

Supplementary Materials

Dual-Responsive Supramolecular Chiral Assemblies from Amphiphilic Dendronized Tetraphenylethylenes

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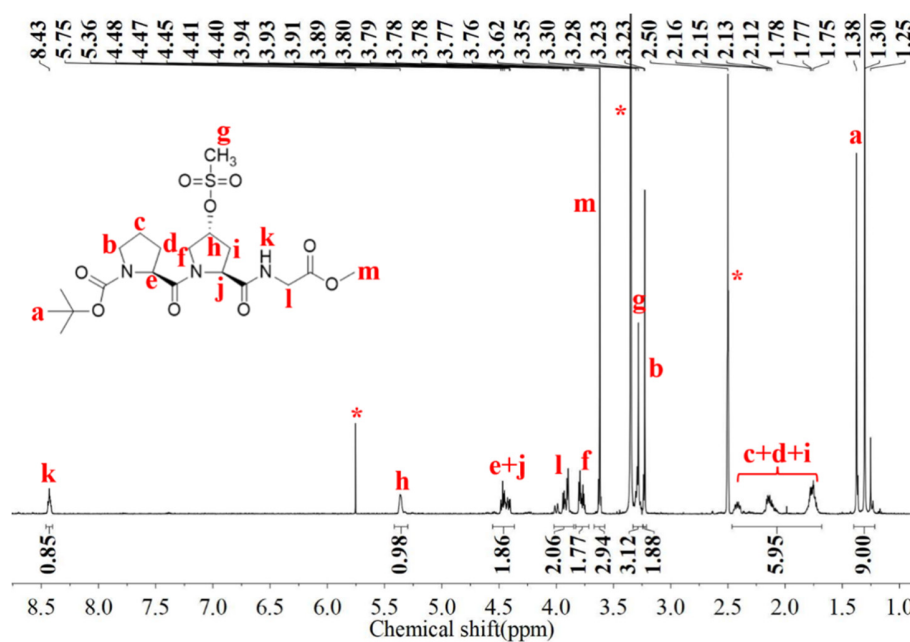


Figure S1. ^1H NMR spectrum of Boc-PO(Ms)G-OMe in d_6 -DMSO. The solvent peak is marked with asterisk (*).

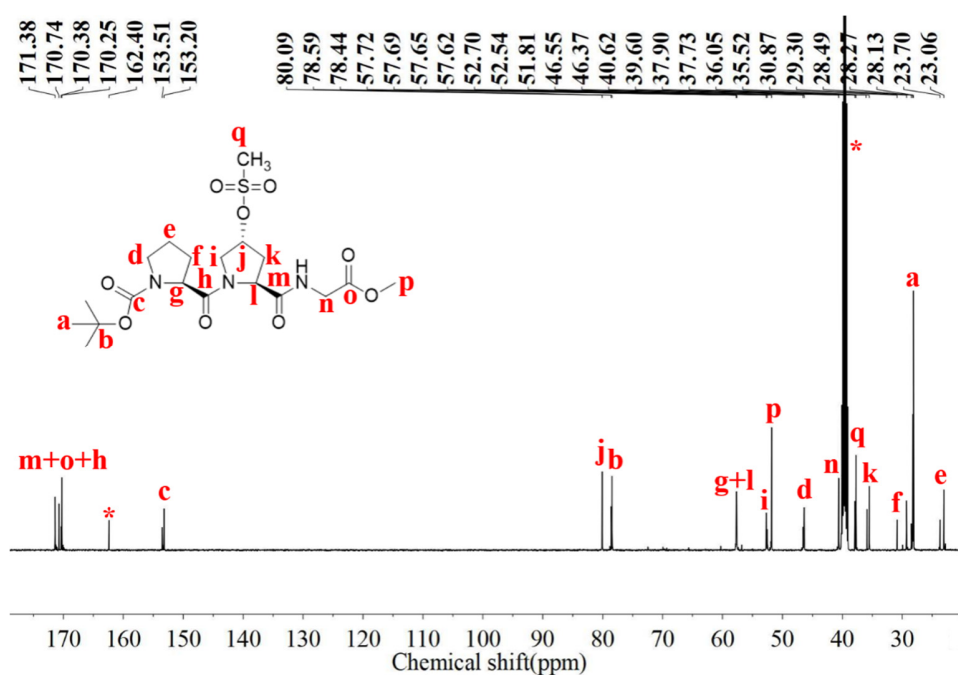


Figure S2. ^{13}C NMR spectrum of Boc-PO(Ms)G-OMe in d_6 -DMSO. The solvent peak is marked with asterisk (*).

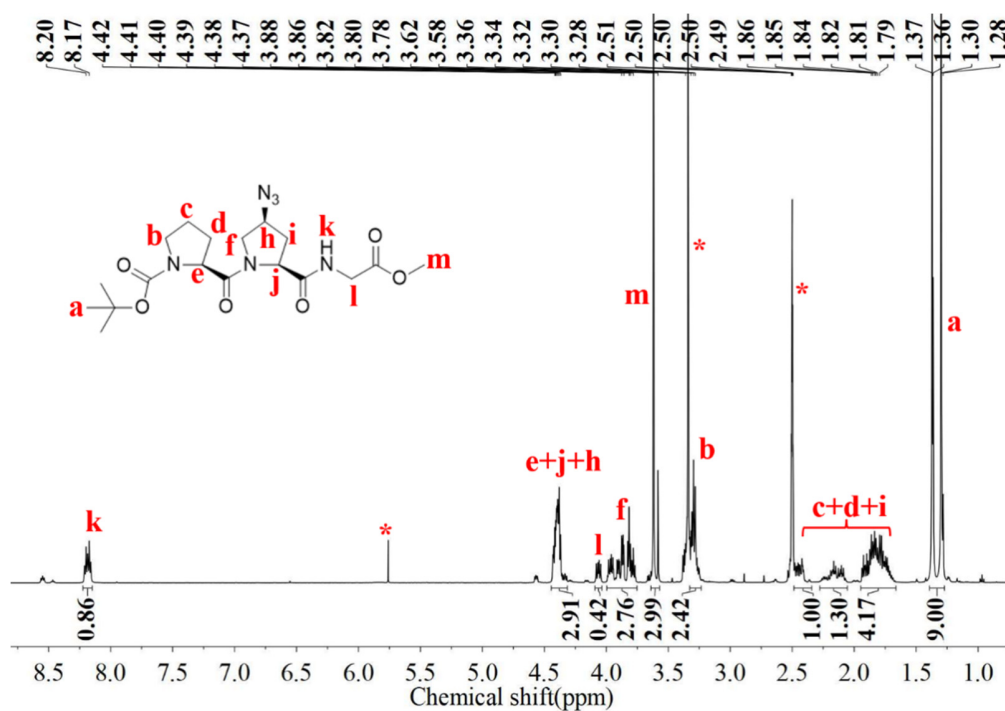


Figure S3. ¹H NMR spectrum of **Boc-PO(N₃)G-OMe** in *d*₆-DMSO. The solvent peak is marked with asterisk (*).

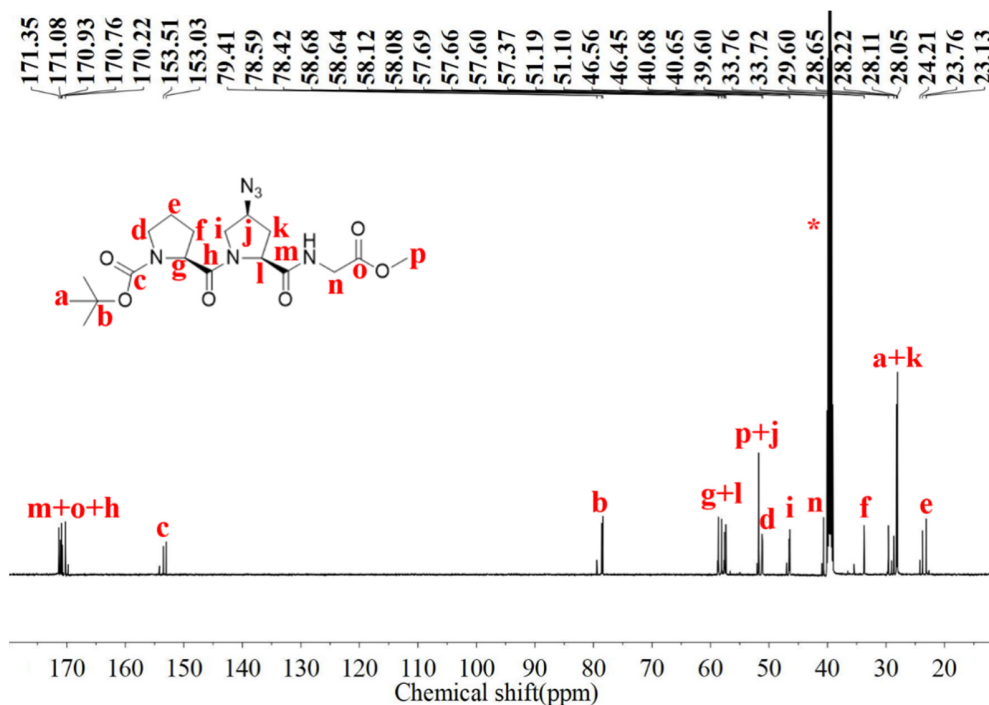


Figure S4. ¹³C NMR spectrum of **Boc-PO(N₃)G-OMe** in *d*₆-DMSO. The solvent peak is marked with asterisk (*).

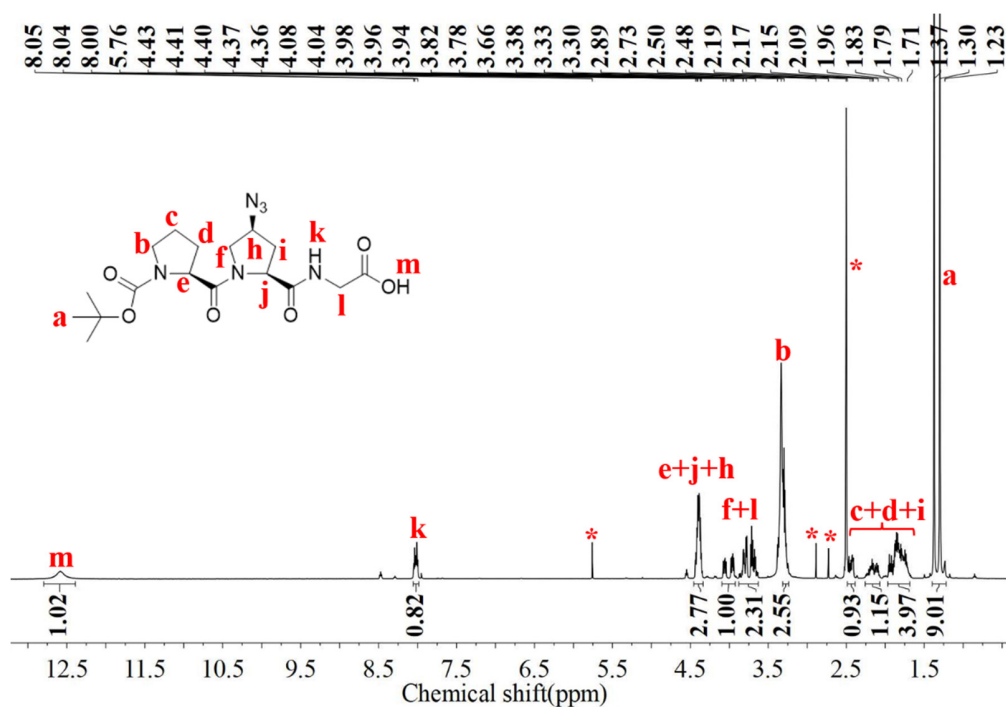


Figure S5. ¹H NMR spectrum of **Boc-PO(N₃)G-OH** in *d*₆-DMSO. The solvent peak is marked with asterisk (*).

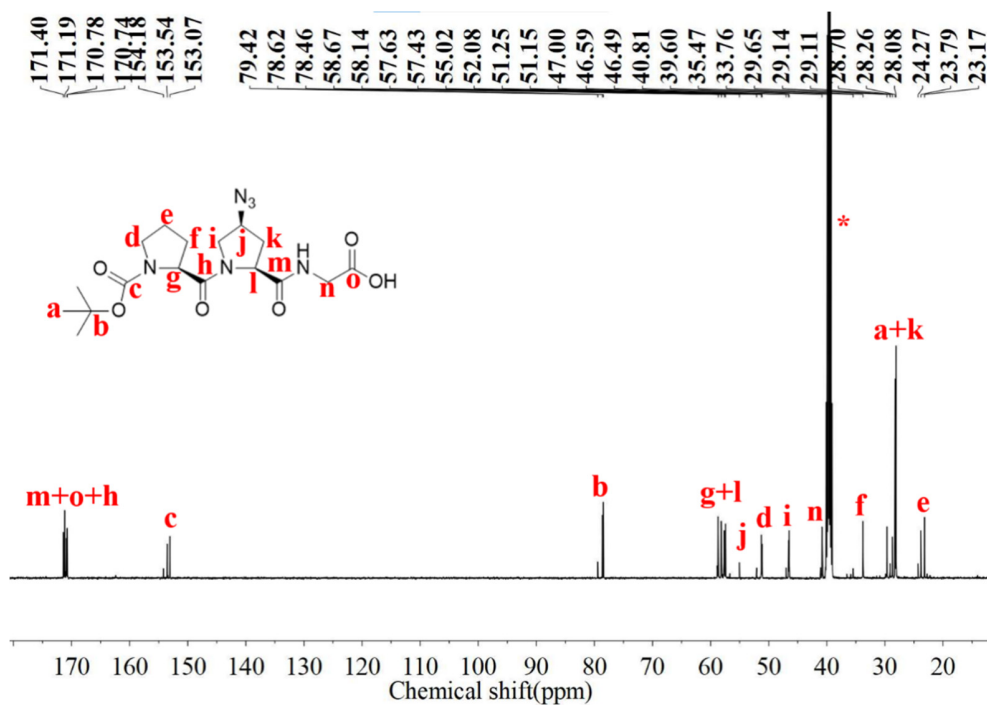


Figure S6. ¹³C NMR spectrum of **Boc-PO(N₃)G-OH** in *d*₆-DMSO. The solvent peak is marked with asterisk (*).

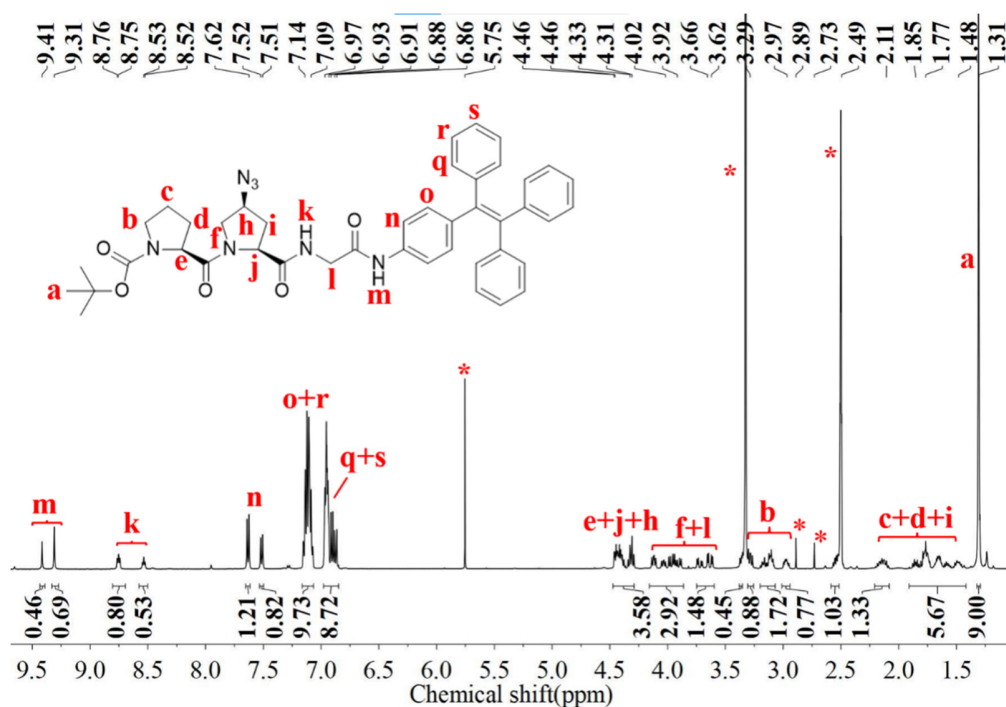


Figure S7. ¹H NMR spectrum of Boc-PO(N₃)G-TPE in *d*₆-DMSO. The solvent peak is marked with asterisk (*).

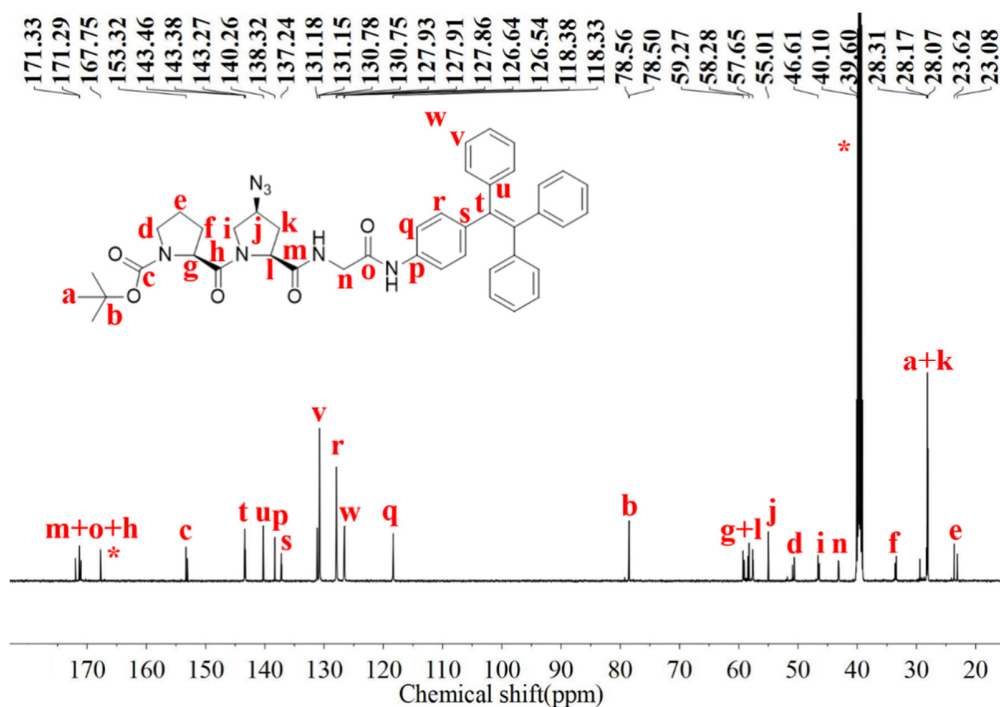


Figure S8. ¹³C NMR spectrum of Boc-PO(N₃)G-TPE in *d*₆-DMSO. The solvent peak is marked with asterisk (*).

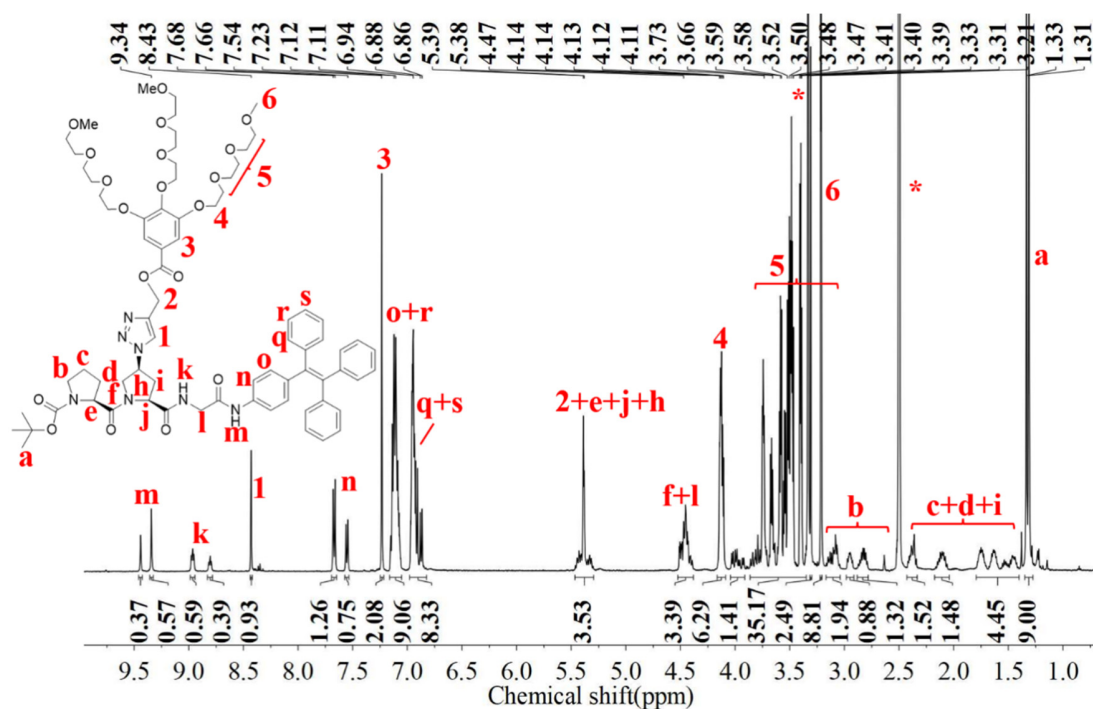
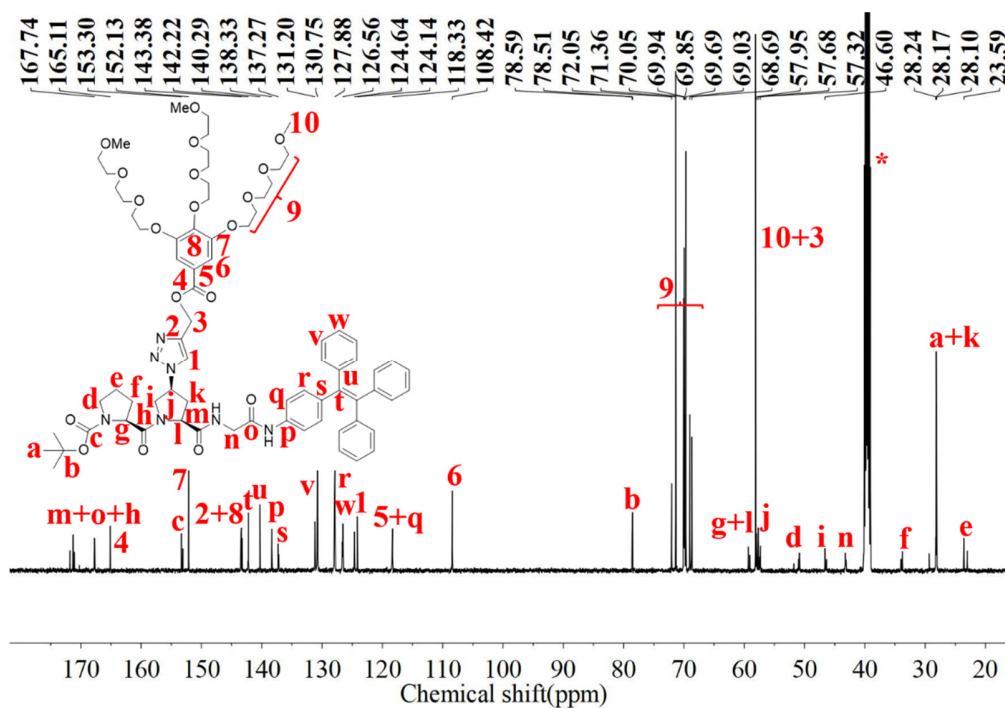


Figure S9. ^1H NMR spectrum of **Boc-PO(Me)G-TPE** in d_6 -DMSO. The solvent peak is marked with asterisk (*).



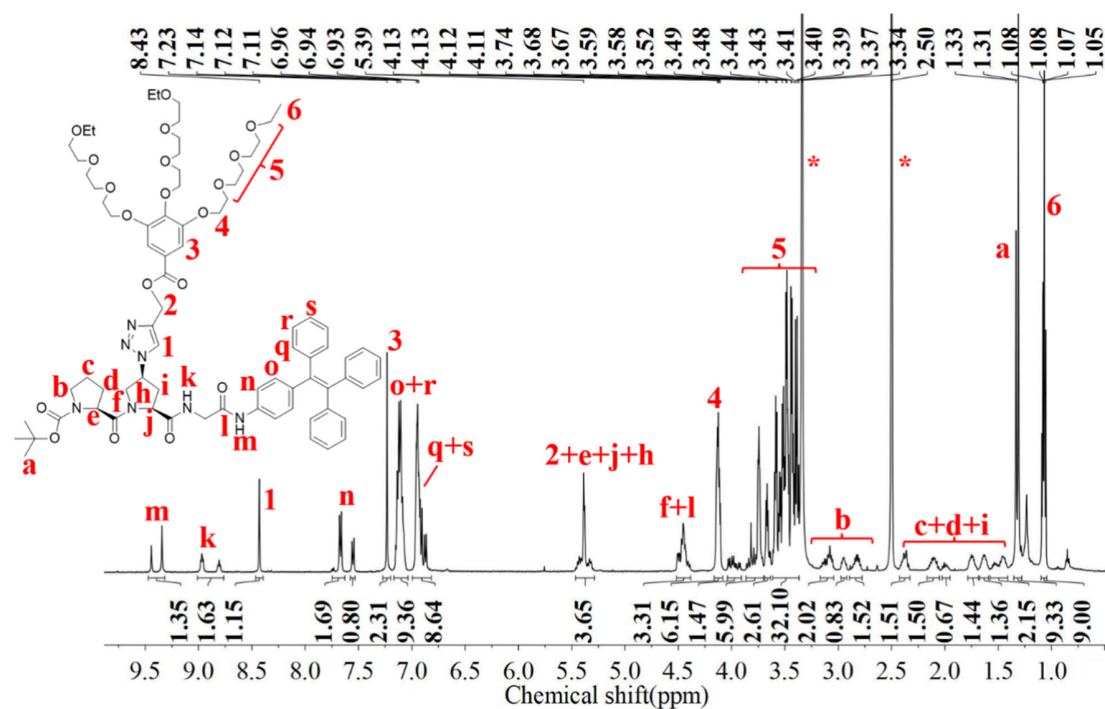


Figure S11. ¹H NMR spectrum of Boc-PO(Et)G-TPE in *d*₆-DMSO. The solvent peak is marked with asterisk (*).

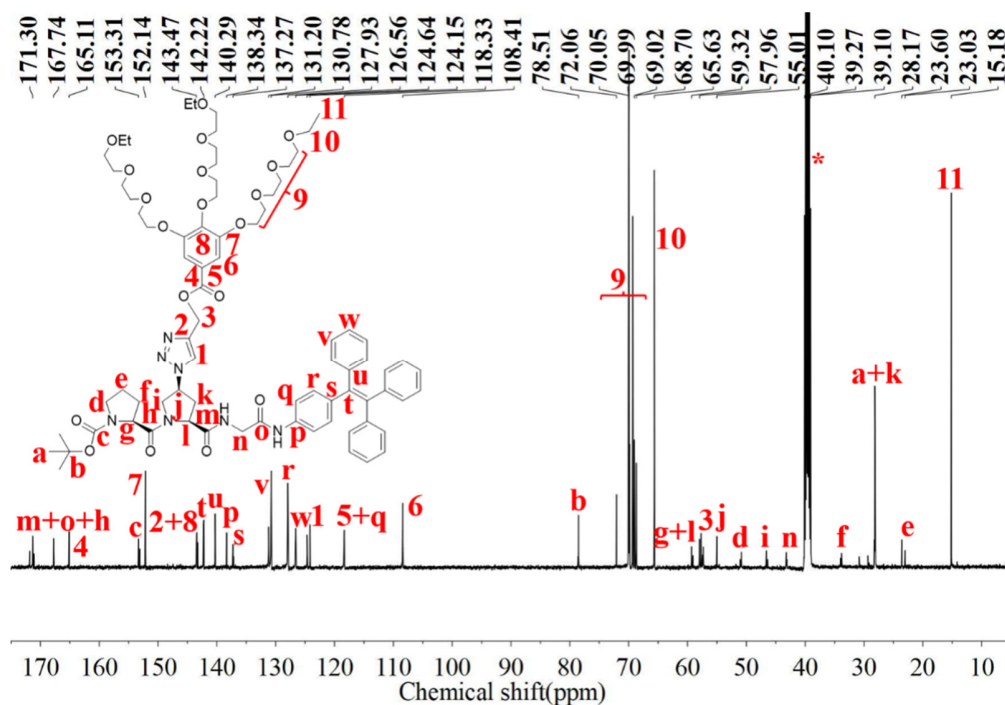


Figure S12. ¹³C NMR spectrum of Boc-PO(Et)G-TPE in *d*₆-DMSO. The solvent peak is marked with asterisk (*).

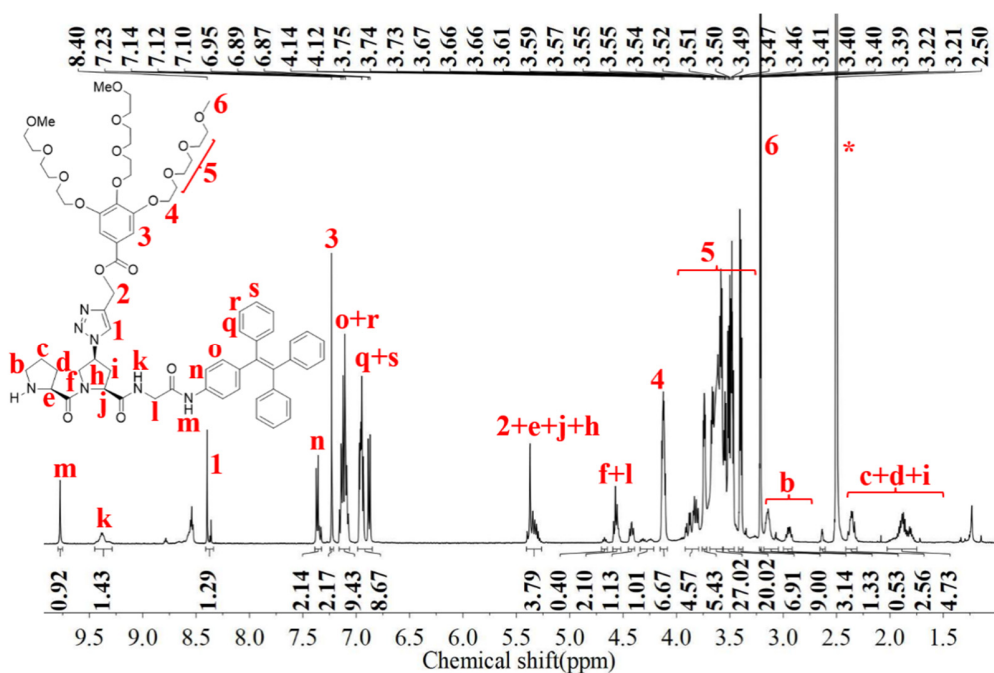


Figure S13. ^1H NMR spectrum of **H-PO(Me)G-TPE** in d_6 -DMSO. The solvent peak is marked with asterisk (*).

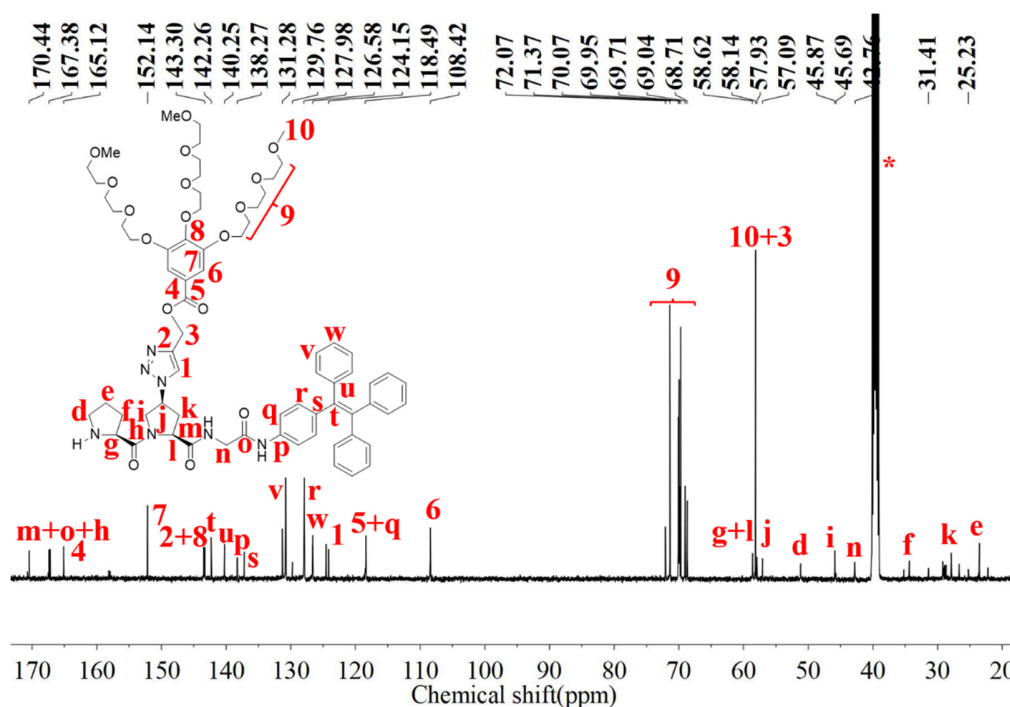


Figure S14. ^{13}C NMR spectrum of **H-PO(Me)G-TPE** in d_6 -DMSO. The solvent peak is marked with asterisk (*).

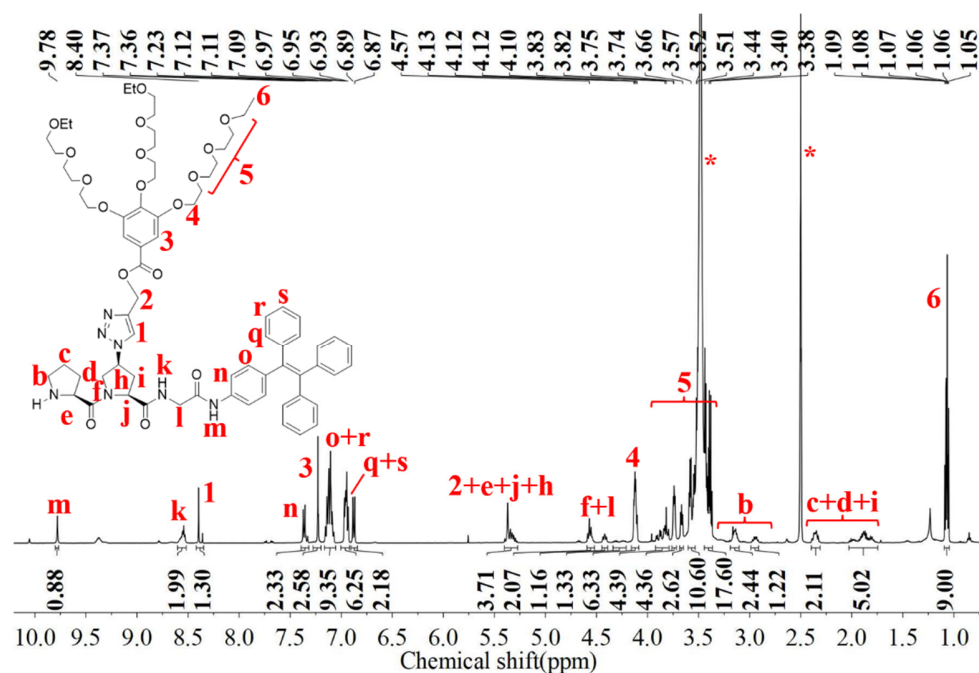


Figure S15. ^1H NMR spectrum of **H-PO(Et)G-TPE** in d_6 -DMSO. The solvent peak is marked with asterisk (*).

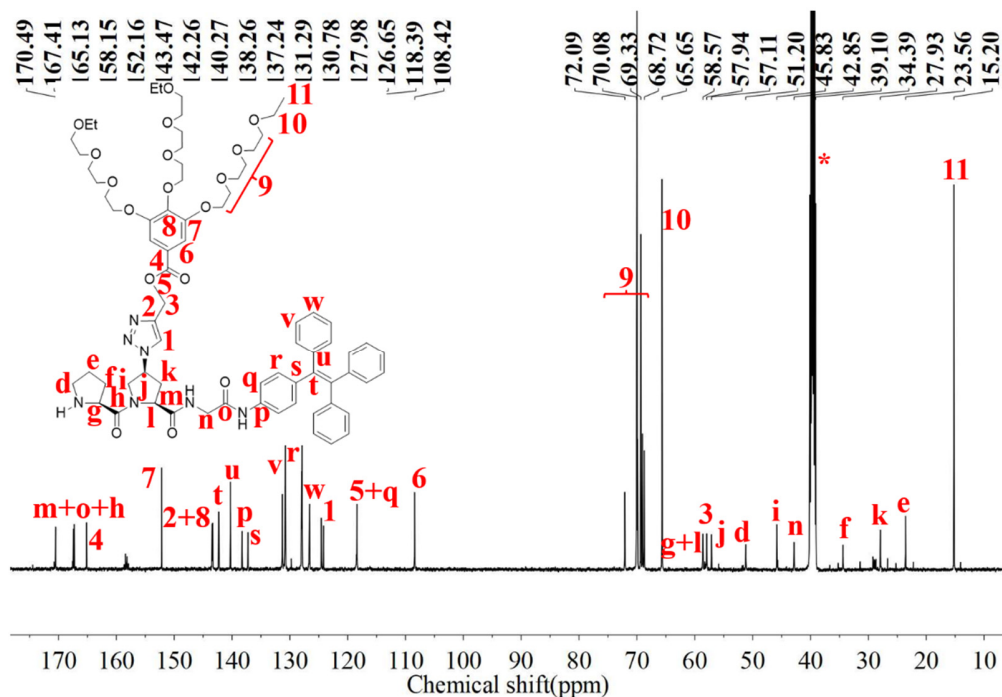


Figure S16. ^{13}C NMR spectrum of **H-PO(Et)G-TPE** in d_6 -DMSO. The solvent peak is marked with asterisk (*).

Boc-PO(Ms)G-OMe #10 RT: 0.08 AV: 1 NL: 6.90E8
T: FTMS + p ESI Full ms [100.0000-1000.0000]

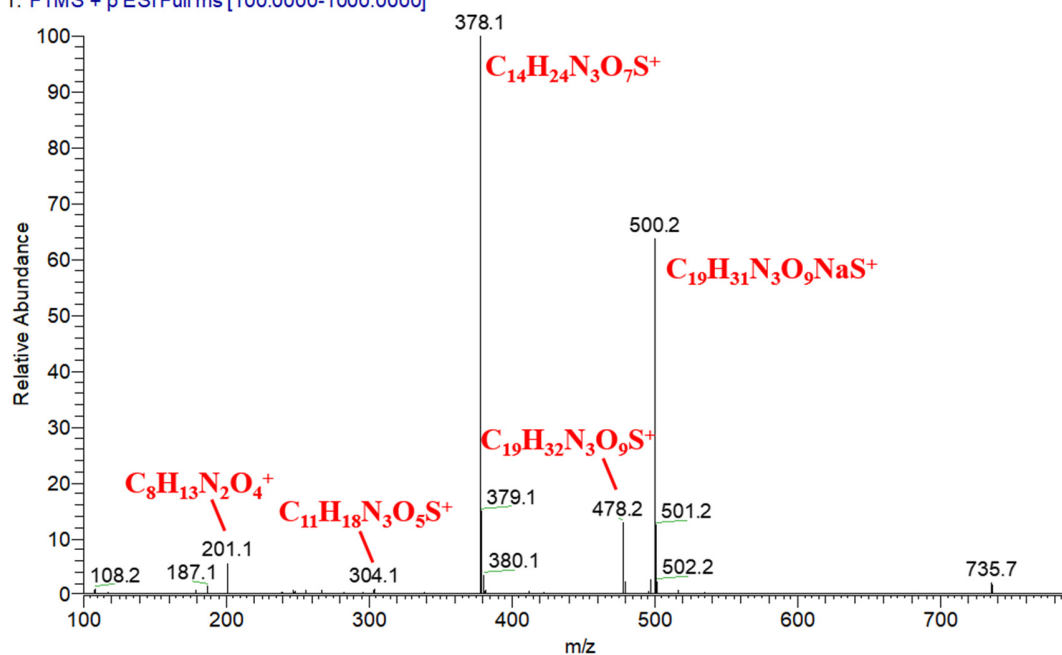


Figure S17. ESI-MS (pos. mode, DCM) of Boc-PO(Ms)G-OMe.

Boc-PO(N3)G-OMe #10 RT: 0.08 AV: 1 NL: 6.10E8
T: FTMS + p ESI Full ms [100.0000-1000.0000]

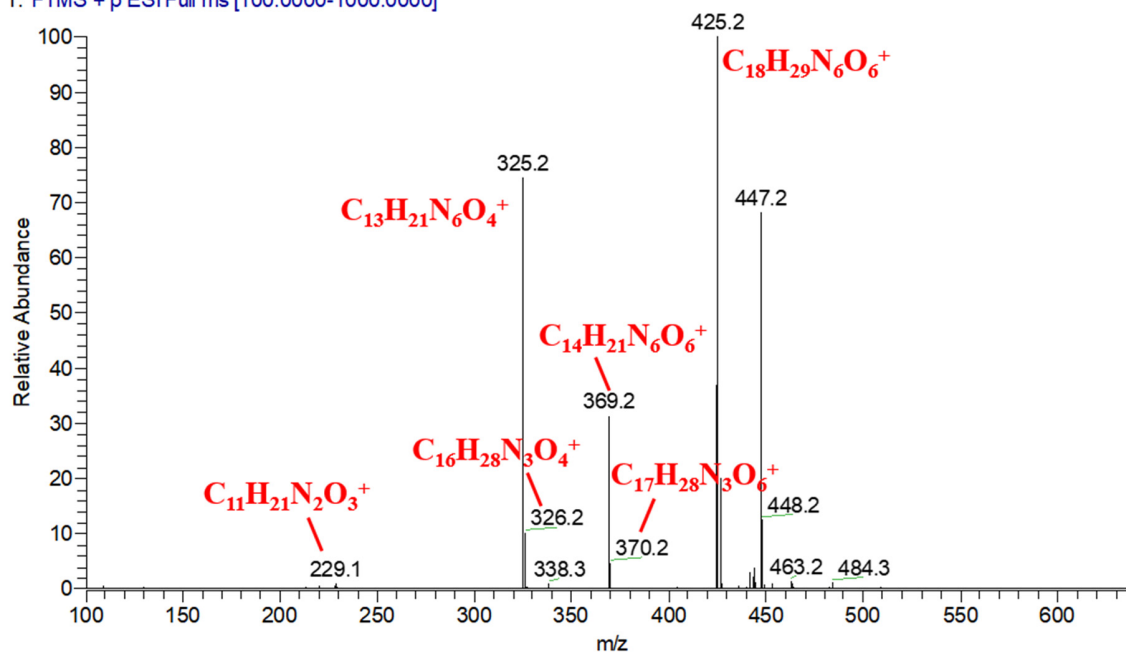


Figure S18. ESI-MS (pos. mode, DCM) of Boc-PO(N3)G-OMe.

Boc-PO(N₃)G-OH #9 RT: 0.07 AV: 1 NL: 7.06E7
T: FTMS + p ESI Full ms [100.0000-1000.0000]

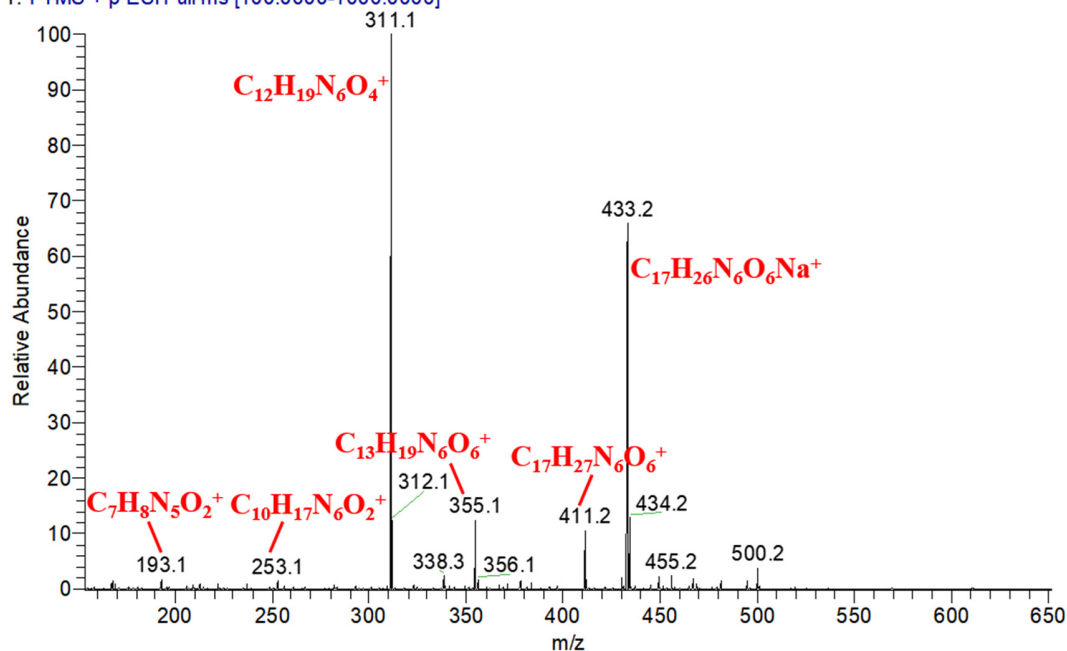


Figure S19. ESI-MS (pos. mode, DCM) of Boc-PO(N₃)G-OH.

POG-TPE #11 RT: 0.09 AV: 1 NL: 3.77E7
T: FTMS + p ESI Full ms [100.0000-1000.0000]

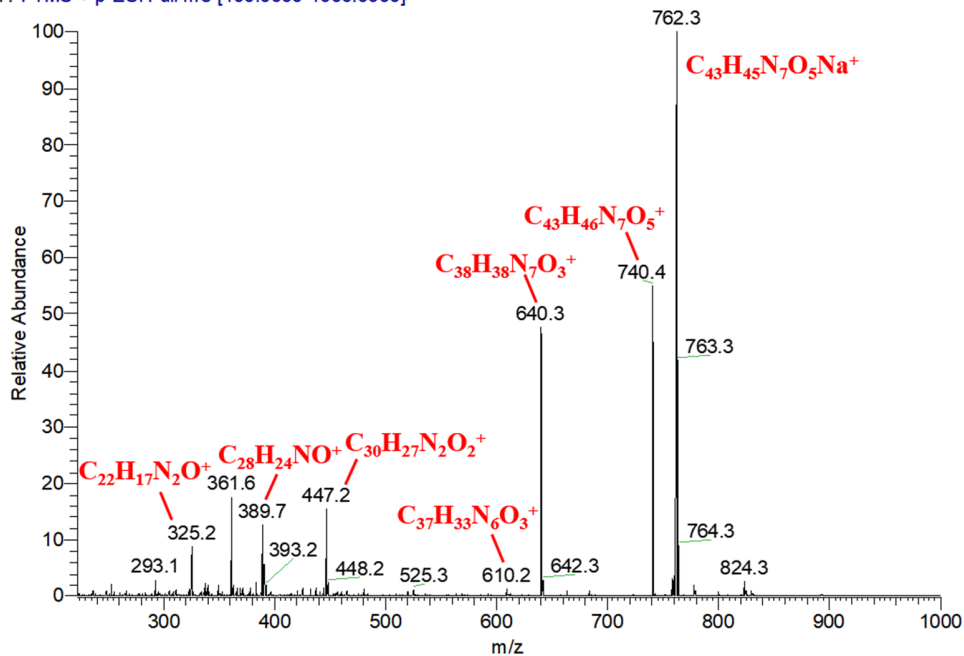


Figure S20. ESI-MS (pos. mode, DCM) of Boc-PO(N₃)G-TPE.

POG-MeG1-TPE #11 RT: 0.09 AV: 1 NL: 1.59E8
T: FTMS + p ESI Full ms [100.0000-1500.0000]

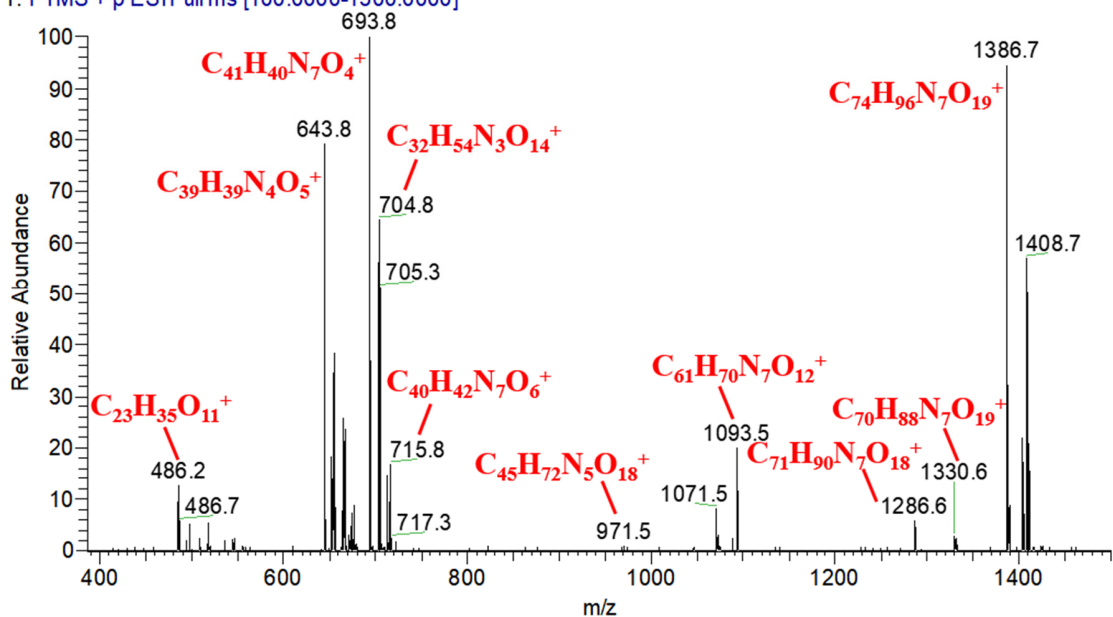


Figure S21. ESI-MS (pos. mode, DCM) of Boc-PO(Me)G-TPE.

POG-EtG1-TPE #16 RT: 0.07 AV: 1 NL: 1.77E8
T: FTMS + p ESI Full ms [200.0000-2000.0000]

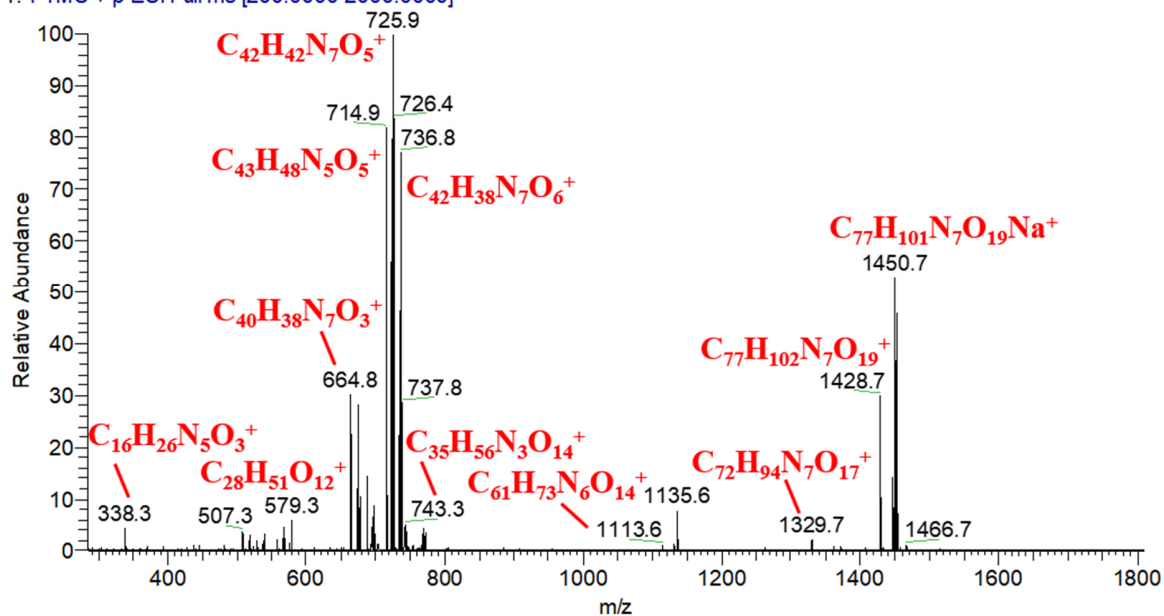


Figure S22. ESI-MS (pos. mode, DCM) of Boc-PO(Et)G-TPE.

H-POG-MeG1-TPE_20220302161001 #12 RT: 0.10 AV: 1 NL: 9.43E7
T: FTMS + p ESI Full ms [100.0000-1500.0000]

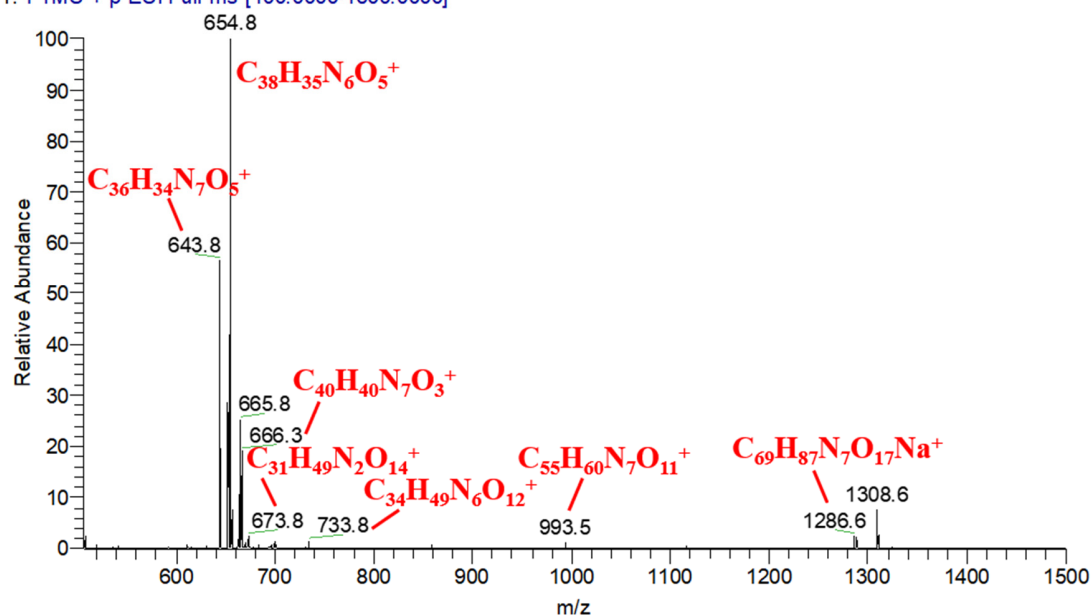


Figure S23. ESI-MS (pos. mode, DCM) of H-PO(Me)G-TPE.

H-POG-EtG1-TPE_20220302161207 #11 RT: 0.09 AV: 1 NL: 9.66E7
T: FTMS + p ESI Full ms [100.0000-1500.0000]

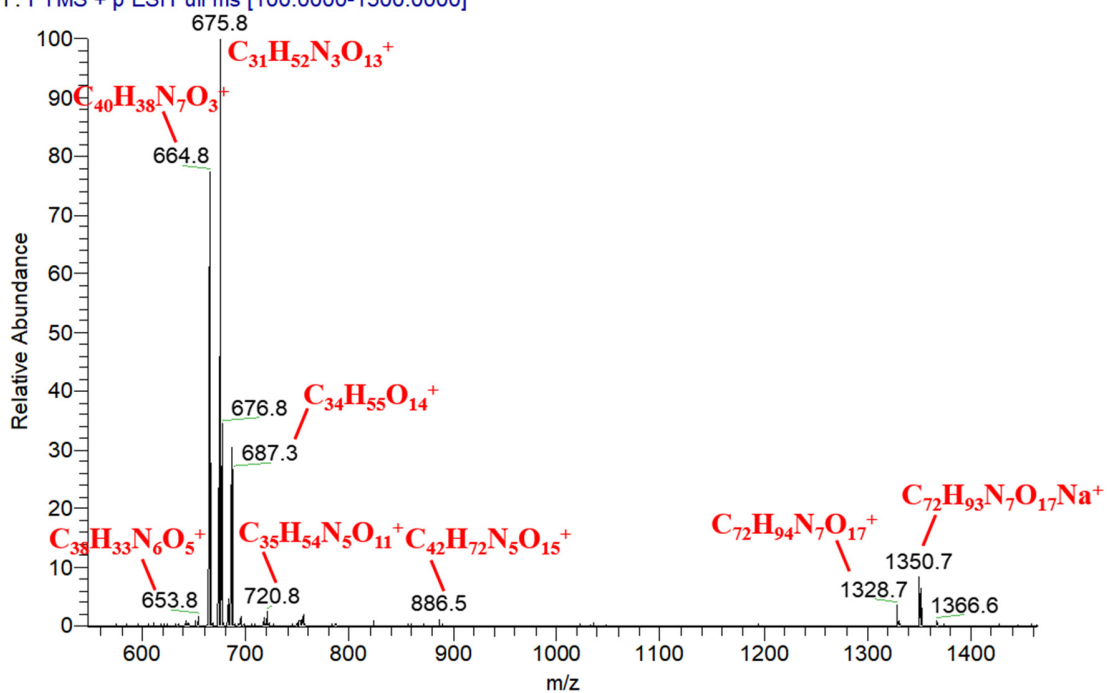


Figure S24. ESI-MS (pos. mode, DCM) of H-PO(Et)G-TPE.

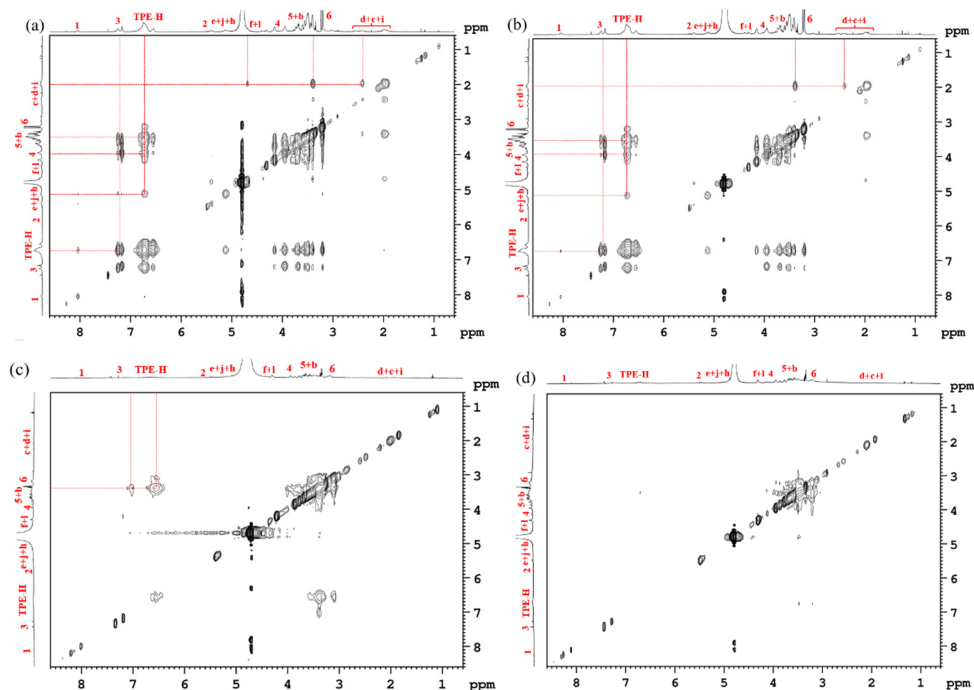


Figure S25. NOESY spectra of H-PO(Me)G-TPE in D₂O at pH 4 (a), pH 5 (b), pH 6 (c), and pH 7 (d). T = 25 °C. C = 1.0 mg·mL⁻¹.

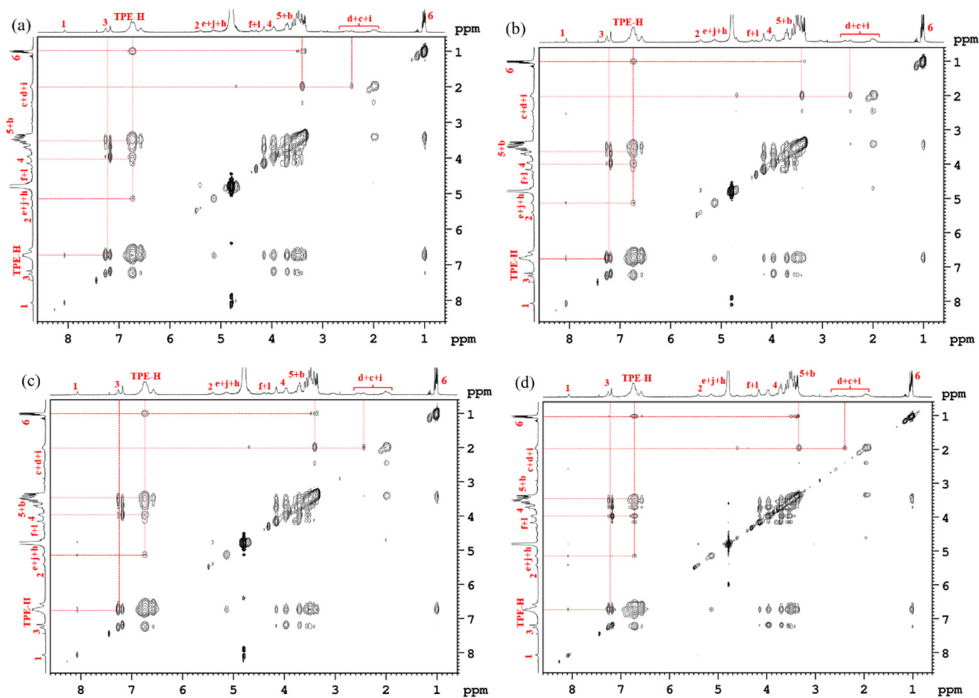


Figure S26. NOESY spectra of H-PO(Et)G-TPE in D₂O at pH 1 (a), pH 3 (b), pH 5 (c), and pH 6 (d). T = 25 °C. C = 1.0 mg·mL⁻¹.

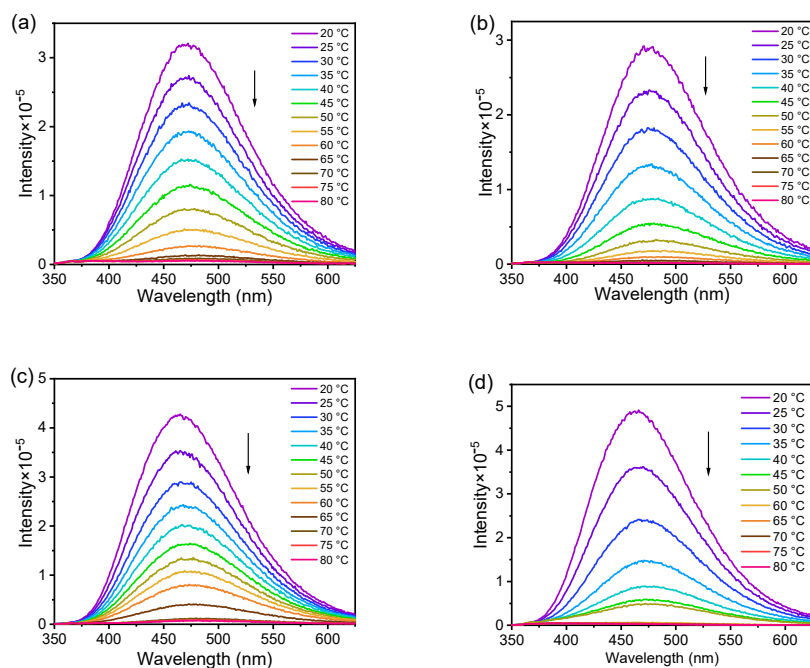


Figure S27. Temperature-varied FL spectra of **H-PO(Me)G-TPE** in aqueous solutions at pH 4 (a), pH 5 (b), pH 6 (c), and pH 7 (d). $C = 0.2 \text{ mg} \cdot \text{mL}^{-1}$, $\lambda_{\text{ex}} = 325 \text{ nm}$.

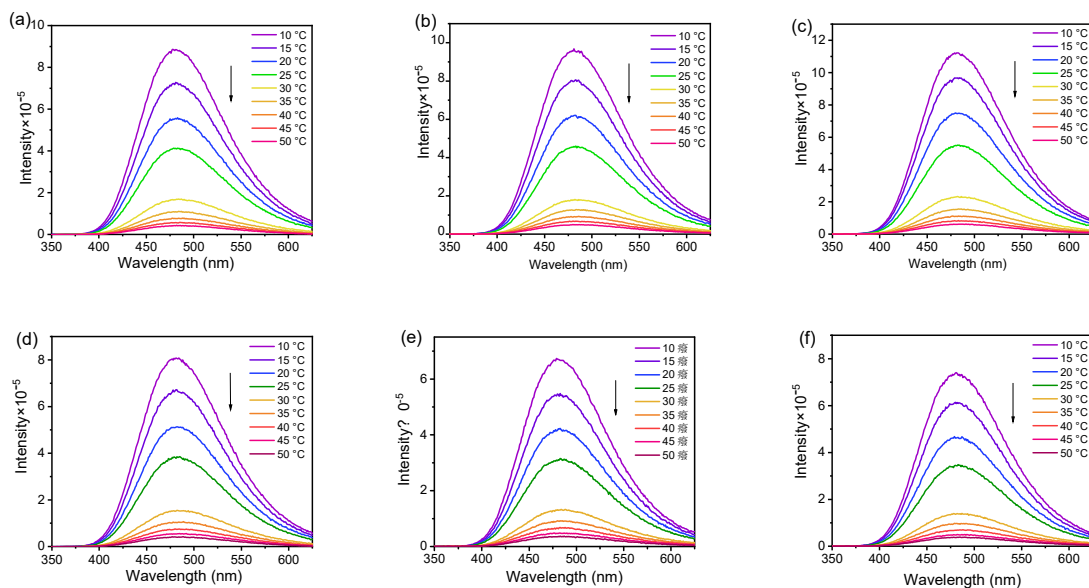


Figure S28. Temperature-varied FL spectra of **H-PO(Et)G-TPE** in aqueous solution at pH 1 (a), pH 2 (b), pH 3 (c), pH 4 (d), pH 5 (e), and pH 6 (f). $C = 0.2 \text{ mg} \cdot \text{mL}^{-1}$, $\lambda_{\text{ex}} = 325 \text{ nm}$.

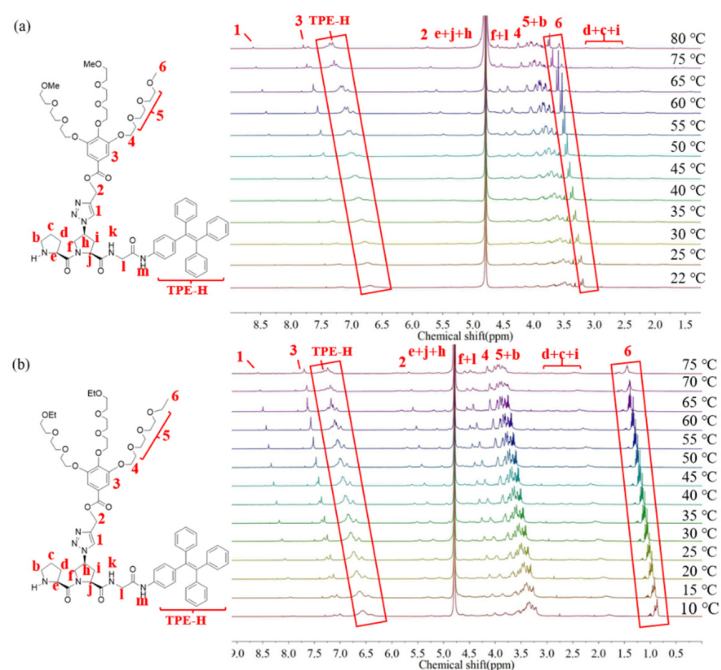


Figure S29. ^1H NMR spectra of **H-PO(Me)G-TPE** (a) and **H-PO(Et)G-TPE** (b) in D_2O at different temperature. pH = 6, C = $1.0 \text{ mg}\cdot\text{mL}^{-1}$.

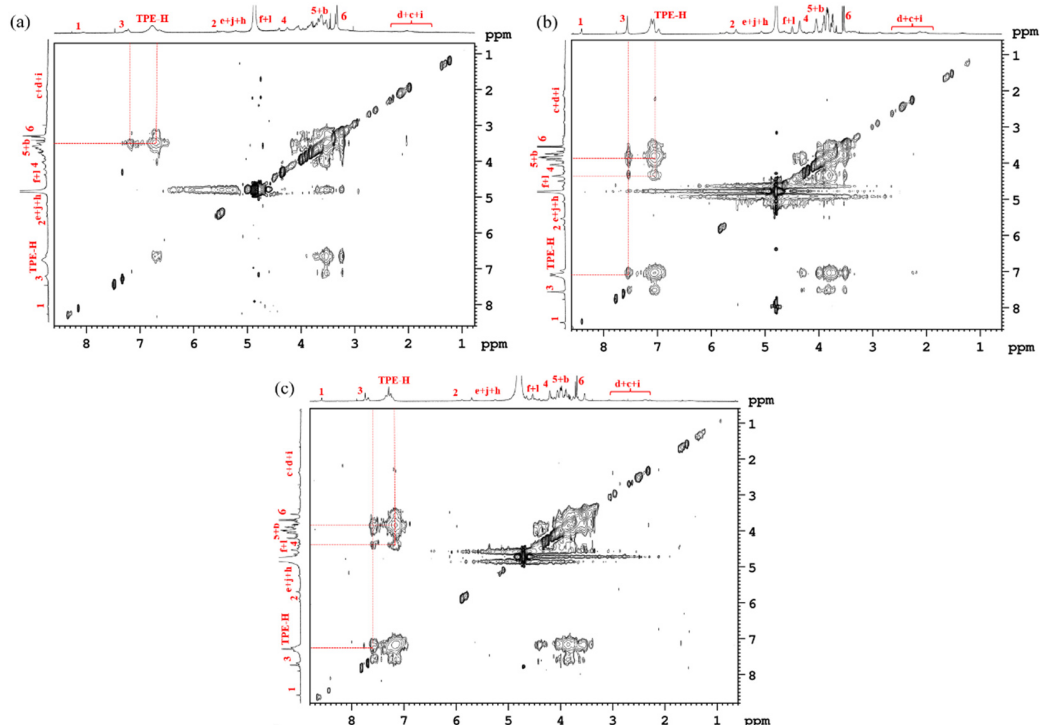


Figure S30. NOESY spectra of **H-PO(Me)G-TPE** in D_2O at $25\text{ }^\circ\text{C}$ (a), $60\text{ }^\circ\text{C}$ (b), and $75\text{ }^\circ\text{C}$ (c). pH = 6. C = $1.0 \text{ mg}\cdot\text{mL}^{-1}$.

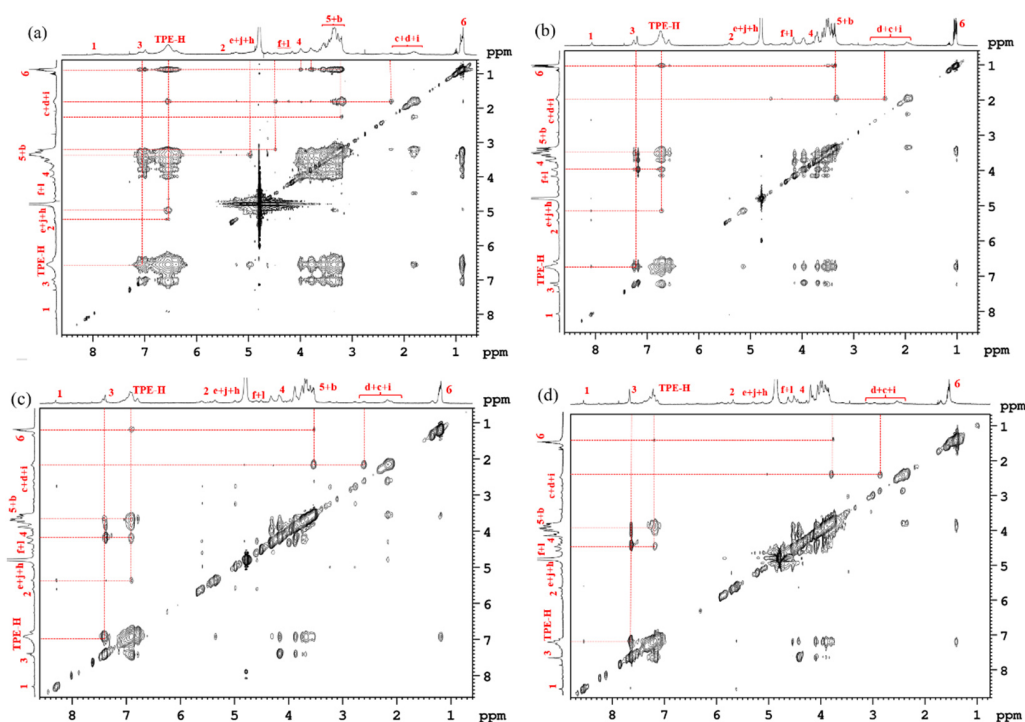


Figure S31. NOESY spectra of **H-PO(Et)G-TPE** in D_2O at 10 °C (a), 25 °C (b), 45 °C (c), and 70 °C (d). pH = 6. $C = 1.0 \text{ mg} \cdot \text{mL}^{-1}$.

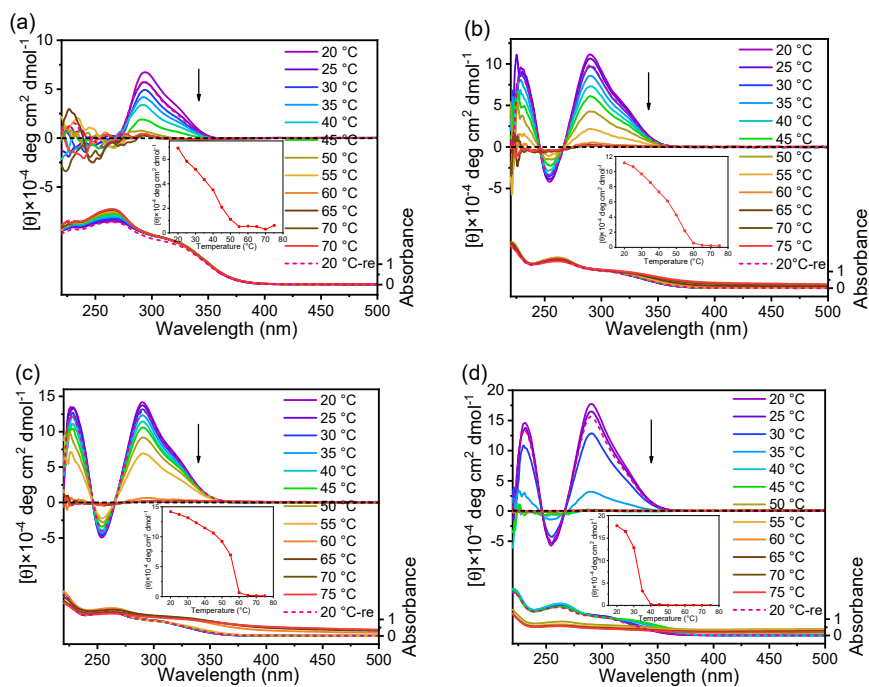


Figure S32. Temperature-varied CD and UV spectra of the assembly from **H-PO(Me)G-TPE** in aqueous solutions at pH 4 (a), pH 5 (b), pH 6 (c), and pH 7 (d). $C = 1.0 \text{ mg} \cdot \text{mL}^{-1}$. Heating rate = 2.0 °C. Insets: plots of $[\theta]_{300}$ against temperatures.

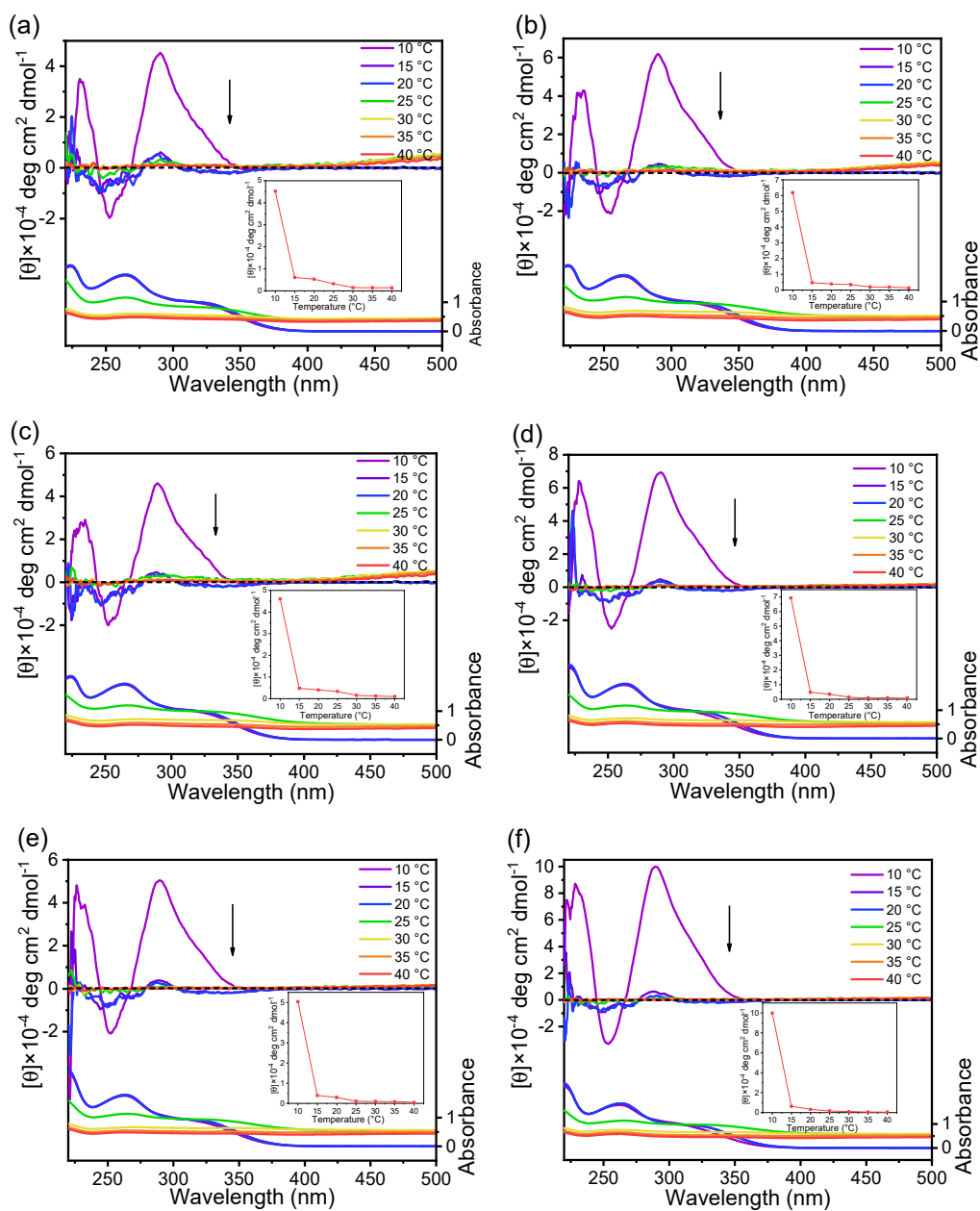


Figure S33. Temperature-varied CD and UV spectra of the assembly from **H-PO(Et)G-TPE** in aqueous solutions at pH 1 (a), pH 2 (b), pH 3 (c), pH 4 (d), pH 5 (e), and pH 6 (f). $C = 1.0 \text{ mg} \cdot \text{mL}^{-1}$. Heating rate = $2.0 \text{ }^{\circ}\text{C}$. Insets: plots of $[\theta]_{300}$ against temperatures.