

Title	Polyethylene-glycol-modified Zwitterionic Polymers assisted Protein Aggregation Arrest and Refolding
Author(s)	Debas, Alisha; Matsumura, Kazuaki; Rajan, Robin
Citation	Molecular Systems Design & Engineering, 7(10): 1327-1335
Issue Date	2022-07-05
Type	Journal Article
Text version	author
URL	http://hdl.handle.net/10119/18768
Rights	This is the author's version of the work. Copyright (C) 2022 Royal Society of Chemistry. Reproduced from Alisha Debas, Kazuaki Matsumura and Robin Rajan, Molecular Systems Design & Engineering, 7 (10), 2022, 1327-1335, with permission from Institution of Chemical Engineers (IChemE) and the Royal Society of Chemistry. DOI: 10.1039/D2ME00084A
Description	

Electronic Supplementary Information

Polyethylene-glycol-modified Zwitterionic Polymers assisted Protein Aggregation Arrest and Refolding

Alisha Debas,^a Kazuaki Matsumura*^a and Robin Rajan*^a

^a School of Materials Science, Japan Advanced Institute of Science and Technology, 1-1 Asahidai, Nomi, Ishikawa, 923-1292, Japan.

*Corresponding author. Email: mkazuaki@jaist.ac.jp (KM). robin@jaist.ac.jp (RR).

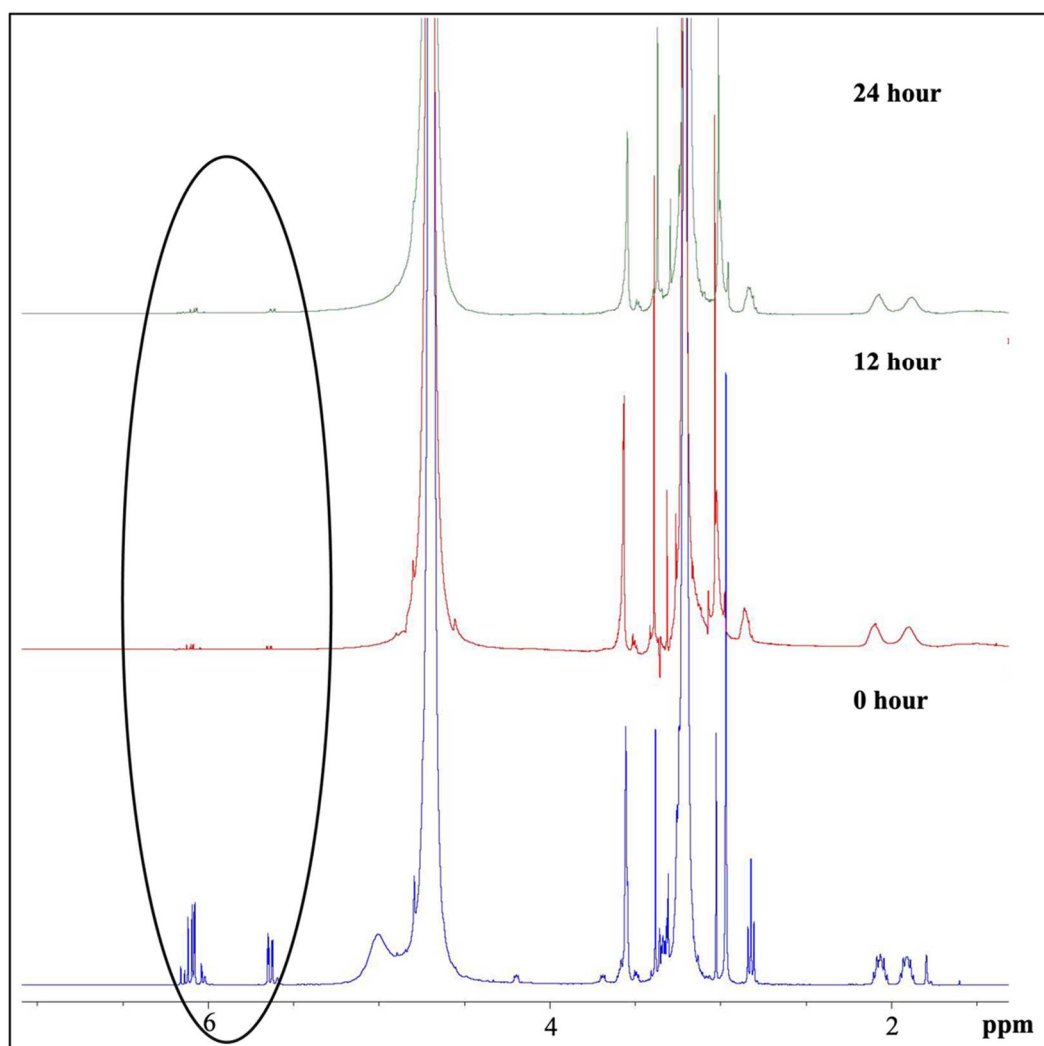


Fig. S1 Periodic ¹H-NMR spectra (in deuterium oxide) of p-(SPB-r-PGMA) for evaluation of conversion rate. The disappearance of vinyl peaks suggests the conversion of the monomer.

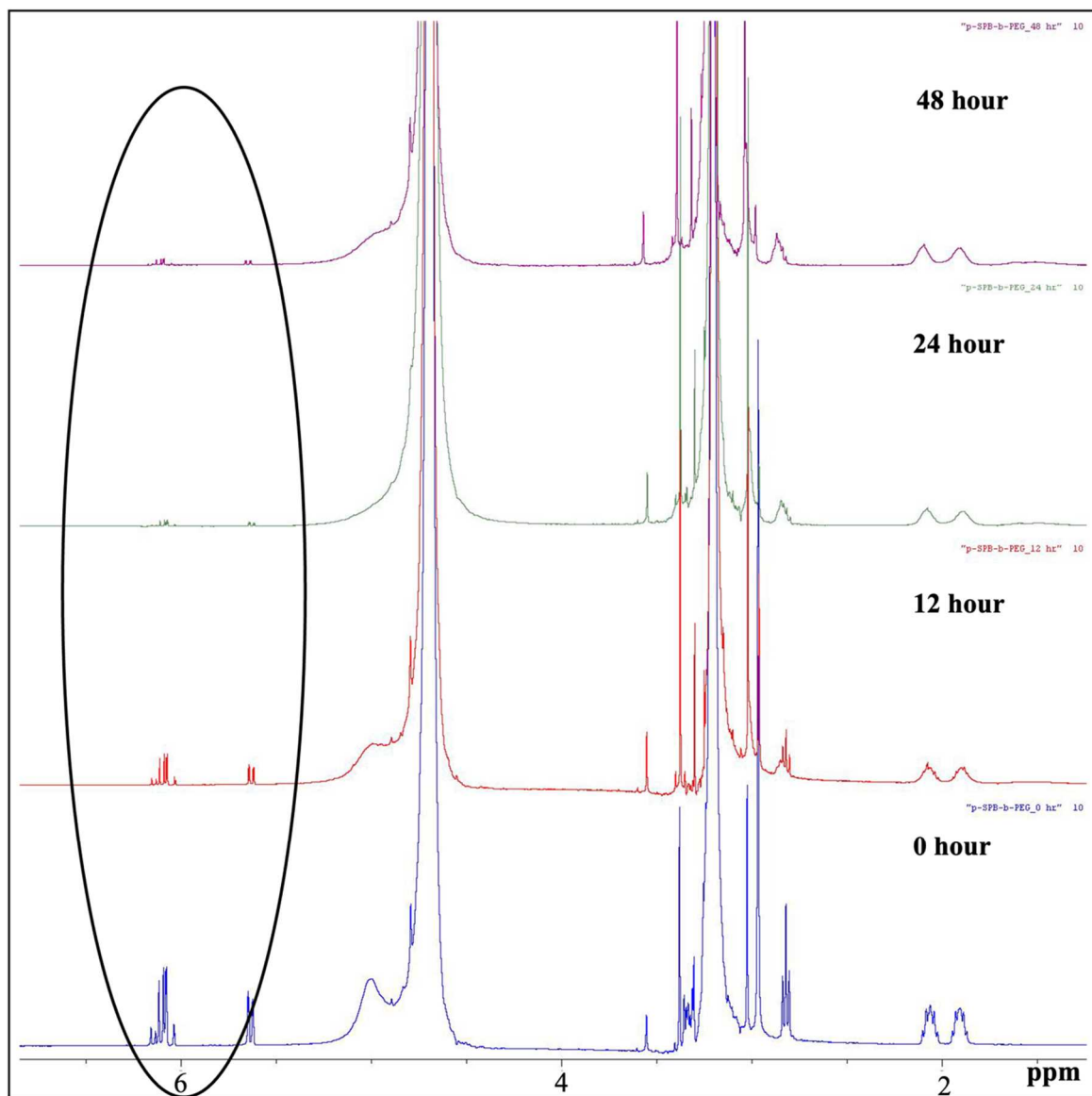


Fig. S2 Periodic ¹H-NMR spectra (in deuterium oxide) of p-SPB-b-PEG for evaluation of conversion rate. The disappearance of vinyl peaks suggests the conversion of the monomer.

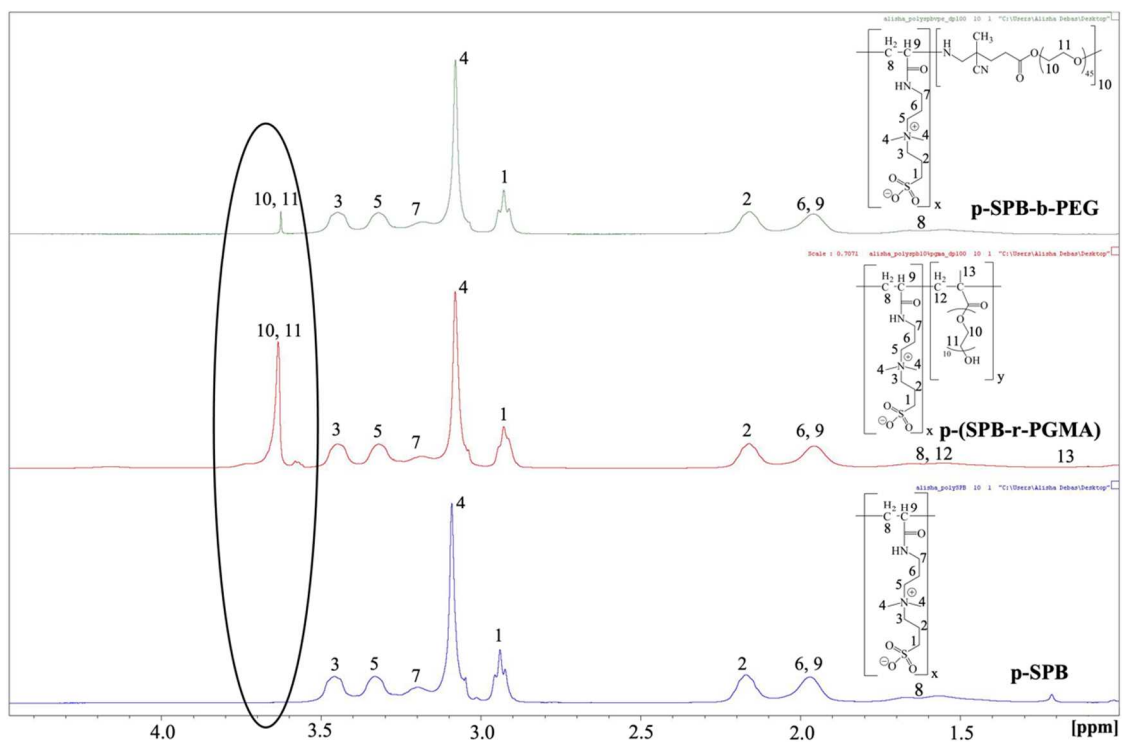


Fig. S3 ¹H-NMR spectra (in deuterium oxide) of polymers showing incorporation of PEG group into poly-SPB.

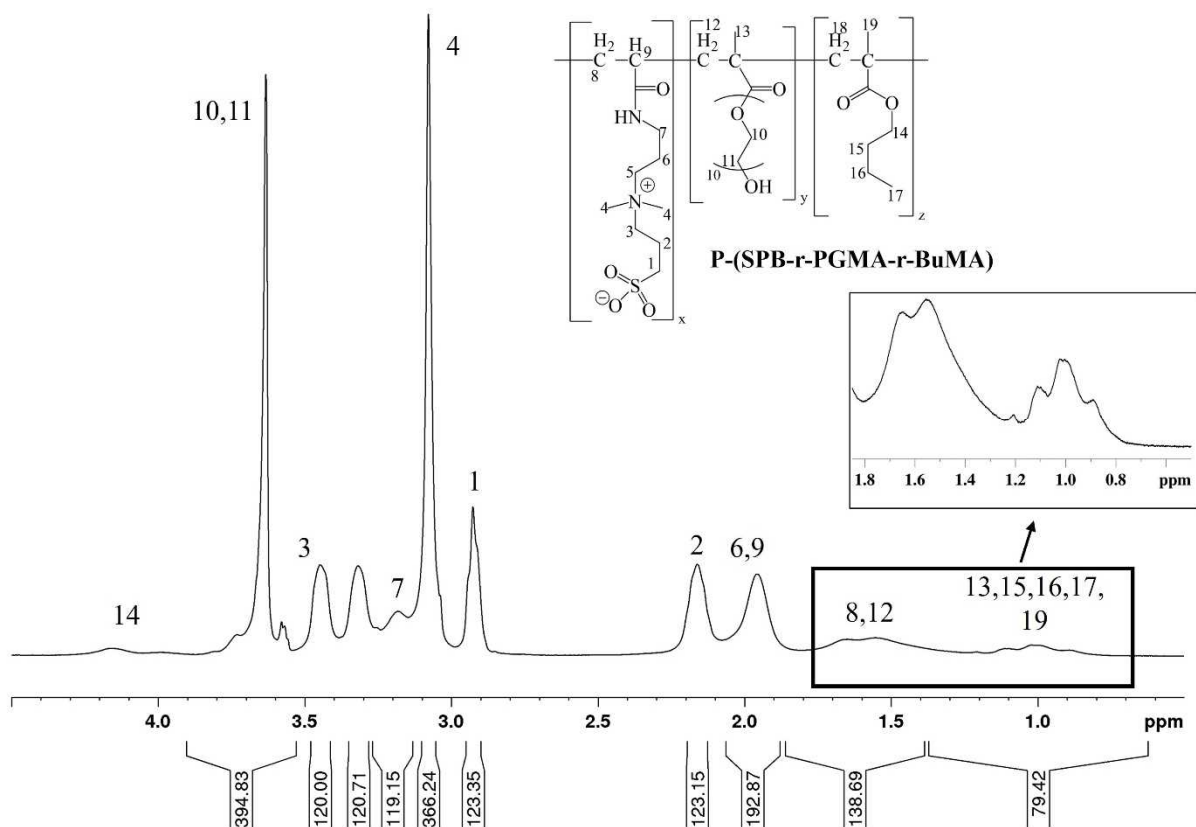


Fig. S4 ¹H-NMR spectrum (in deuterium oxide) of poly-SPB with PGMA and BuMA side groups.

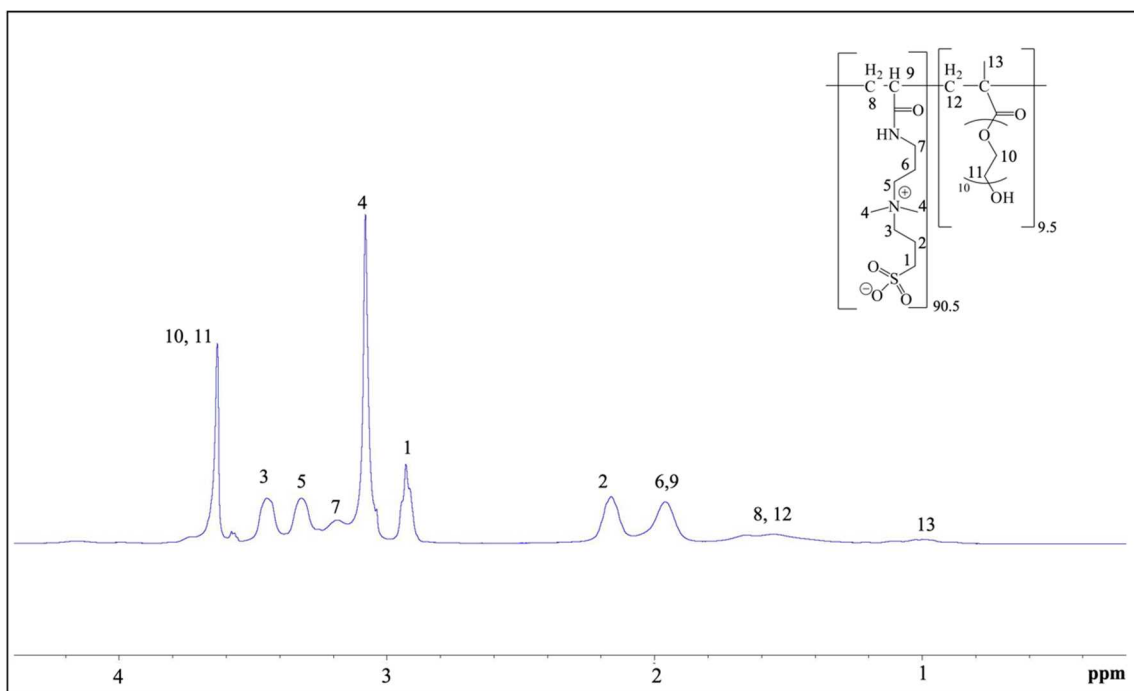


Fig. S5 ^1H -NMR spectrum (in deuterium oxide) of p-(SPB-10% PGMA) (DP60) [R1].

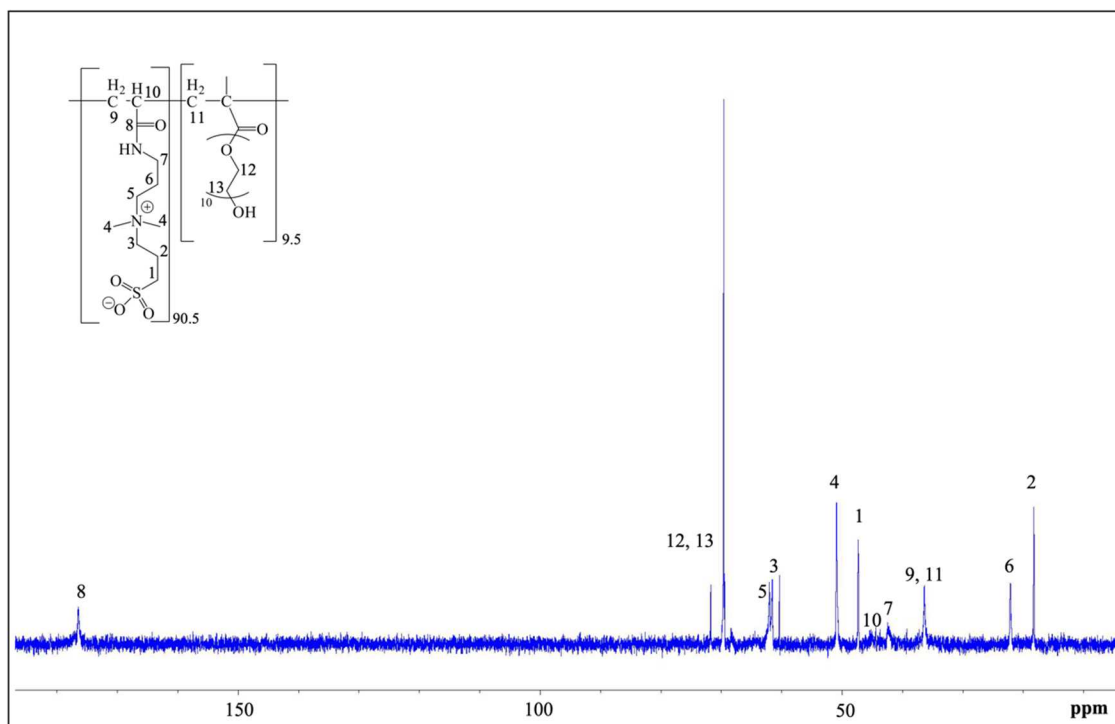


Fig. S6 ^{13}C -NMR spectrum (in deuterium oxide) of p-(SPB-10% PGMA) (DP60) [R1].

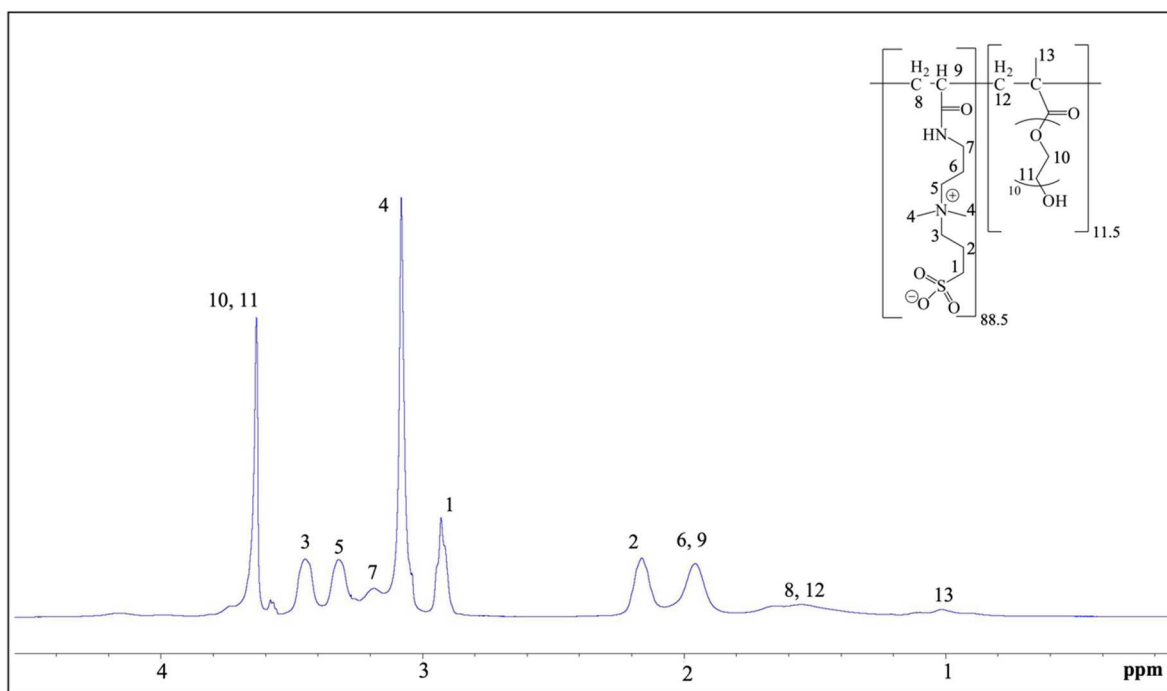


Fig. S7 ^1H -NMR spectrum (in deuterium oxide) of p-(SPB-10% PGMA) (DP100) [R2].

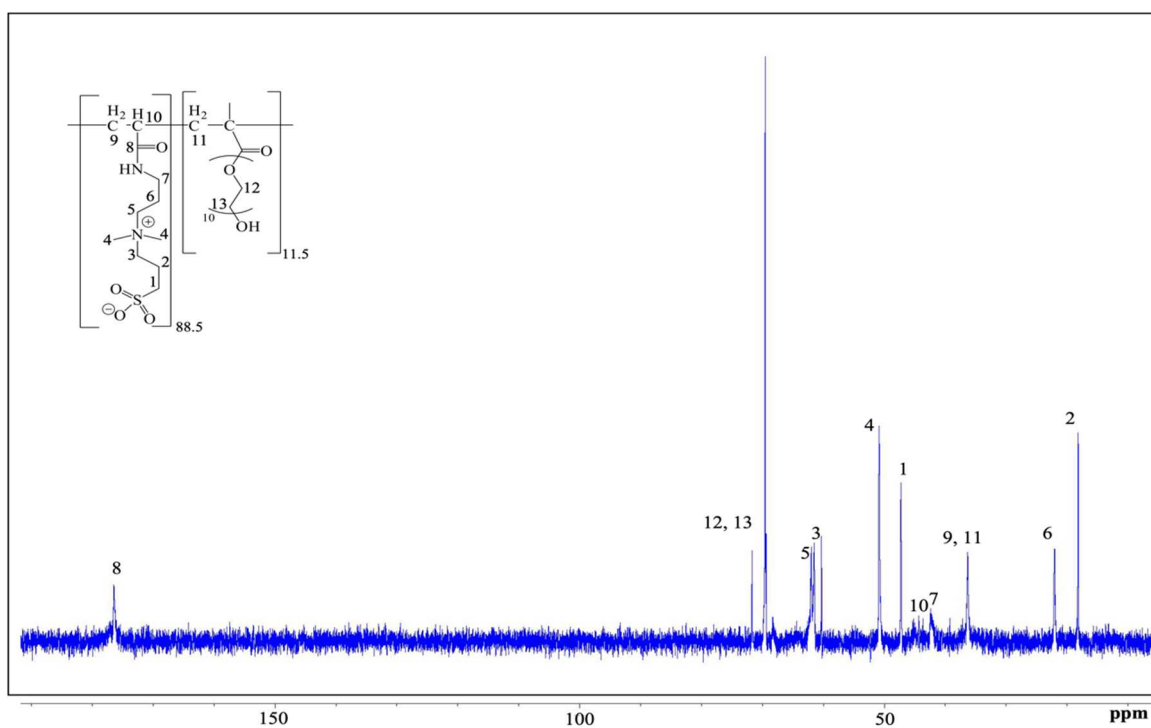


Fig. S8 ^{13}C -NMR spectrum (in deuterium oxide) of p-(SPB-10% PGMA) (DP100) [R2].

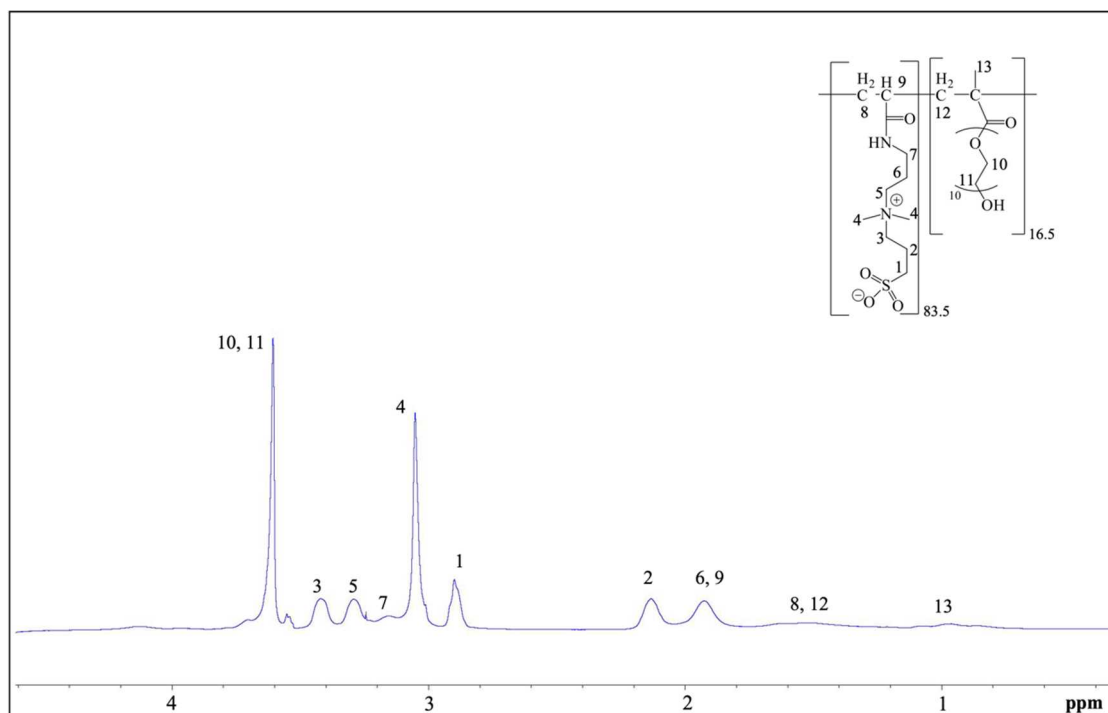


Fig. S9 $^1\text{H-NMR}$ spectrum (in deuterium oxide) of p-(SPB-15% PGMA) (DP60) [R3].

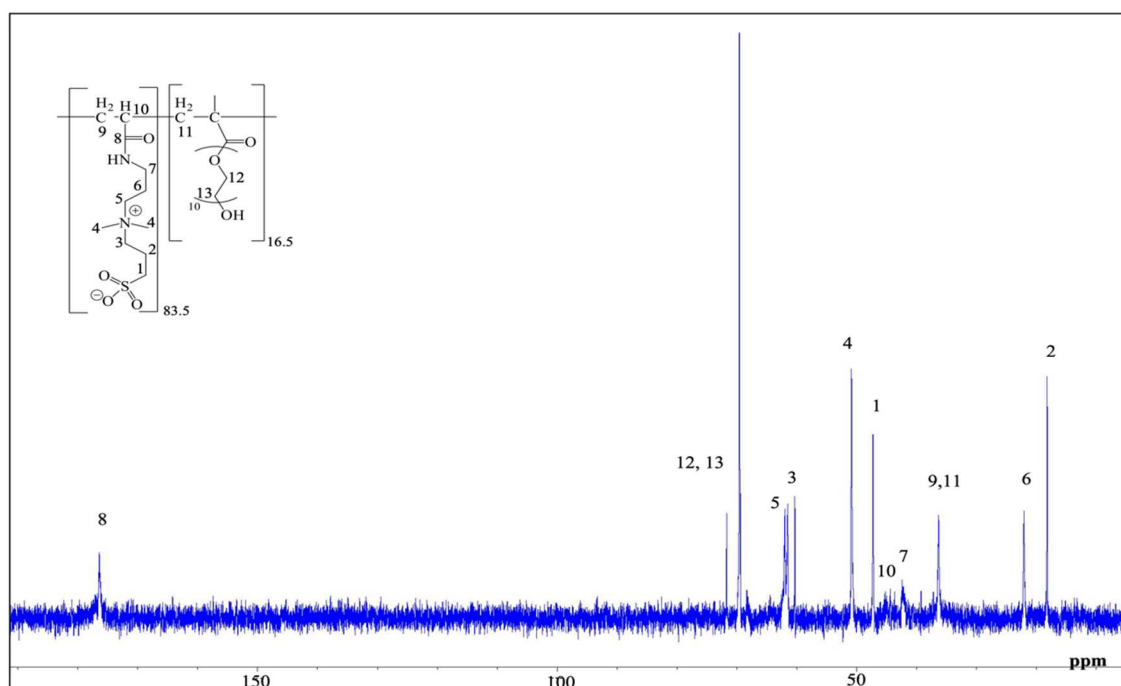


Fig. S10 $^{13}\text{C-NMR}$ spectrum (in deuterium oxide) of p-(SPB-15% PGMA) (DP60) [R3].

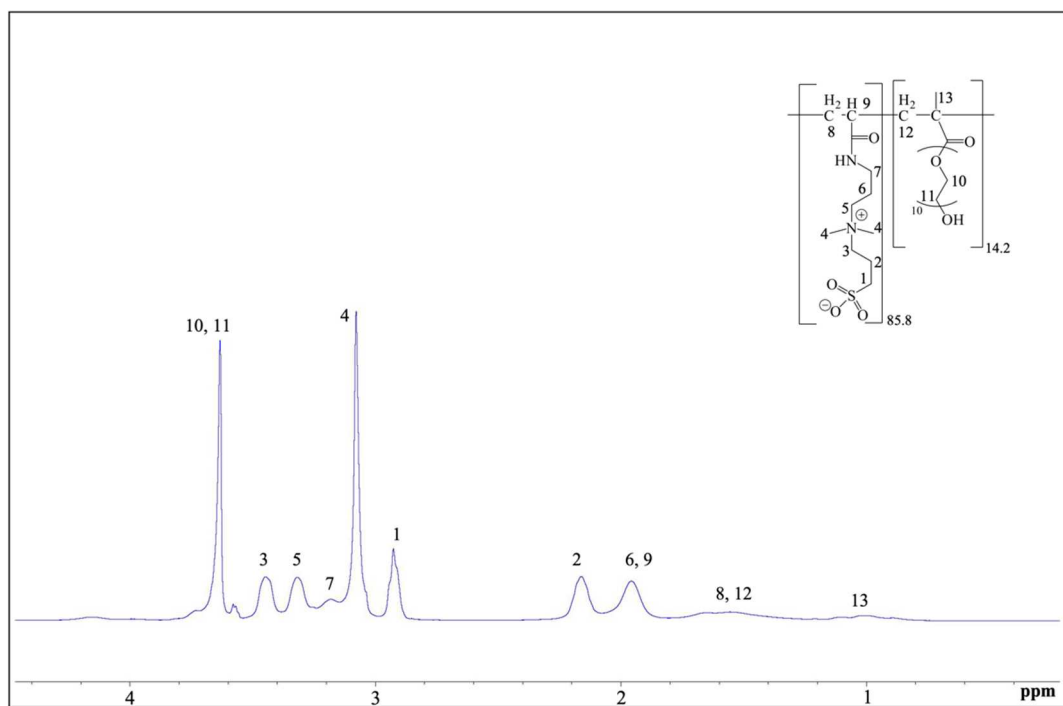


Fig. S11 $^1\text{H-NMR}$ spectrum (in deuterium oxide) of p-(SPB-15% PGMA) (DP100) [R4].

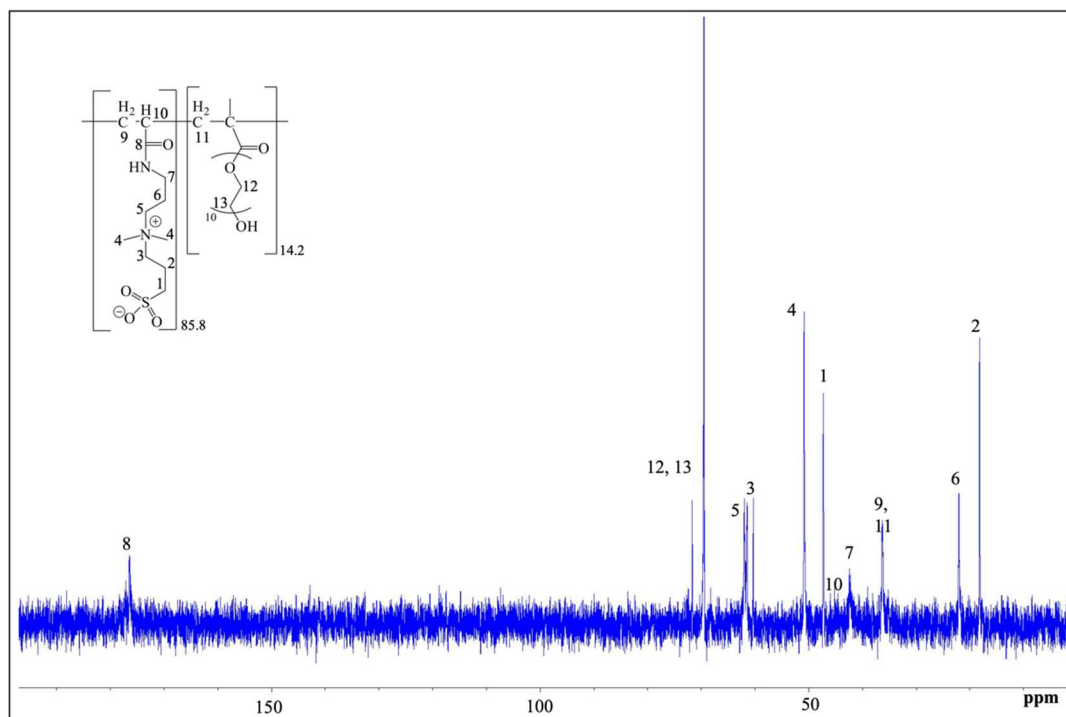


Fig. S12 $^{13}\text{C-NMR}$ spectrum (in deuterium oxide) of p-(SPB-15% PGMA) (DP100) [R4].

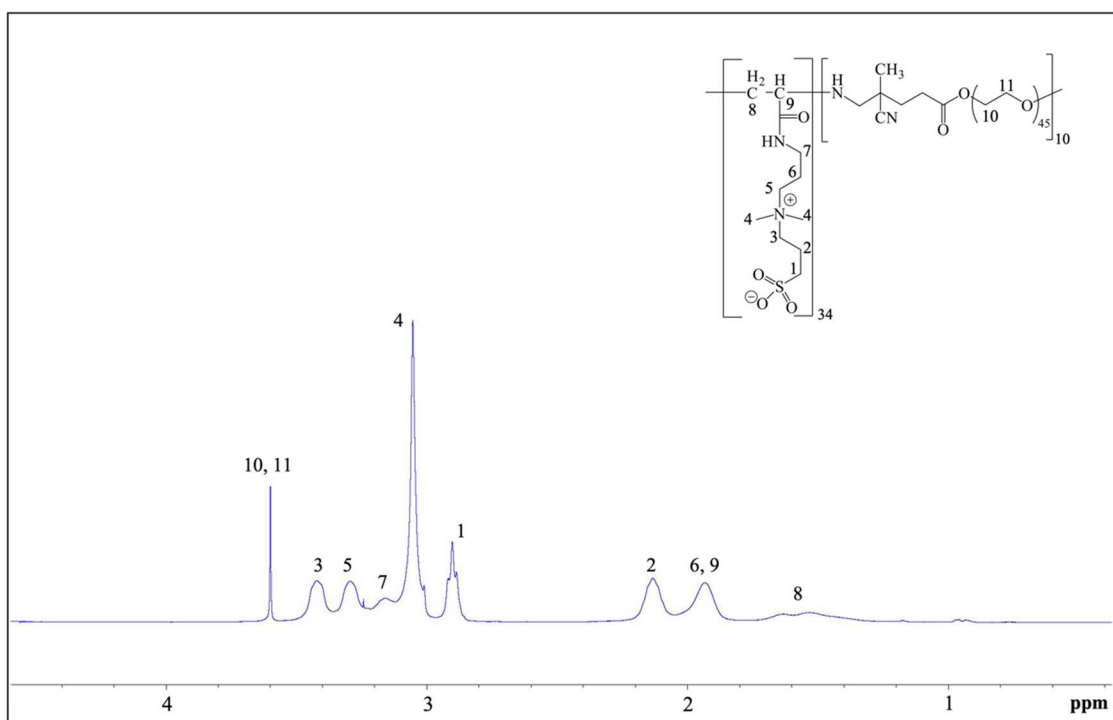


Fig. S13 $^1\text{H-NMR}$ spectrum (in deuterium oxide) of p-SPB-b-PEG (DP60) [B1].

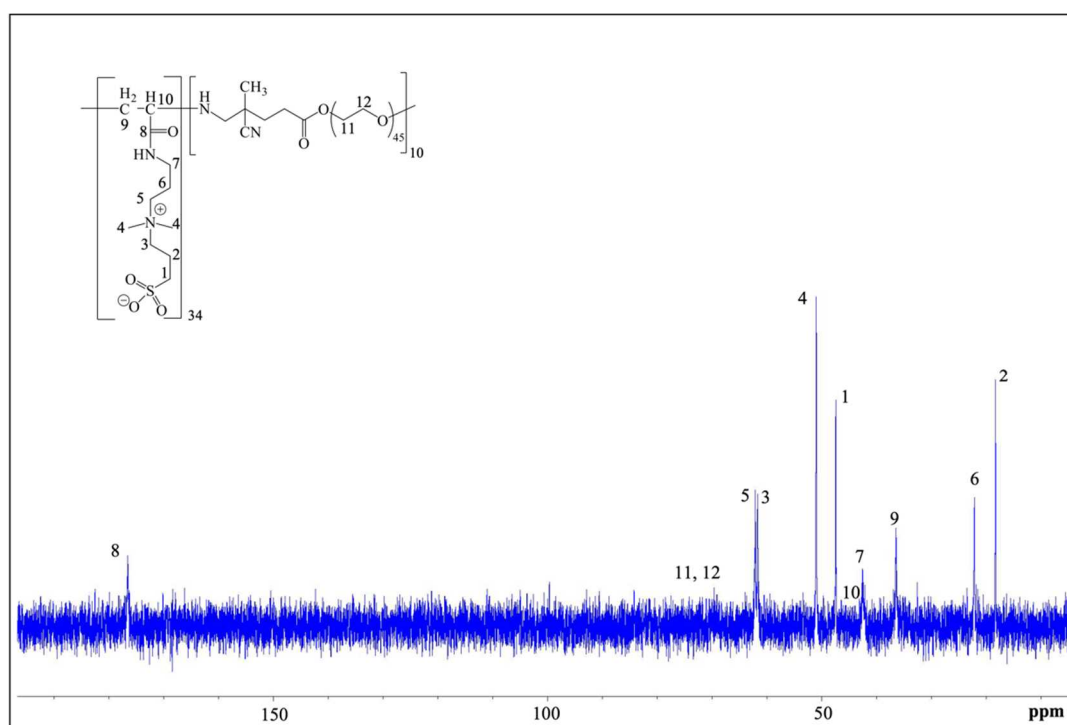


Fig. S14 $^{13}\text{C-NMR}$ spectrum (in deuterium oxide) of p-SPB-b-PEG (DP60) [B1].

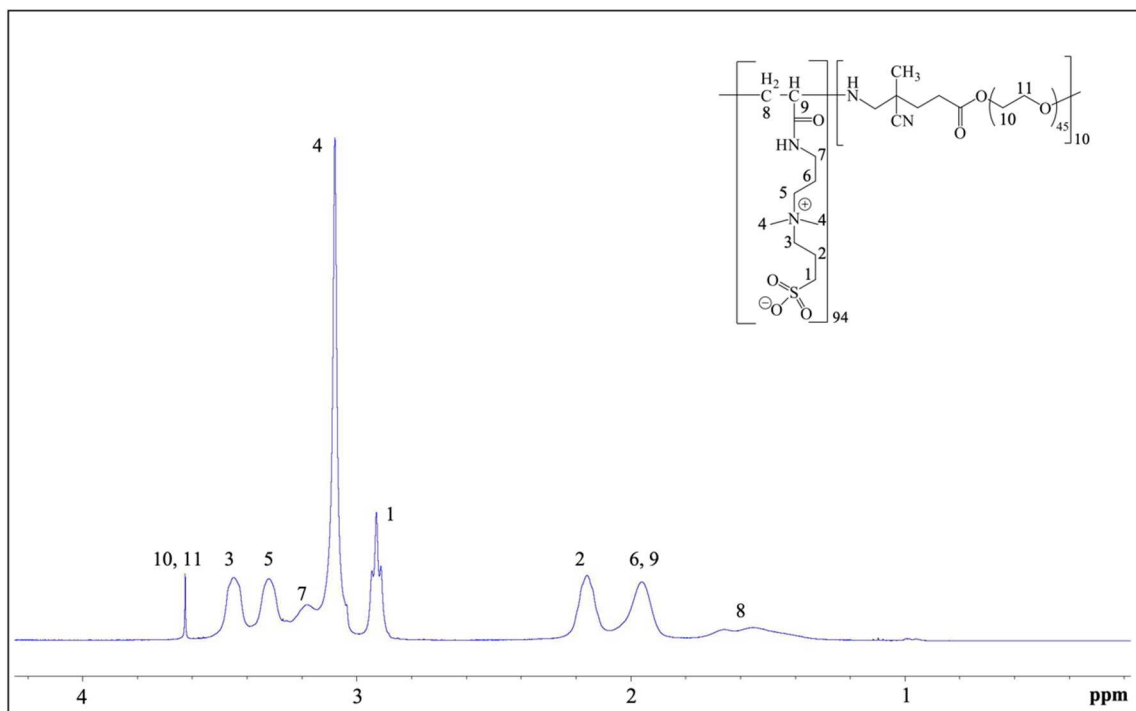


Fig. S15 $^1\text{H-NMR}$ spectrum (in deuterium oxide) of p-SPB-b-PEG (DP100) [B2].

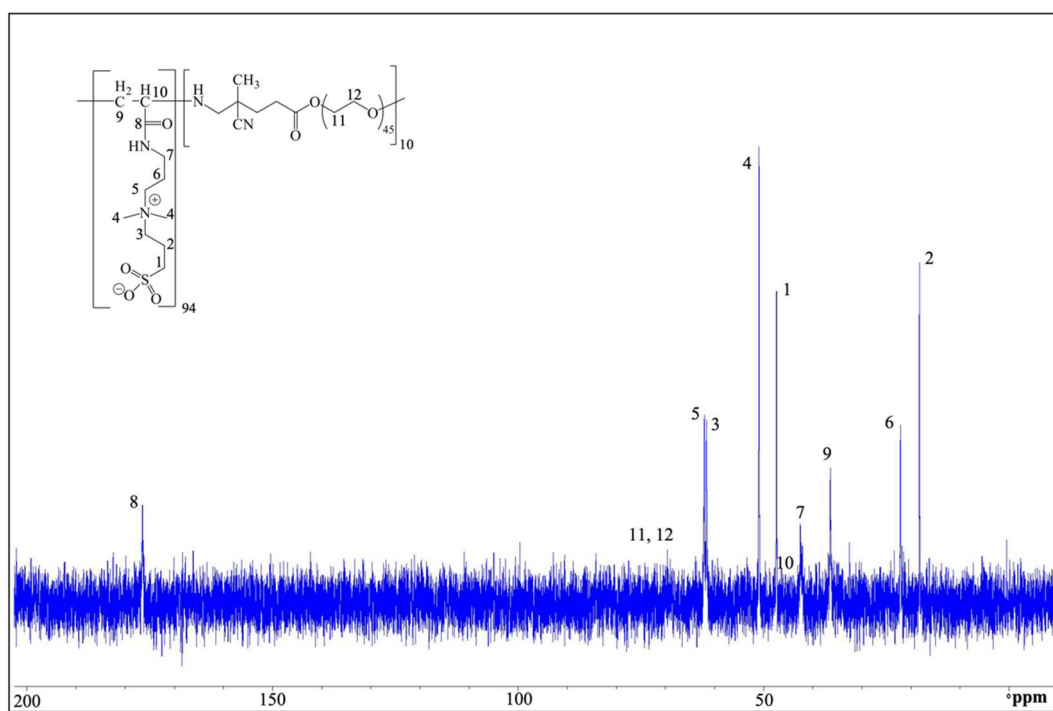


Fig. S16 $^{13}\text{C-NMR}$ spectrum (in deuterium oxide) of p-SPB-b-PEG (DP100) [B2].

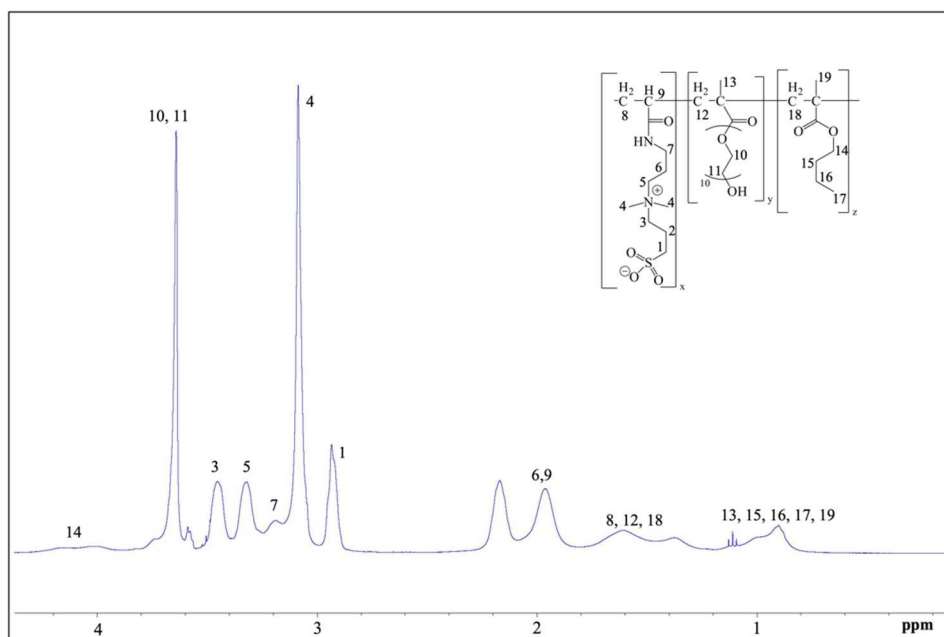


Fig. S17 ¹H-NMR spectrum (in deuterium oxide) of p-(SPB-15%PGMA-10%BuMA) (DP60) [T1].

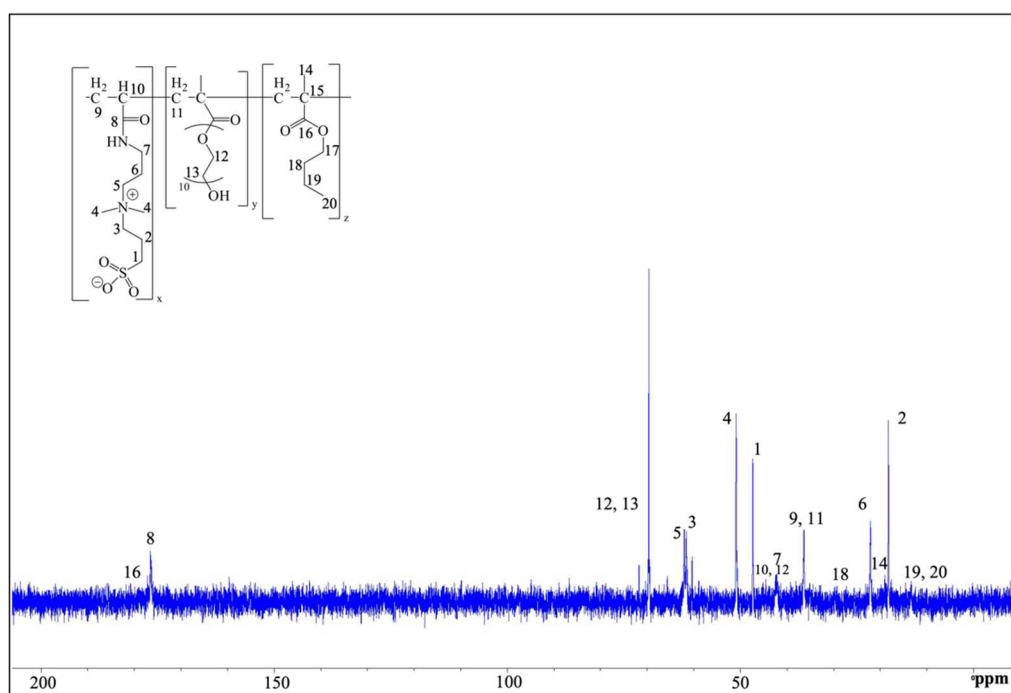


Fig. S18 ¹³C-NMR spectrum (in deuterium oxide) of p-(SPB-15%PGMA-10%BuMA) (DP60) [T1].

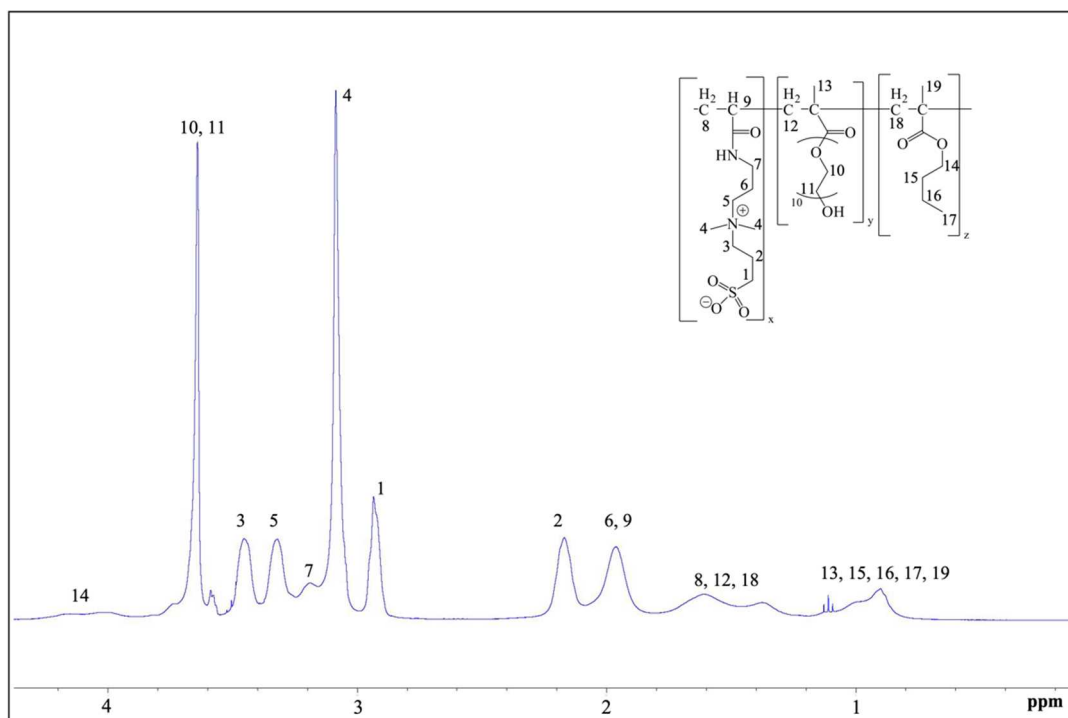


Fig. S19 $^1\text{H-NMR}$ spectrum (in deuterium oxide) of p-(SPB-15%PGMA-10%BuMA) (DP100) [T2].

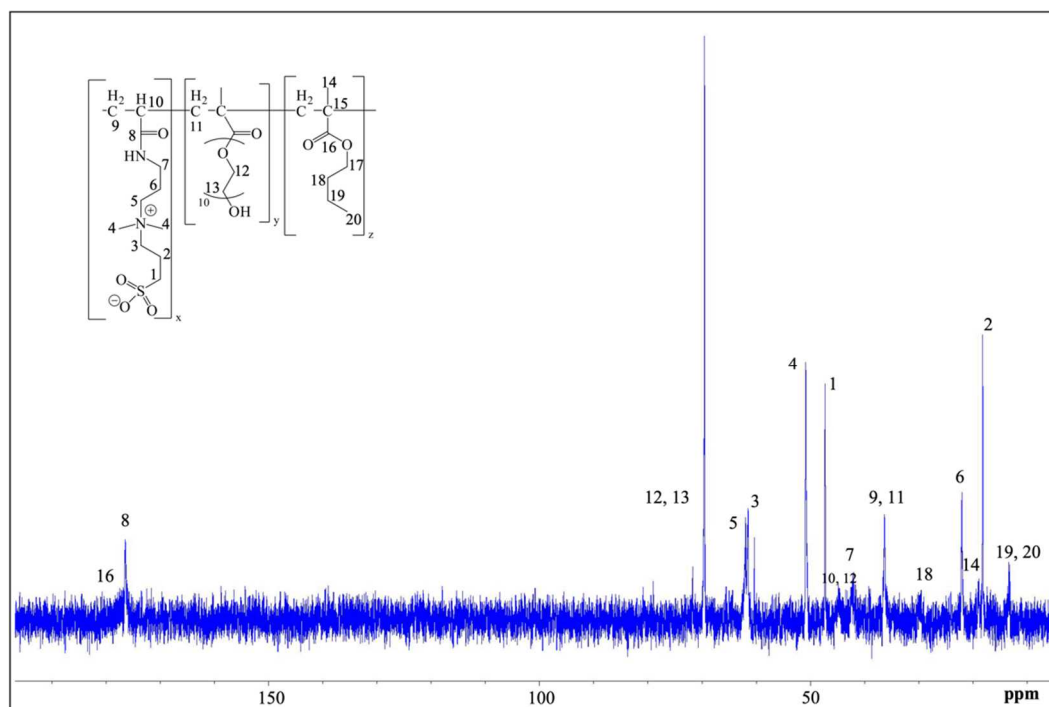


Fig. S20 $^{13}\text{C-NMR}$ spectrum (in deuterium oxide) of p-(SPB-15%PGMA-10%BuMA) (DP100) [T2].

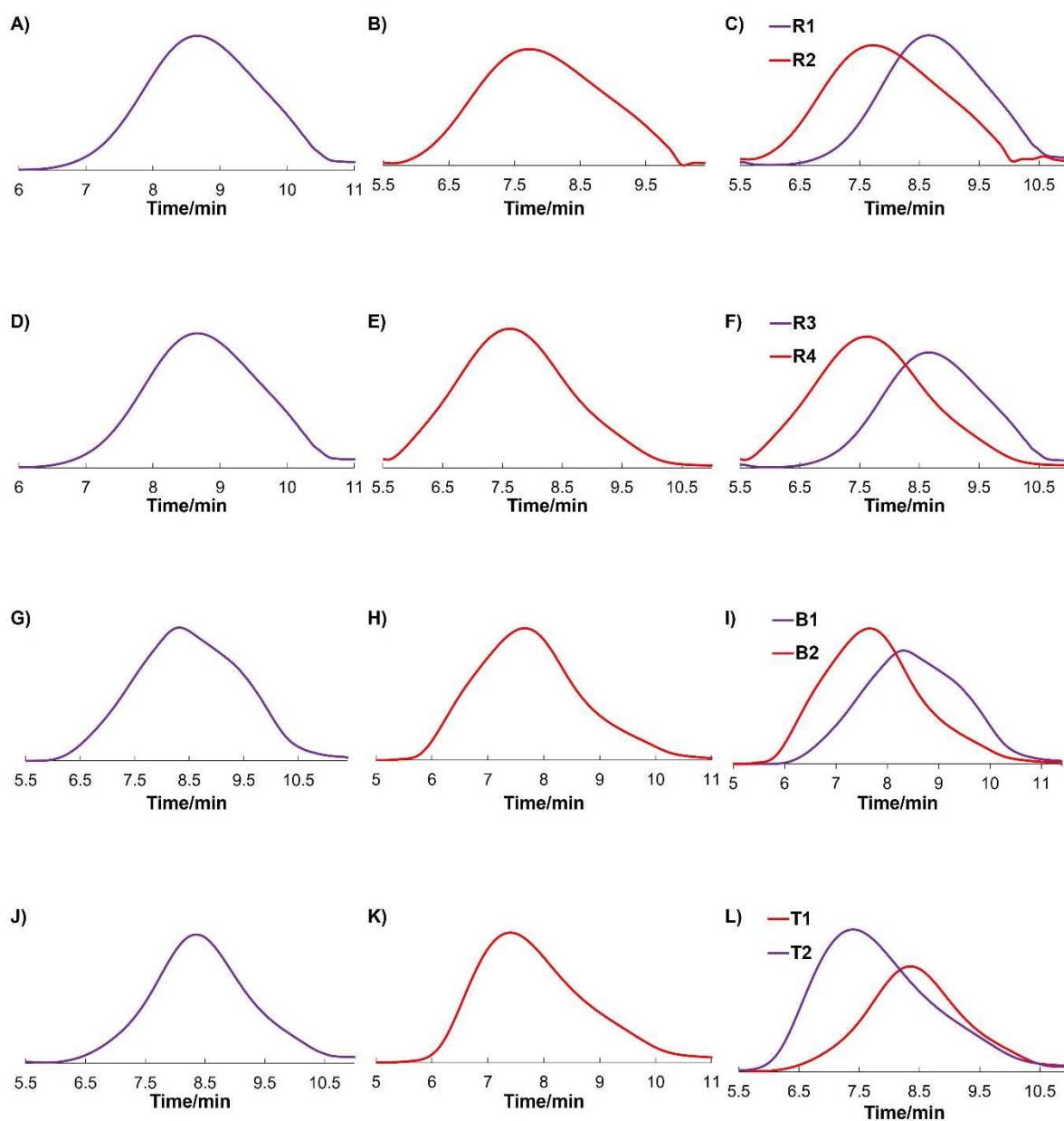


Fig. S21 GPC elution curves of A) R1, B) R2, C) Comparison of R1 and R2, D) R3, E) R4, F) Comparison of R3 and R4, G) B1, H) B2, I) Comparison of B1 and B2, J) T1, K) T2, and L) Comparison of T1 and T2, using an aqueous 0.1 M NaBr solution (pH 7.4) as the mobile phase.