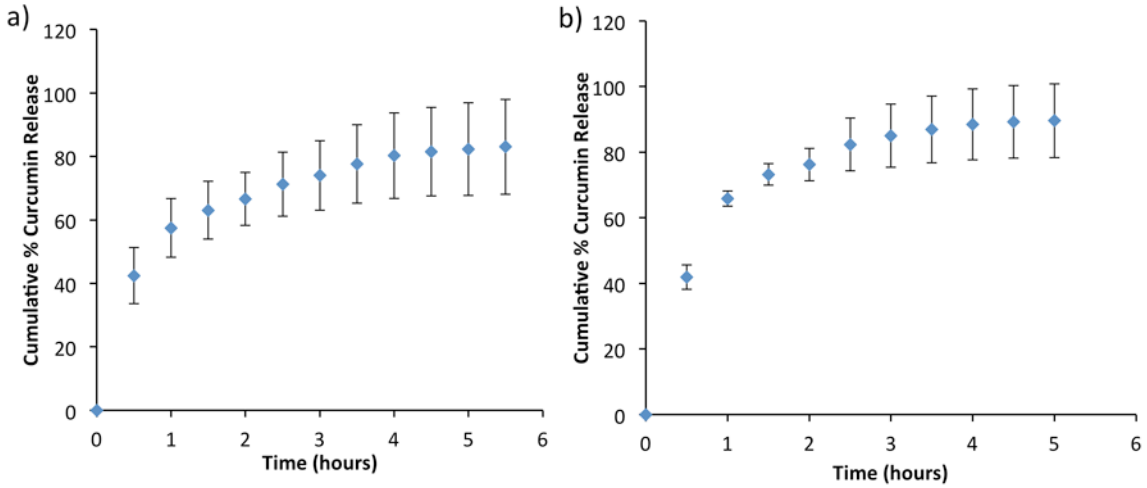

Figure S12. Dissolution profile for free curcumin performed under the same conditions as the *in vitro* curcumin release from the particles, except that powdered curcumin was used instead of curcumin loaded particles and remaining insoluble curcumin was separated at each time point by centrifugation rather than using a magnet. The same amount of curcumin was used in this experiment as was used in the particle experiment (**P1**, higher curcumin content) in order to account for the solubility limit of the drug. a) pH 7.4; b) pH 5.4.