Article:
Jesson, C.P., Pearce, C.M., Simon, H. et al. (6 more authors) (2017) H2O2 Enables Convenient Removal of RAFT End-Groups from Block Copolymer Nano-Objects Prepared via Polymerization-Induced Self-Assembly in Water. Macromolecules, 50 (1). pp. 182-191. ISSN 0024-9297

https://doi.org/10.1021/acs.macromol.6b01963

Supporting Information for:

H_2O_2 enables convenient removal of RAFT end-groups from block copolymer nano-objects prepared via polymerization-induced self-assembly in water

C. P. Jesson et al.

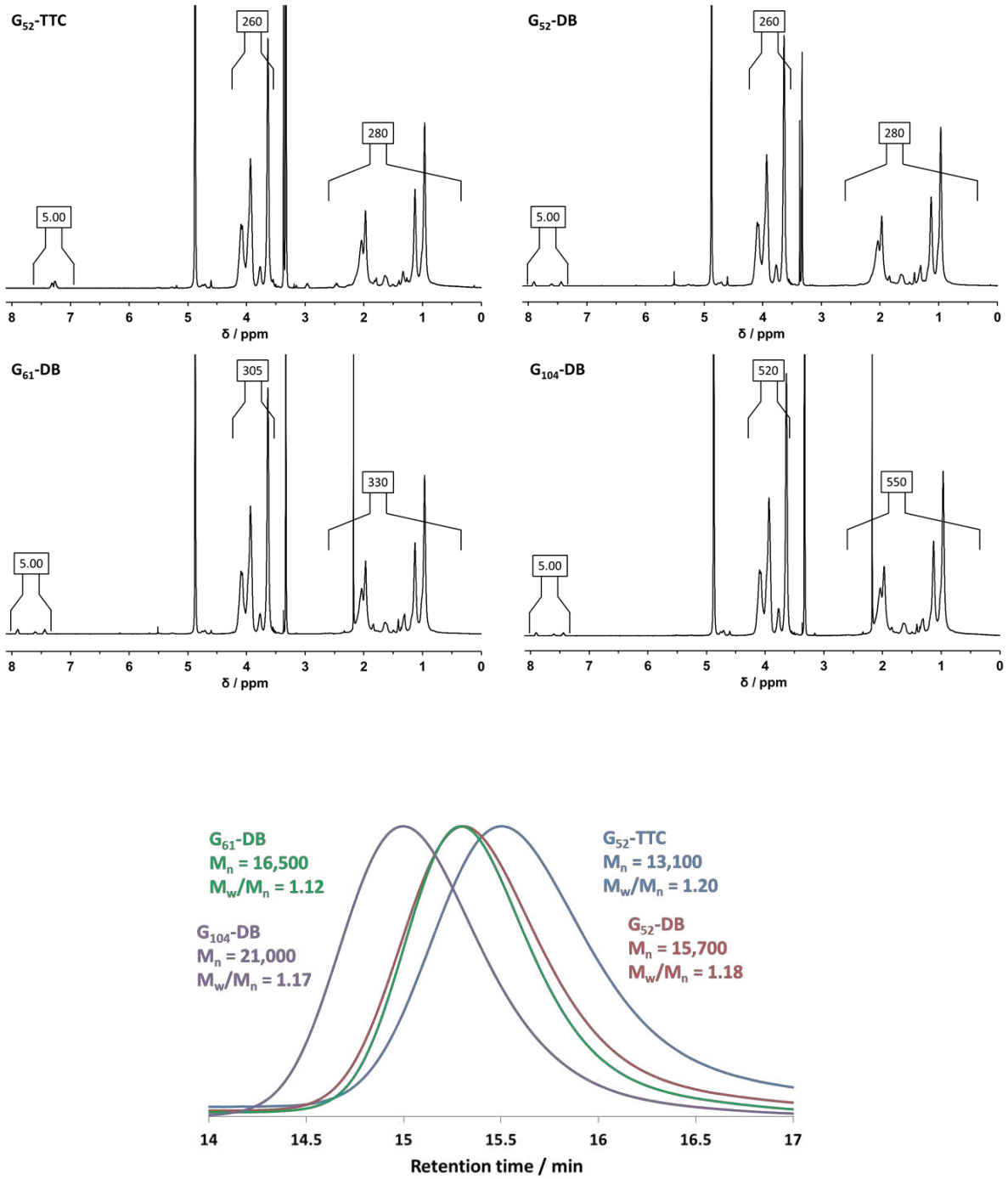

Figure S1. (a) Integrated ^{1}H NMR spectra and (b) DMF GPC chromatograms for G_{52}-TTC, G_{52}-DB, G_{61}-DB and G_{104}-DB macro-CTAs

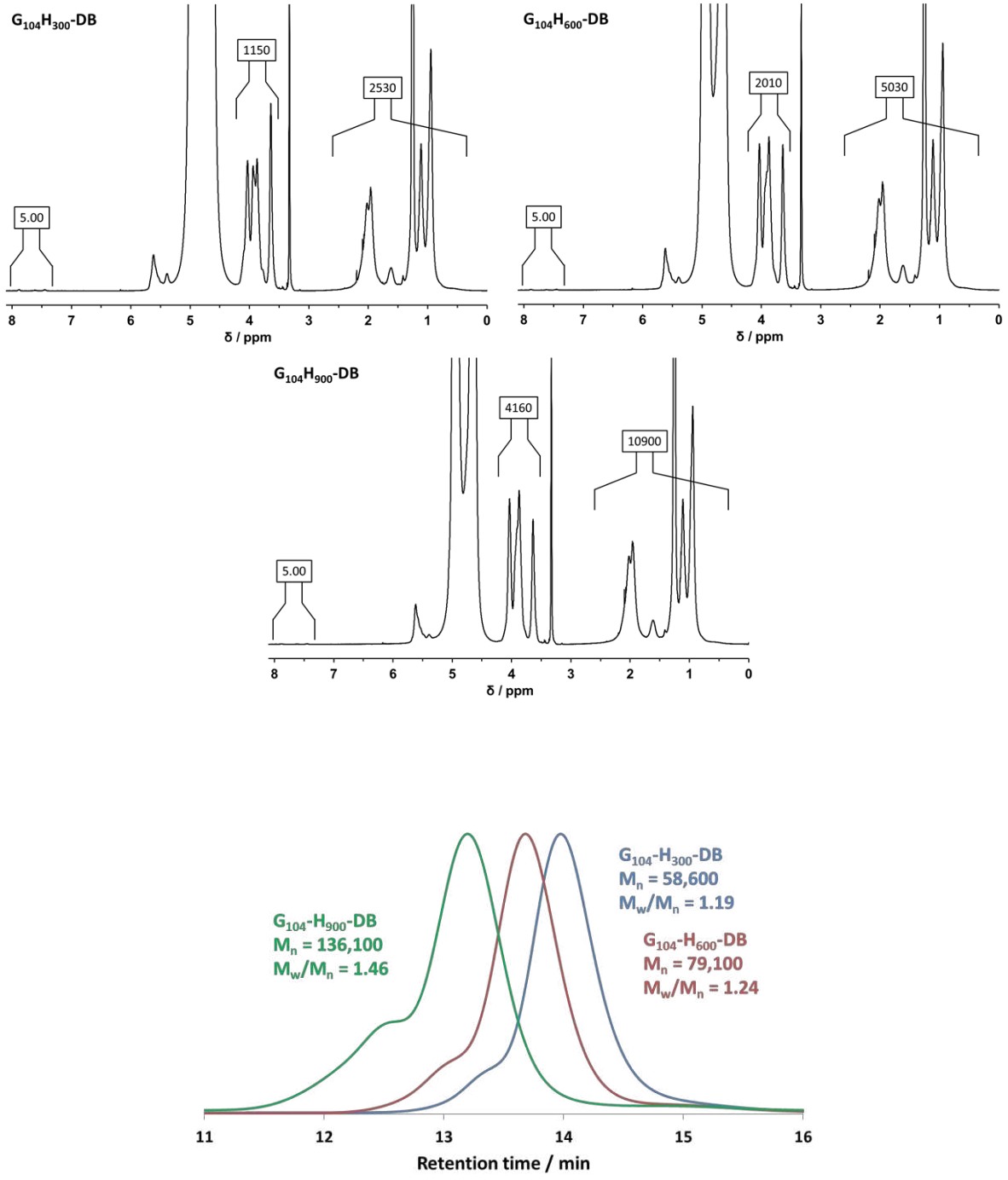

Figure S2. (a) Integrated ^{1}H NMR spectra and (b) DMF GPC chromatograms for G_{104}-H_X (X = 300, 600, 900) diblock copolymer spheres

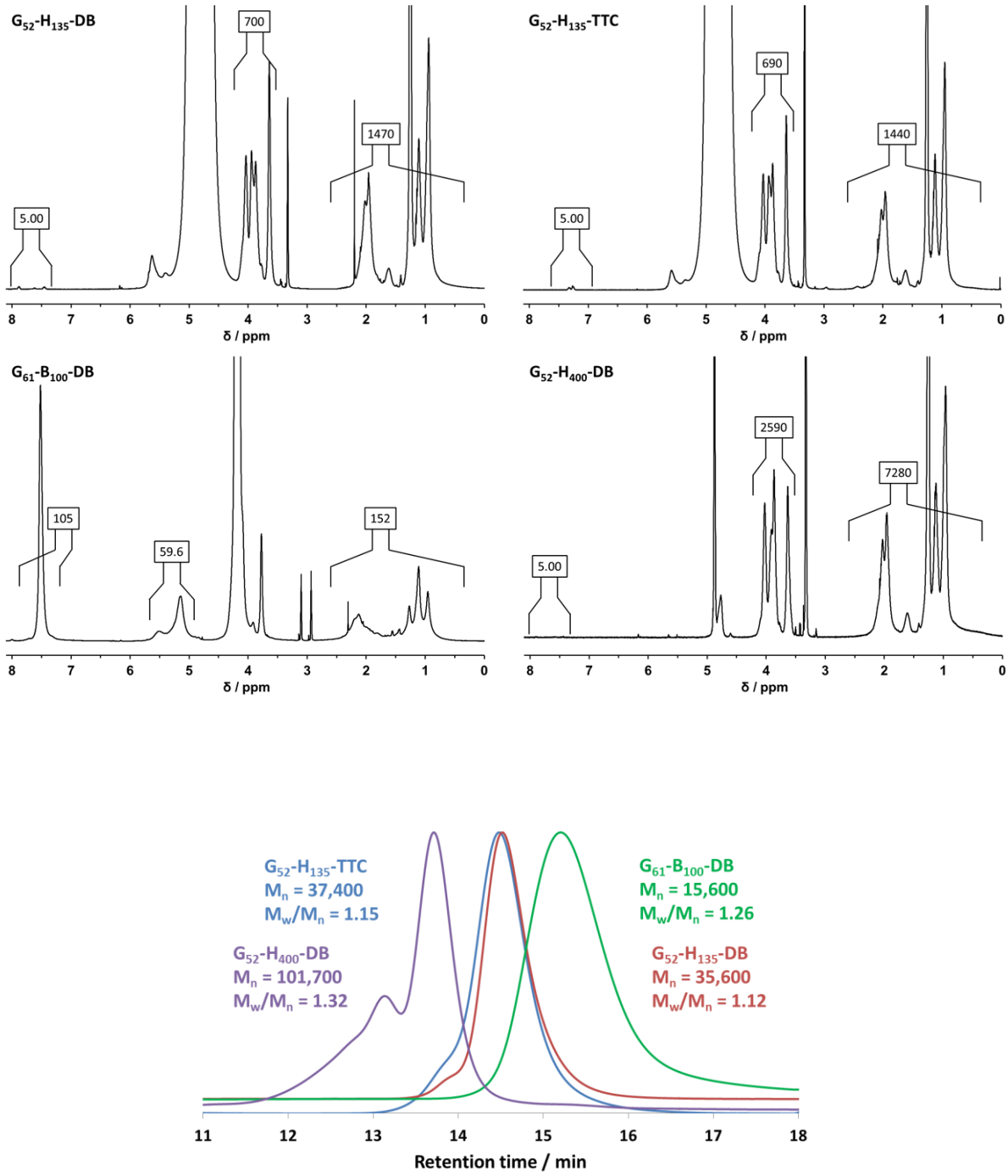

Figure S3. (a) Integrated ^{1}H NMR spectra and (b) DMF GPC chromatograms for G_{52}-H_{135}-TTC and G_{52}-H_{135}-DB worms, G_{61}-B_{100} spheres and G_{52}-H_{400} vesicles

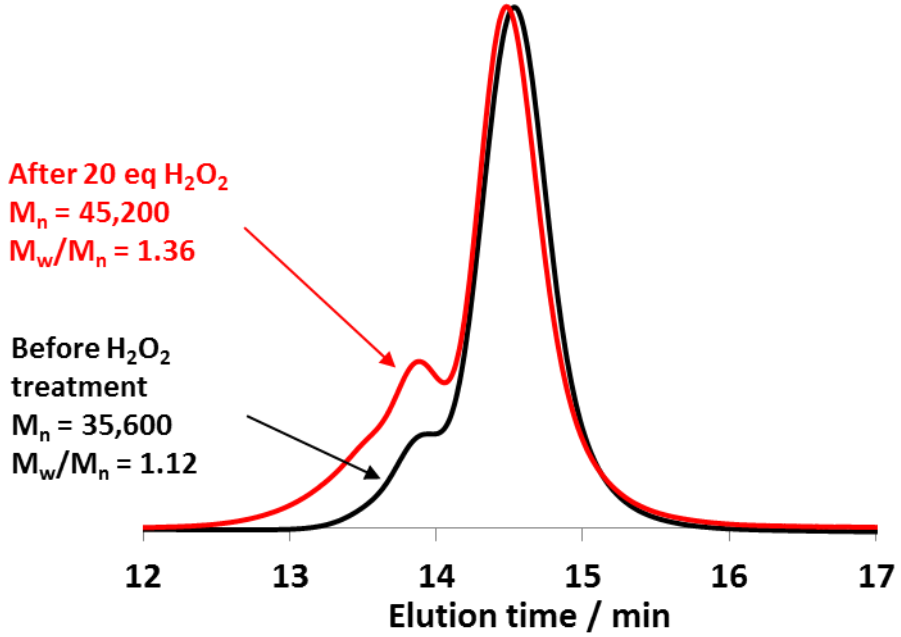

Figure S4. DMF GPC traces recorded for G_{52}-H_{135}-DB before (black) and after (red) H_2O_2 treatment. Conditions: H_2O_2/dithiobenzoate molar ratio = 20 for 3 h at 70 °C.

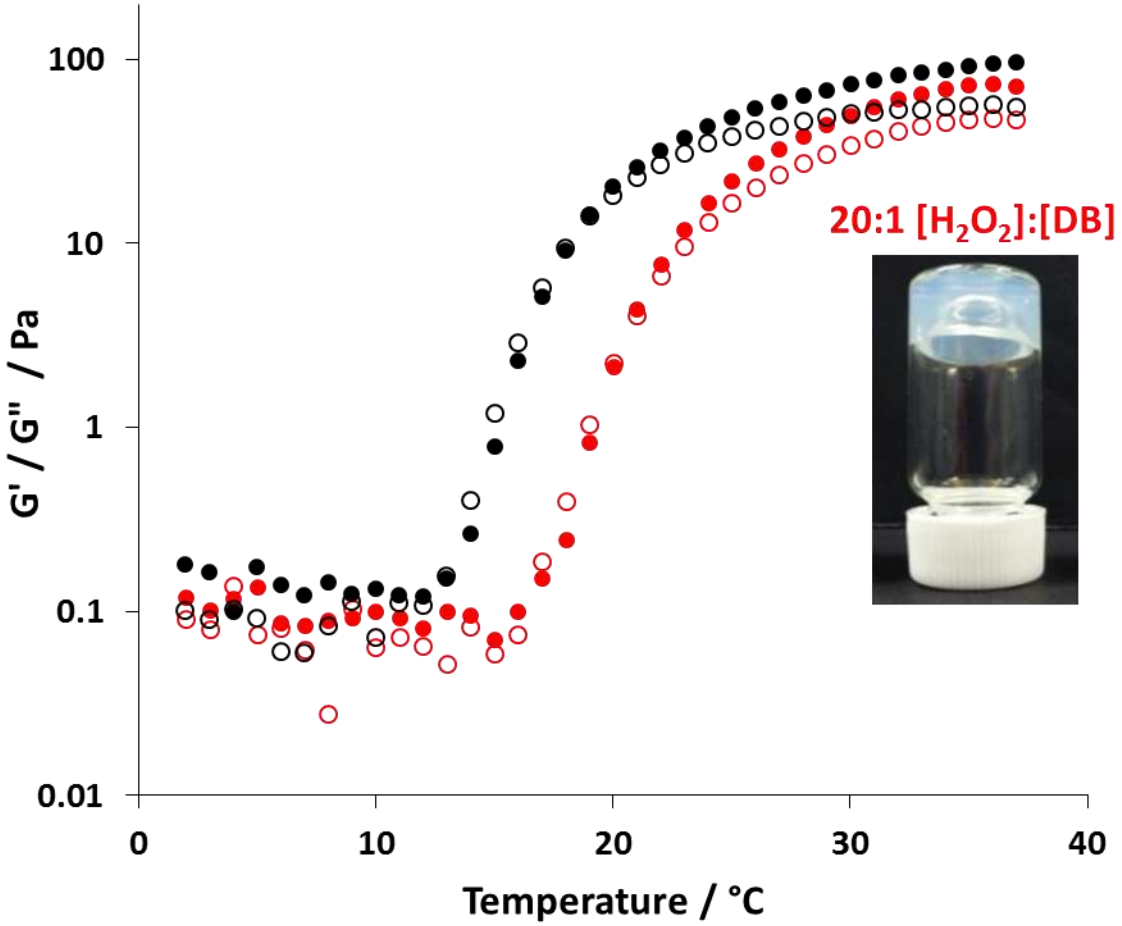

Figure S5. Gel storage modulus (G', closed symbols) and loss modulus (G", open symbols) vs. temperature plots obtained for a G_{52}-H_{135}-DB worm gel before (black) and after (red) treatment with H_2O_2. Conditions: $[H_2O_2]/[DB]$ = 20 for 3 h at 70 °C. Note that a weaker worm gel is obtained after H_2O_2 treatment (G' = 71 Pa, vs. G' = 96 Pa originally) and the critical gelation temperature (CGT) is raised from 19 °C to 21 °C.

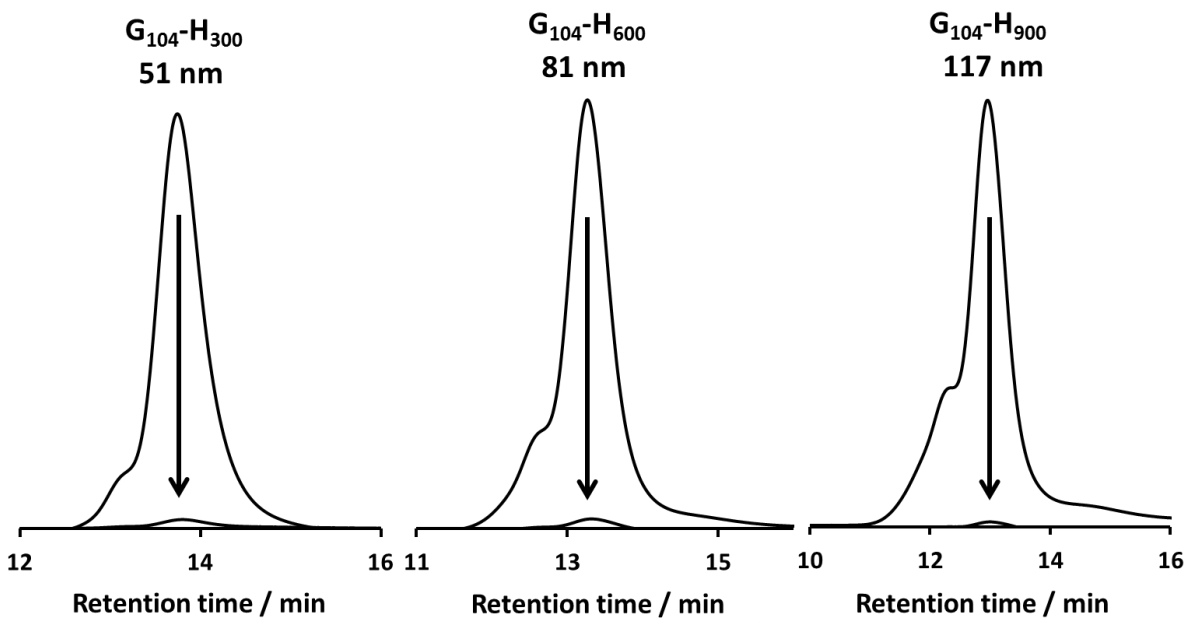

Figure S6. DMF GPC chromatograms (UV detector) of G_{104}-H_X-DB spheres before end-group removal and after H_2O_2 treatment for 24 h (see arrows) using a H_2O_2/dithiobenzoate molar ratio of 5.0 at 70 °C. In each case at least 98 % of the original end-groups are removed.

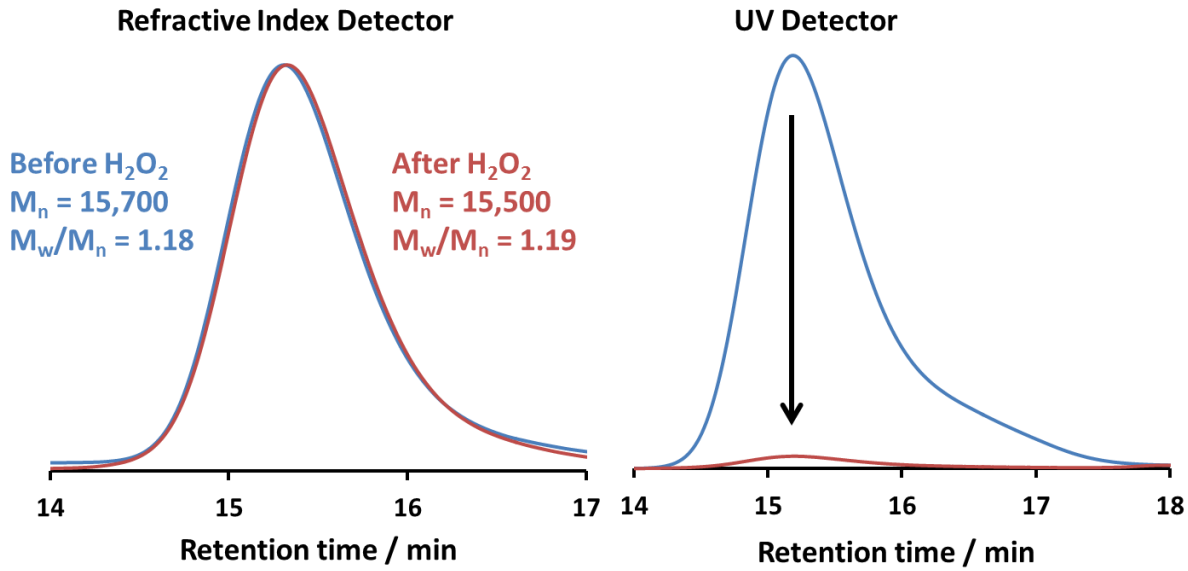

Figure S7. GPC chromatograms recorded for the G_{52}-DB macro-CTA before (blue traces) and after (red traces) end-group removal via H_2O_2 treatment using a H_2O_2/dithiobenzoate molar ratio of 5.0 at 70 °C: (a) minimal change in the molecular weight distribution as judged using a refractive index detector and (b) 97 % disappearance in the 309 nm signal associated with the RAFT end-group using the UV detector.

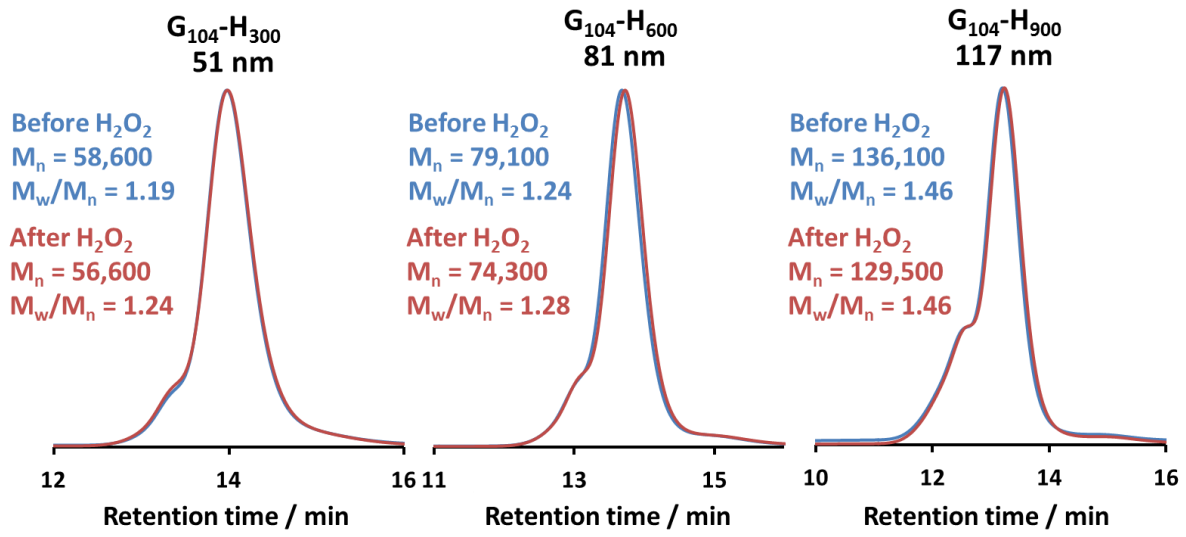

Figure S8. DMF GPC chromatograms (refractive index detector) of G_{104}-H_X-DB spheres before end-group removal and after H_2O_2 treatment for 7 h using a H_2O_2/dithiobenzoate molar ratio of 5.0 at 70 °C. Note that there is minimal change in the molecular weight distributions under these optimized end-group removal conditions.