

Supporting Information

Allyl Sulfides in Garlic Oil Initiate the Formation of Renewable Adhesives

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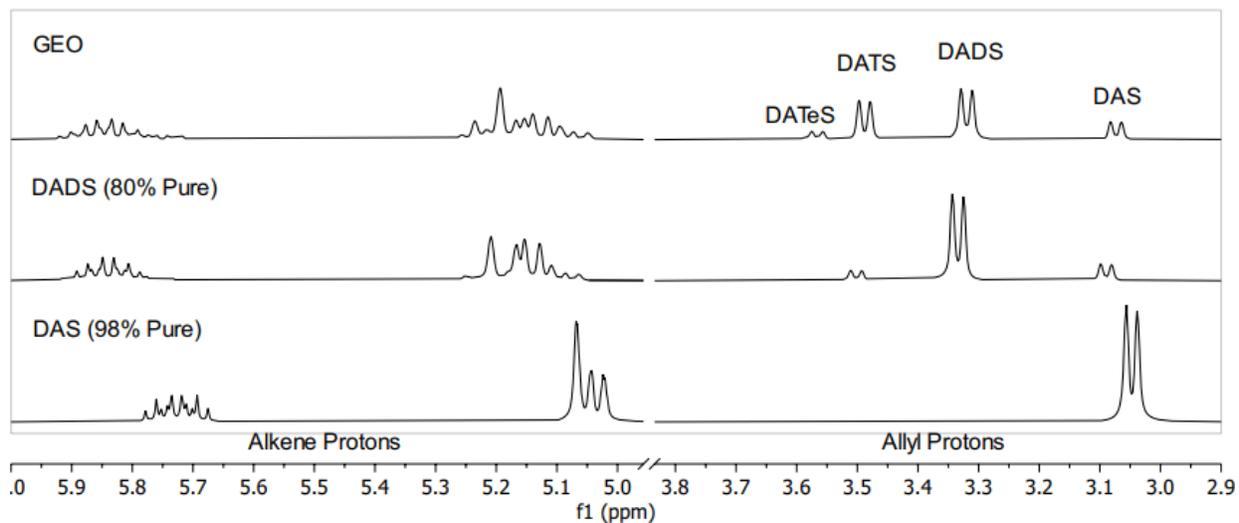


Fig. S1: ¹H NMR of 98% diallyl sulfide (DAS), 80% diallyl disulfide (DADS) -remainder mainly DAS and diallyl trisulfide (DATS), and garlic essential oil, only regions of interest shown.

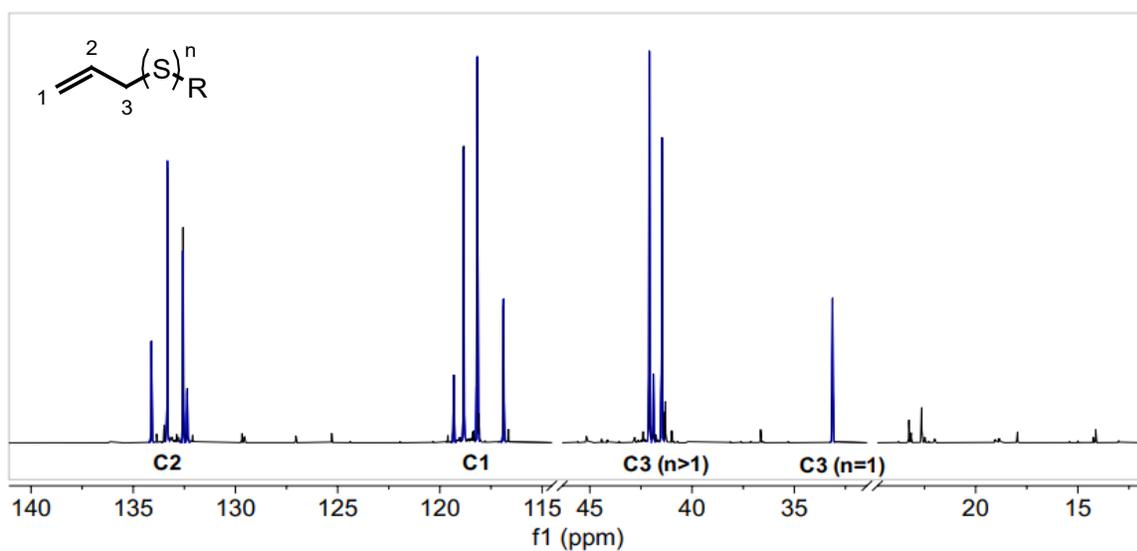


Fig. S2: ¹³C NMR spectrum of garlic essential oil, regions without peaks are not shown for clarity.

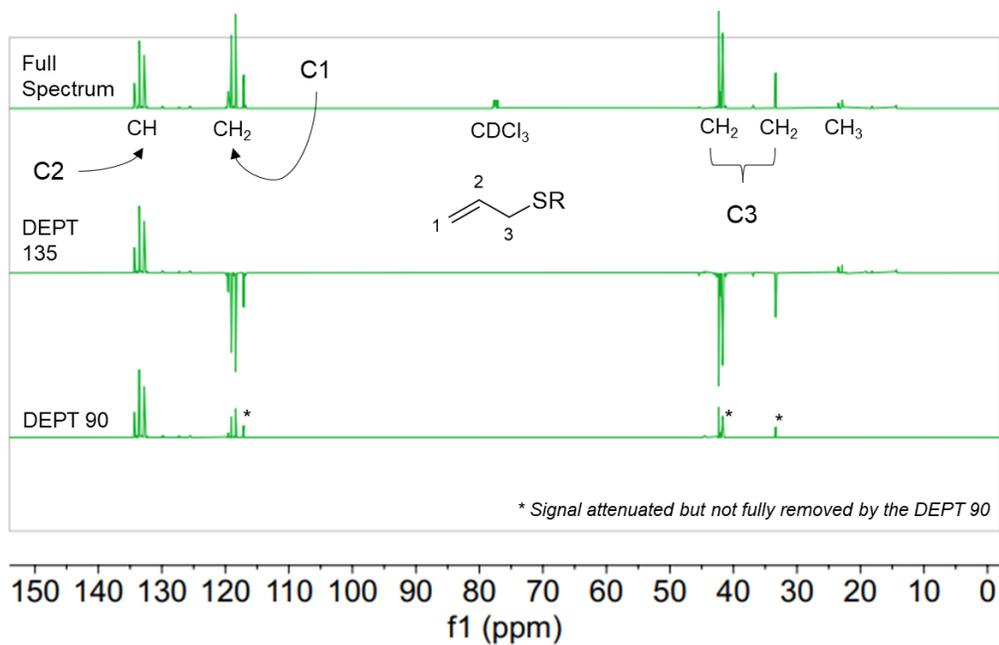


Fig. S3: ¹³C DEPT NMR of garlic essential oil purchased from Green Health; DEPT 135 CH and CH₃ up, DEPT 90 CH only.

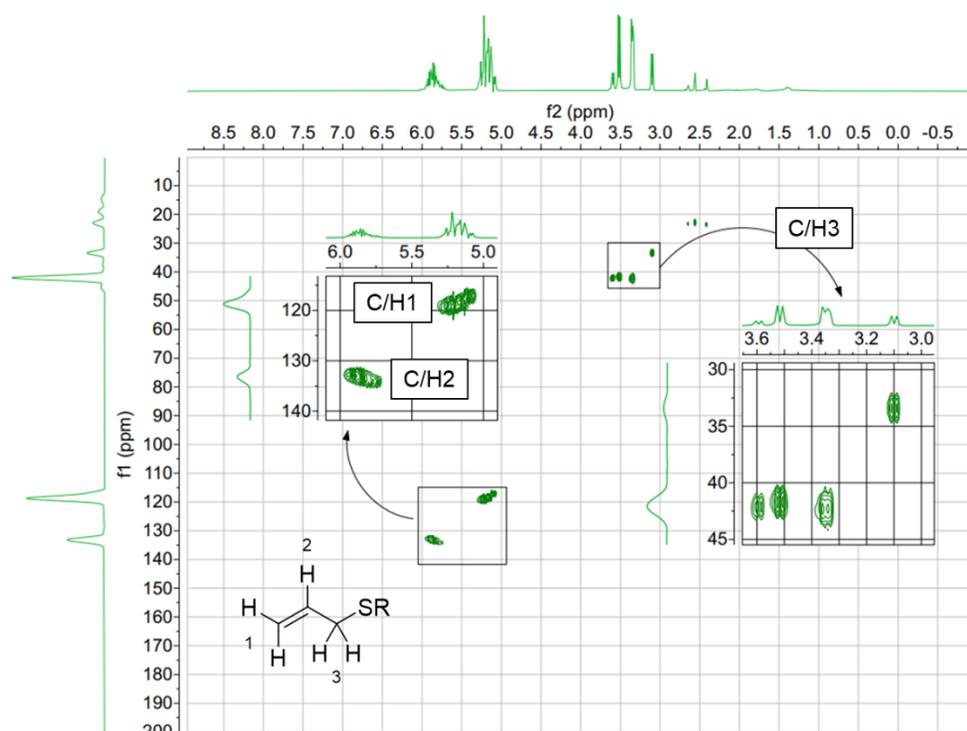


Fig. S4: ¹H-¹³C HSQC of Green Health garlic essential oil.

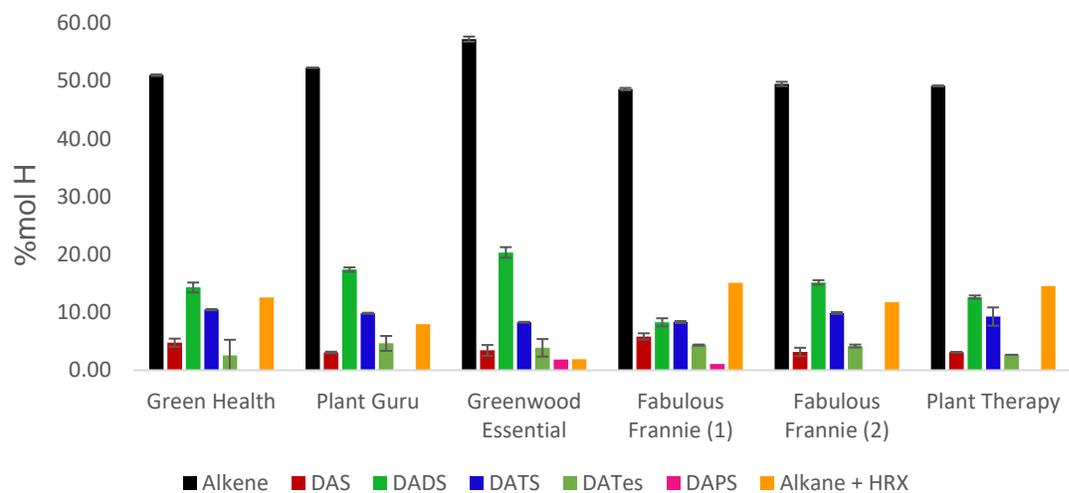


Fig. S5: Average distribution of all hydrogens present within garlic essential oil by species. Error bars represent standard deviation.

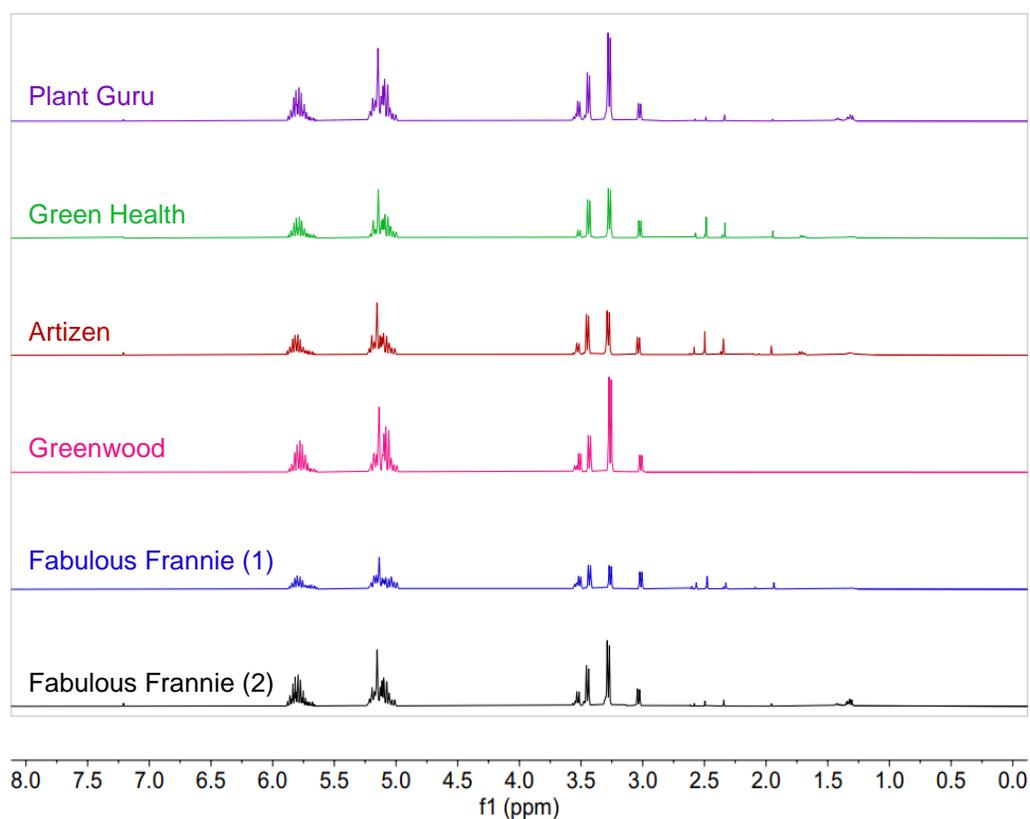


Fig. S6: ^1H NMR of various garlic essential oil from a variety of commercial suppliers. Differences between batches from Fabulous Frannie were observed and therefore spectra from both batches have been provided.

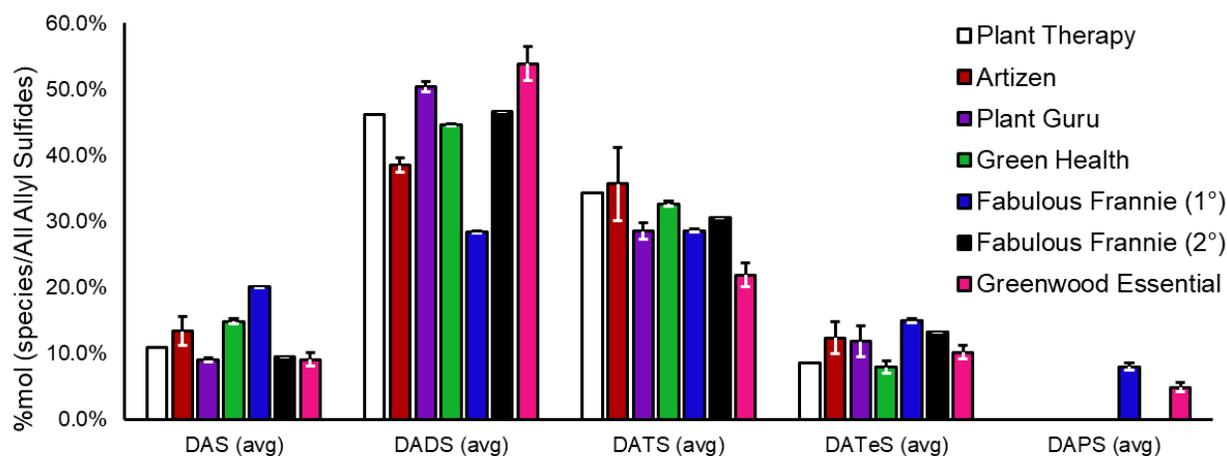


Fig. S7: Average distribution of allyl sulfides present within garlic essential oil by species. Error bars represent standard deviation. Only one sample of Plant Therapy was tested due to supply issues.

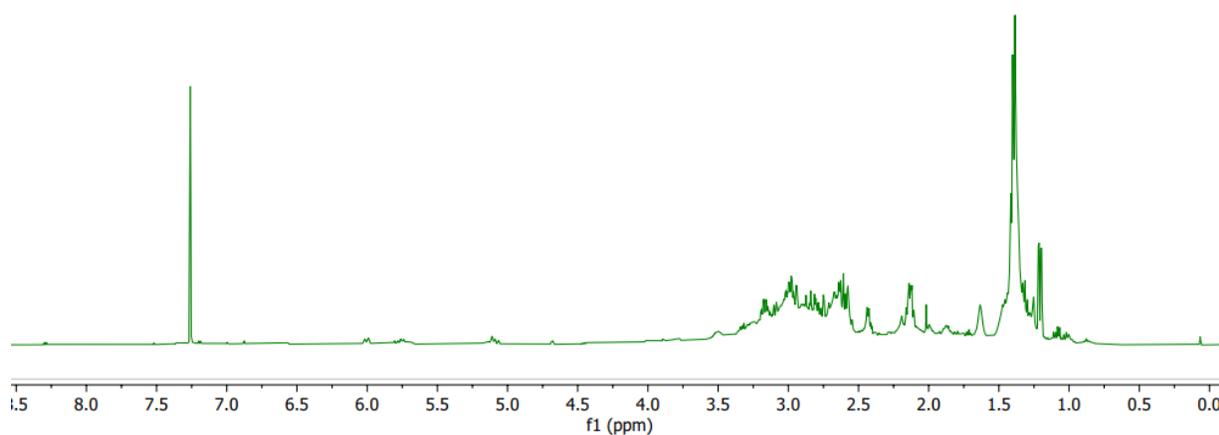


Fig. S8: ^1H NMR of poly(GEO) synthesized with garlic essential oil purchased from Green Health.

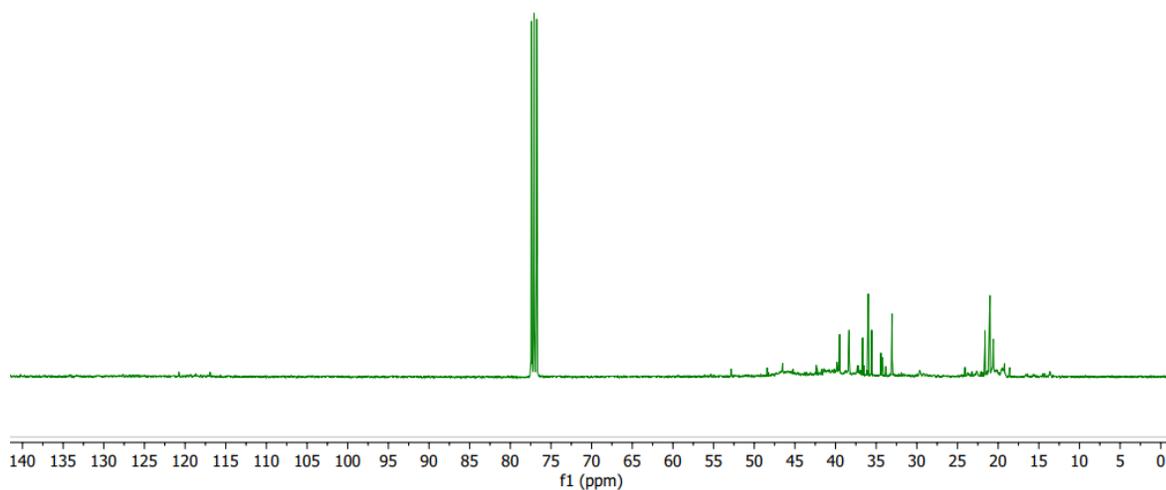


Fig. S9: ^{13}C NMR of poly(GEO) synthesized with garlic essential oil purchased from Green Health.

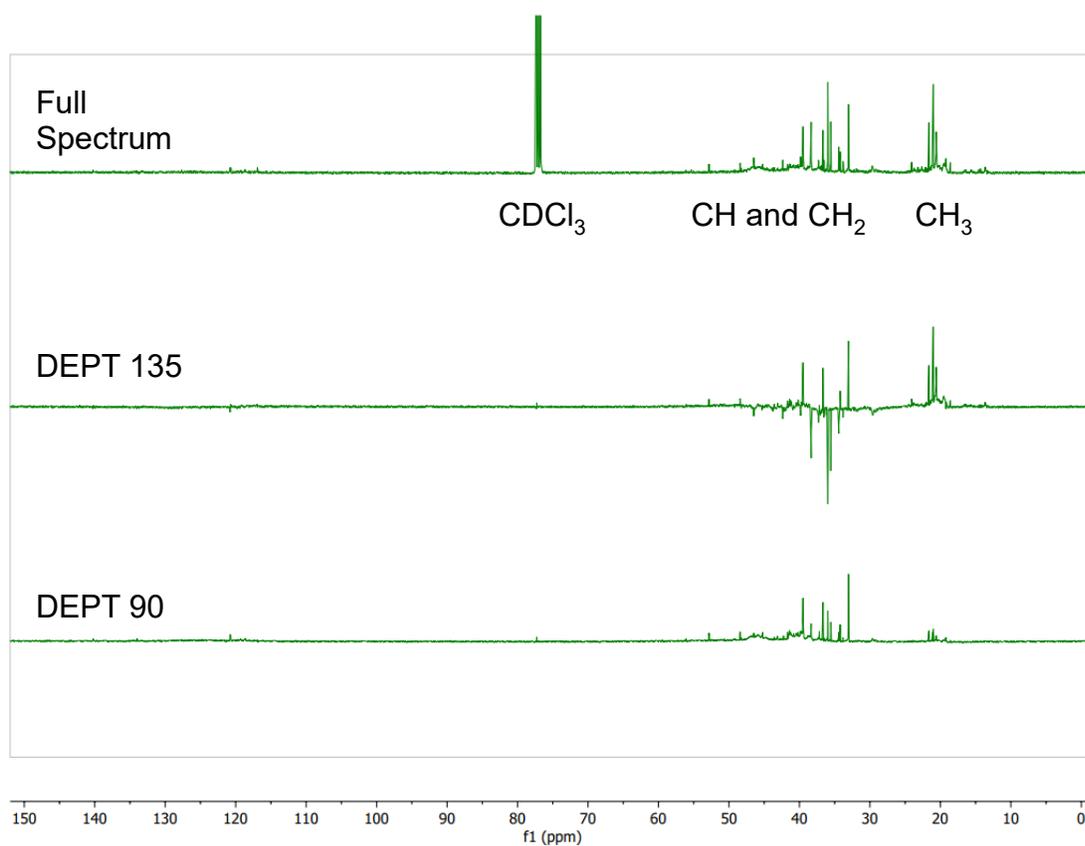


Fig. S10: ^{13}C DEPT NMR of poly(GEO) synthesized with garlic essential oil purchased from Green Health. DEPT 135 CH and CH₃ up, DEPT 90 CH only.

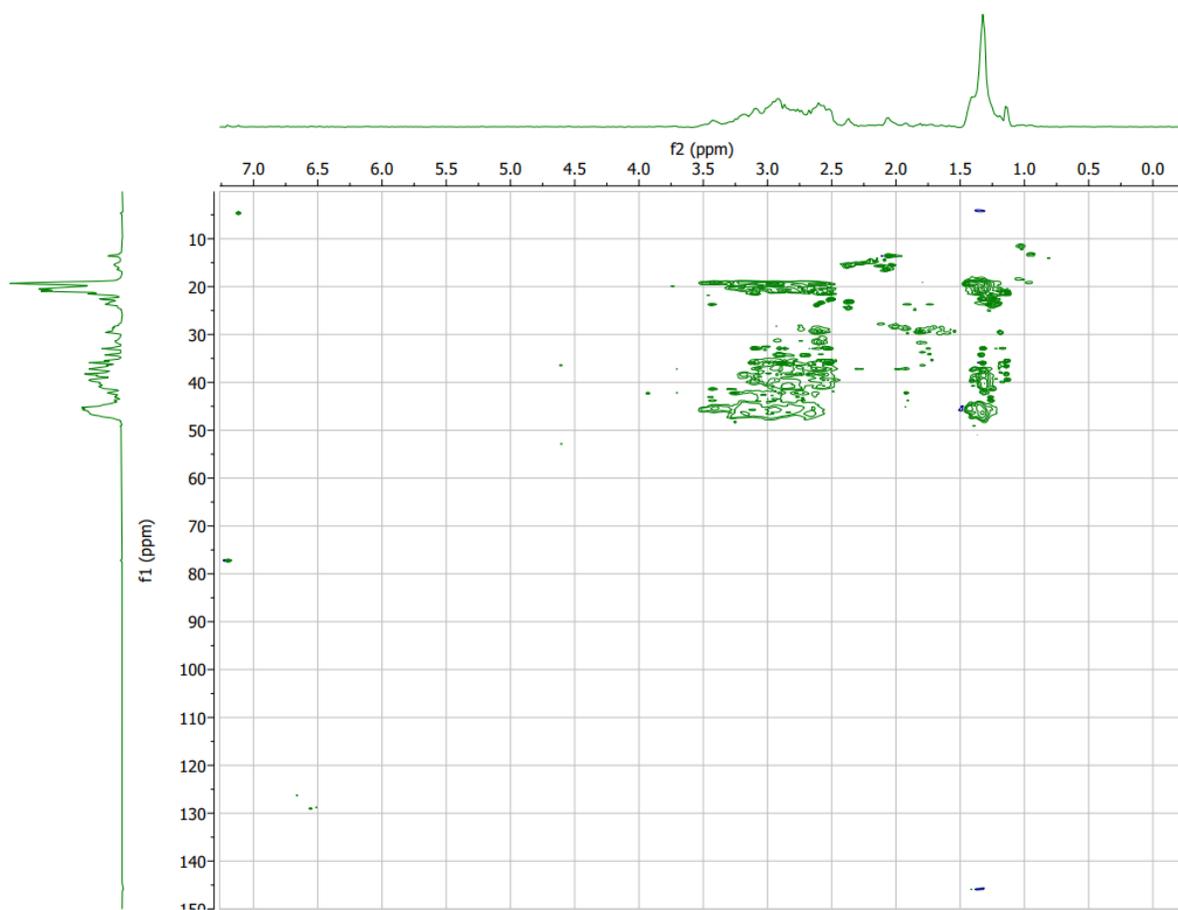


Fig. S11: ^1H - ^{13}C HSQC of poly(GEO) synthesized with Fabulous Frannie (1).

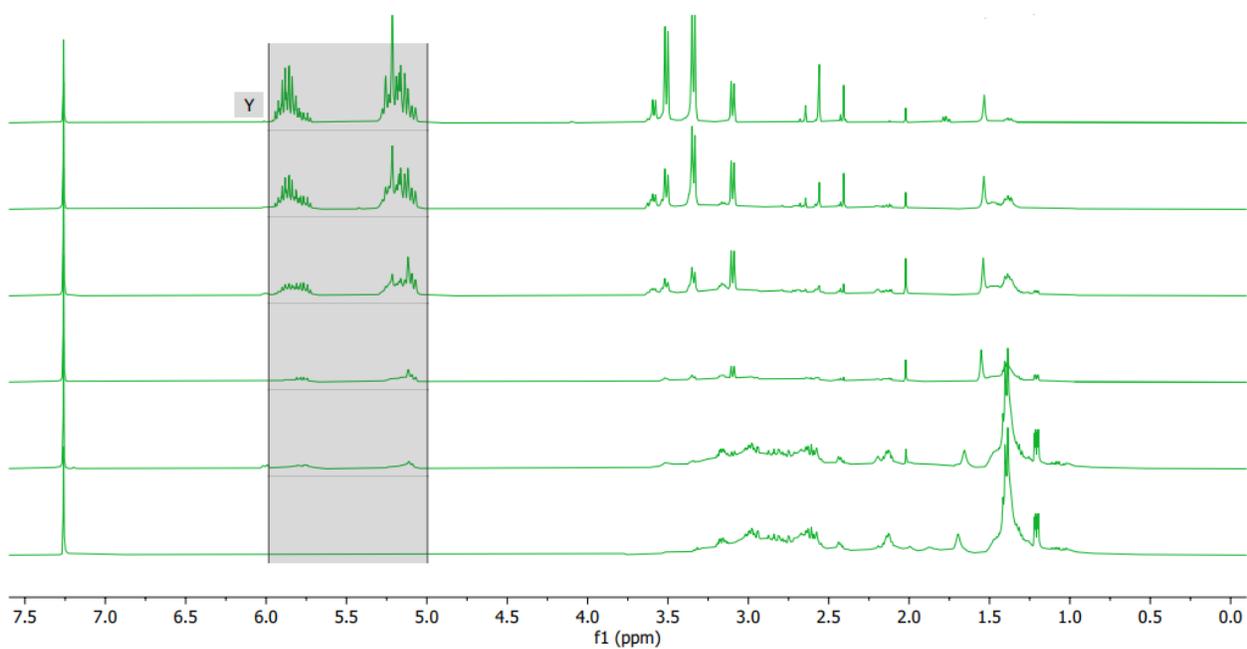


Fig. S12: Reaction progression of poly(GEO) at 160 °C monitored by ^1H NMR.

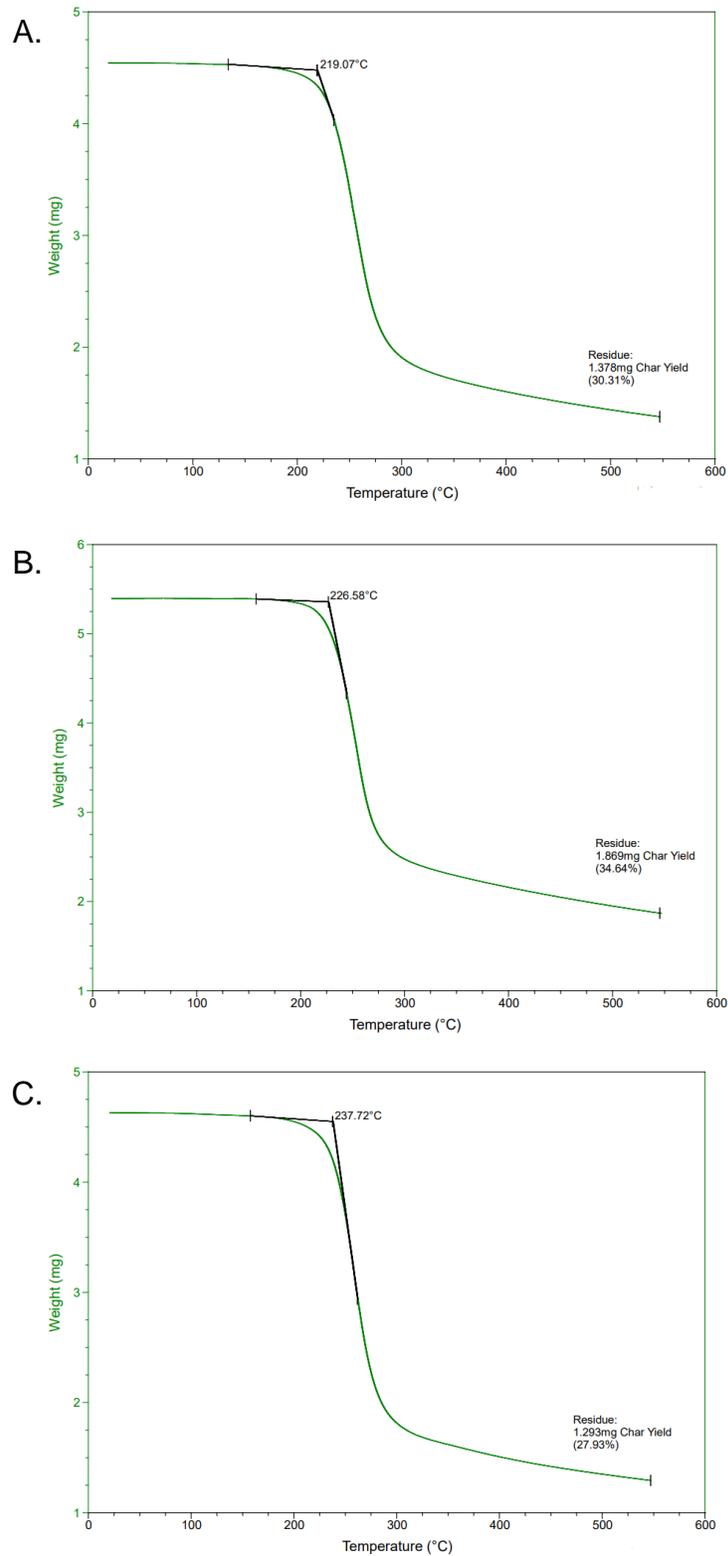


Fig. S13: Thermogravimetric analysis of poly(GEO) synthesized with garlic oil purchased from A. Green Health, B. Fabulous Frannie (1), and C. Greenwood Essential.

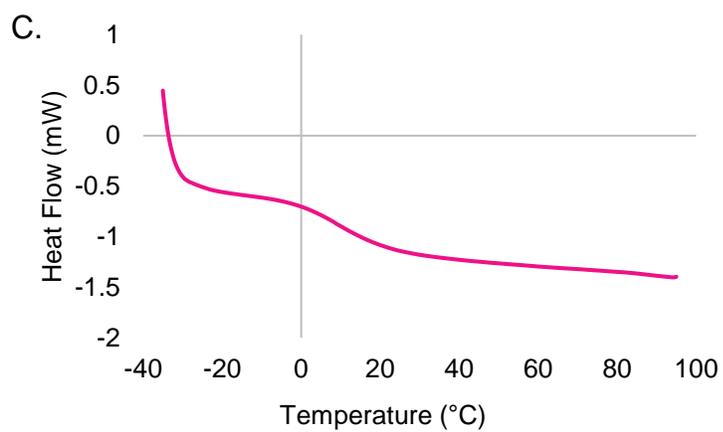
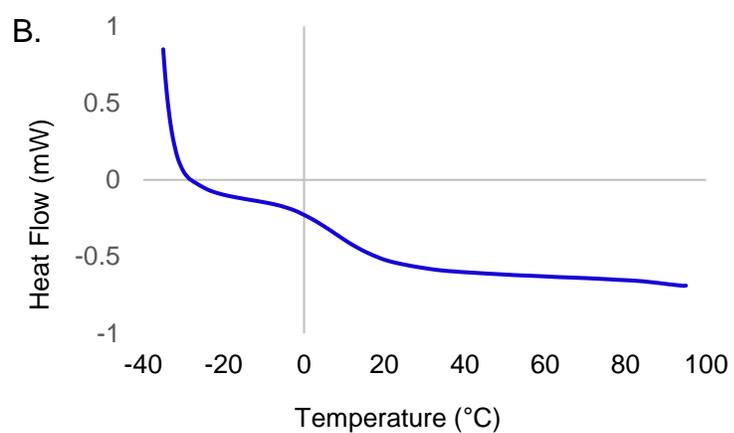
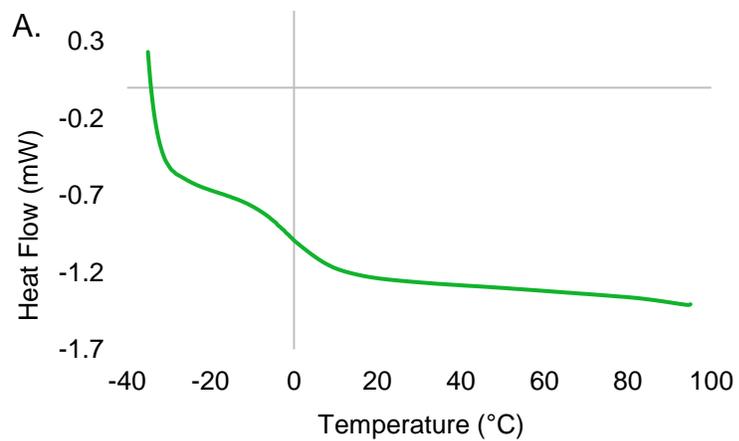


Fig. S14: Differential scanning calorimetry of poly(GEO) synthesized with garlic oil purchased from A. Green Health, B. Fabulous Frannie (1), and C. Greenwood Essential.

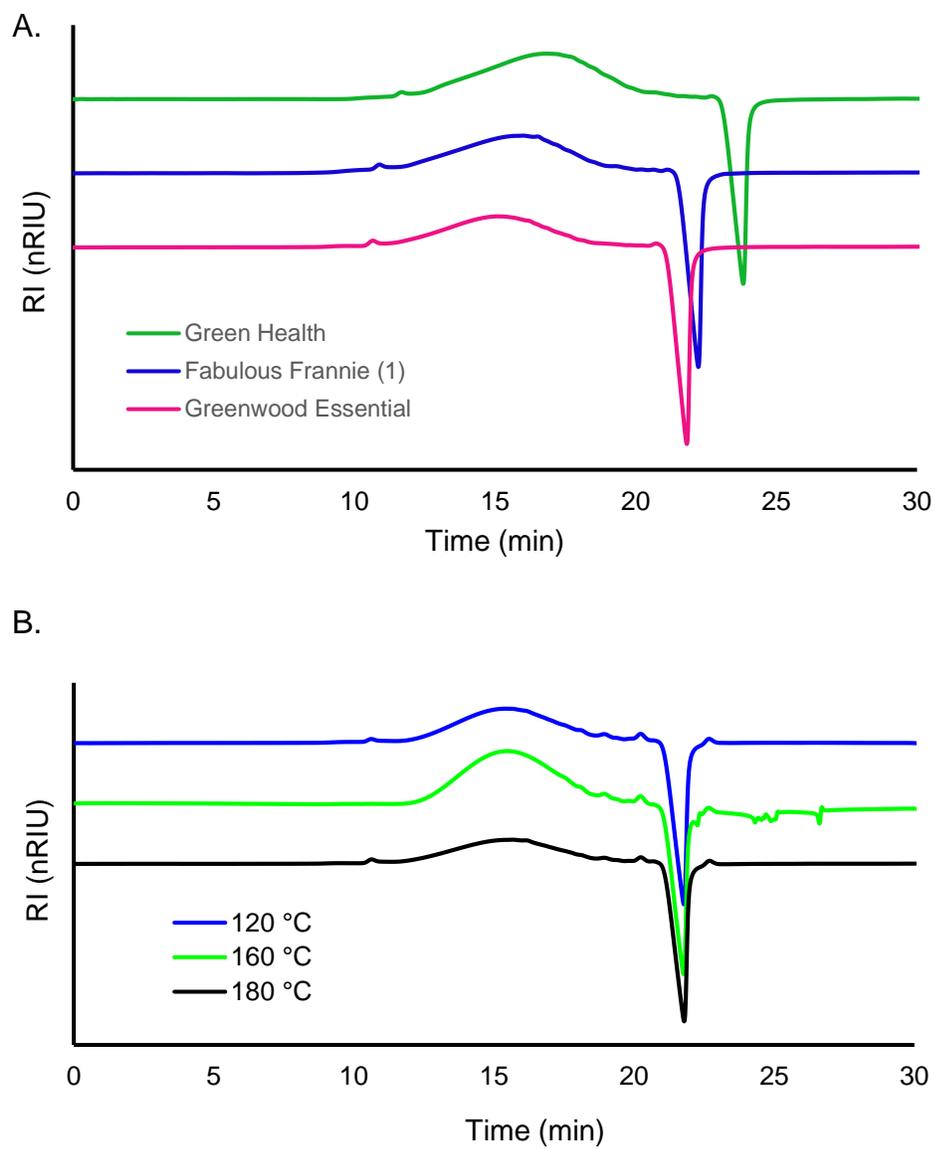


Fig. S15: Gel permeation chromatography of poly(GEO) synthesized with garlic oil purchased from A. Green Health (green), Fabulous Frannie (1) (blue), and Greenwood Essential (pink) and B. Green Health with 25% extent of polymerization synthesized at 120 (blue), 160 (green), and 180 °C (black).

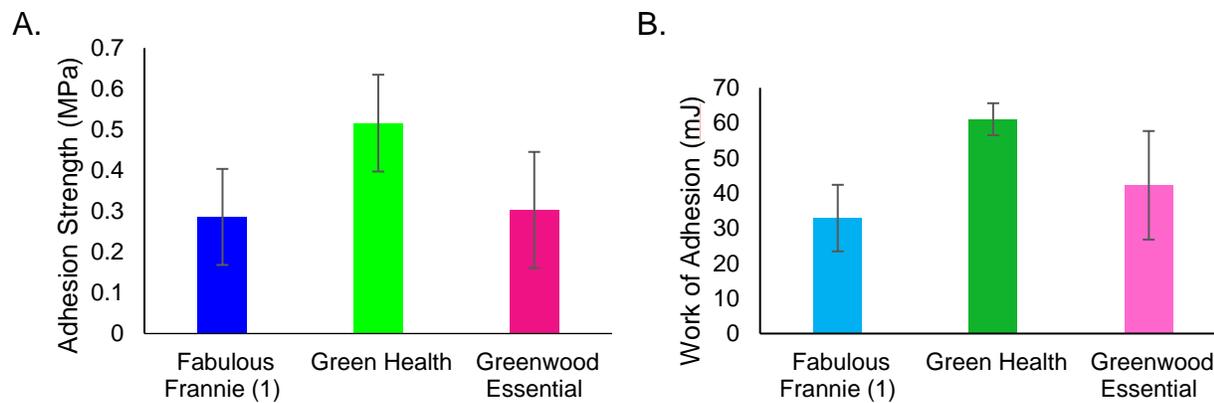


Fig. S16: Average adhesion data of poly(GEO) by supplier for A. maximum adhesion strength and B. work of adhesion.