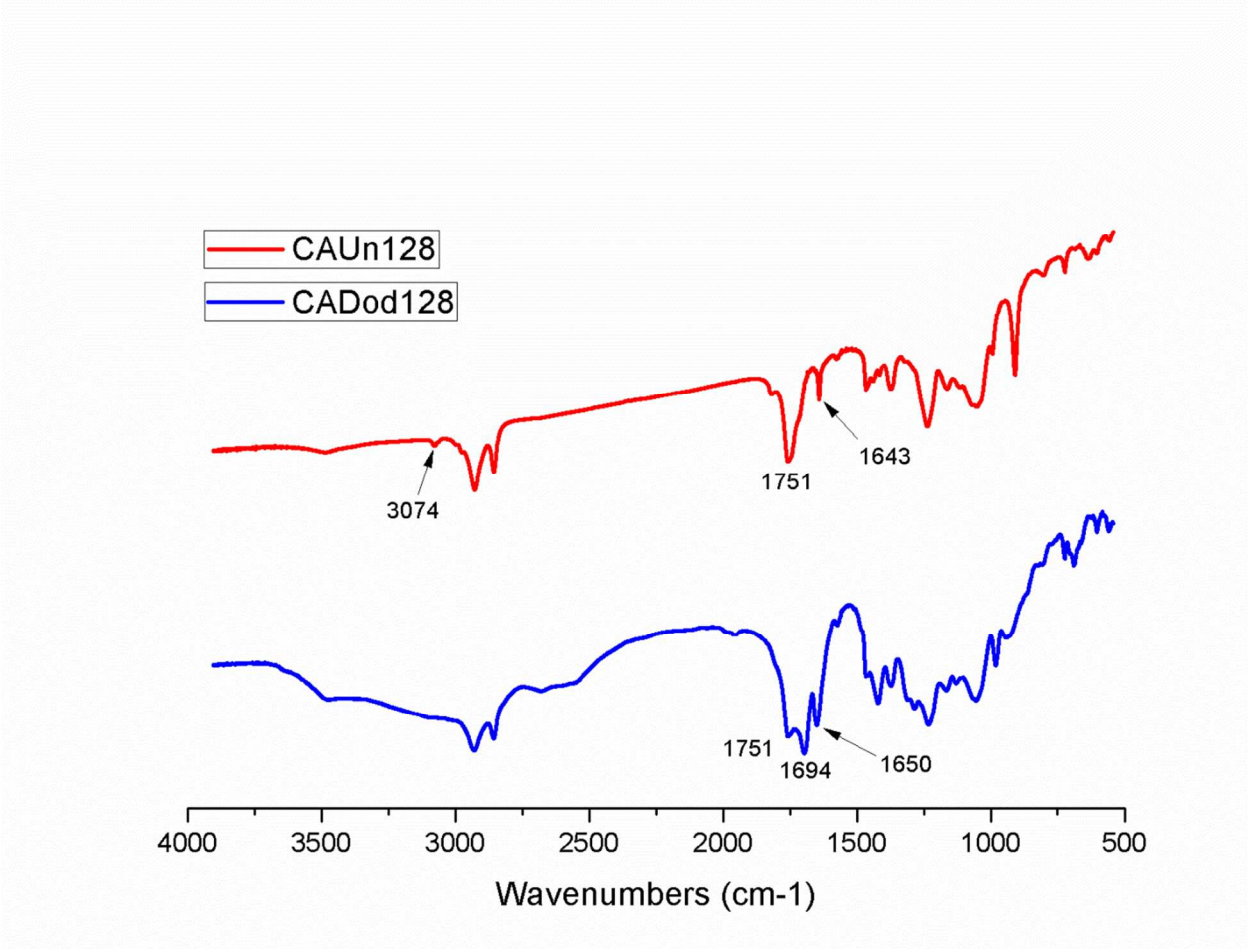
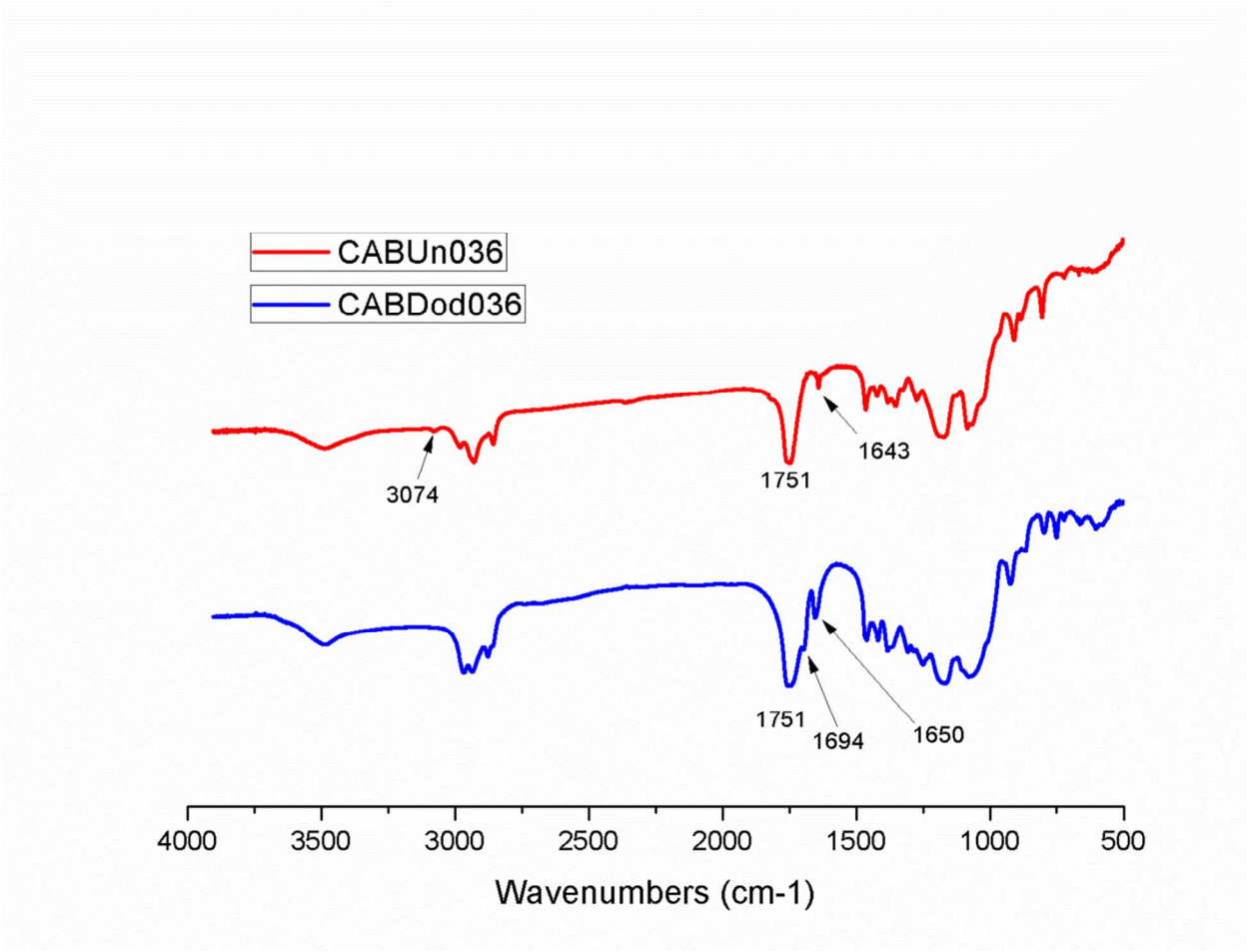
Supporting Information

We include here FTIR, ^{1}H NMR, ^{1}H-^{13}C HSQC, and DSC spectra of new compounds prepared that we did not include in the body of the manuscript. We also included the predicted proton NMR spectra of dodec-2-endioic acid and dimerized dodec-2-endioic acid via a free radical mechanism, which were compared to the real spectra of our hydrolyzed samples. All the spectra, unless otherwise stated below, were acquired using instruments and methods as described in the Experimental Section of the paper.

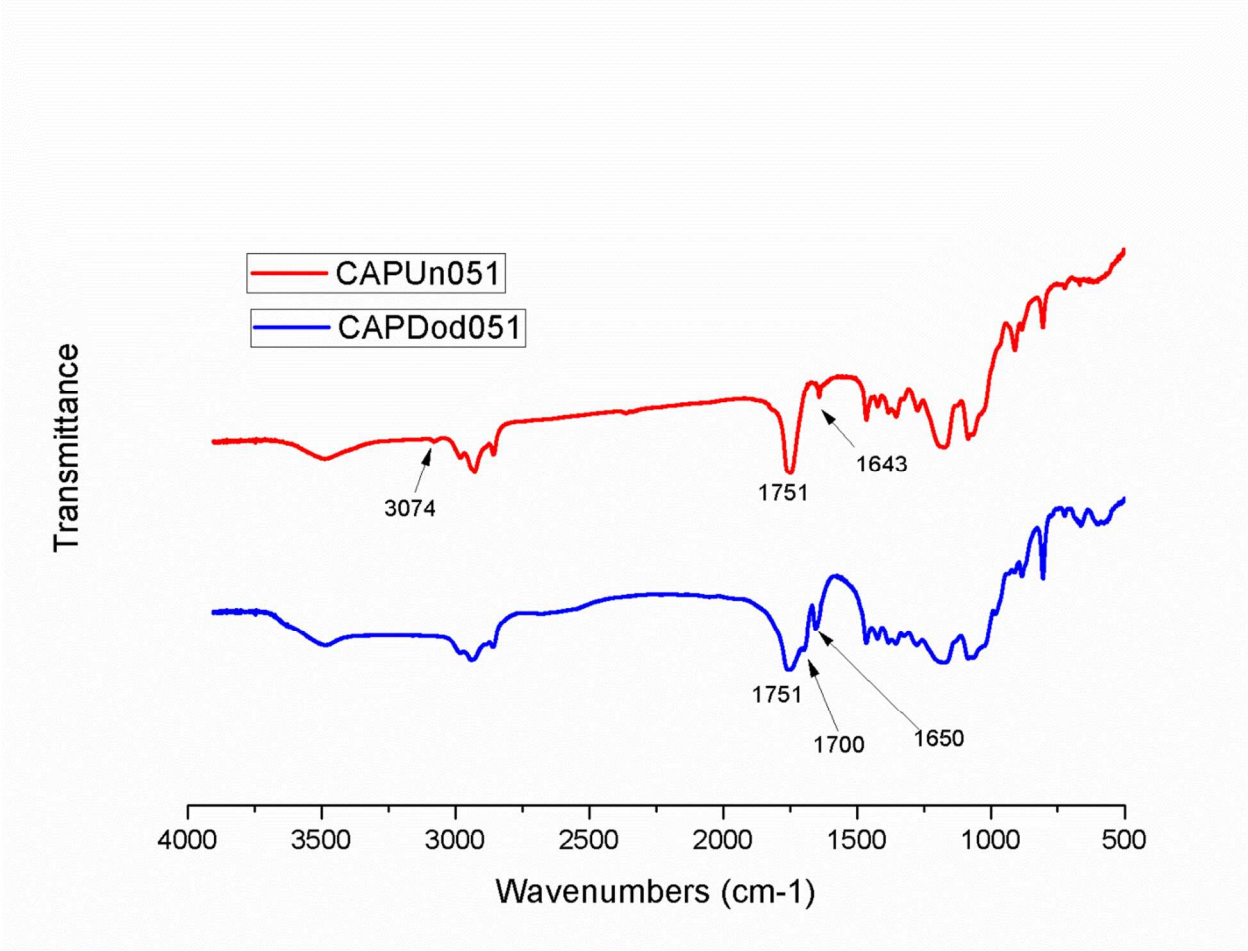
FTIR Spectra



S1. FTIR spectra of CAUn128 and CADod128.

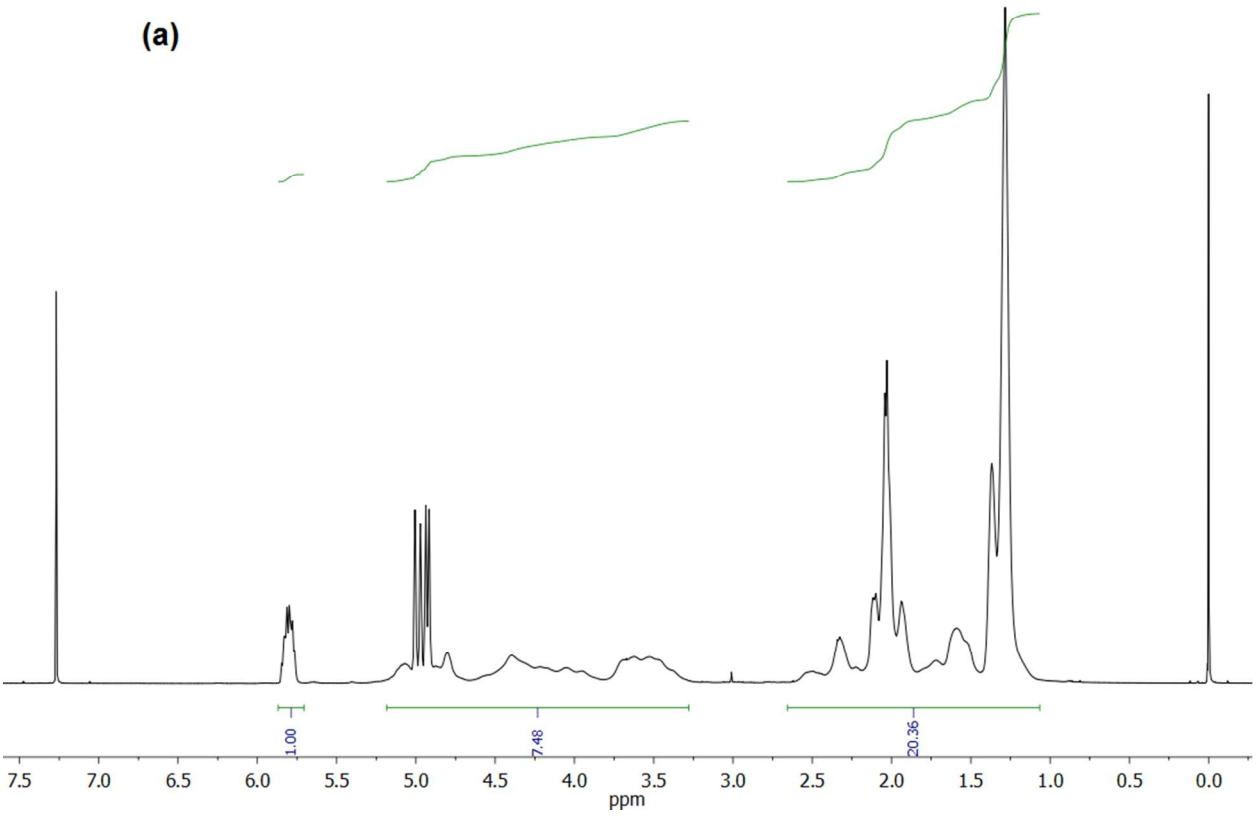


S2. FTIR spectra of CABUn036 and CABDod036.



S3. FTIR spectra of CAPUn051 and CAPDod051.

NMR Spectra

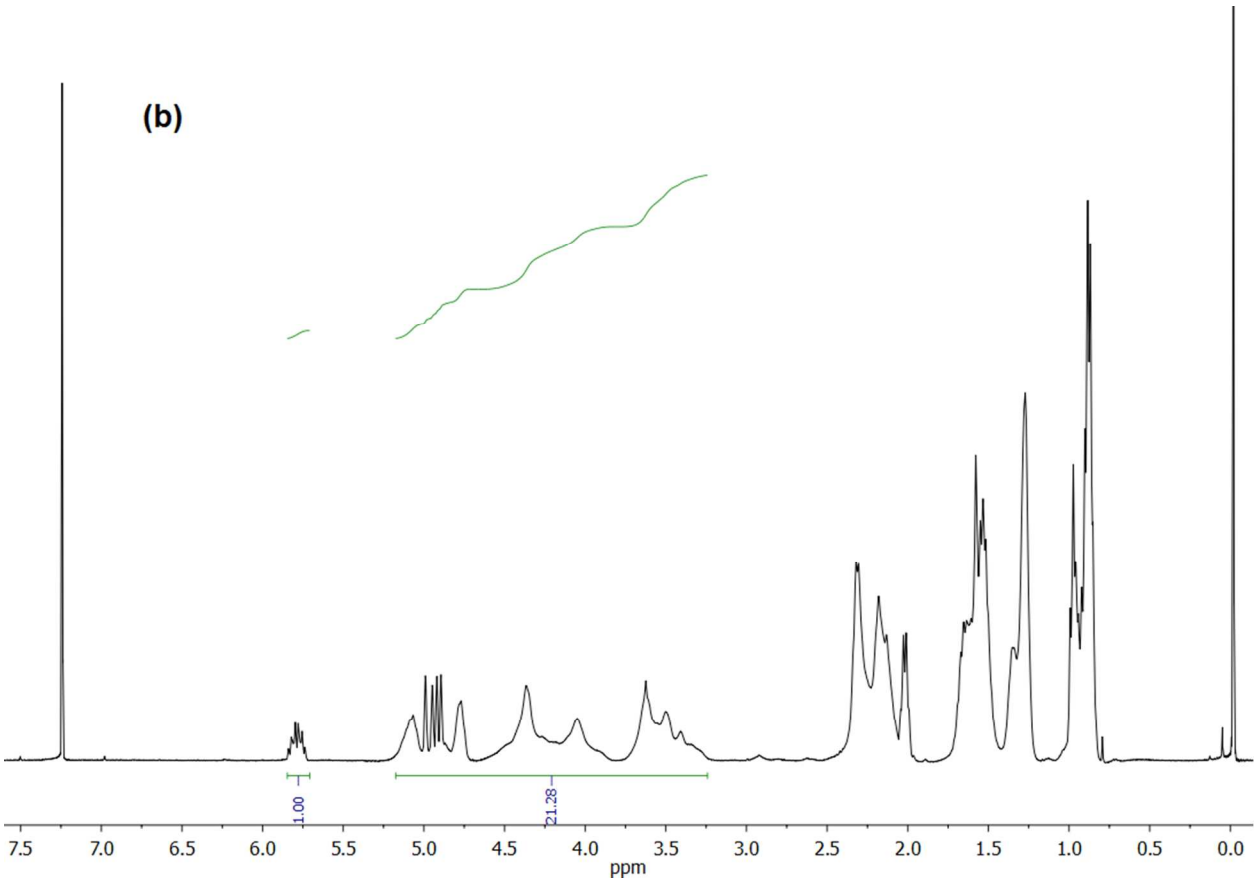


DS (Un) was calculated according to the equation:

$$\frac{7 + 2[DS(Un)]}{DS(Un)} = \frac{7.48}{1.00}$$

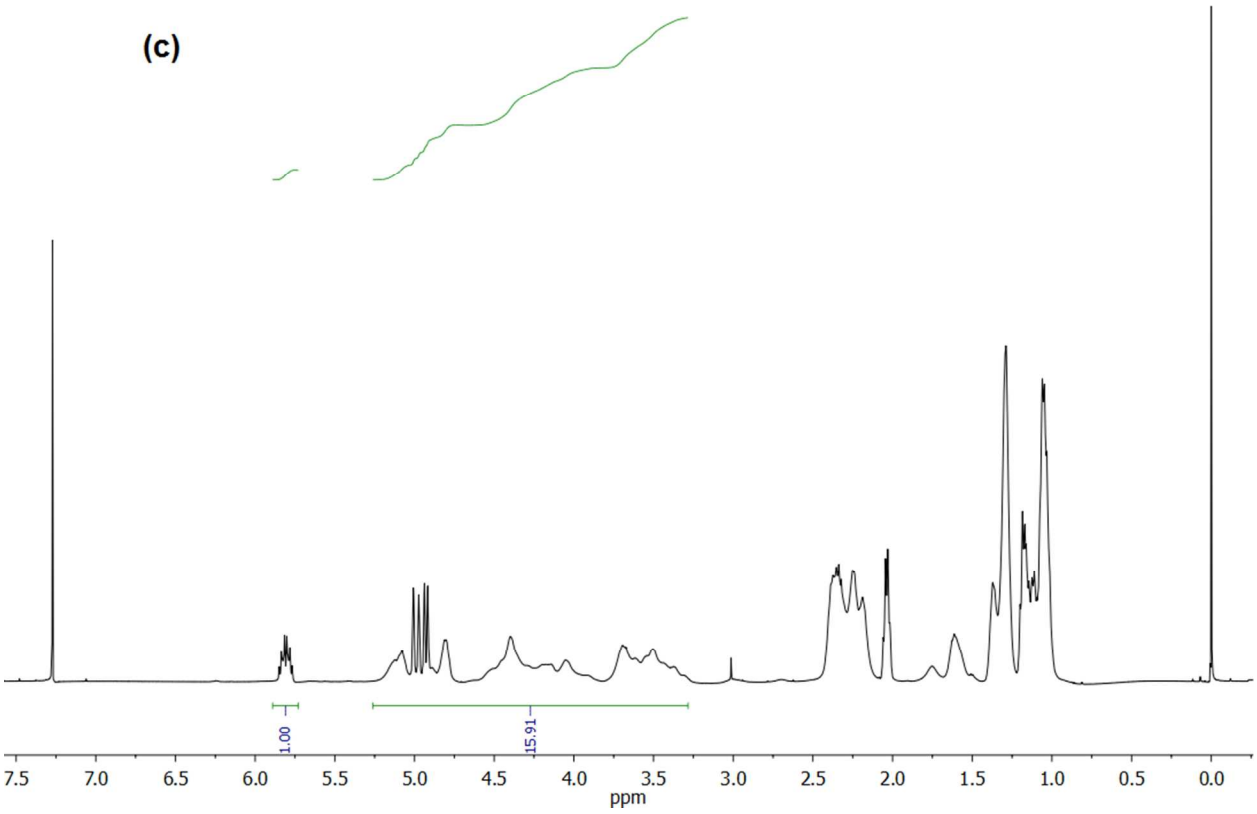
DS (Ac) was calculated according to the equation:

$$\frac{8 \times 2 \times DS(Un) + 3 \times DS(Ac)}{DS(Un)} = \frac{20.36}{1.00}$$



DS (Un) was calculated according to the equation:

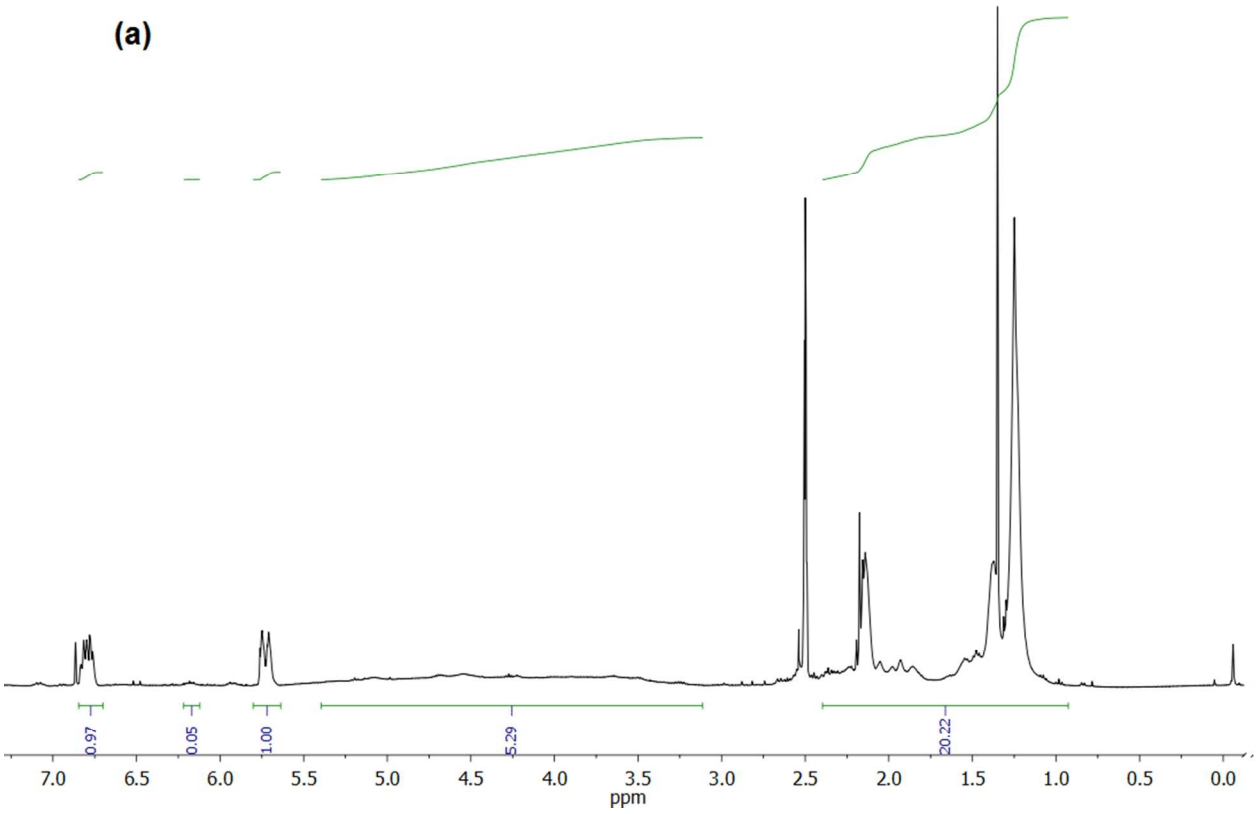
$$\frac{7 + 2[DS(Un)]}{DS(Un)} = \frac{21.28}{1.00}$$



DS (Un) was calculated according to the equation:

$$\frac{7 + 2[DS(Un)]}{DS(Un)} = \frac{15.91}{1.00}$$

S4. ^{1}H-NMR spectra of CAUn128 (a), CABUn036 (b), and CAPUn051 (c).



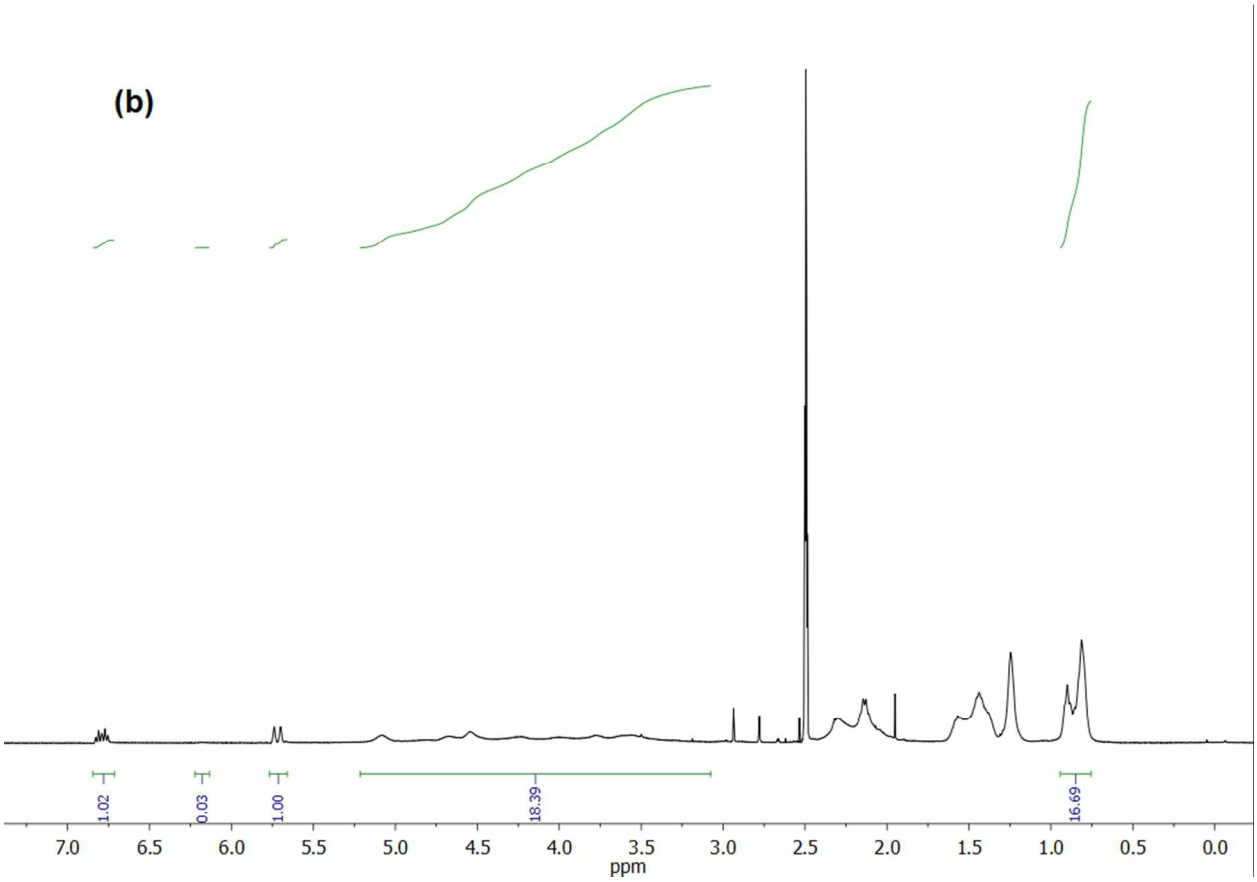
DS (Dod) was calculated according to the equation:

$$\frac{7 + 2[DS(Dod)]}{DS(Dod)} = \frac{5.29}{1.00}$$

DS (Ac) was calculated according to the equation:

$$\frac{8 \times 2 \times DS(Un) + 3 \times DS(Ac)}{DS(Un)} = \frac{20.22}{1.00}$$

(Here and in the following calculation, we use corresponding DS (Un) determined in S4 instead of DS (Dod) because the former is more accurate)

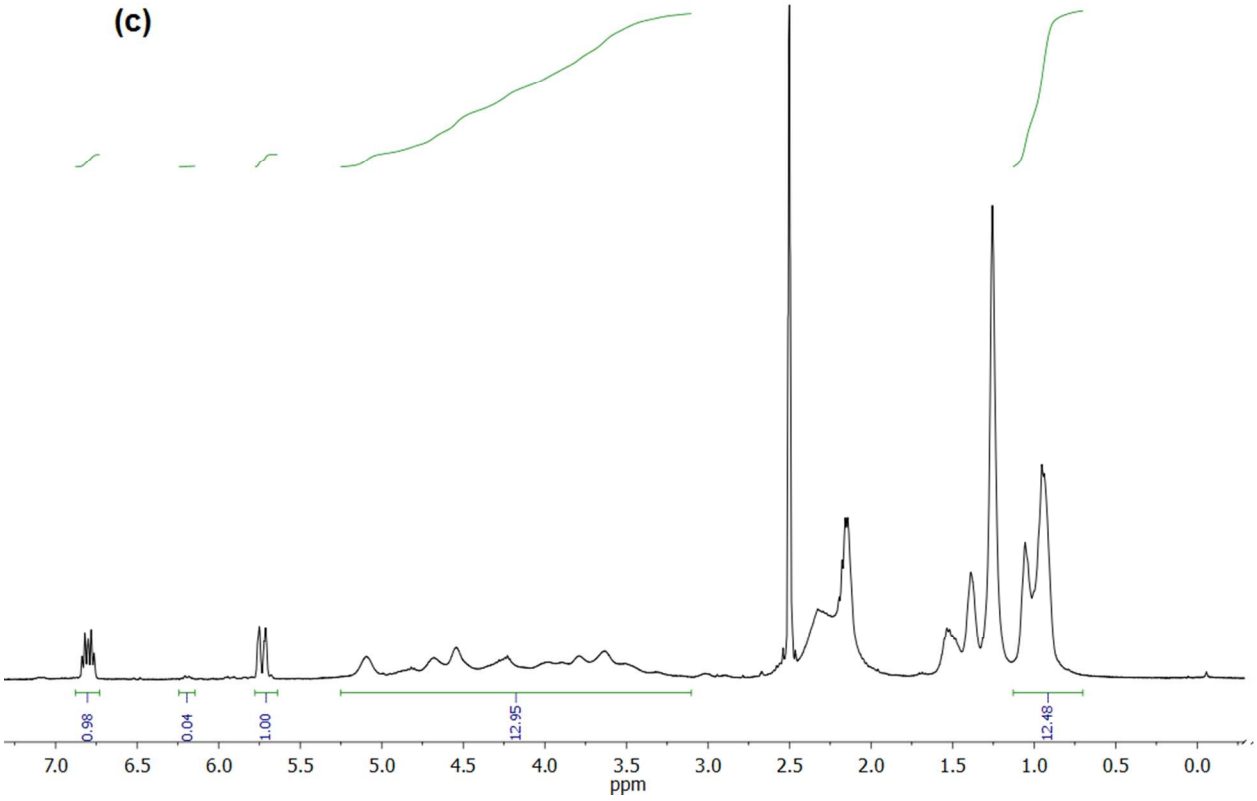


DS (Dod) was calculated according to the equation:

$$\frac{7 + 2[DS(Dod)]}{DS(Dod)} = \frac{18.39}{1.00}$$

DS (Bu) was calculated according to the equation:

$$\frac{3 \times DS(Bu)}{DS(Un)} = \frac{16.69}{1.00}$$



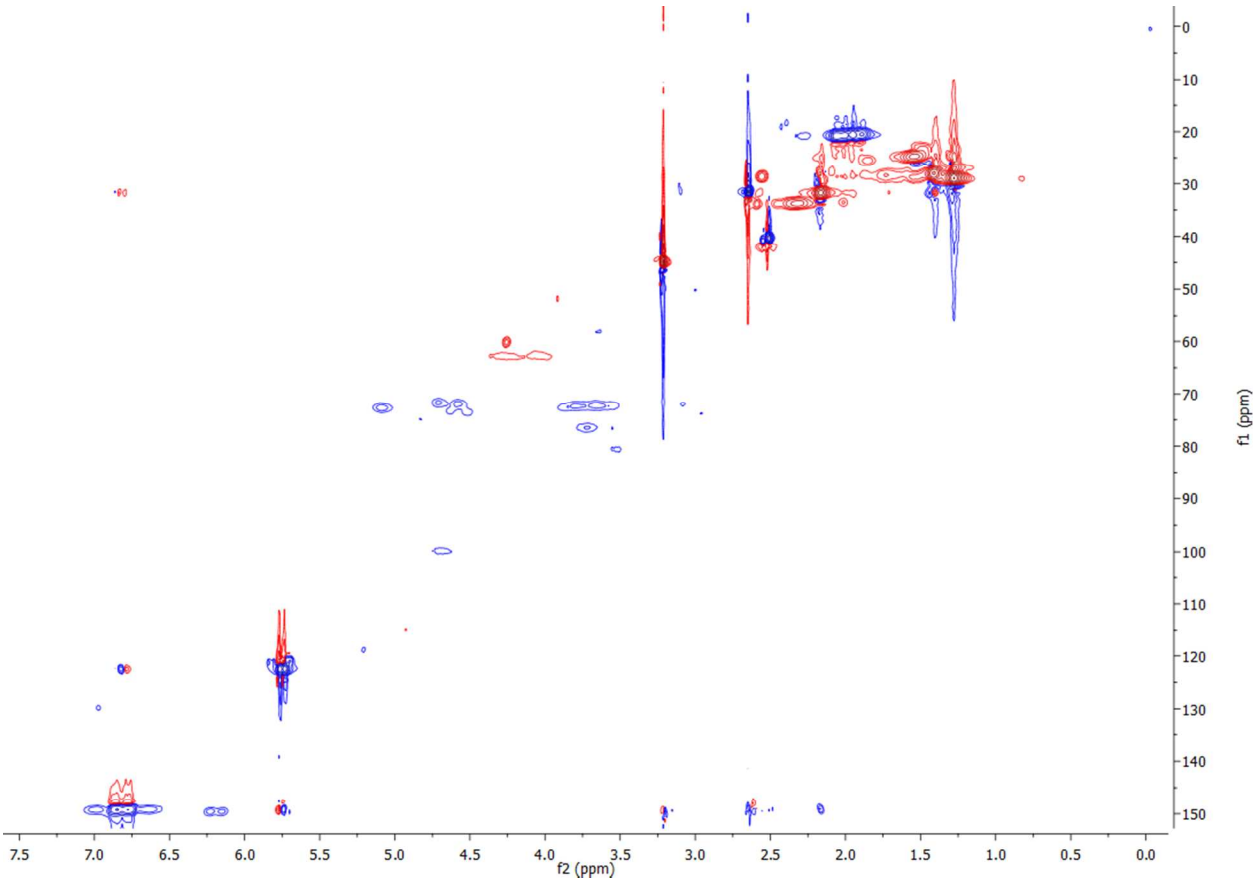
DS (Dod) was calculated according to the equation:

$$\frac{7 + 2[DS(Dod)]}{DS(Dod)} = \frac{12.95}{1.00}$$

DS (Pr) was calculated according to the equation:

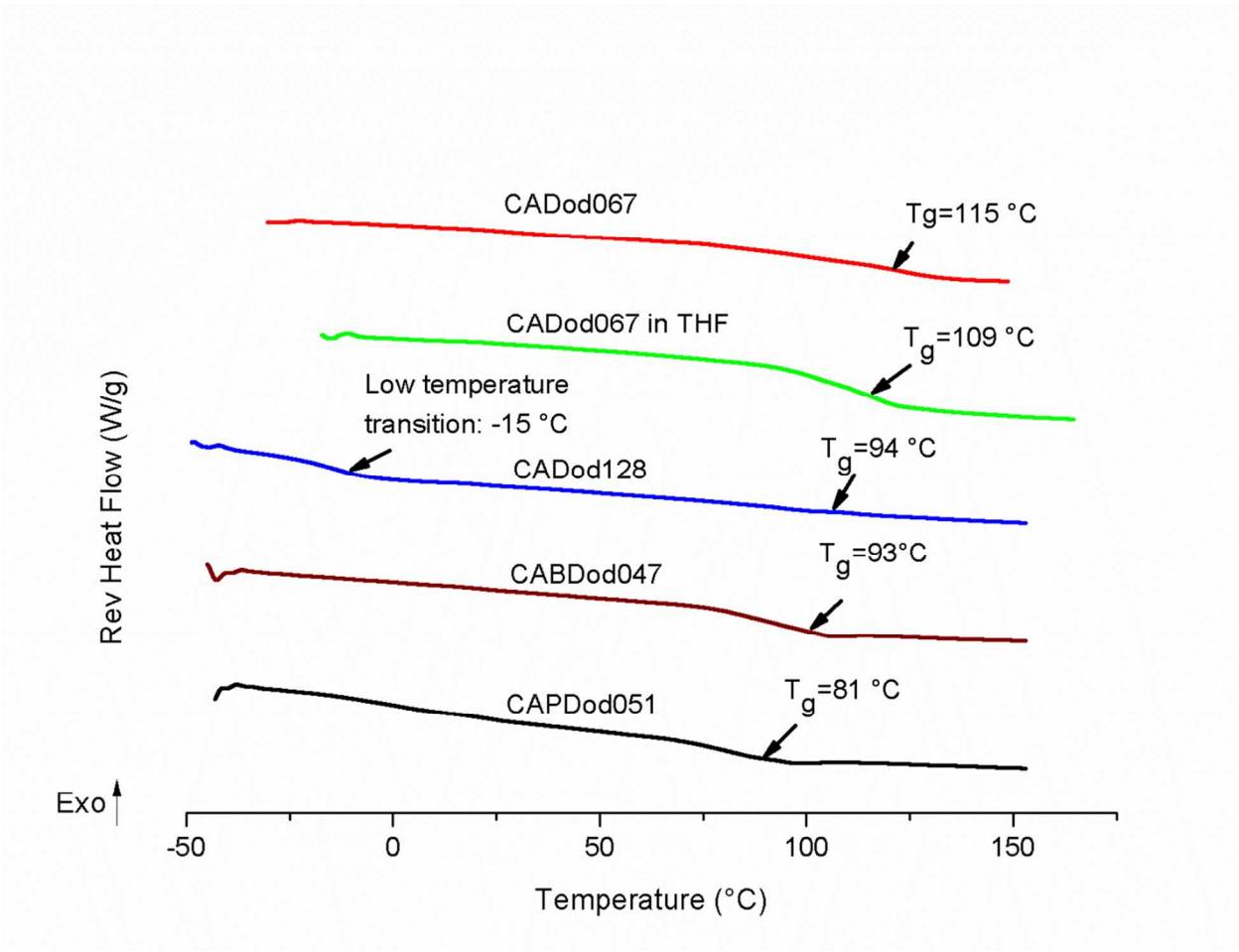
$$\frac{3 \times DS(Pr)}{DS(Un)} = \frac{12.48}{1.00}$$

S5. ^{1}H-NMR spectra of CADod128 (a), CABDod036 (b), and CAPDod051 (c).



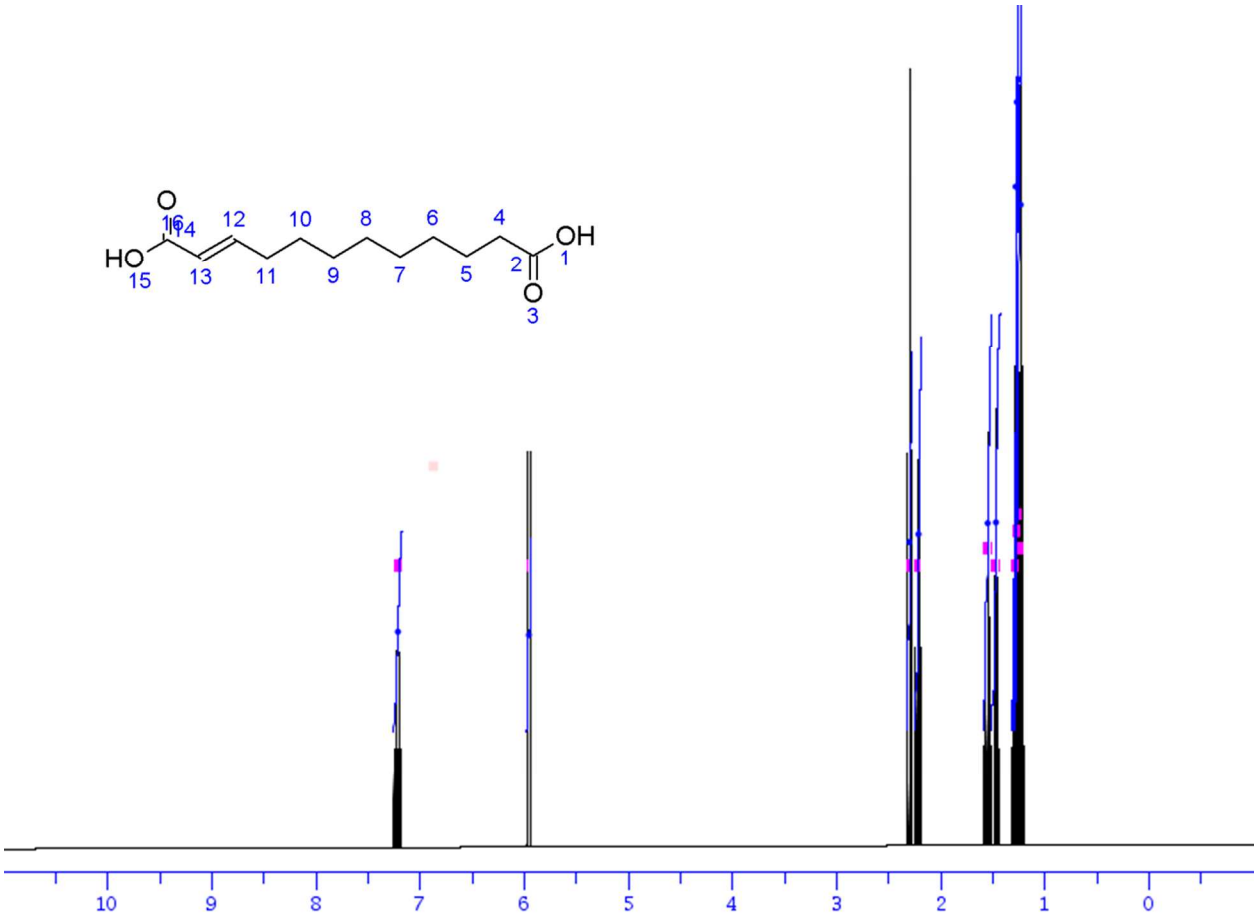
S6. ^{1}H-^{13}C HSQC spectrum of CADod067.

DSC Data

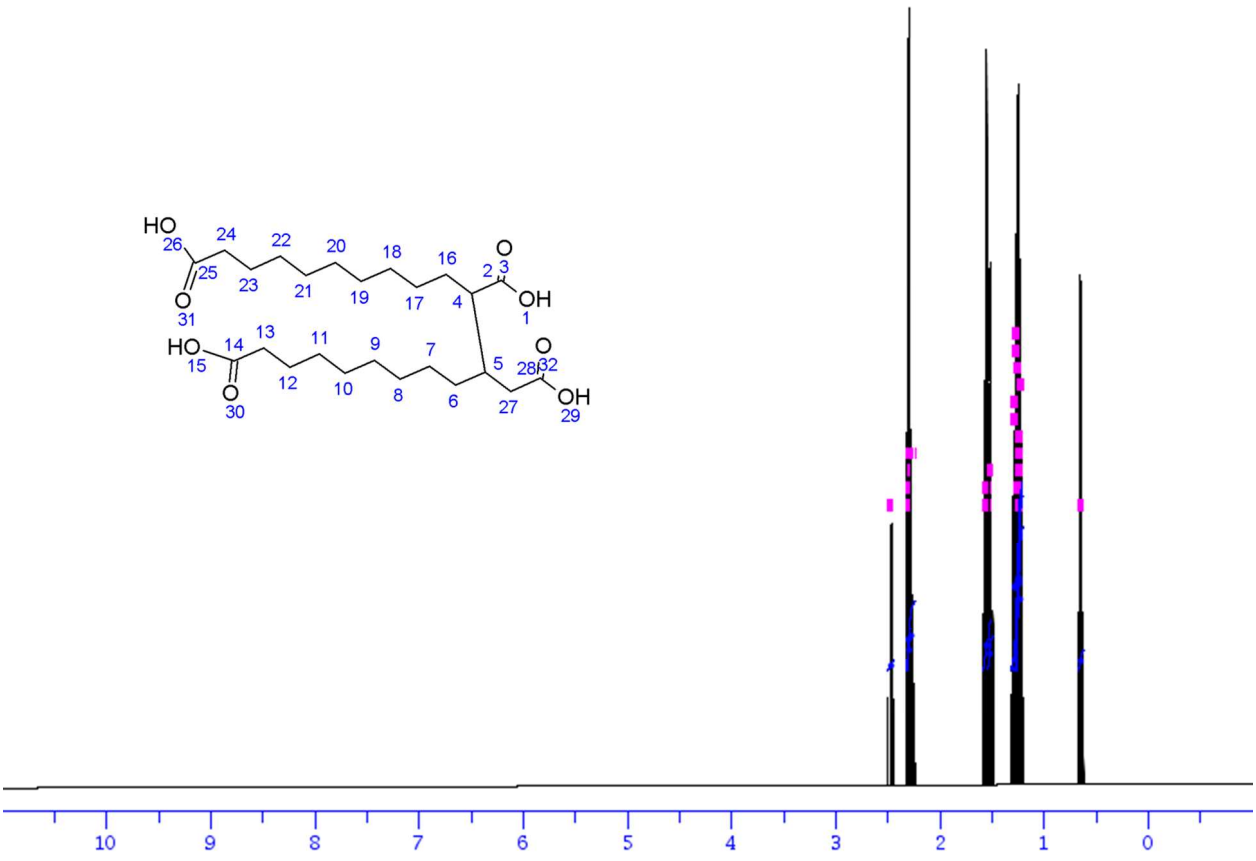


S7. DSC Analysis of CADod067, CADod067 in THF, CADod128, CABDod036 and CAPDod051.

Predicted NMR Spectra



S8. Predicted ^{1}H-NMR spectrum of dodec-2-endioic acid. 7.213 (12, 1H, dt, J=15.755, J=6.803), 5.954 (13, 1H, d, J=15.755), 2.213 (11, 2H, td, J=7.433, J=6.803), 1.469 (10, 2H, tt, J=7.681, J=7.433), 1.231-1.279 (6, 7, 8, 9, 8H, m), 1.549 (5, 2H, tt, J=7.667, J=7.367), 2.299 (4, 2H, t, J=7.367) (Note: the spectrum was predicted in the website http://www.nmrdb.org/predictor).



S9. Predicted ^{1}H-NMR spectrum of dimerized dodec-2-endioic acid. 0.648 (6, 2H, dt, J=7.350, J=7.273), 1.229-1.275 (7-11, 17-22, 22H) 1.518-1.550 (12, 16, 23, 6H), 2.276-2.300 (5, 13, 24, 27, 7H), 2.469 (4, 1H, q, J=7.500) (Note: the spectrum was predicted in the website http://www.nmrdb.org/predictor).