Supporting Information for:

Phenyl Acrylate is a Versatile Monomer for the Synthesis of Acrylic Diblock Copolymer Nano-objects via Polymerization-Induced Self-Assembly

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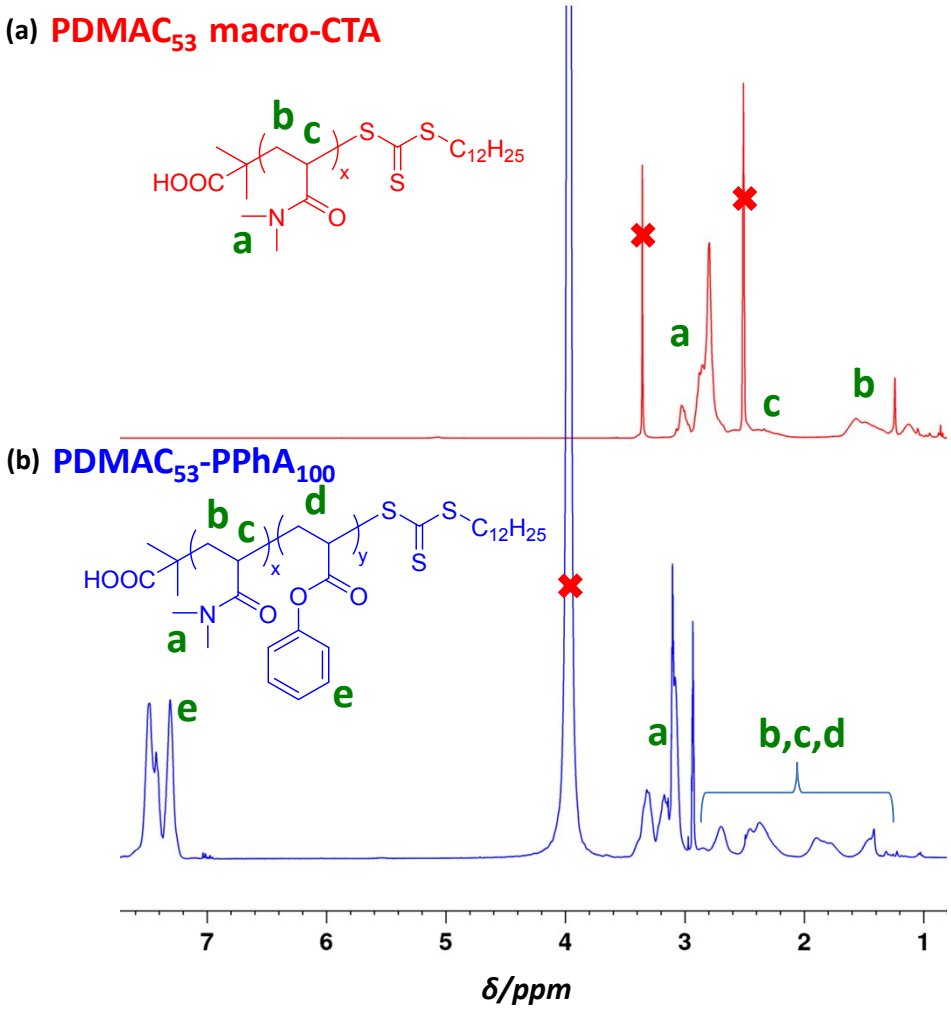

Figure S1. ^{1}H NMR spectra recorded for (a) $PDMAC_{53}$ macro-CTA in DMSO-d_6 and (b) $PDMAC_{53}$-$PPhA_{100}$ diblock copolymer in DMF-d_7 (>99% PhA conversion after polymerization for 4.5 h in water at 30 ºC; DDMAT/initiator molar ratio = 5.0).

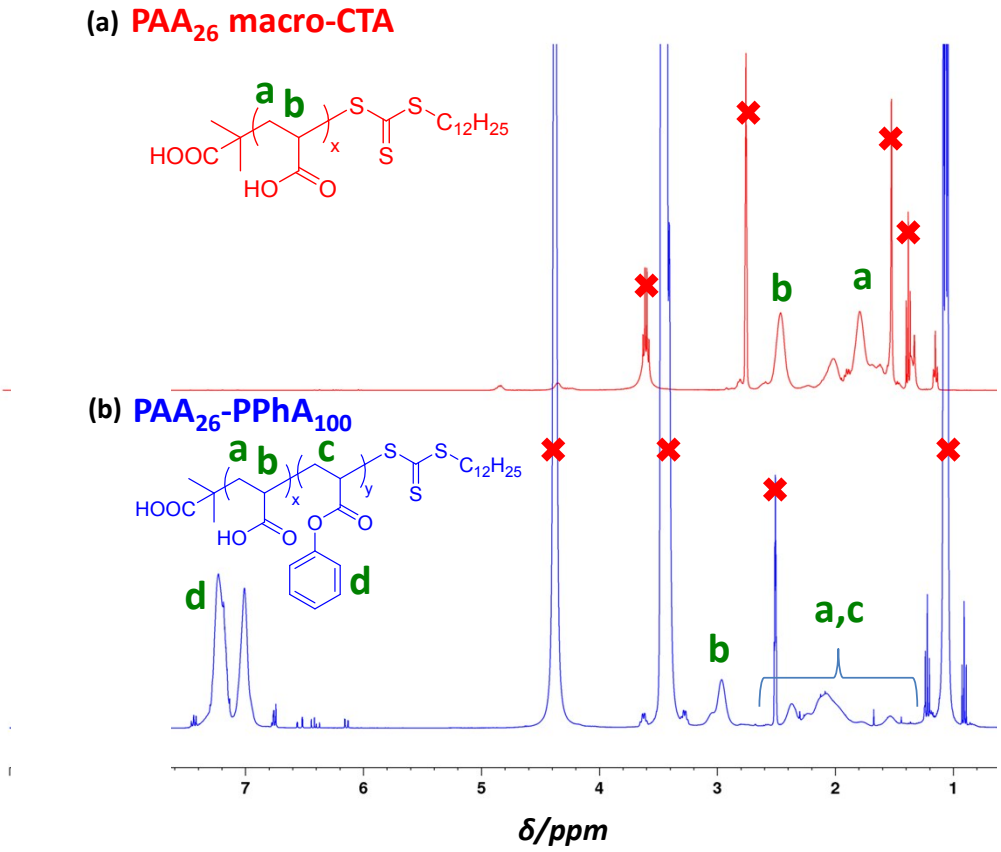

Figure S2. ^{1}H NMR spectra in DMSO-d_6 recorded for (a) PAA_{26} macro-CTA and (b) PAA_{26}-$PPhA_{80}$ diblock copolymer (98% PhA conversion after polymerization in ethanol for 16 h at 70 ºC; DDMAT/initiator molar ratio = 5.0).

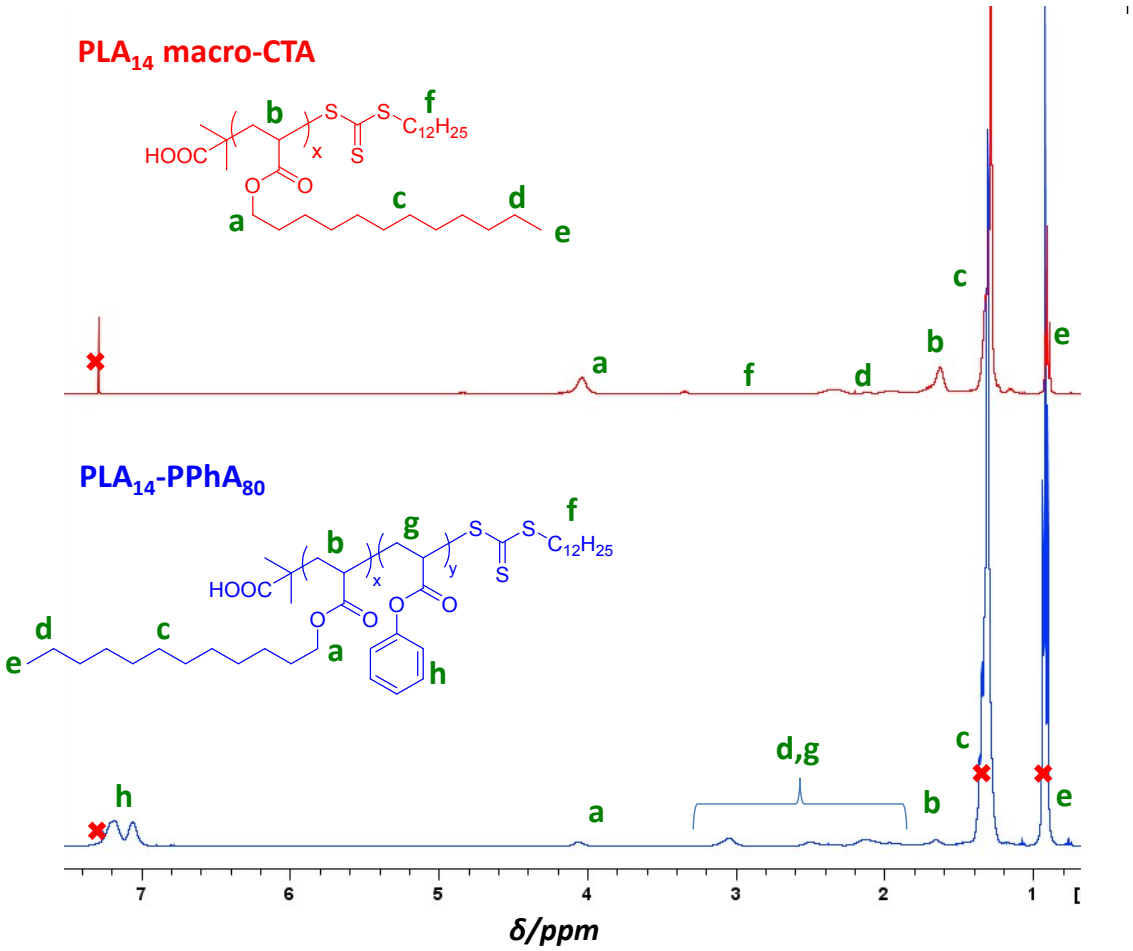

Figure S3. ^{1}H NMR spectra recorded in $CDCl_3$ for (a) PLA_{14} macro-CTA and (b) PLA_{14}-$PPhA_{100}$ diblock copolymer (>99% % PhA conversion after polymerization in *n*-heptane for 16 h at 80 ºC; CTA/initiator molar ratio = 5.0).

Synthesis of $PDMAC_{53}$-$PPhA_x$ Diblock Copolymer Nano-objects by RAFT solution Polymerization in DMF

A typical protocol for the synthesis of $PDMAC_{53}$−$PPhA_{100}$ diblock copolymer was as follows: $PDMAC_{53}$ macro-CTA (0.24 g, 0.0427 mmol), phenyl acrylate (0.633 g, 4.27 mmol) and DMF (2.6300 g, corresponding to a 25% w/w aqueous solution) were weighed into a 25 mL round-bottom flask, followed by ascorbic acid (1.5 mg, 8.54 µmol), then KPS (2.30 mg, 8.54 µmol; CTA/initiator molar ratio = 5.0). Once dissolved, the solution was degassed with nitrogen for 30 min and then sealed and immersed in an oil bath set at 30 °C. The reaction mixture was stirred for 16 h to ensure high monomer conversion (> 96% by ^{1}H NMR analysis) and subsequently quenched by cooling to 20 °C, followed by exposure to air. DMF GPC analysis of $PDMAC_{53}$−$PPhA_{100}$ indicated M_n and M_w/M_n values of 19 100 g mol^{-1} and 1.24, respectively.

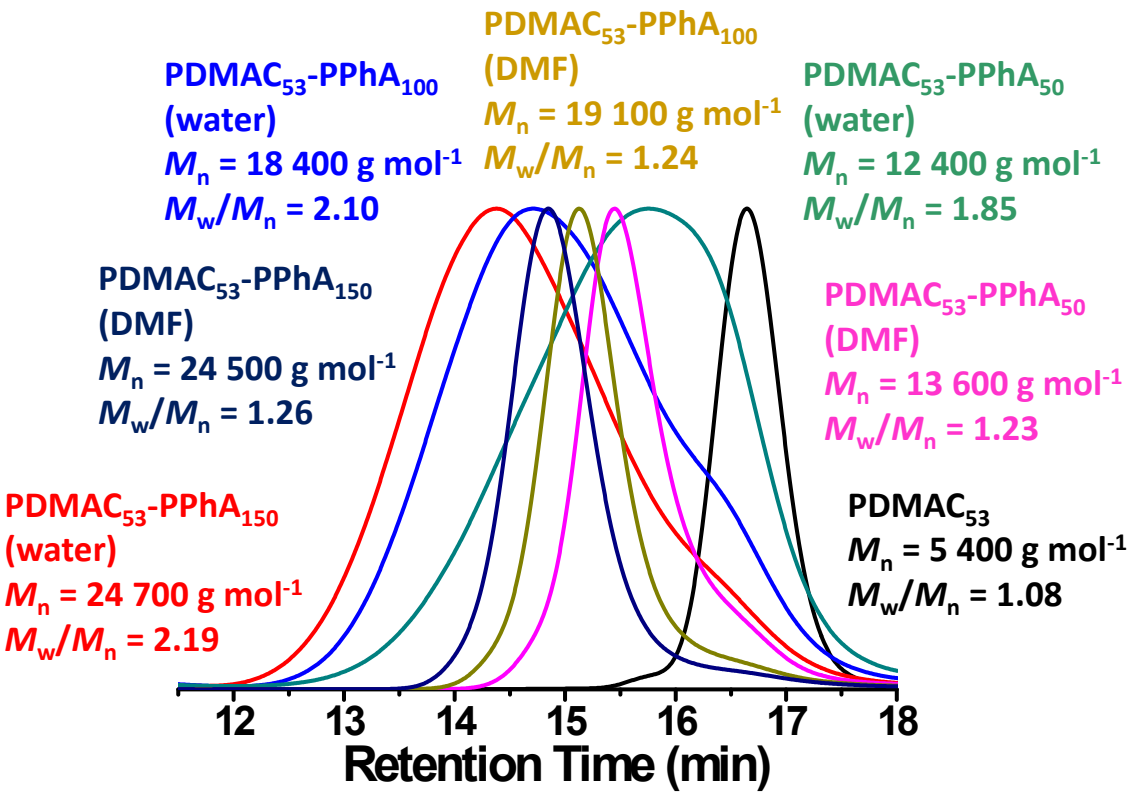

Figure S4. DMF GPC curves for $PDMAC_{53}$–$PPhA_x$ diblock copolymers prepared at 25% w/w solids and 30 °C via either RAFT aqueous emulsion polymerization or solution polymerization in DMF. M_n values are expressed relative to a series of near-monodisperse poly(methyl methacrylate) calibration standards. All reactions reached high conversion (>96 %) as judged by ^{1}H NMR in DMF-d_7.