Supporting Information

Polyaspartamide Vesicle induced by Metallic Nanoparticles

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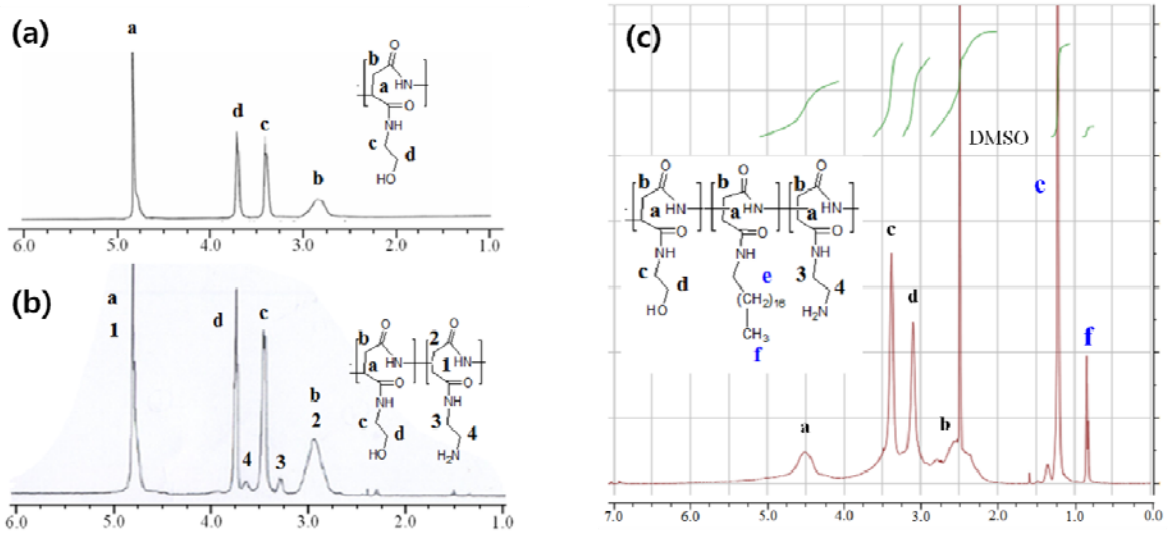

Fig. S1 ^{1}H-NMR spectra of (a) poly(2-hydroxyethyl aspartamide) (PHEA), (b) poly(2-amino-2-hydroxyethyl aspartamide) (PAHA), and (c) poly(2-amino-2-hydroxyethyl aspartamide)-g-C_{18} (PAHA-g-C_{18}). Each peak was assigned to the corresponding proton of the chemical structure. ^{1}H-NMR spectra were obtained by dissolving PHEA (a) and PAHA (b) in D_2O, and PAHA-g-C_{18} (c) in DMSO-d_6.

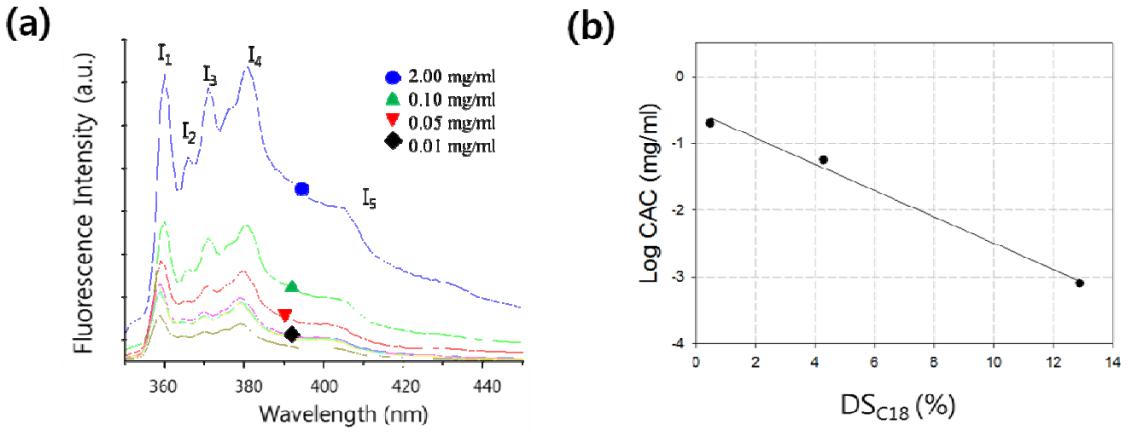

Fig. S2 (a) Fluorescence emission spectra of pyrene loaded in the PAHA-g-C_{18} solution were acquired at various polymer concentrations. (b) Critical aggregation concentration (CAC) as a function of DS_{C18}. Concentration of PAHA-g-C_{18} was kept constant at 2.0 mg/ml which was higher than its CAC.

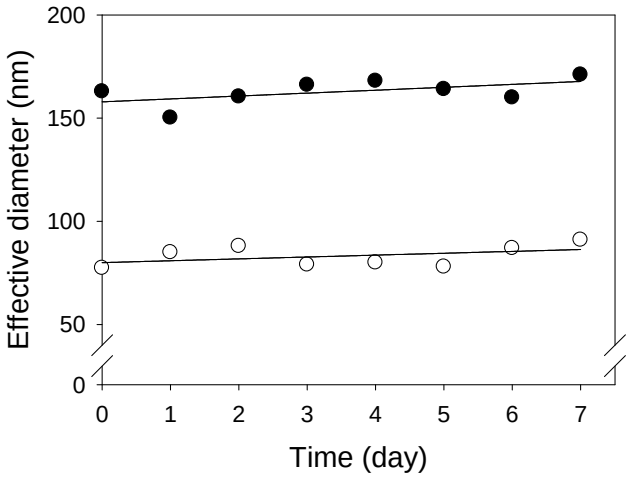

Fig. S3 Effective diameter change of polymer vesicles in PBS at 25°C. The vesicles formed via the micelle-to-vesicle transition (●) remained stable over a week, similar to vesicles formed with PHEA-g-C_{18} with DS_{C18} at 35 % (○).

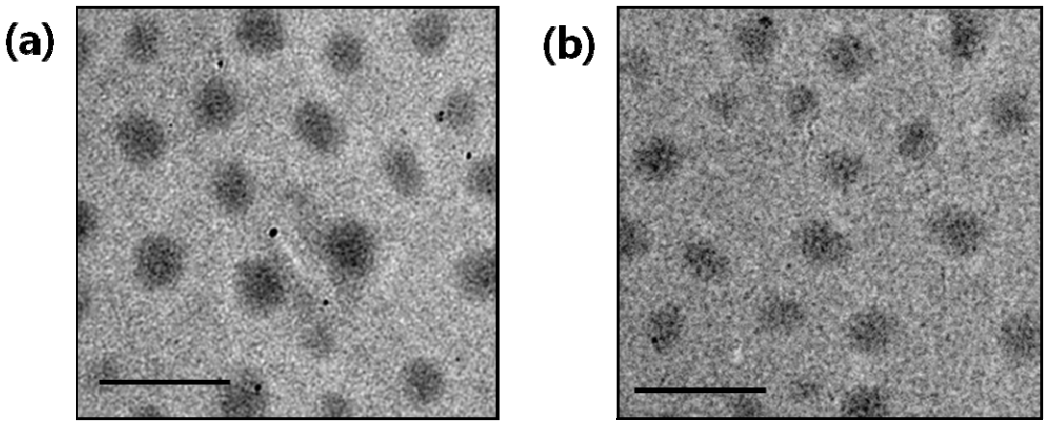

Fig. S4 There was minimal difference of the morphology and size between the polymeric self-aggregates formed in the presence of the platinum precursors (b) and those formed without platinum precursors (a). The scale bar represents 200 nm. The images were captured at 120 kV with JEOL 2100 Cryo TEM.

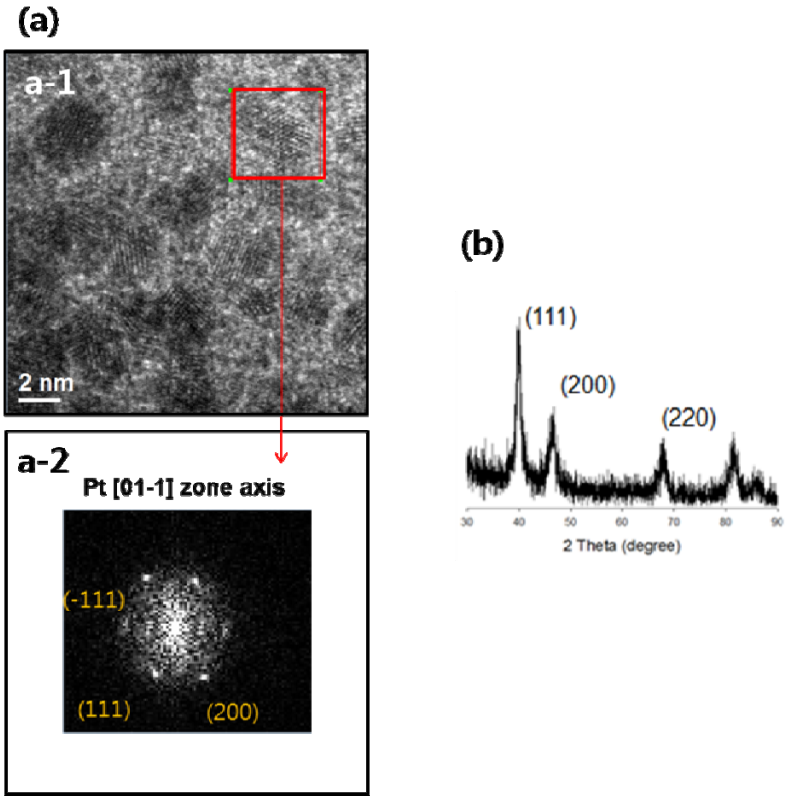

Fig. S5 (a) The individual particles formed within self-assembled constructs of PAHA-g-C_{18} (a-1) present a face-centered cubic (fcc) structure, according to high resolution TEM images (a-2). (b) X-ray diffraction (XRD) pattern of the Pt nanoparticles prepared with self-assembled PAHA-g-C_{18} (DS 5 %) construct. The pattern revealed *d* spacings of 2.27, 1.96, and 1.39 Å, which correspond to the *d* spacings for the {111}, {200}, and {220} planes, respectively, of a face-centered-cubic Pt structure.

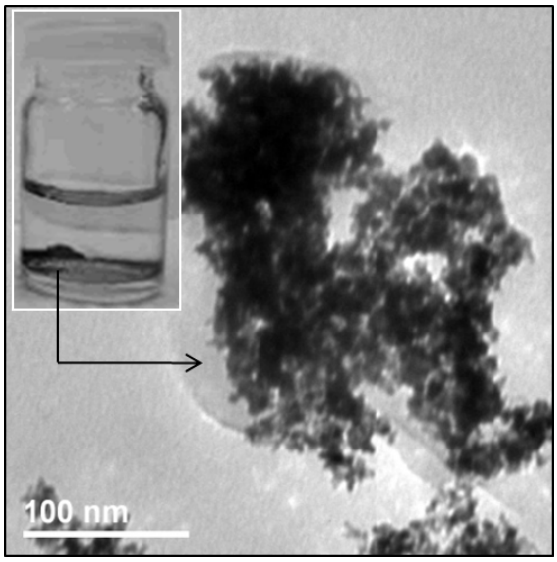

Fig. S6 TEM image of Pt particles prepared without a polymer construct shows uncontrollable aggregation between particles.