Supporting information:

Materials: Potassium tetrachloroplatinate(II) (K_2PtCl_4), H_2SO_4, methanol, and ascorbic acid were purchased from Nacalai Tesque Inc. (Kyoto, Japan). The nonionic surfactant (Brij58, $C_{16}H_{33}(OCH_2CH_2)_{20}OH$) was obtained from Sigma-Aldrich, Germany. All the reagents were used without further purification. All solutions were prepared with deionized water treated with a Millipore water purification system (Millipore Corp.).

Characterization: Transmission electron microscopic (TEM) images were taken by using a JEOL JEM-2100F microscope using an accelerating voltage at 200 kV. The samples were prepared by depositing a drop of the diluted colloidal suspension on a carbon-coated copper grid. Low-angle XRD patterns were recorded by a Rigaku NANO-Viewer (Cu Kα radiation) with a camera length of 700 mm operated at 40 kV and 30 mA. A wide-angle powder X-ray diffraction (XRD) pattern was recorded with a Rigaku Rint 2500 diffractometer with monochromated Cu Kα radiation. Cyclic voltammetry was recorded by using a CHI 842B electrochemical analyzer (CH Instruments Inc., Austin, TX). A conventional three electrode cell was used, including a Ag/AgCl electrode as reference electrode, a platinum wire as counter electrode, and a working electrode. The working electrode was prepared by depositing the samples on a glassy carbon electrode (3 mm in diameter). The GCE was coated with MPNs at the same loading of 5.0 μg and dried completely at room temperature before the electrochemical experiments. All potential values were referenced to the Ag/AgCl electrode.

Figure S1

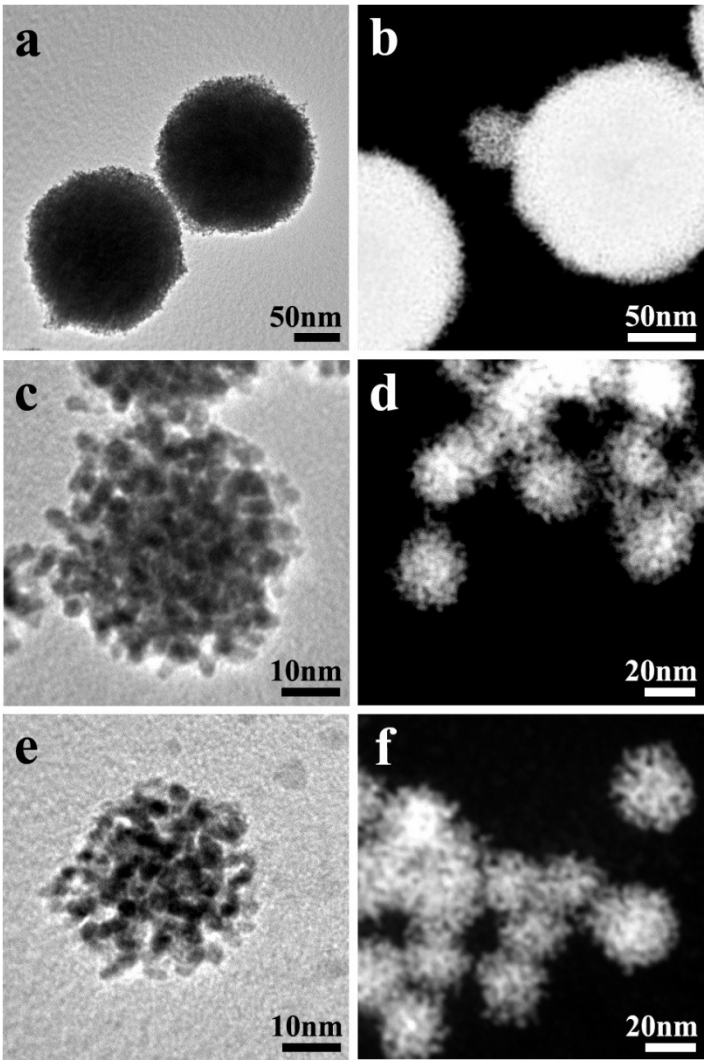

Figure S1 (a, c, and e) Bright-field TEM images and (b, d, and f) high-angle annular dark-field scanning TEM (HAADF-STEM) images for (a, and b) MPN1, (c and d) MPN5, and (e and f) MPN7 prepared with 0.01 wt%, 10.0 wt%, and 20.0 wt% Brij58, respectively.

Figure S2

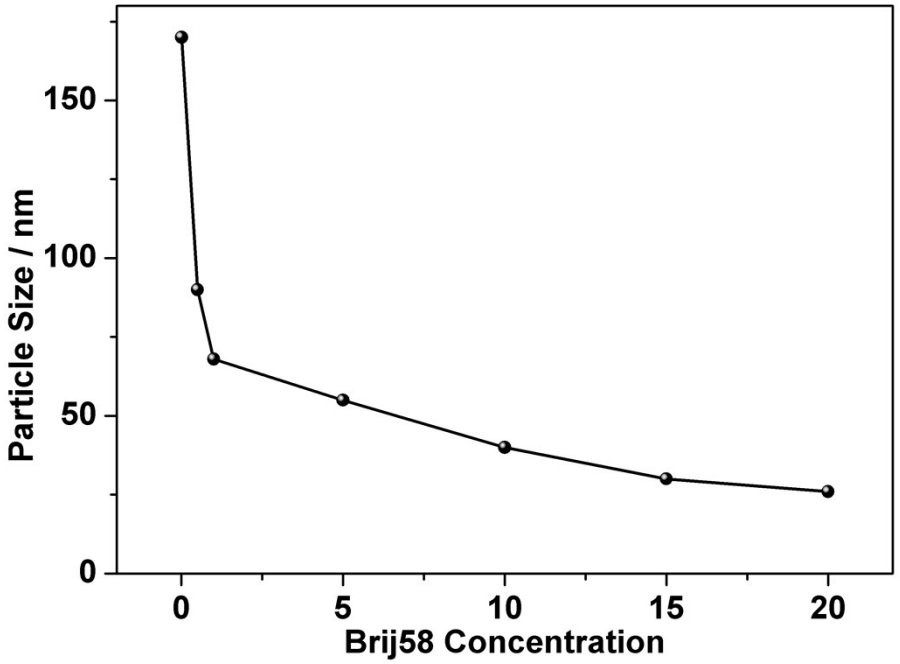

Figure S2 Relationship between the particle size and the Brij58 concentration.

Figure S3

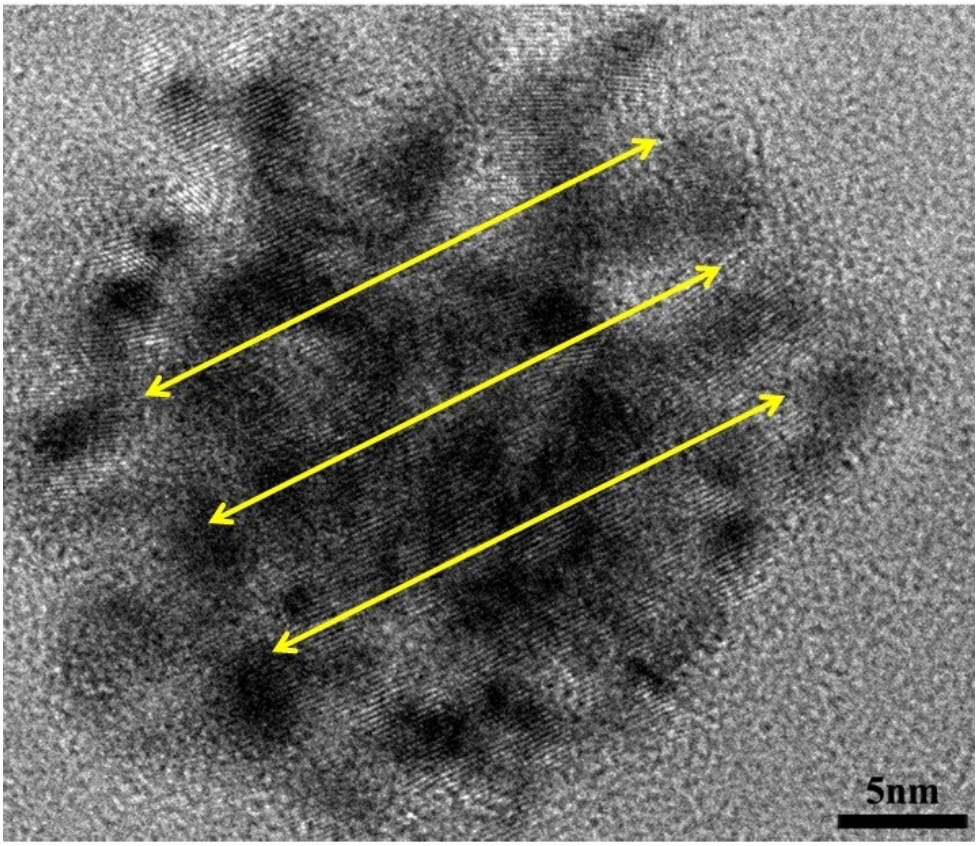

Figure S3 High-resolution TEM image for MPN7 prepared with 20.0 wt% Brij58.