Electronic Supplementary Material (ESI) for Polymer Chemistry

Supplementary Information

Water-Soluble Conjugated Polymer Brush with Multihydroxy Dendritic Side Chains

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Fig. S1

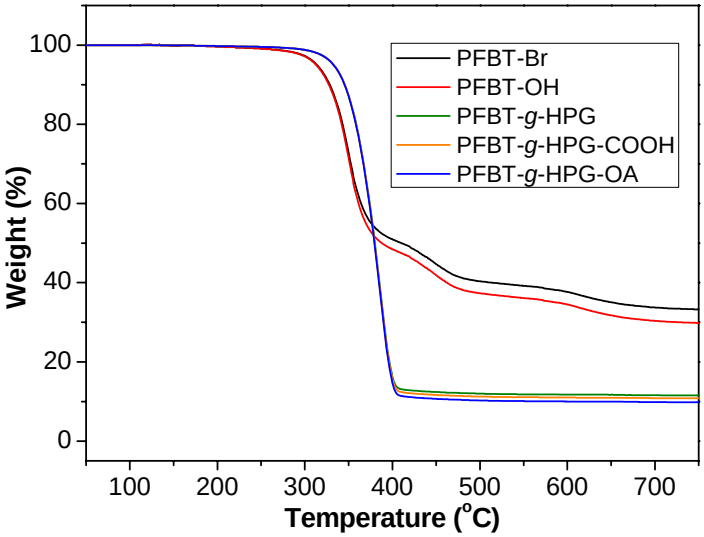

Fig. S1 TGA curves of PFBT-Br, PFBT-OH, PFBT-*g*-HPG, PFBT-*g*-HPG-COOH and PFBT-*g*-HPG-OA.

Fig. S2

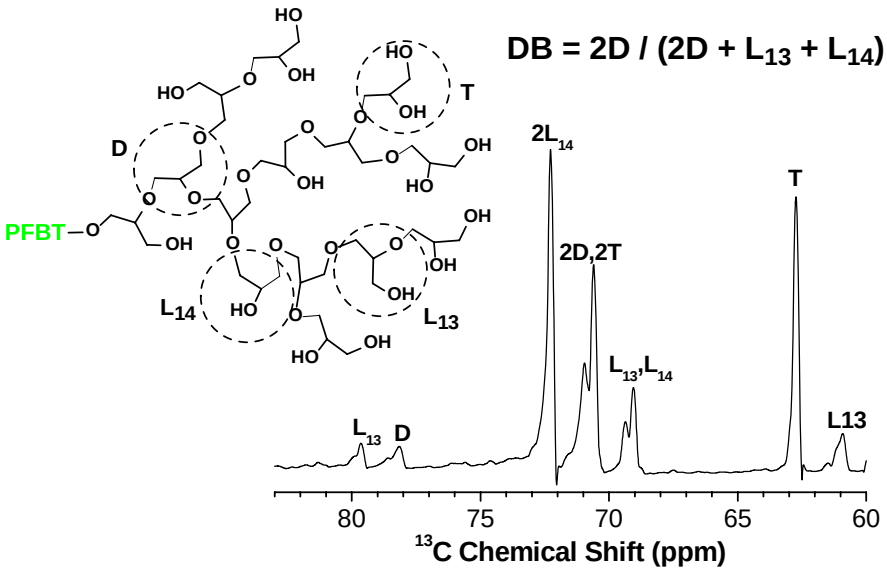

Fig. S2 Inverse-gated ^{13}C NMR spectrum of PFBT-*g*-HPG (solvent: DMSO-d_6).

The technique of inverse-gated ^{13}C NMR can produce carbon signals of high qualities despite the decoupling of ^{1}H, because of long delay time up to 10 s and high number of scans. Since the dendritic, linear and terminal carbons caused signals with different chemical shifts, their inverse-gated ^{13}C NMR spectrum offered the opportunity to calculate the degree of branching. The mechanism for measuring DB of hyperbranched polyglycerol by inverse-gated ^{13}C NMR measurement can be found in literature (A. Sunder, R. Hanselmann, H. Frey, R. Mülhaupt, *Macromolecules*, 1999, **32**, 4240–4246.) .

Fig. S3

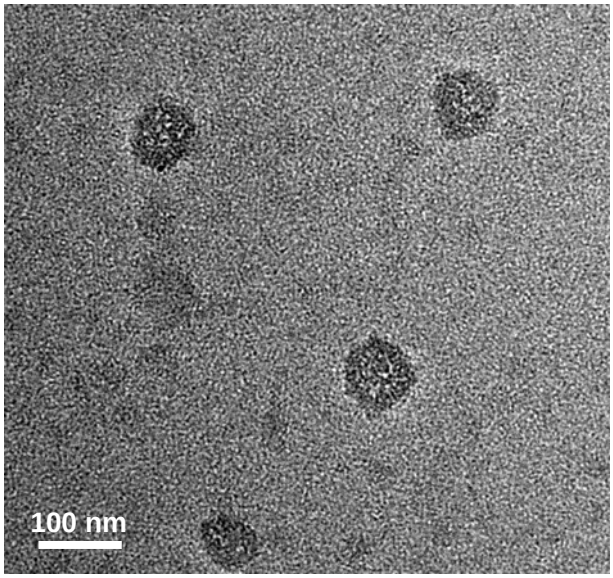

Fig. S3 TEM image of PFBT-*g*-HPG prepared from aqueous solution at high magnification.

Fig. S4

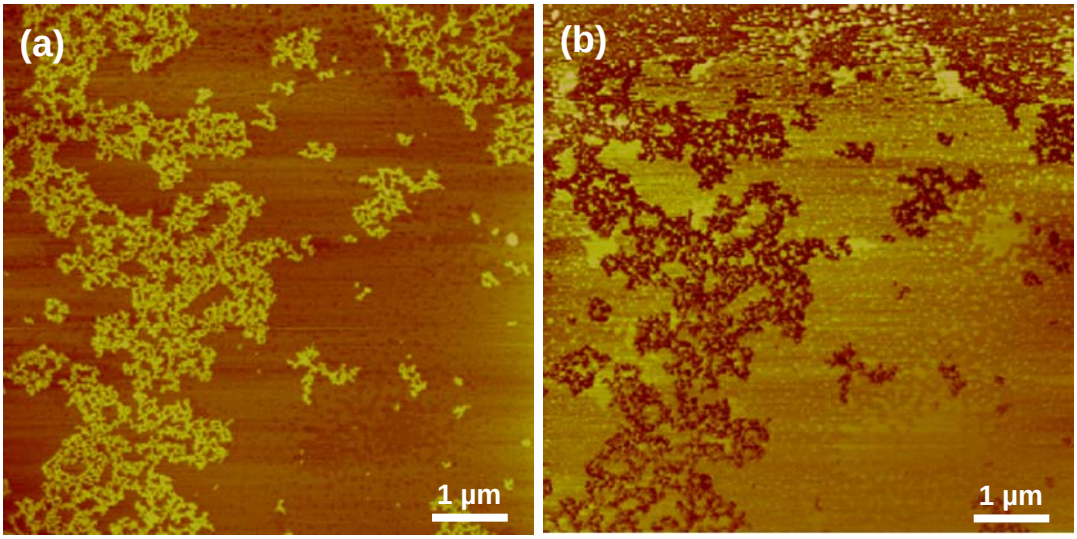

Fig. S4 AFM height (a) and phase (b) images of PFBT-*g*-HPG prepared from aqueous solution.

Fig. S5

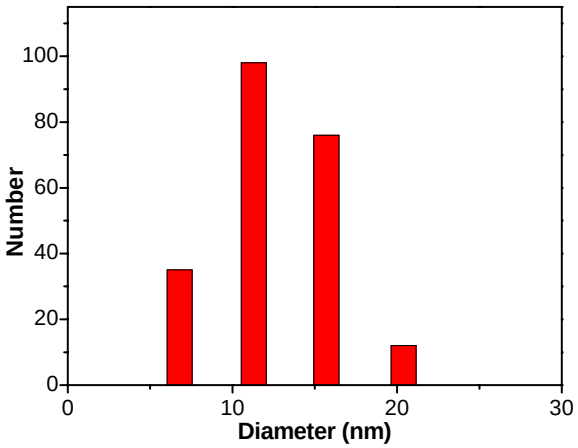

Fig. S5 LLS result of PFBT-*g*-HPG in DMF water at [RU] = 20 μM.

Fig. S6

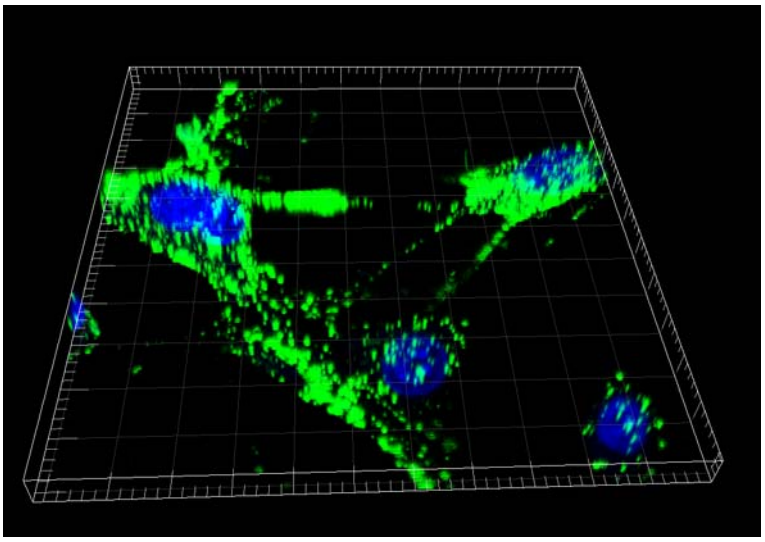

Fig. S6 3D confocal fluorescence image of cell line MCF–7 with incubation of PFBT-*g*-HPG ([RU] = 1μM) for 2 h.

Fig. S7

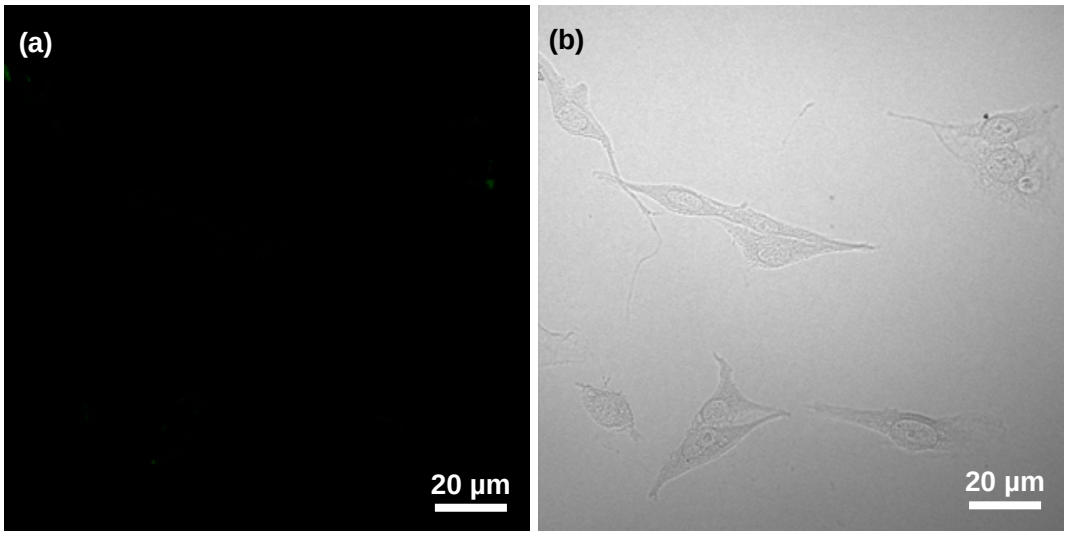

Fig. S7 Confocal fluorescence image (a) and bright-field image (b) of cell line MCF–7 without incubation of PFBT-*g*-HPG.

Fig. S8

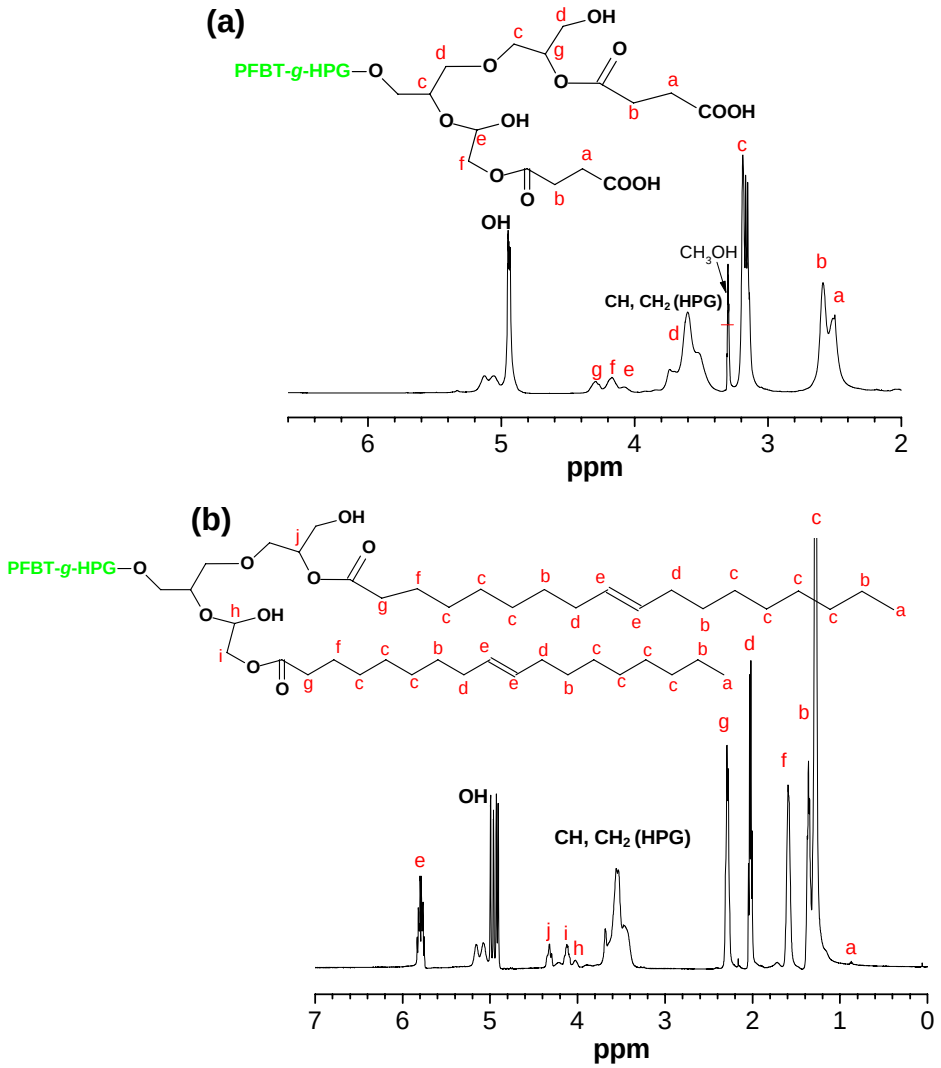

Fig. S8 ^{1}H NMR spectra of PFBT-*g*-HPG-COOH (a) (solvent: CD_3OD) and PFBT-*g*-HPG-OA (b) (solvent: $CDCl_3$).