# Supporting Information

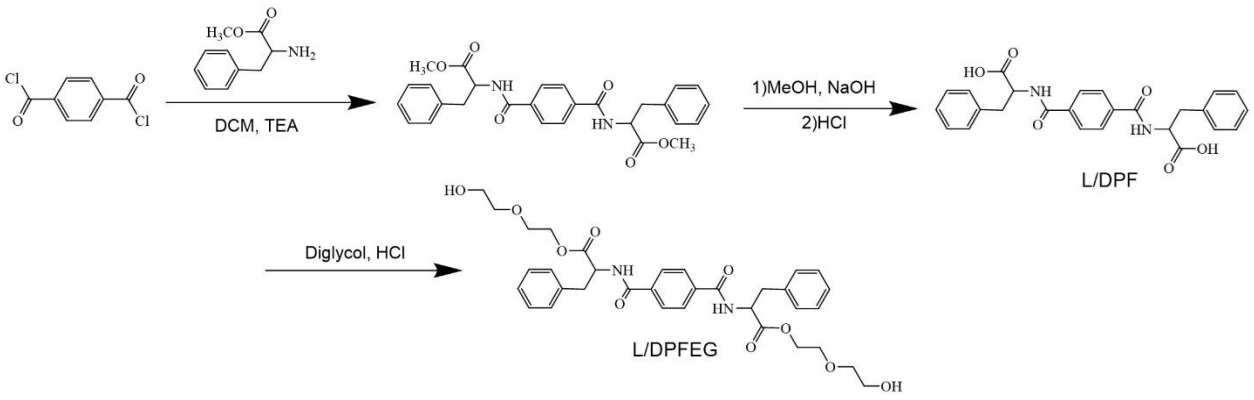
# Inversion of Supramolecular Chirality by In-situ Hydrolyzation of Achiral Diethylene Glycol Motifs

*Shuting Wang, Laiben Gao, Nan Su, Li Yang, Fengli Gao, Xiaoqiu Dou*, and Chuanliang Feng**

AUTHOR ADDRESS: State Key Lab of Metal Matrix Composites, School of Materials Science and Engineering, Shanghai Key Laboratory for Molecular Engineering of Chiral Drugs, School of Materials Science and Engineering, Shanghai Jiao Tong University, 200240, Shanghai, China

* Xiaoqiu Dou. E-mail: douxiaoqiu@sjtu.edu.cn

* Chuanliang Feng. E-mail: clfeng@sjtu.edu.cn




Scheme S1. Synthesis process of L/DPFEG and L/DPF molecules.

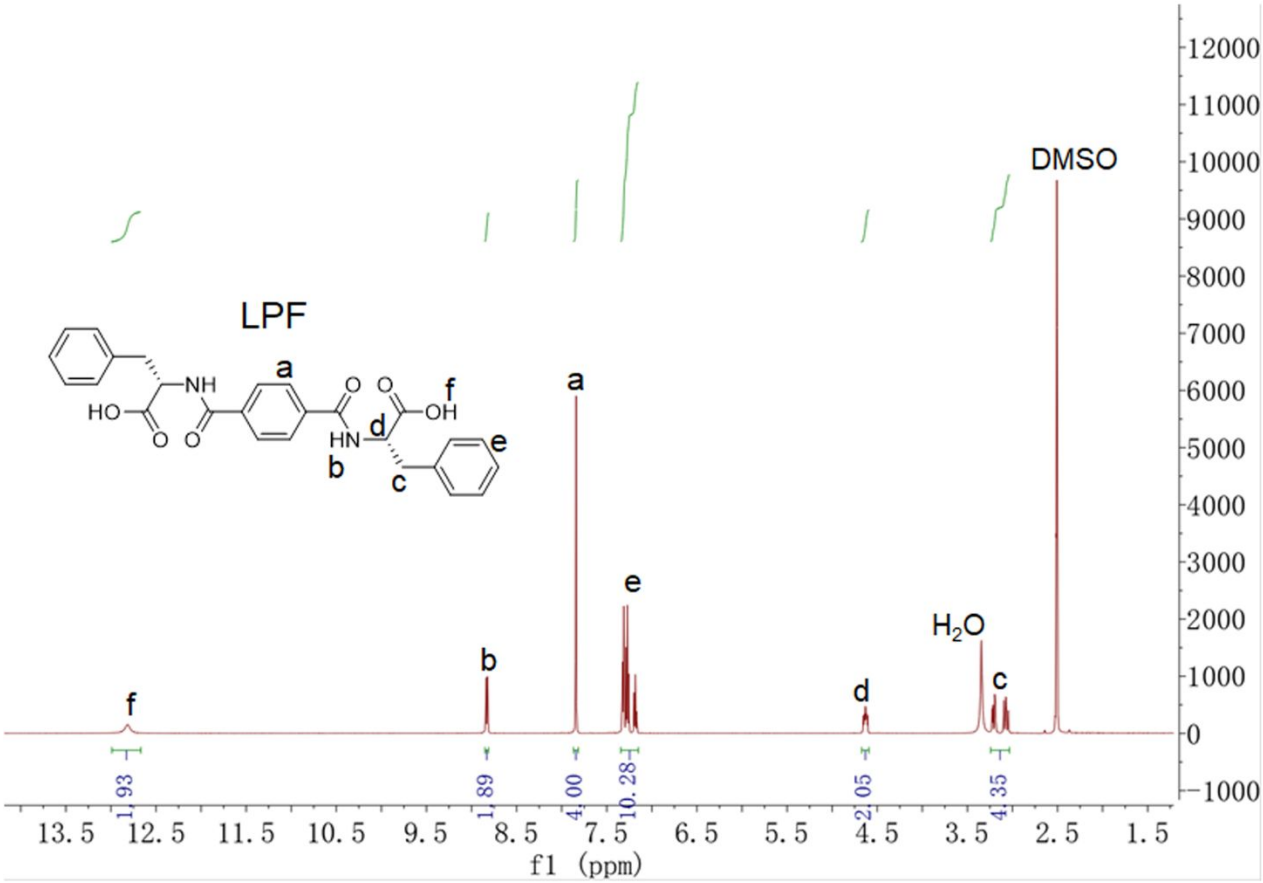



Figure S1. $^{1}$H NMR spectrum of LPF.

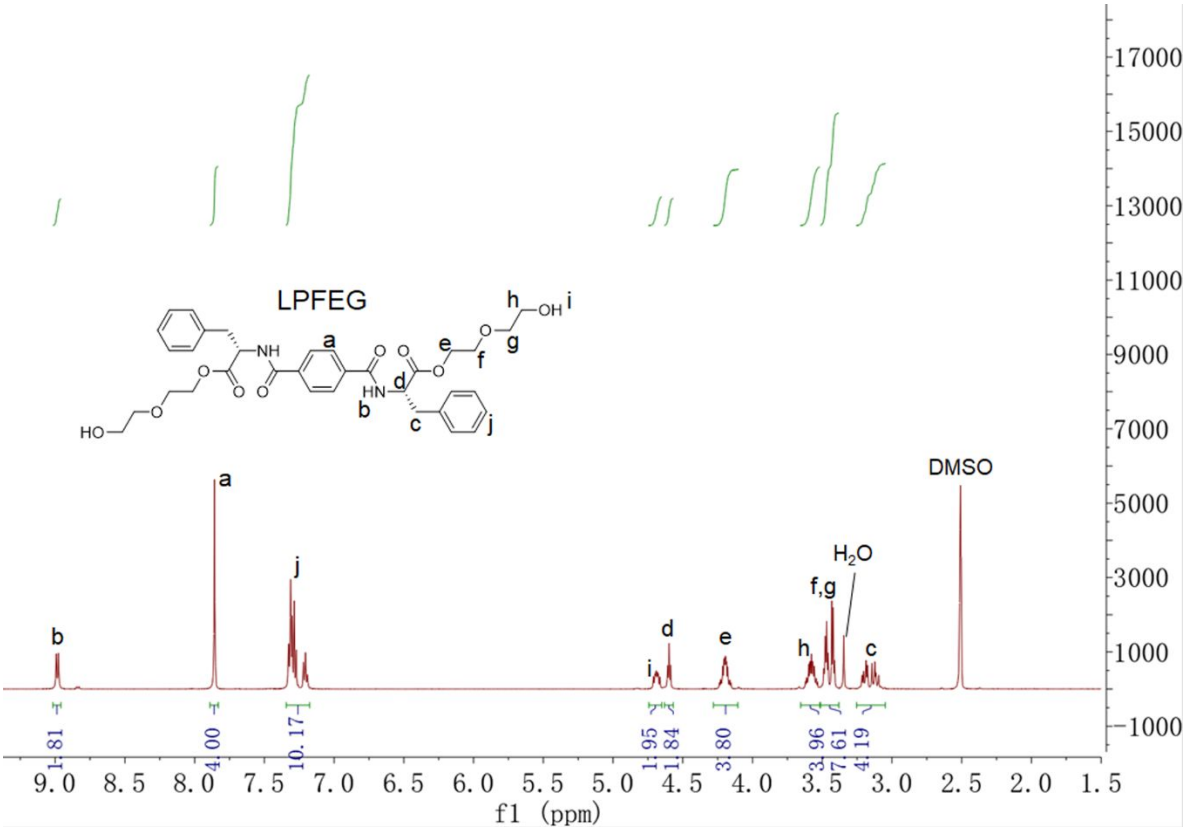



Figure S2. $^{1}$H NMR spectrum of LPFEG.

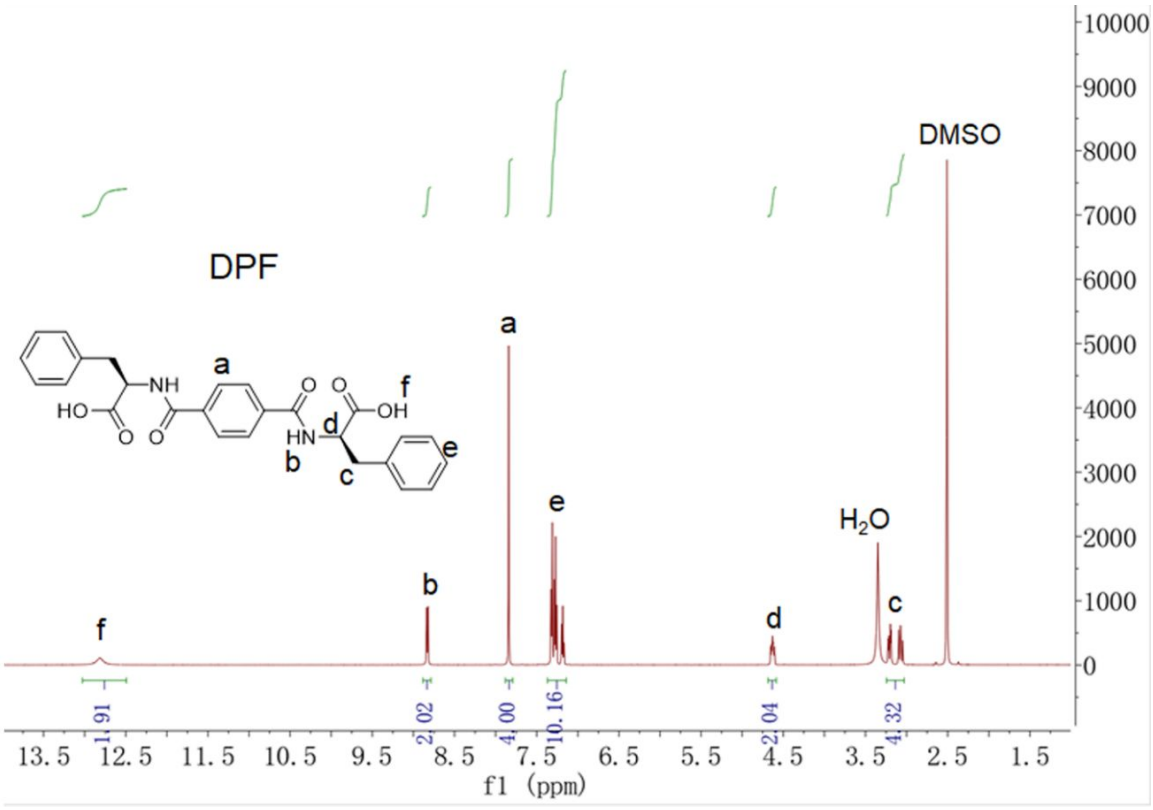



Figure S3. $^{1}$H NMR spectrum of DPF.

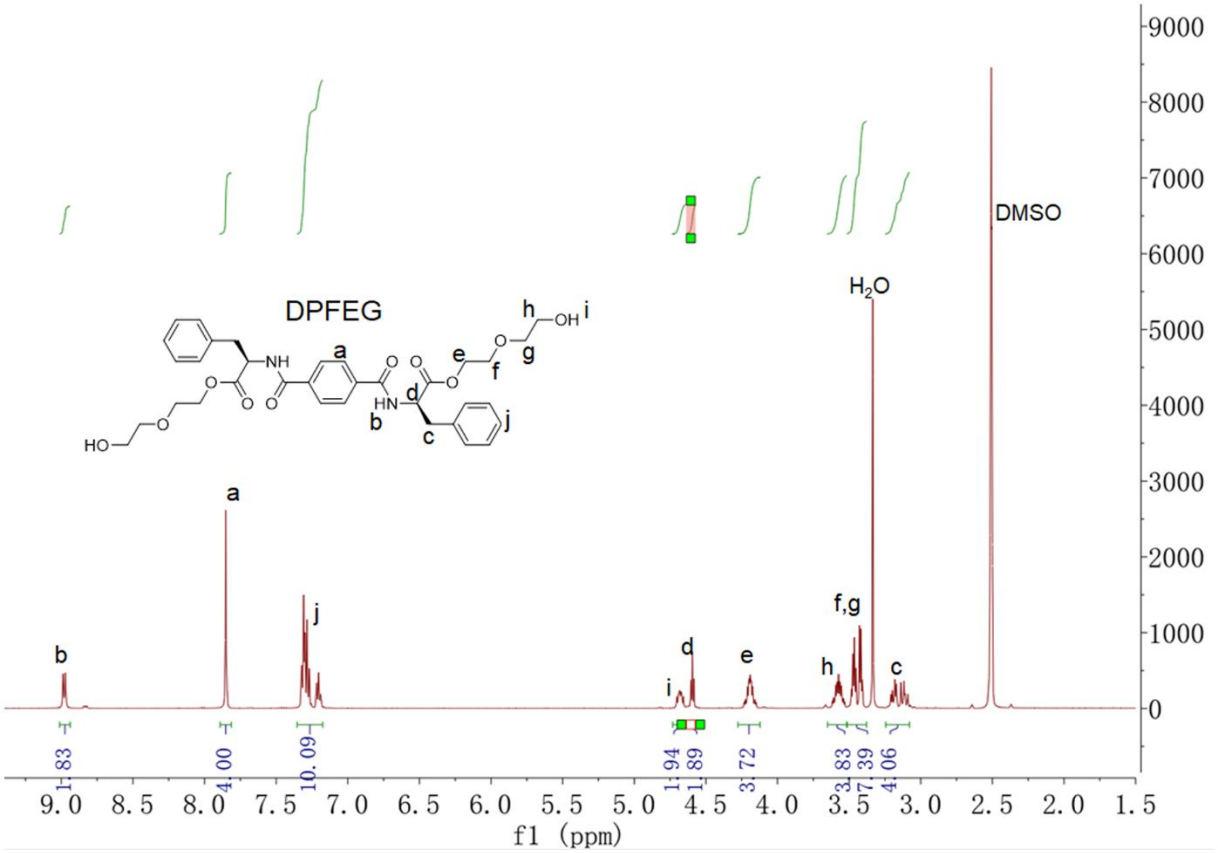



Figure S4. $^{1}$H NMR spectrum of DPFEG.

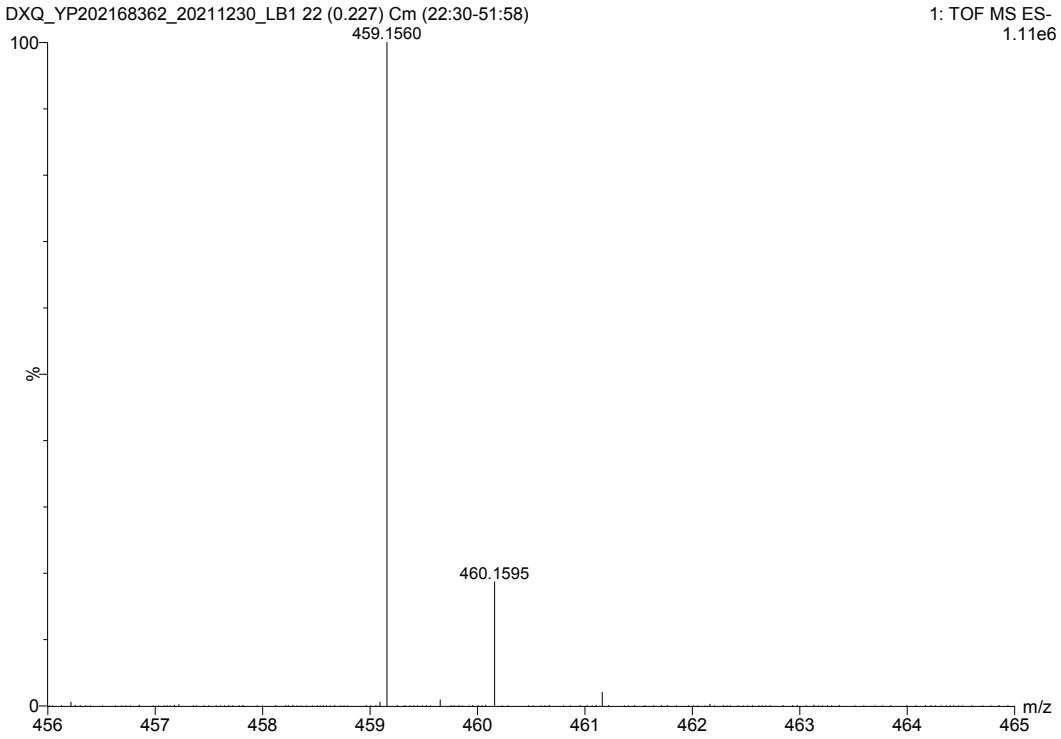



Figure S5. EI-MS spectrum of LPF.

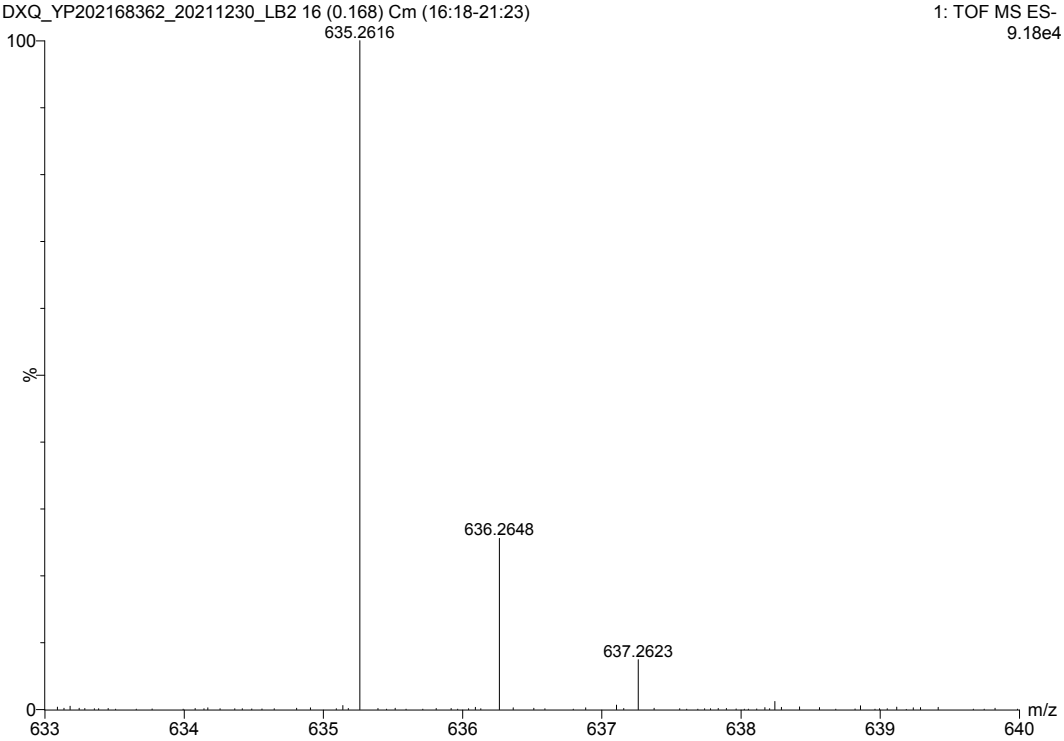


Figure S6. EI-MS spectrum of LPFEG.

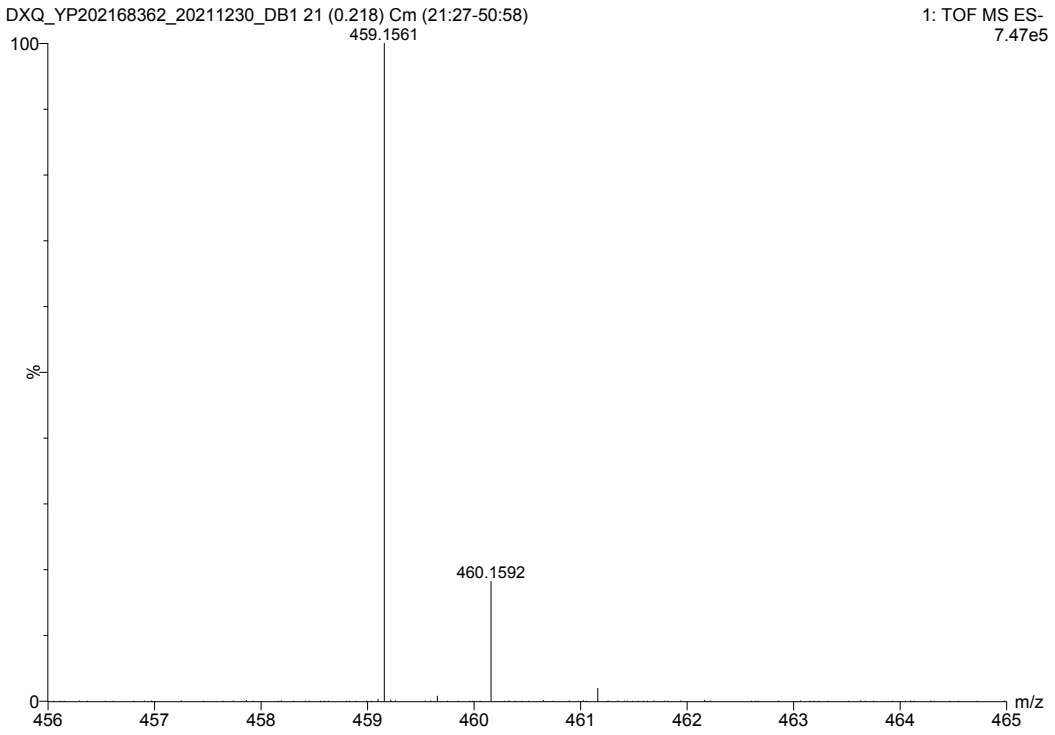



Figure S7. EI-MS spectrum of DPF.

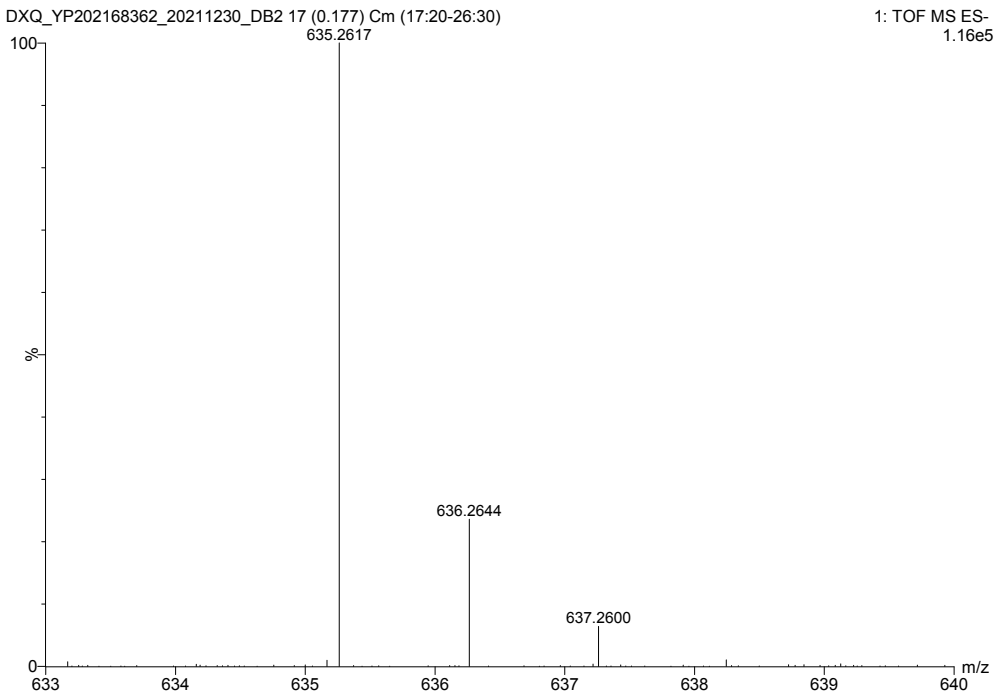



Figure S8. EI-MS spectrum of DPFEG.

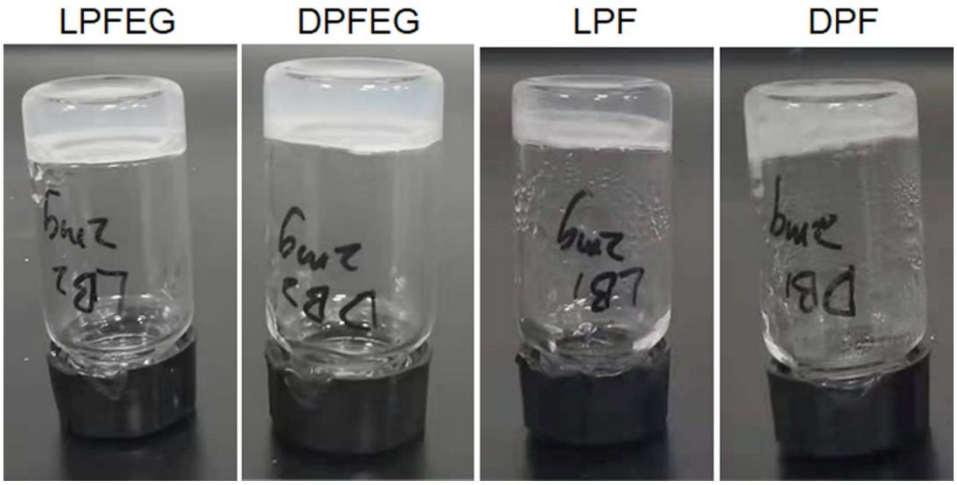



Figure S9. Photographic images of free standing LPFEG, DPFEG, LPF, and DPF hydrogels. Concentrations of all samples were 2.0 mg/mL.

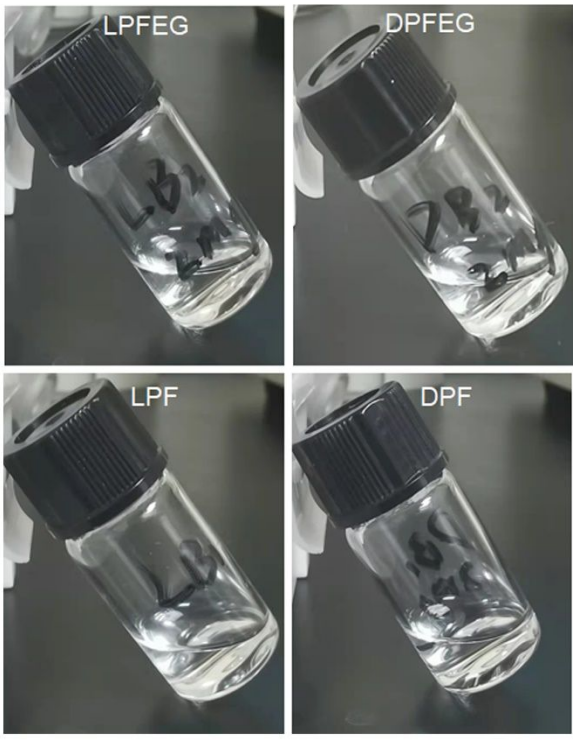



Figure S10. Photographic images of LPFEG, DPFEG, LPF, and DPF molecules dissolved in MeOH. Concentrations of all samples were 2.0 mg/mL.

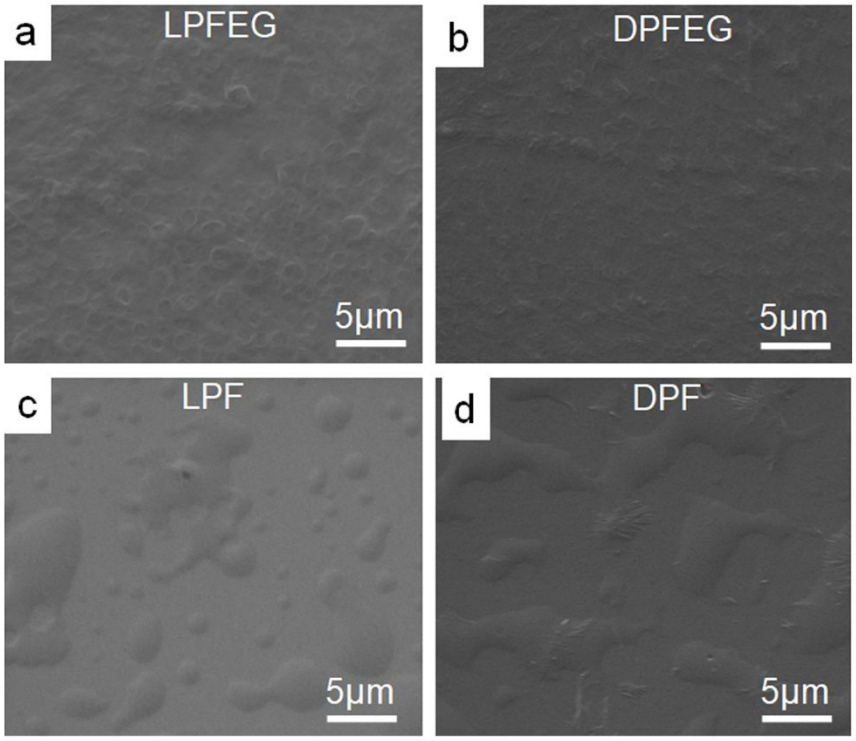



Figure S11. The SEM images of unordered aggregates formed by drying MeOH solution of (a) LPFEG, (b) DPFEG, (c) LPF, and (d) DPF.

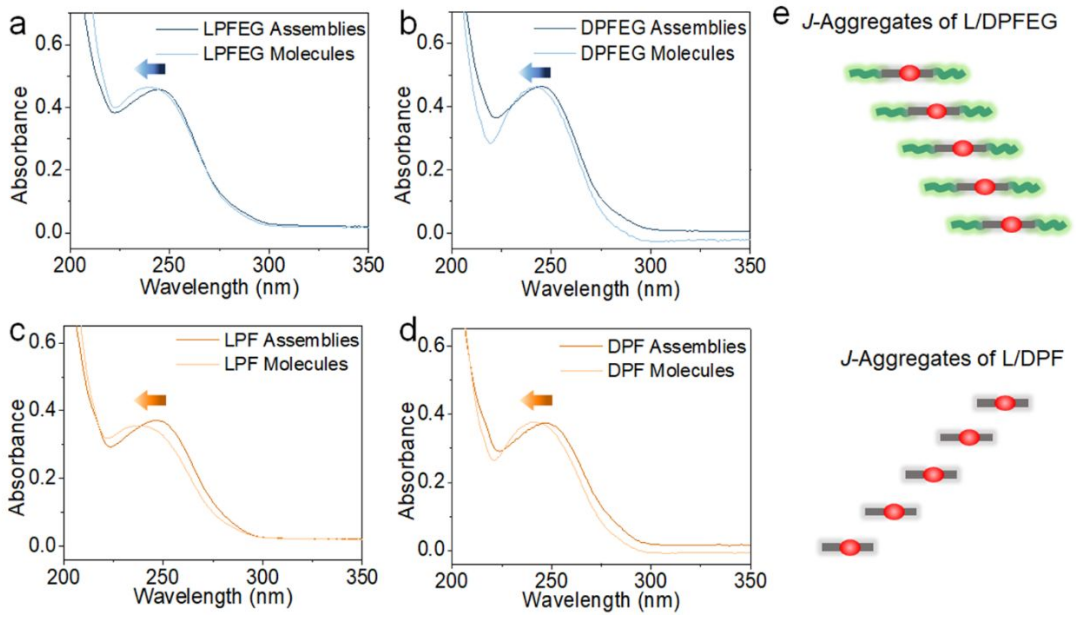



Figure S12. UV spectra of (a) LPFEG assemblies in $H_2O$ and LPFEG molecules in MeOH, (b) DPFEG assemblies in $H_2O$ and DPFEG molecules in MeOH, (c) LPF assemblies in $H_2O$ and LPF molecules in MeOH, (d) DPF assemblies in $H_2O$ and DPF molecules in MeOH. The UV spectra were obtained by using a 1 mm path length of a quartz cuvette. The concentrations of L/DPFEG samples were 3.1 mmol/L, and the concentrations of L/DPF samples were 4.3 mmol/L.

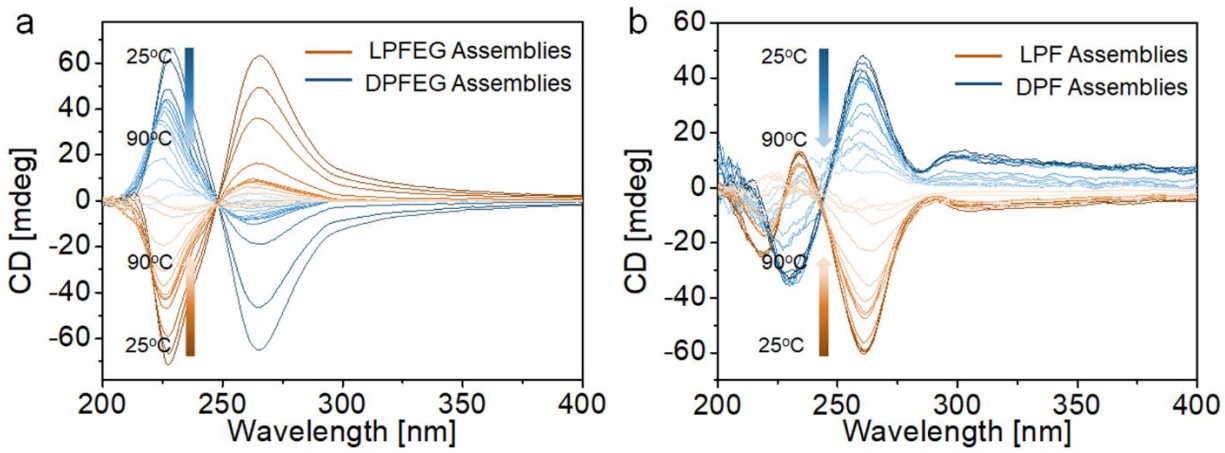



Figure S13. Temperature-dependent CD spectra of (a) L/DPFEG and (b) L/DPF samples obtained by using a 1 mm path length of a quartz cuvette. The concentrations of L/DPFEG samples were 3.1 mmol/L, and the concentrations of L/DPF samples were 4.3 mmol/L.

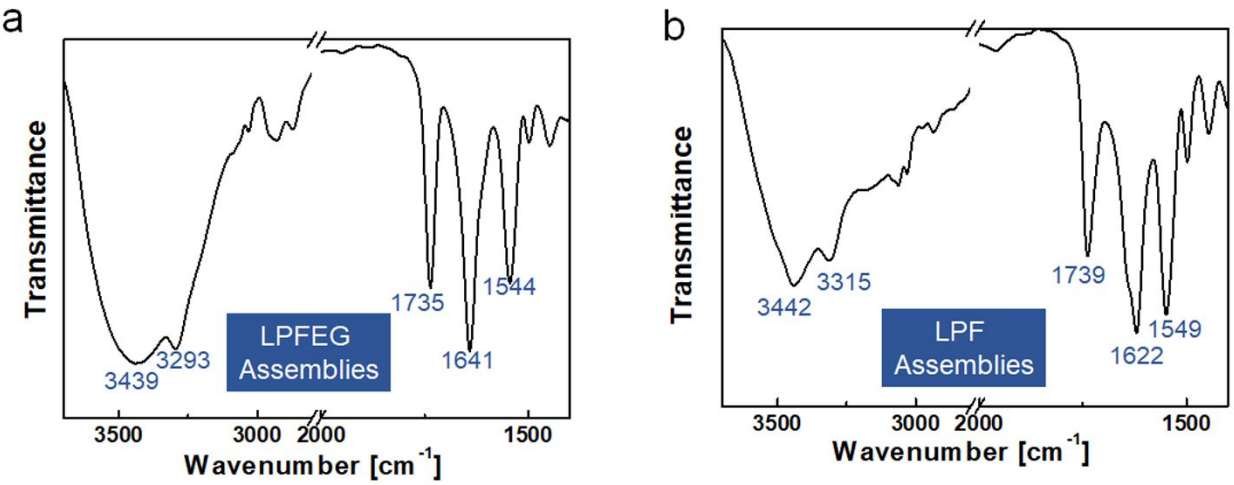



Figure S14. FI-IR spectra of (a) LPFEG assemblies and (b) LPF assemblies.

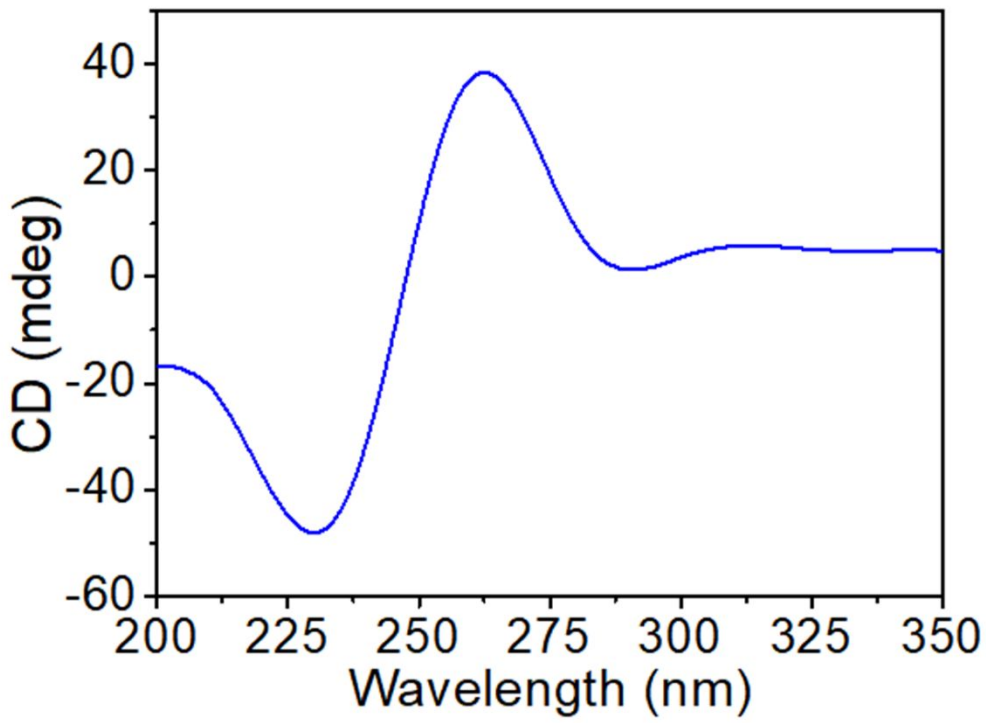



Figure S15. CD spectrum of hydrogel formed after hydrolyzing LPFEG.

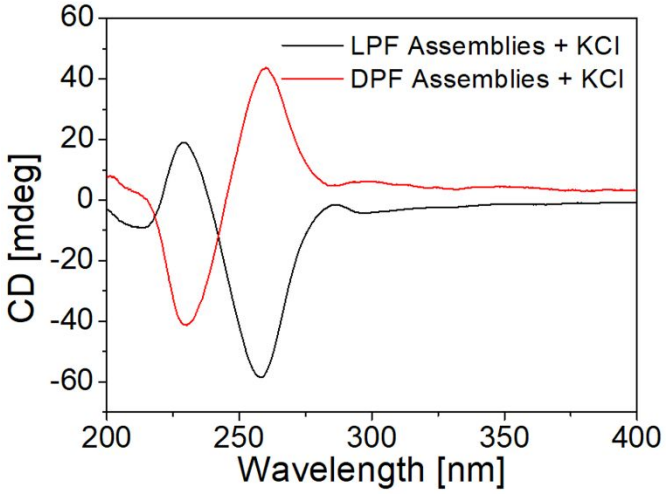



Figure S16. CD spectra of L/DPF assemblies formed in KCl solution (KCl concentration: 1 mol/L).

The samples were obtained by using a 1 mm path length of a quartz cuvette. The concentrations

of L/DPFEG samples in KCl solution were 3.1 mmol/L, and the concentrations of L/DPF samples in KCl solution were 4.3 mmol/L.