Supplementary Materials: Biocompatible Polymer-Grafted TiO_2 Nanoparticle Sonosensitizers Prepared Using Phosphonic Acid-Functionalized RAFT Agent

Yukiya Kitayama [1,2], Aoi Katayama [2], Zhicheng Shao [1] and Atsushi Harada [1,2,*]

[1] Department of Applied Chemistry, Graduate School of Engineering, Osaka Prefecture University, 1-1 Gakuen-cho, Naka-ku, Sakai, Osaka 599-8531, Japan; kitayama@omu.ac.jp (Y.K.); shao.zhicheng.36a@st.kyoto-u.ac.jp (Z.S.)
[2] Department of Applied Chemistry, Graduate School of Engineering, Osaka Metropolitan University, 1-1 Gakuen-cho, Naka-ku, Sakai, Osaka 599-8531, Japan; sc22139u@st.omu.ac.jp
* Correspondence: atsushi_harada@omu.ac.jp

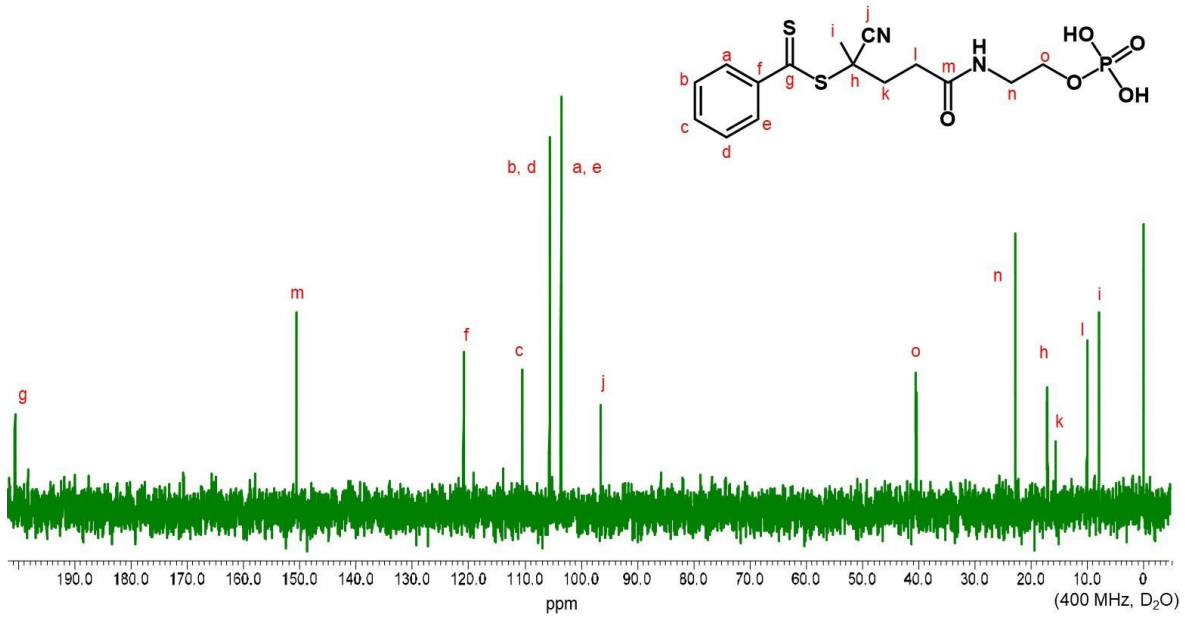

Figure S1. ^{13}C NMR spectrum of RAFT-PO_4H_2 in D_2O.

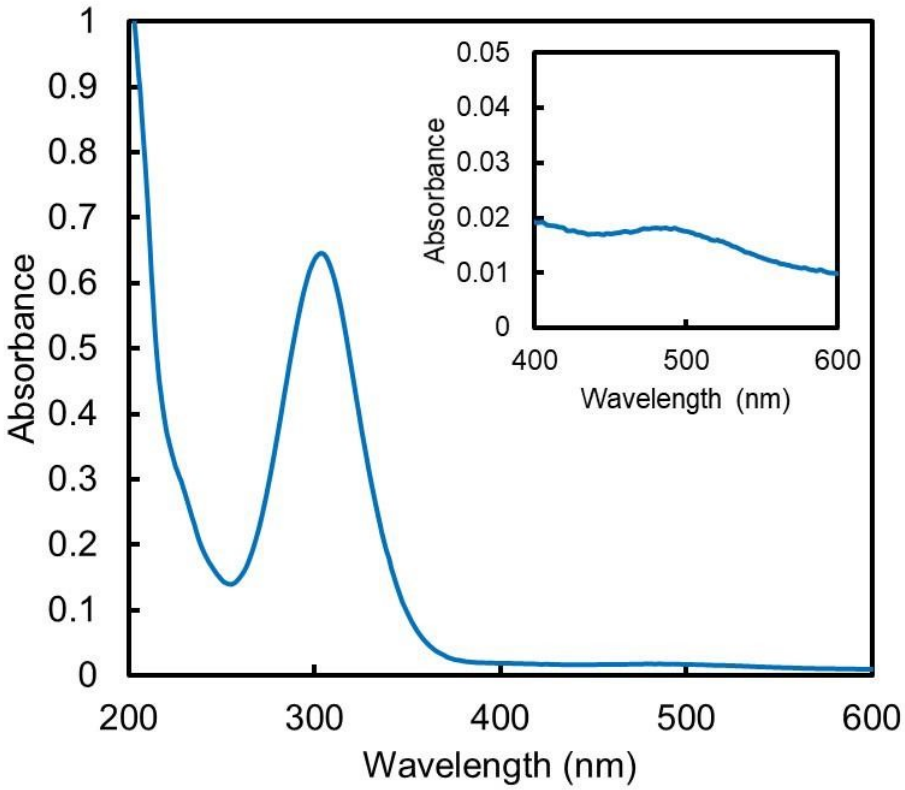

Figure S2. UV-Vis spectrum of RAFT-PO_4H_2.

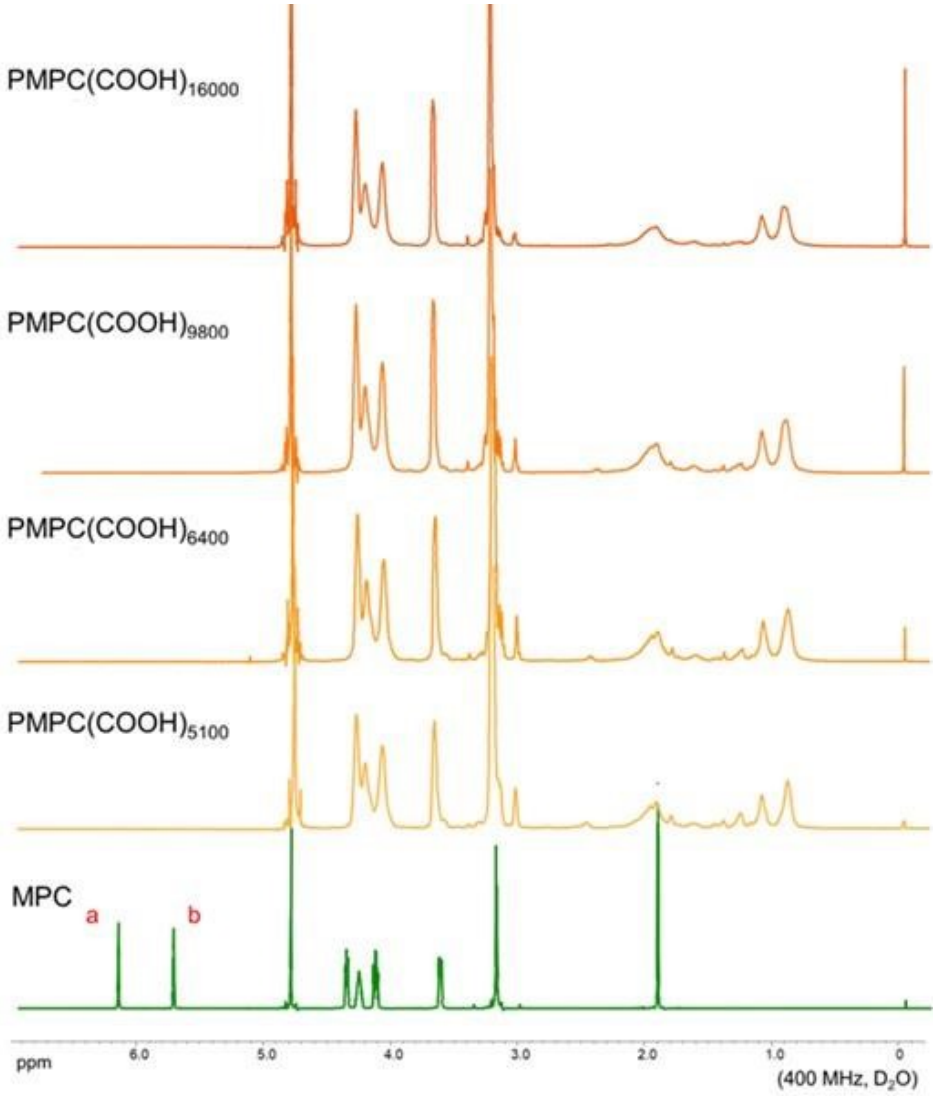

Figure S3. ^{1}H NMR spectra of MPC and polymer solutions obtained after RAFT polymerizations of MPC using RAFT-COOH with different molar ratio of MPC and RAFT-PO_4H_2.

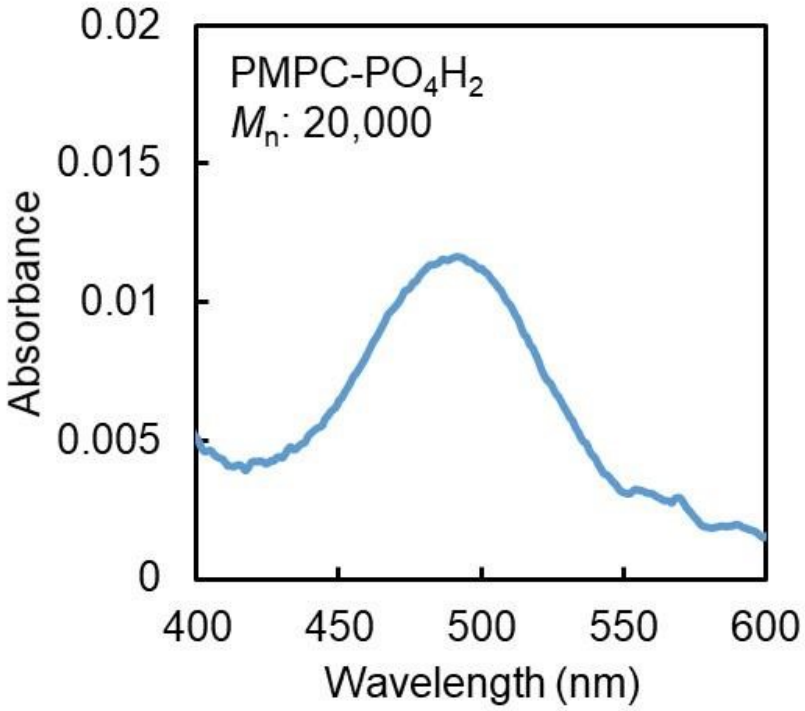

Figure S4. UV-Vis spectra of PMPC-PO_4H_2 prepared with RAFT- PO_4H_2. Polymer concentration: 10 mg/mL. Solvent: Water dissolving Brij98 (0.5 mM)

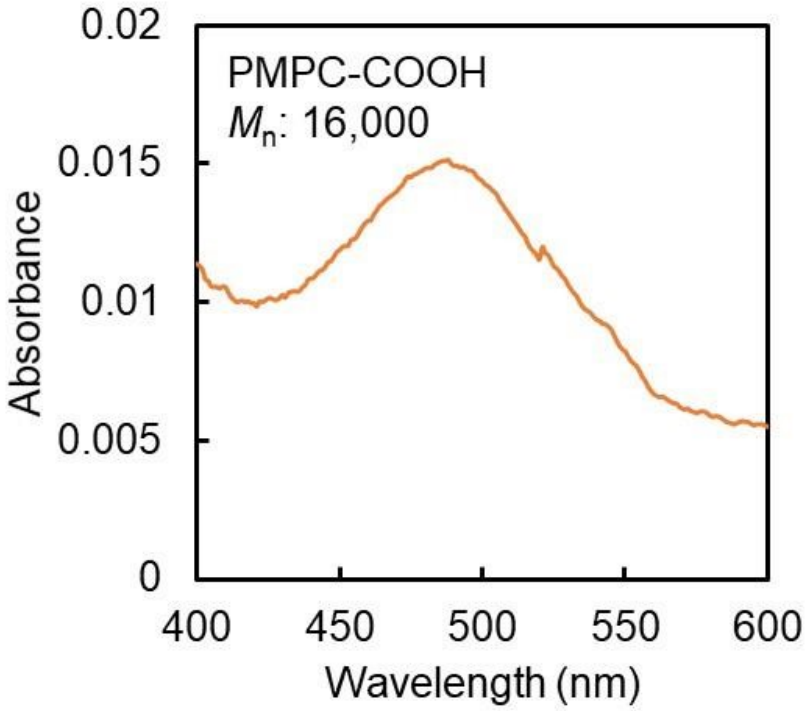

Figure S5. UV-Vis spectra of PMPC-COOH prepared with RAFT-COOH. Polymer concentration: 10 mg/mL. Solvent: Water dissolving Brij98 (0.5 mM).

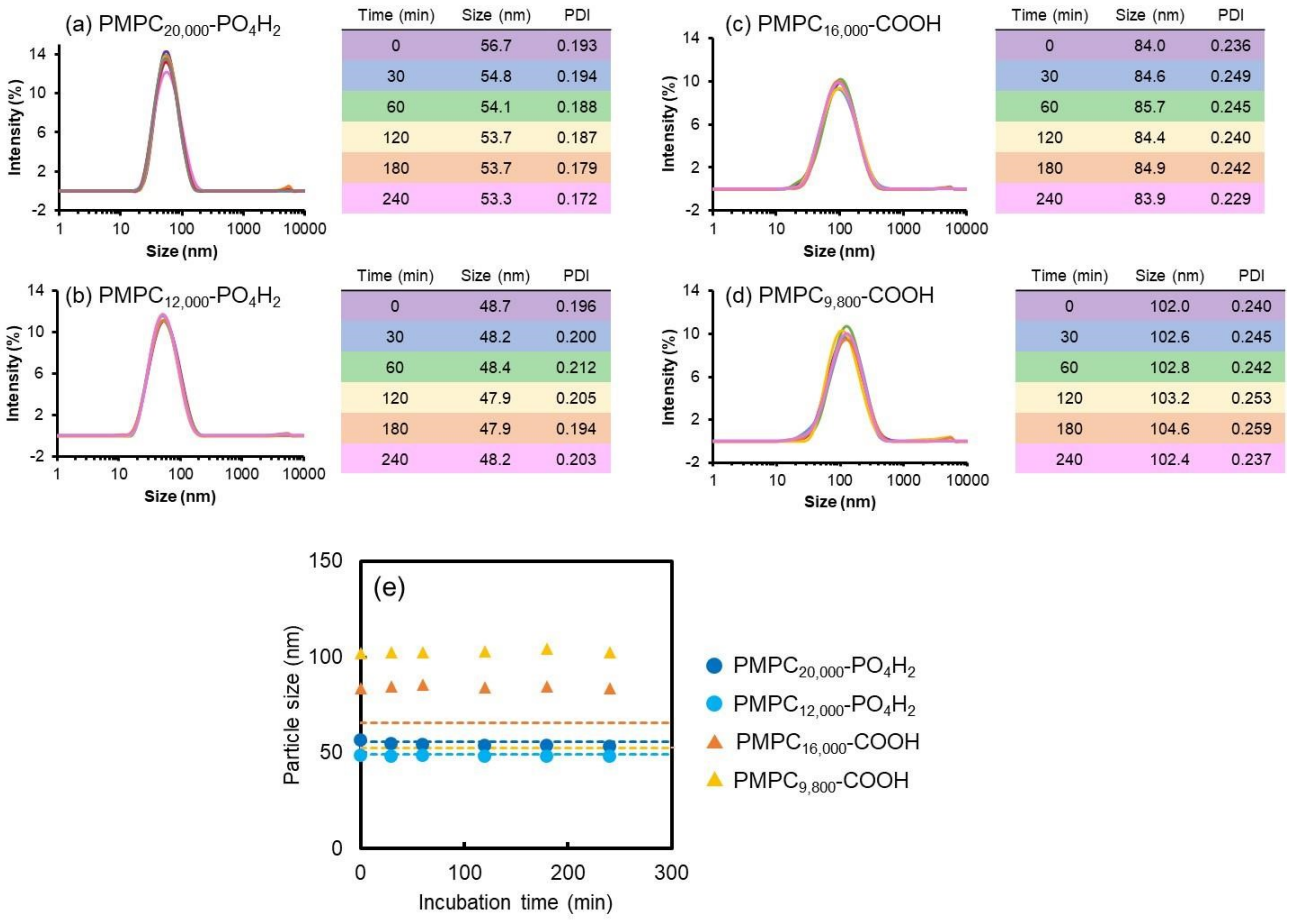

Figure S6. Particle size distributions, average particle size and PDI values of PMPC-modified TiO_2 nanoparticles prepared with $PMPC_{20000}$-PO_4H_2 (a), $PMPC_{12000}$-PO_4H_2 (b), $PMPC_{12,000}$-COOH (c), and $PMPC_{9,800}$-COOH (d) at different incubation times (0 min: purple, 30 min: blue, 60 min: green, 120 min: yellow, 180 min: orange, 240 min: pink) in pure water. Particle size v.s. incubation time plots of PMPCmodified TiO_2 nanoparticles prepared with $PMPC_{20000}$-PO_4H_2, $PMPC_{12000}$-PO_4H_2, $PMPC_{12,000}$-COOH, and $PMPC_{9,800}$-COOH after 100 times dilution with pure water (e). Dashed lines in (e) are particle size before dilution.

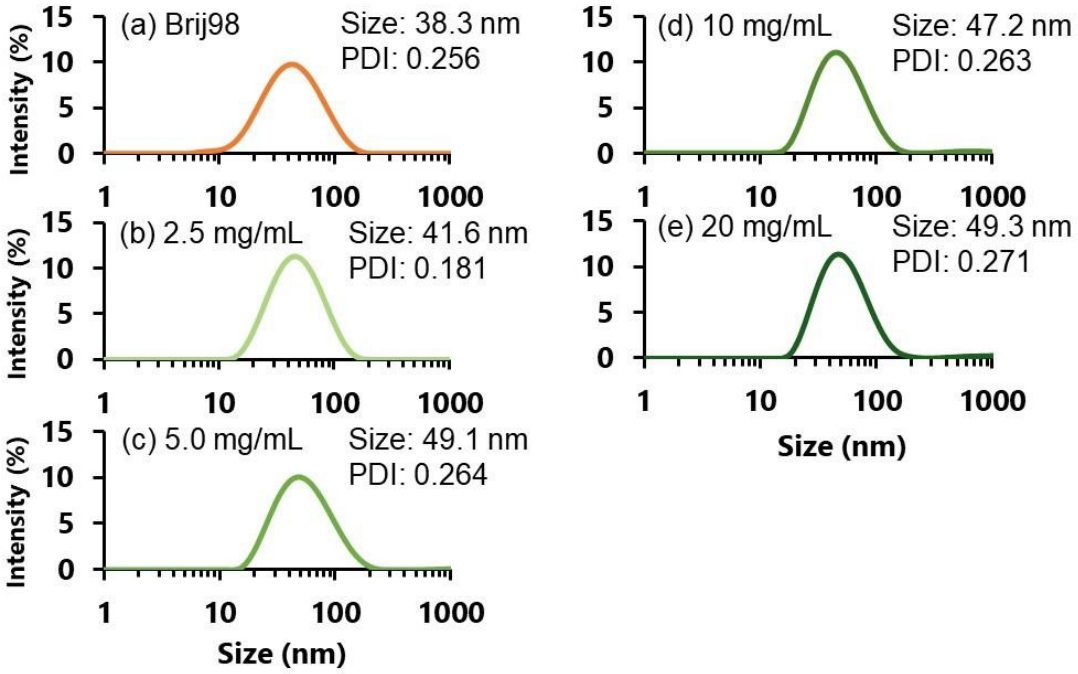

Figure S7. Particle size distributions of Brij98-stabilized (a) and PMPC-modified TiO_2 nanoparticles prepared with different concentrations of $PMPC_{7600}$-PO_4H_2 (b: 2.5, c: 5.0, d: 10, e: 20 mg/mL).