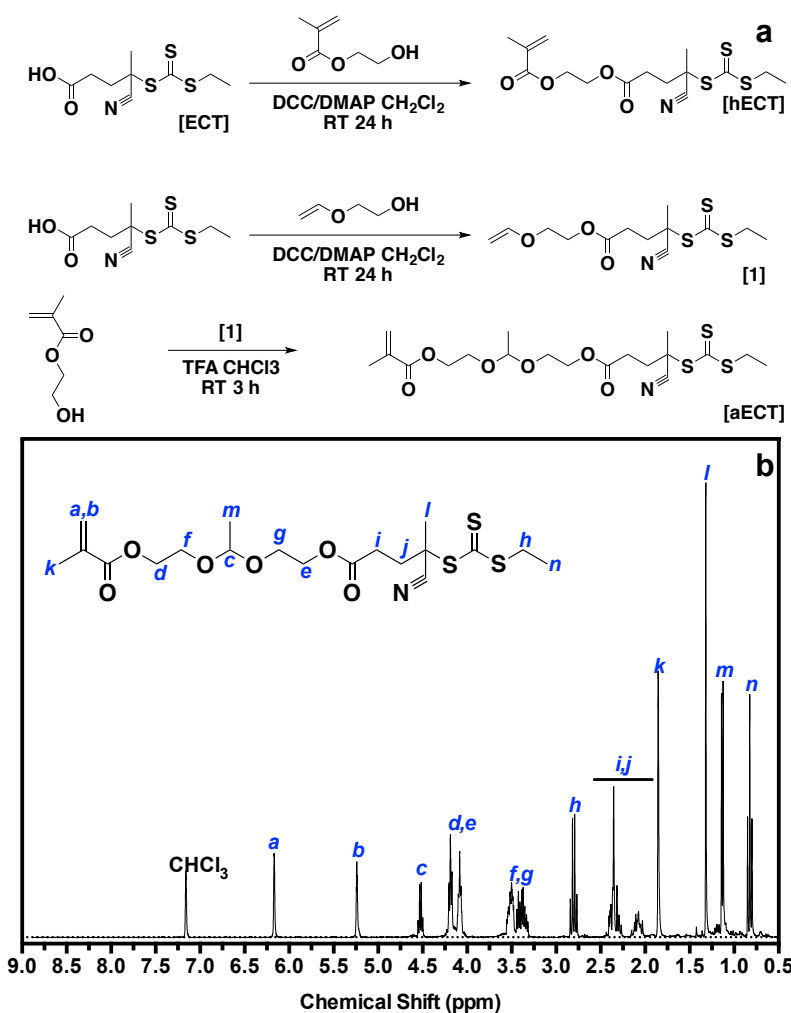
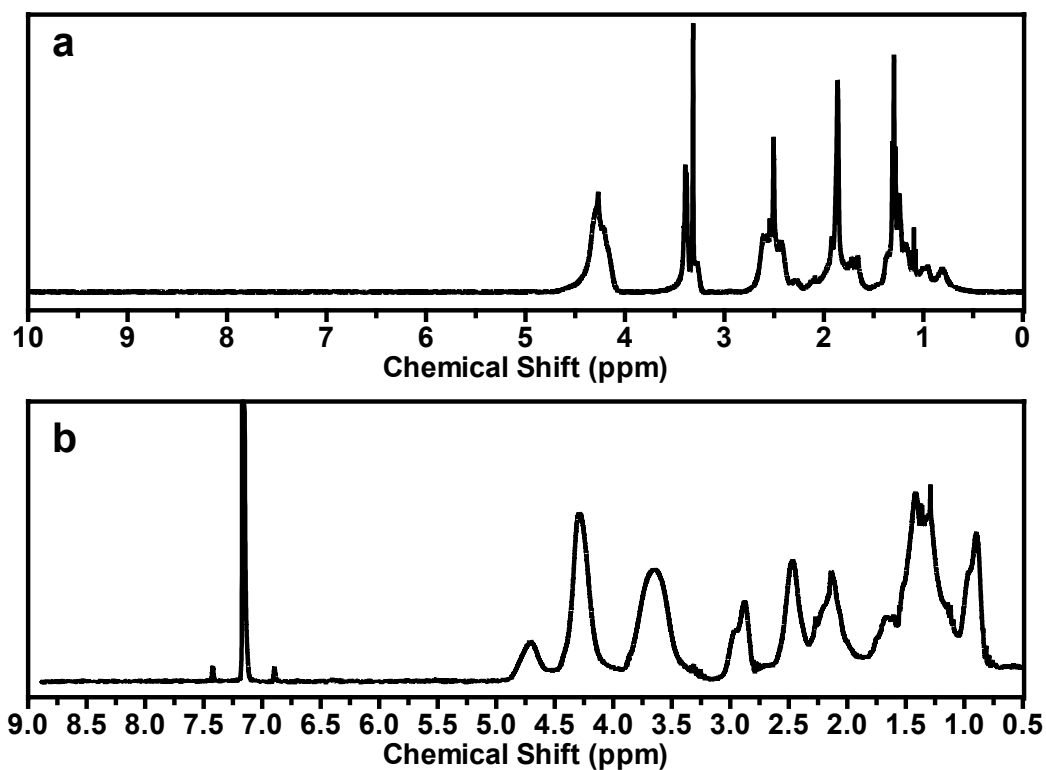


## Supporting Information

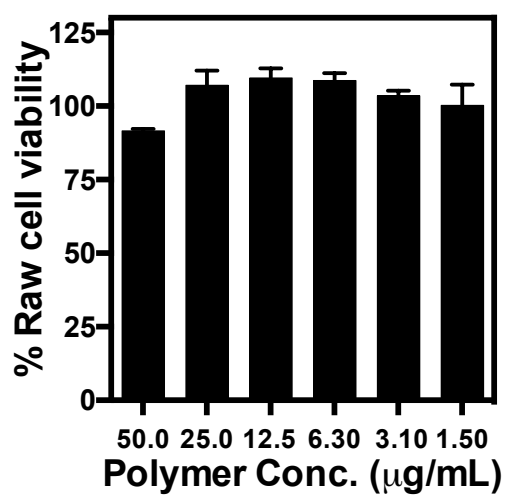
Shown in SI Fig. 1b, is the  $^1\text{H}$  NMR confirming the formation of the desired acetal-linked transmer with labelled peaks including the characteristic acetal CH and  $\text{CH}_3$  resonances at 1.1 and 4.5 respectively. The resultant transmers were then homopolymerized in dry DMSO at 70 °C for 18 h using an initial transmer to initiator ratio of 20.  $^1\text{H}$  NMR analysis of the crude polymerization mixture indicated that these conditions led to quantitative conversion of the vinyl resonances at 6.1 and 5.2 ppm respectively (not shown). Following purification the resultant poly(hECT) and poly(aECT) cores were then analysed using a combination of  $^1\text{H}$  NMR and GPC (Fig 2a-d).



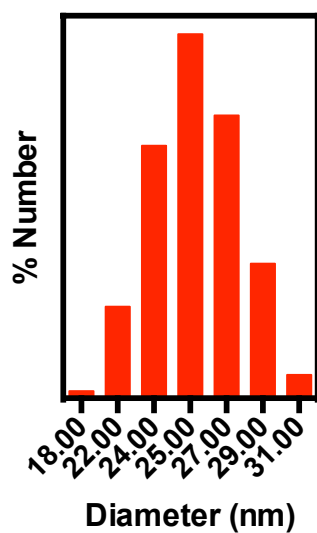
SI Fig. 1 (a) Synthetic scheme for the synthesis of alkyl ester (hECT) and acetal linked (aECT) RAFT transmers. (b)  $^1\text{H}$  NMR spectrum in  $\text{D}_6$  benzene for the acetal linked RAFT transmer aECT.



SI Fig 2a, b. <sup>1</sup>H NMR spectrums for the poly(hECT) and poly(aECT) hyperbranched transfer cores synthesized via homopolymerization of hECT and aECT in D<sub>6</sub> DMSO and CDCl<sub>3</sub> respectively.



SI Fig. 3. MTS Cell viability as a function of polymer concentration for RAW cells treated with poly(Man-co-CTM) based radiant star nanoparticles.



SI Fig 4 Dynamic light scattering histogram for poly(Man-co-CTM) radiant star nanoparticles in 150 mM phosphate buffered saline (PBS) at pH 7.4 at a polymer concentration of 1.0 mg/mL.