Supplementary Materials

Synthesis and characterization of catechol-containing polyacrylamides

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^{1}H-NMR spectra of Homo and Co-Polymers are given in the following figures. The mol content of modified monomers in the copolymers were calculated from peak a and peak b and calculated as follow:

$$A = \frac{\frac{a(\delta=6.5\ ppm)}{number\ of\ protons}}{\left(\frac{a(\delta=6.5\ ppm)}{number\ of\ protons} + b(\delta=5.0\ ppm)\right)} \cdot 100\ [\%]$$

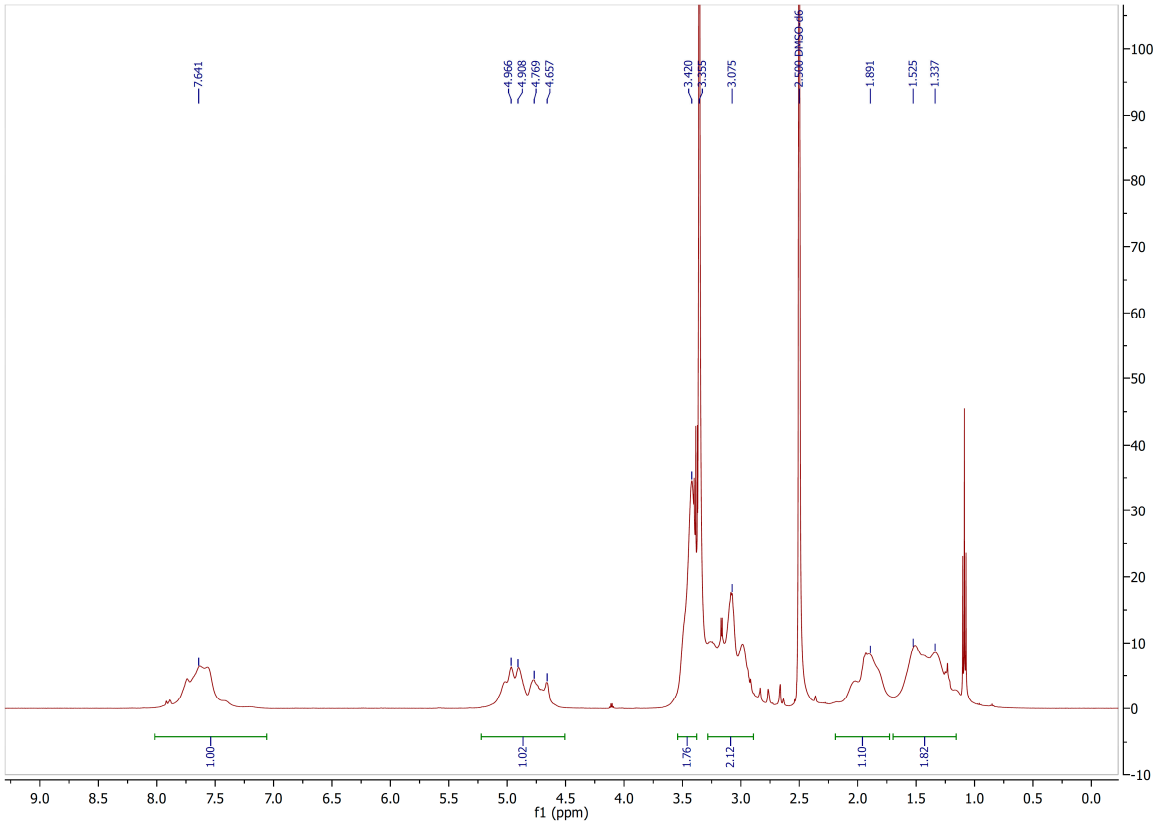


Figure S1. ^{1}H-NMR spectrum of P(HEAA) (DMSO-d_6, 500 MHz)

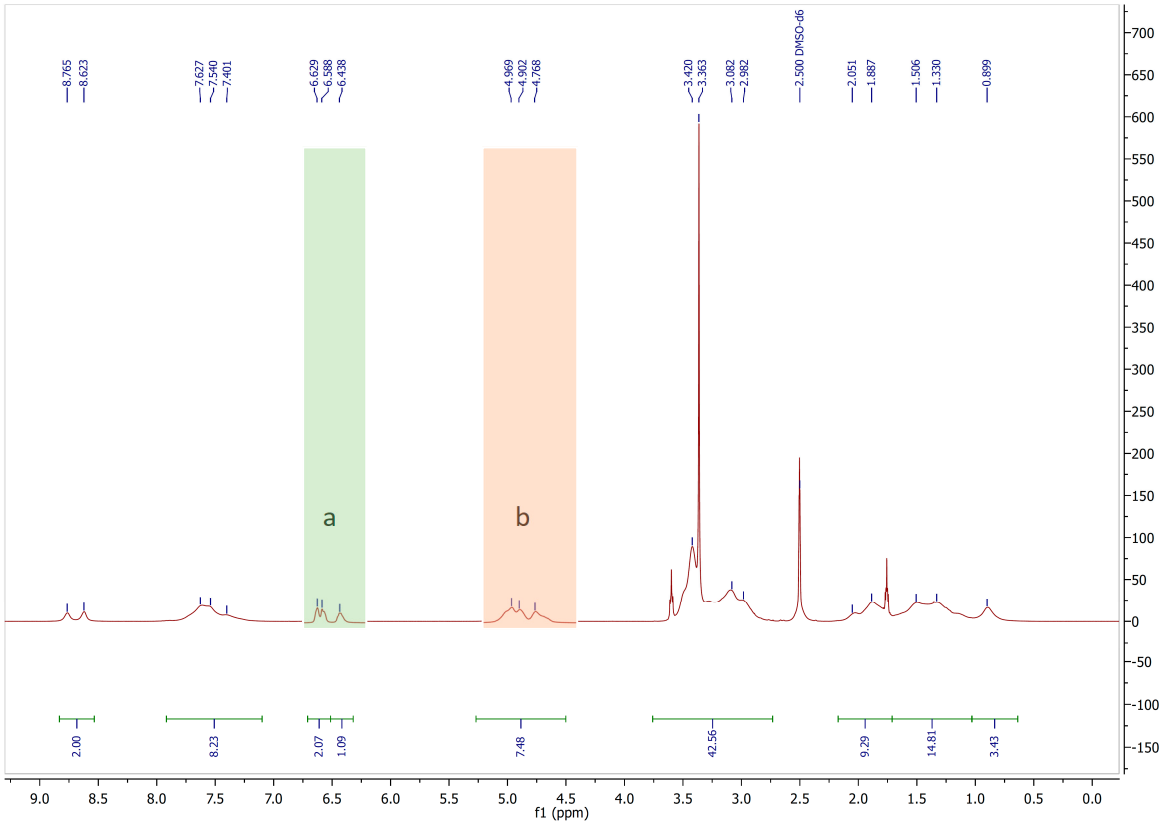


Figure S2. ^{1}H-NMR spectrum of P(HEAA/DMA$_{10}$) (DMSO-d$_6$, 500 MHz)

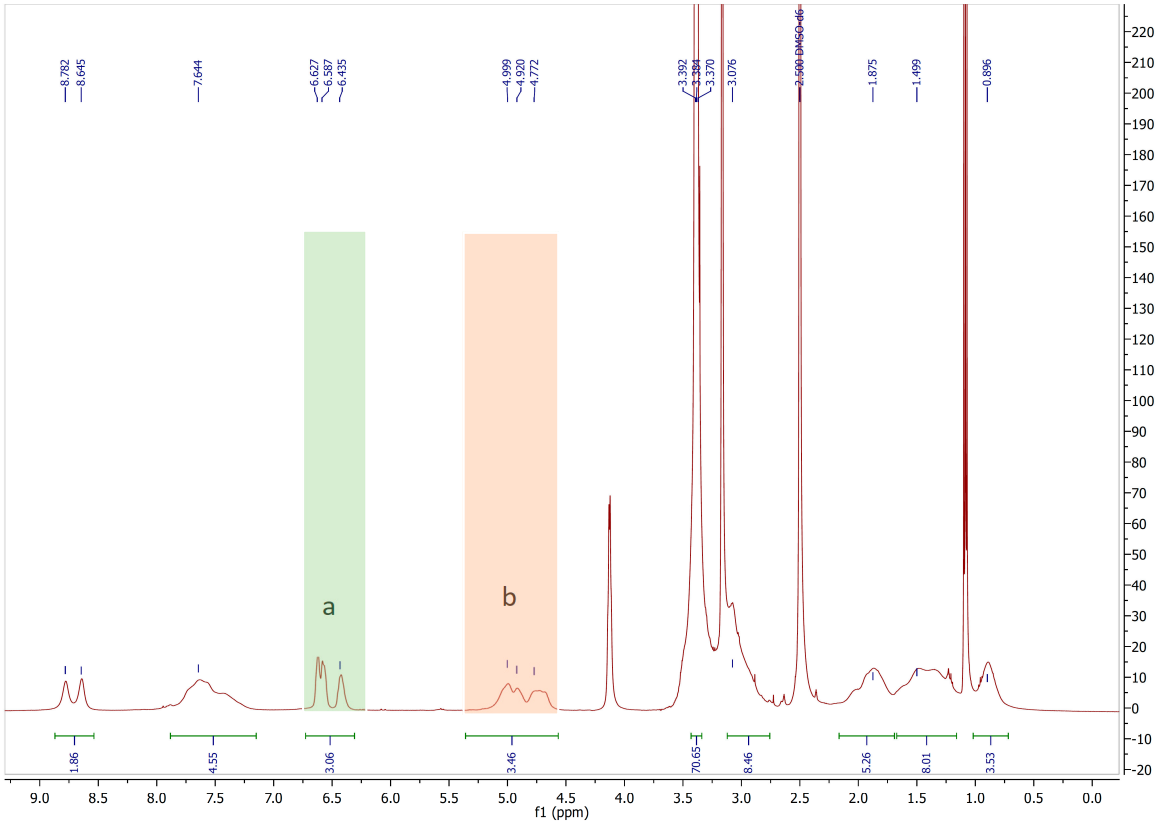


Figure S3. ^{1}H-NMR spectrum of P(HEAA/DMA$_{20}$) (DMSO-d$_6$, 500 MHz)

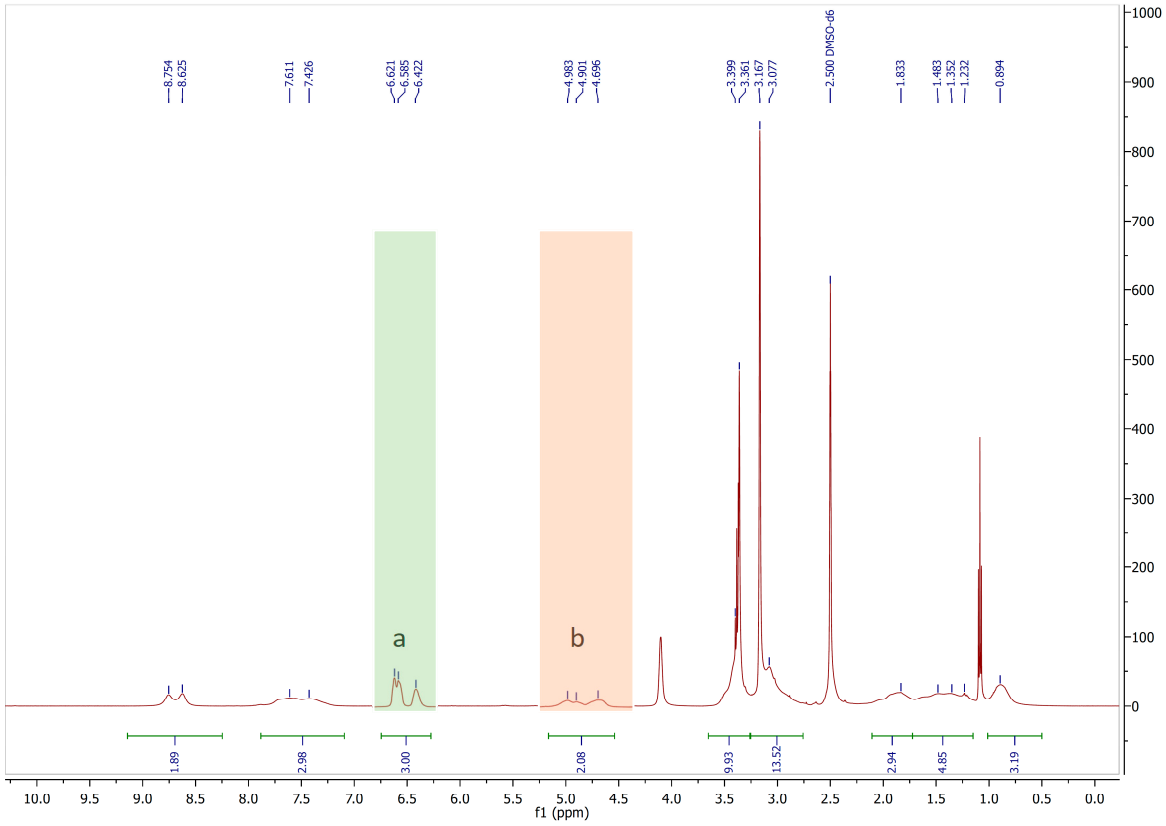


Figure S4. ^{1}H-NMR spectrum of P(HEAA/DMA$_{30}$) (DMSO-d$_6$, 500 MHz)

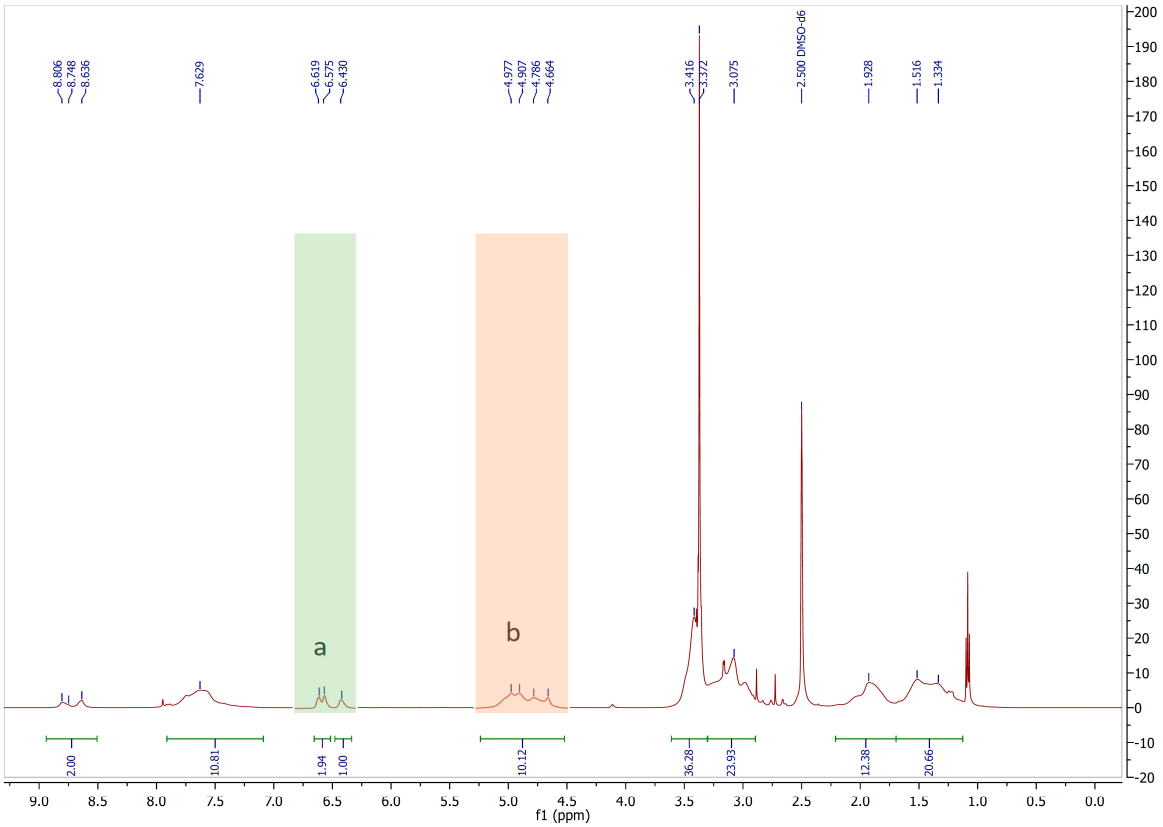


Figure S5. ^{1}H-NMR spectrum of P(HEAA/DA$_{10}$) (DMSO-d$_6$, 500 MHz)

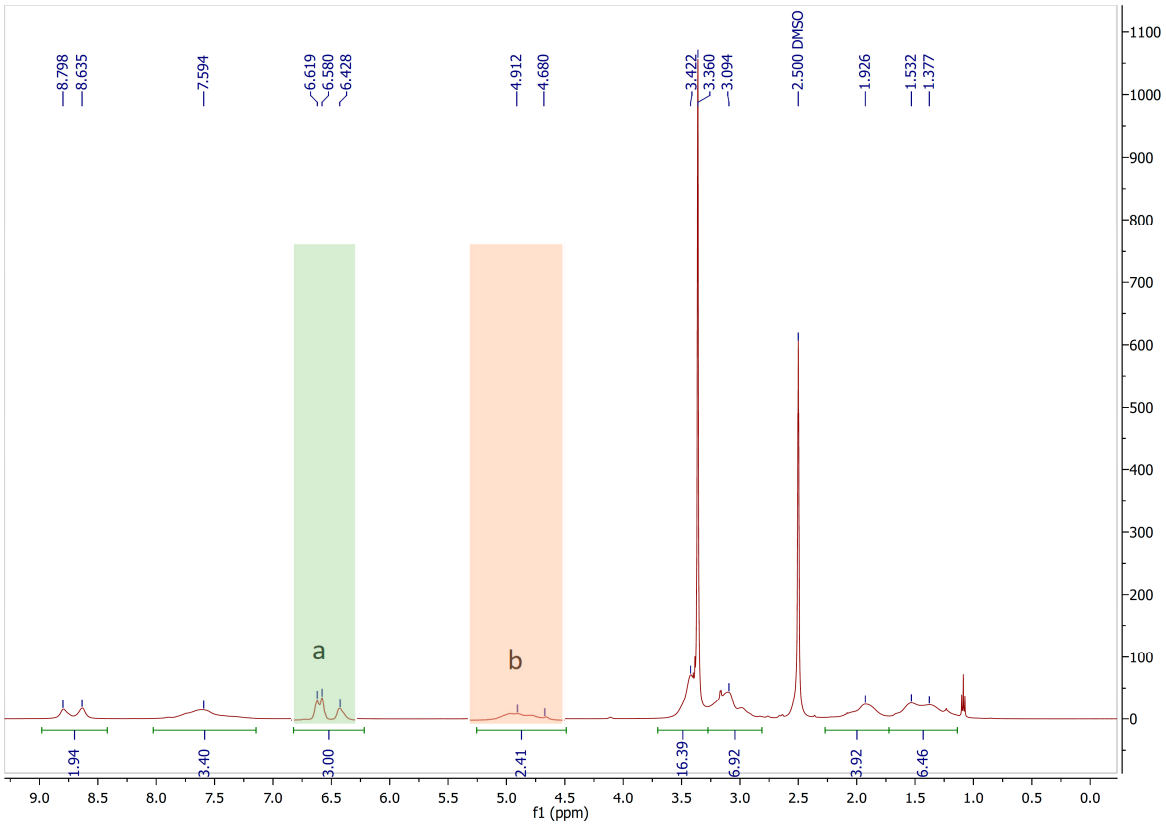


Figure S6. ^{1}H-NMR spectrum of P(HEAA/DA$_{30}$) (DMSO-d$_6$, 500 MHz)

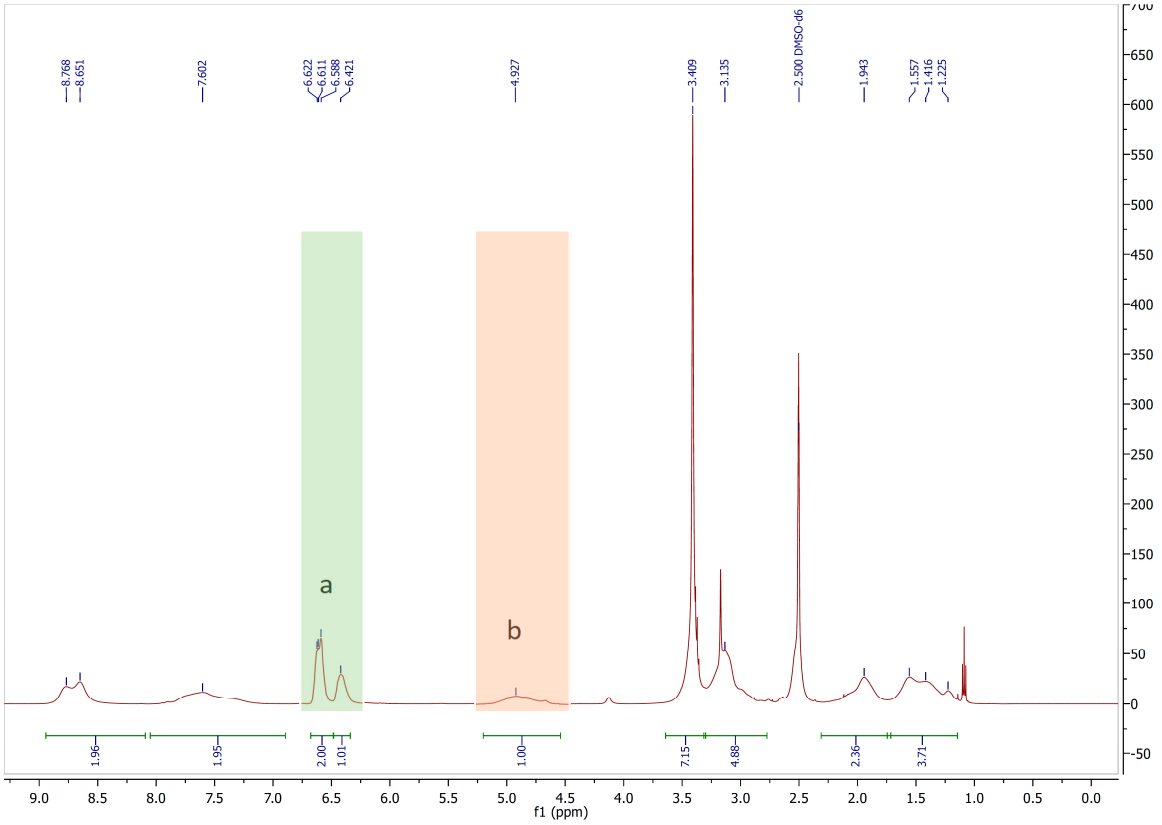


Figure S7. ^{1}H-NMR spectrum of P(HEAA/DA$_{50}$) (DMSO-d$_6$, 500 MHz)

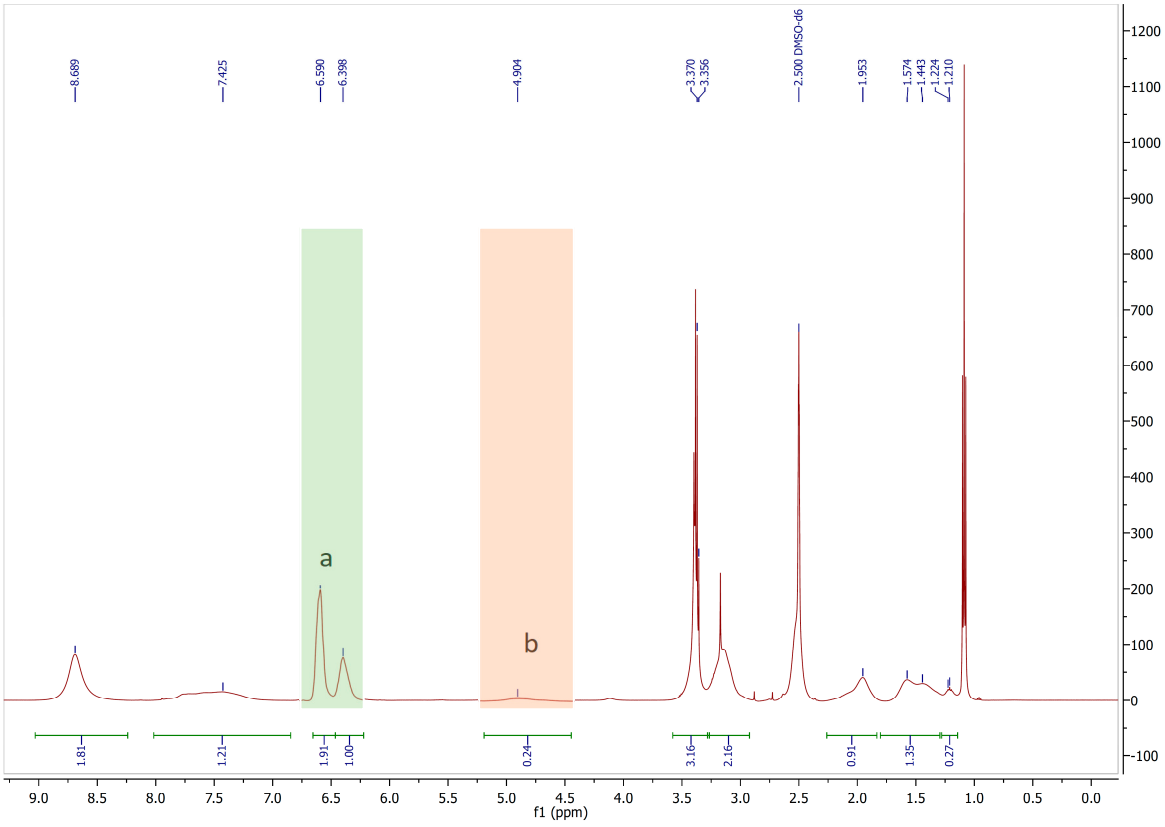


Figure S8. ^{1}H-NMR spectrum of P(HEAA/DA$_{80}$) (DMSO-d$_6$, 500 MHz)

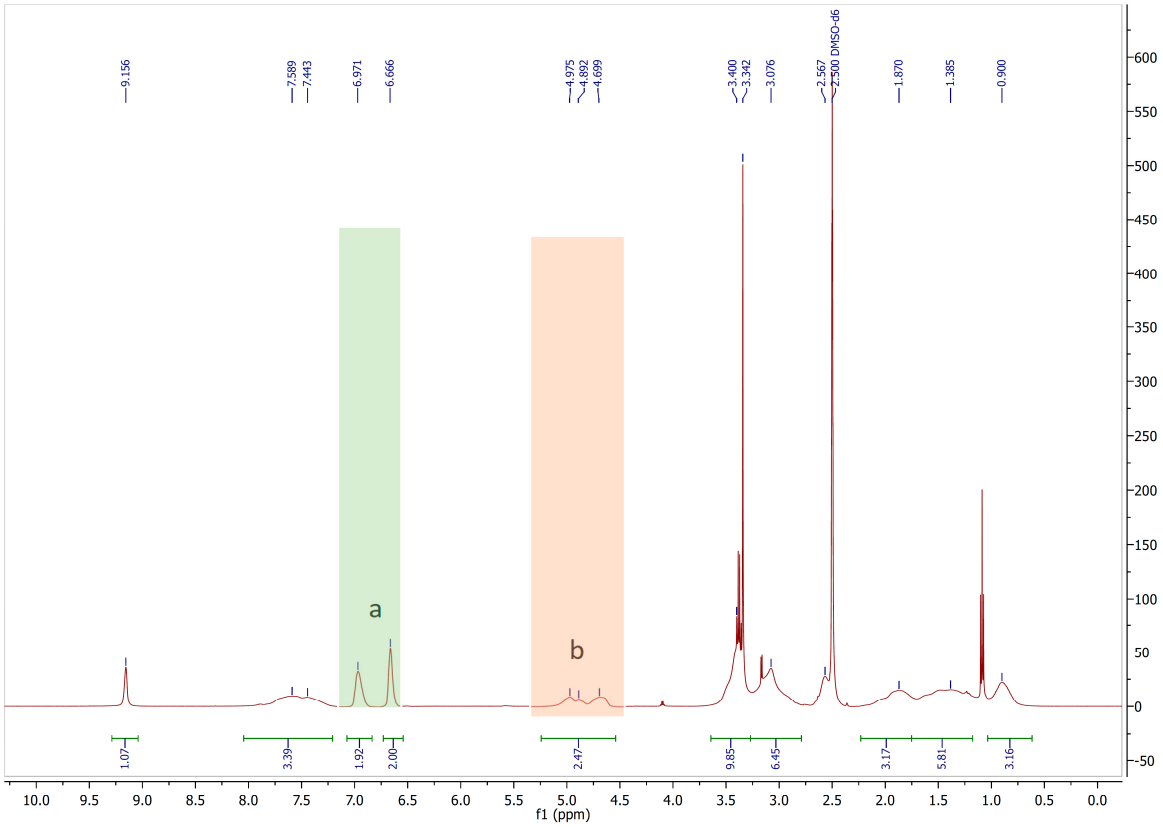


Figure S9. ^{1}H-NMR spectrum of P(HEAA/TMA$_{30}$) (DMSO-d$_6$, 500 MHz)

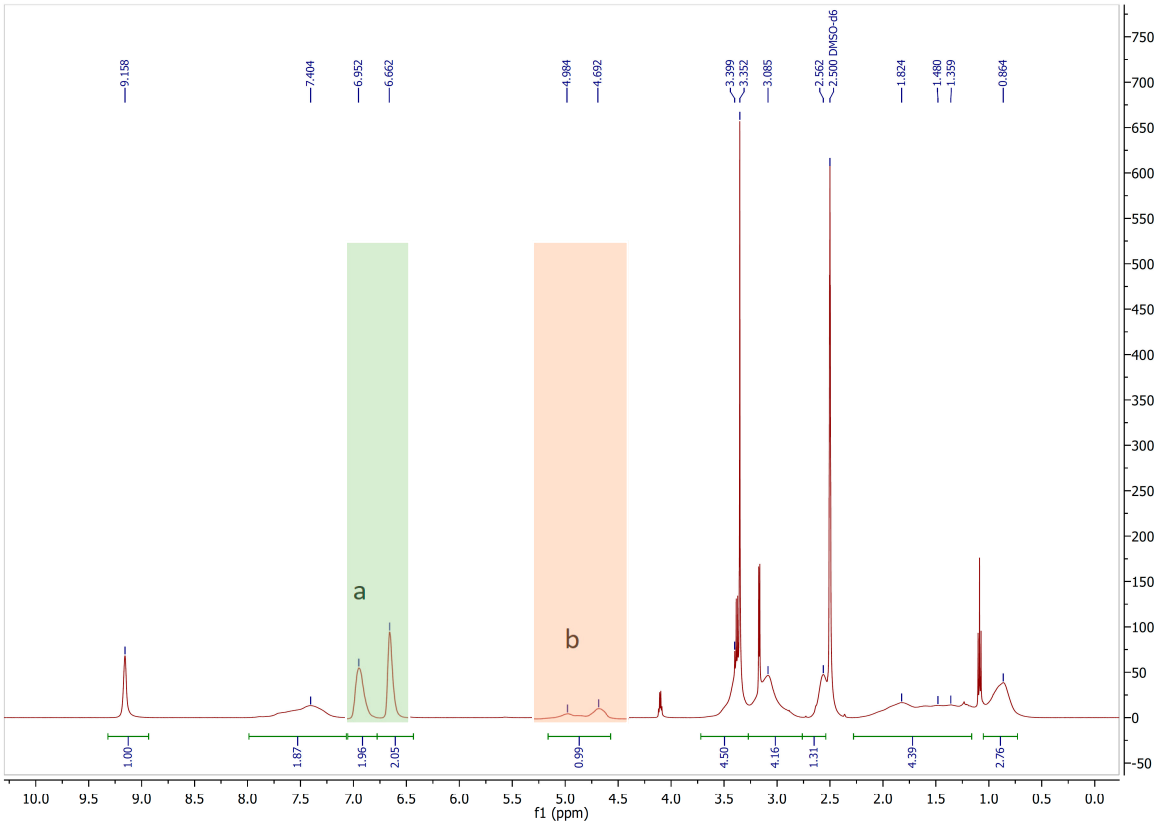


Figure S10. ^{1}H-NMR spectrum of P(HEAA/TMA$_{50}$) (DMSO-d$_6$, 500 MHz)

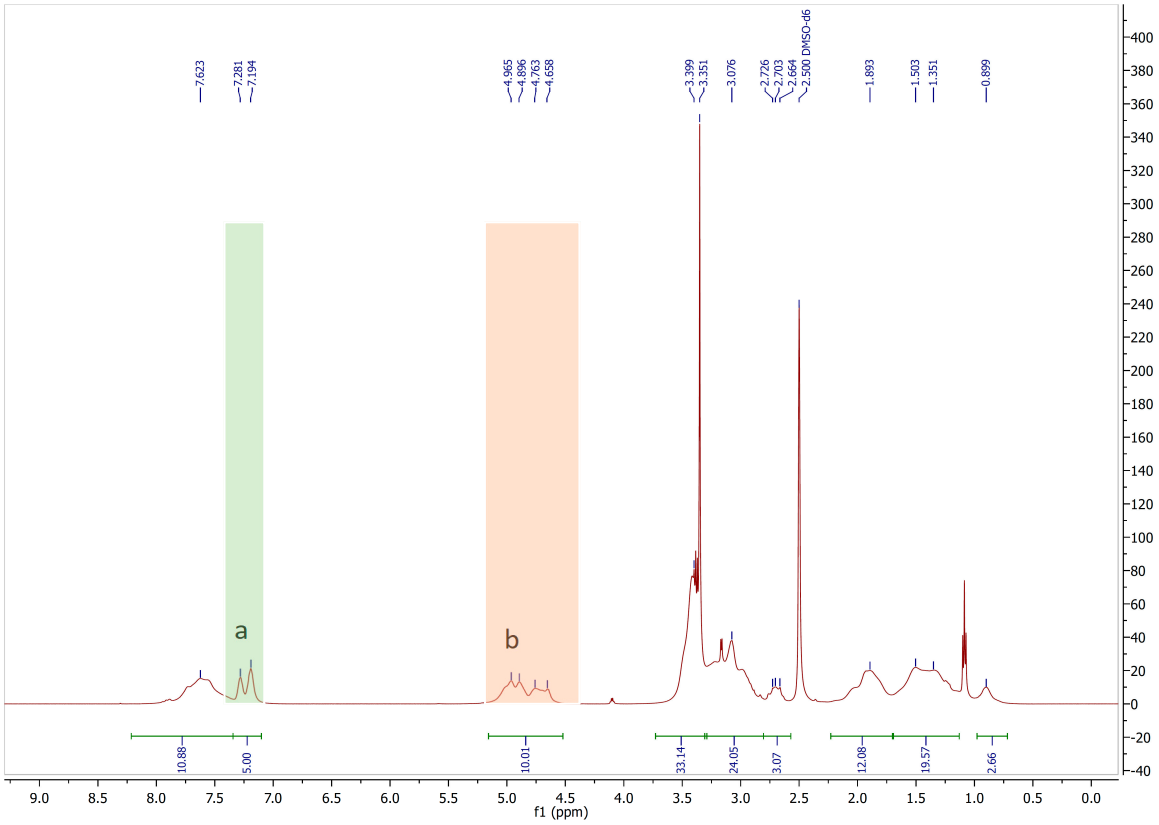


Figure S11. ^{1}H-NMR spectrum of P(HEAA/PMA$_{10}$) (DMSO-d$_6$, 500 MHz)

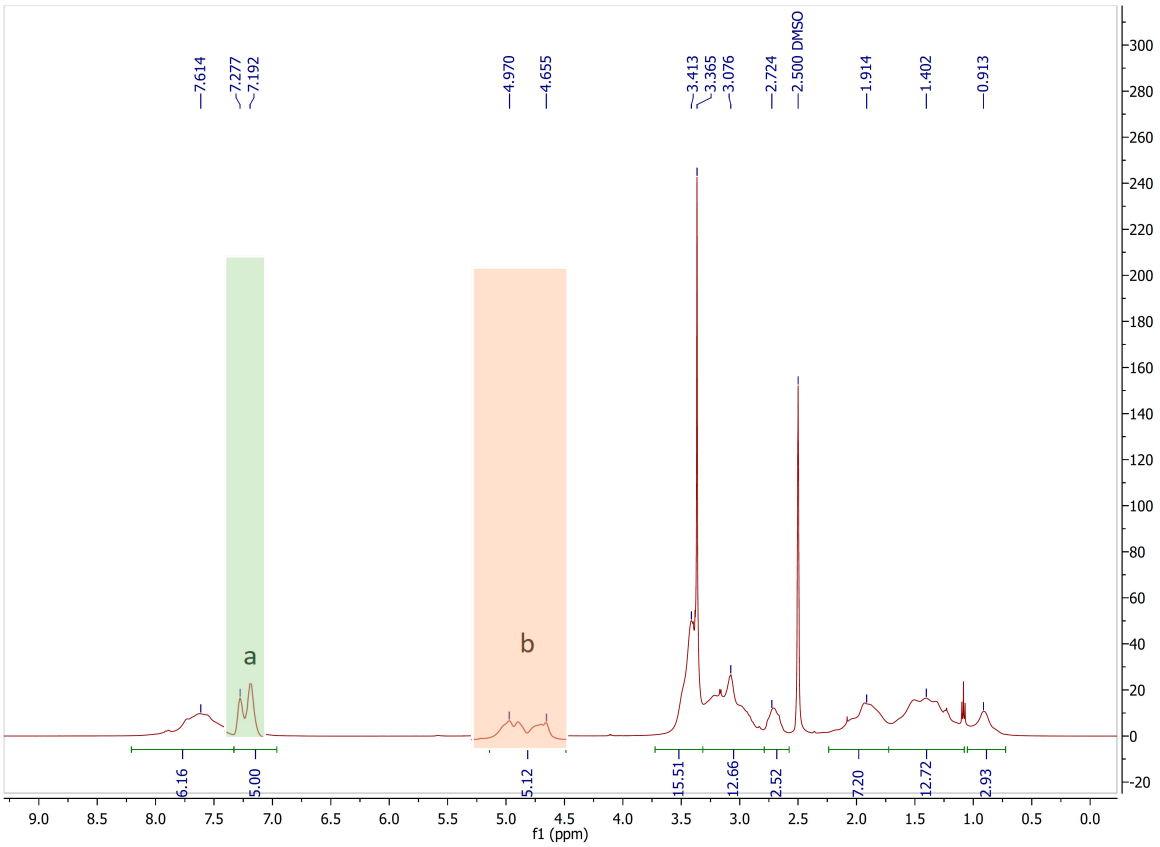


Figure S12. ^{1}H-NMR spectrum of P(HEAA/PMA$_{20}$) (DMSO-d$_6$, 500 MHz)

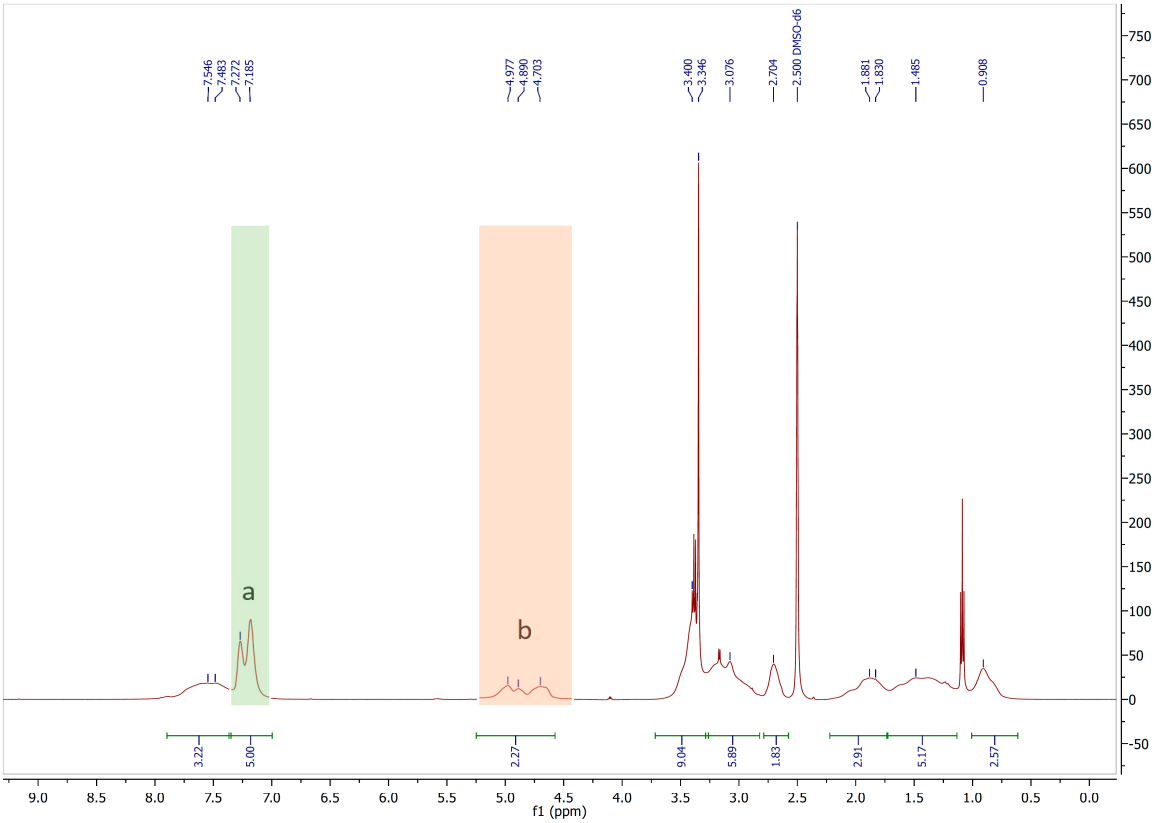


Figure S13. ^{1}H-NMR spectrum of P(HEAA/PMA$_{30}$) (DMSO-d$_6$, 500 MHz)

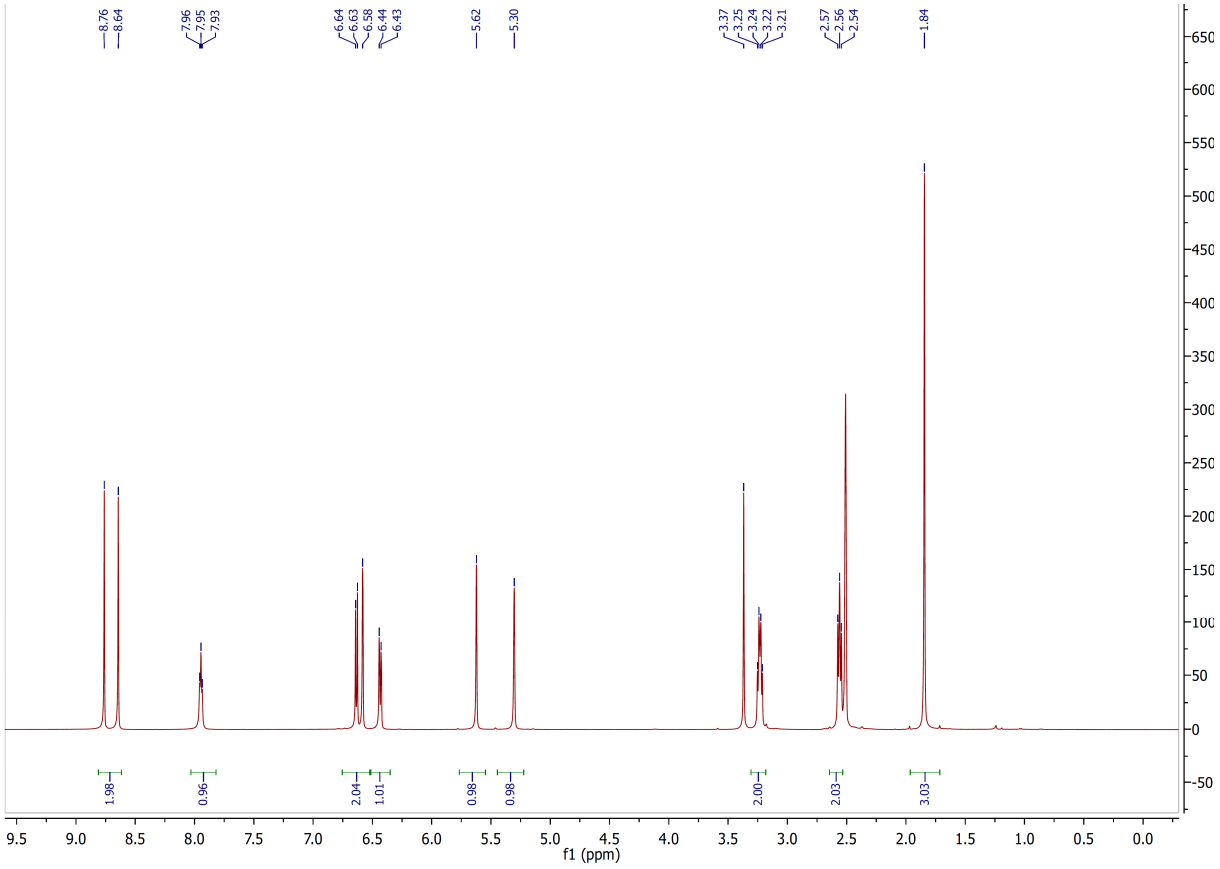


Figure S14: ^{1}H-NMR(DMA) (DMSO-d6, 500 MHz)

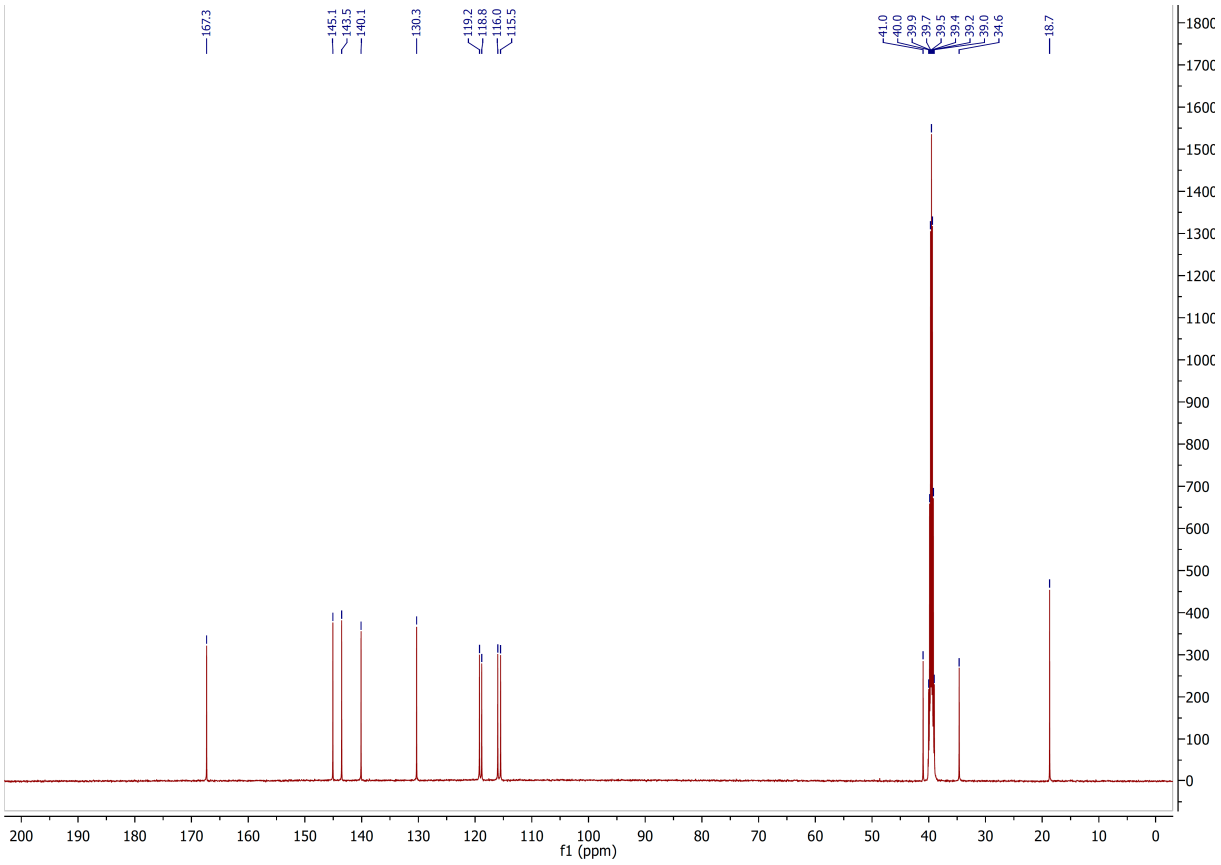


Figure S15: ^{13}C-NMR(DMA) (DMSO-d6, 126 MHz)

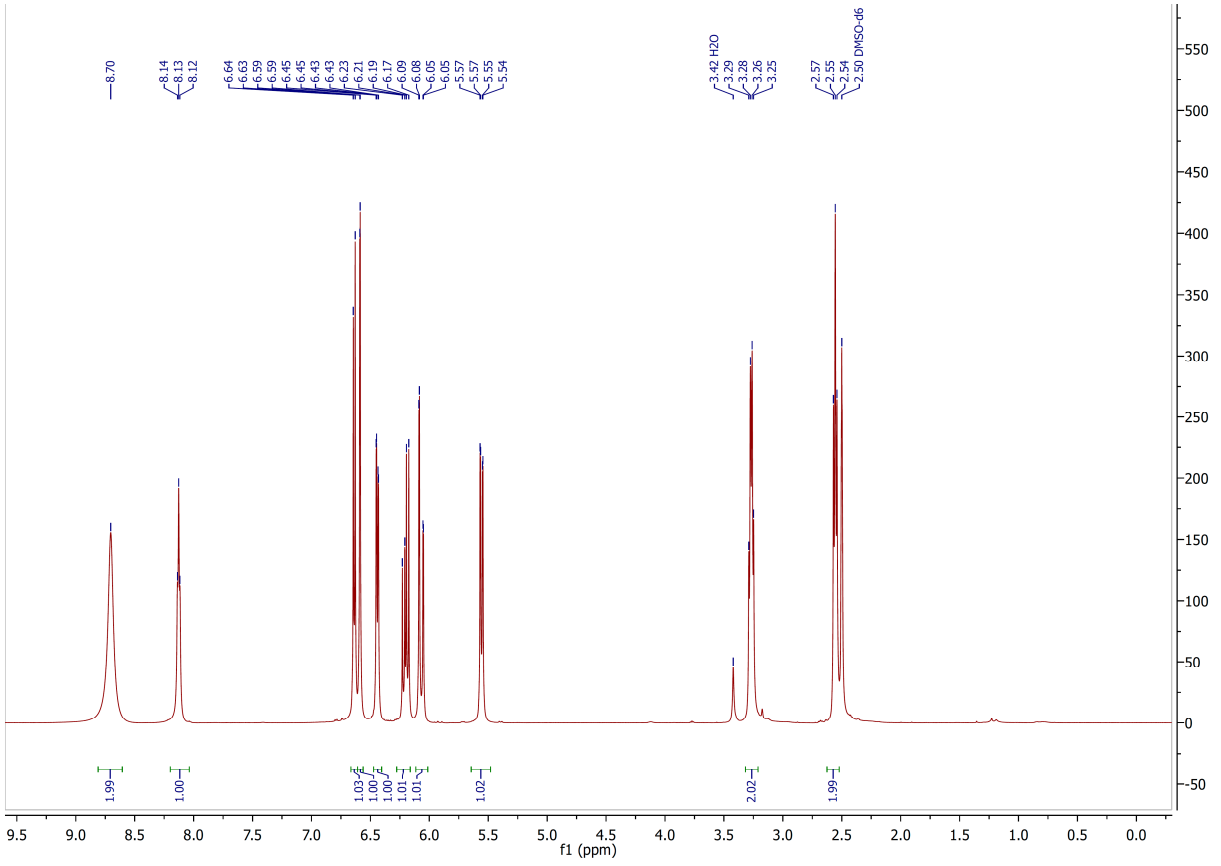


Figure S16: ^{1}H-NMR(DA) (DMSO-d6, 500 MHz)

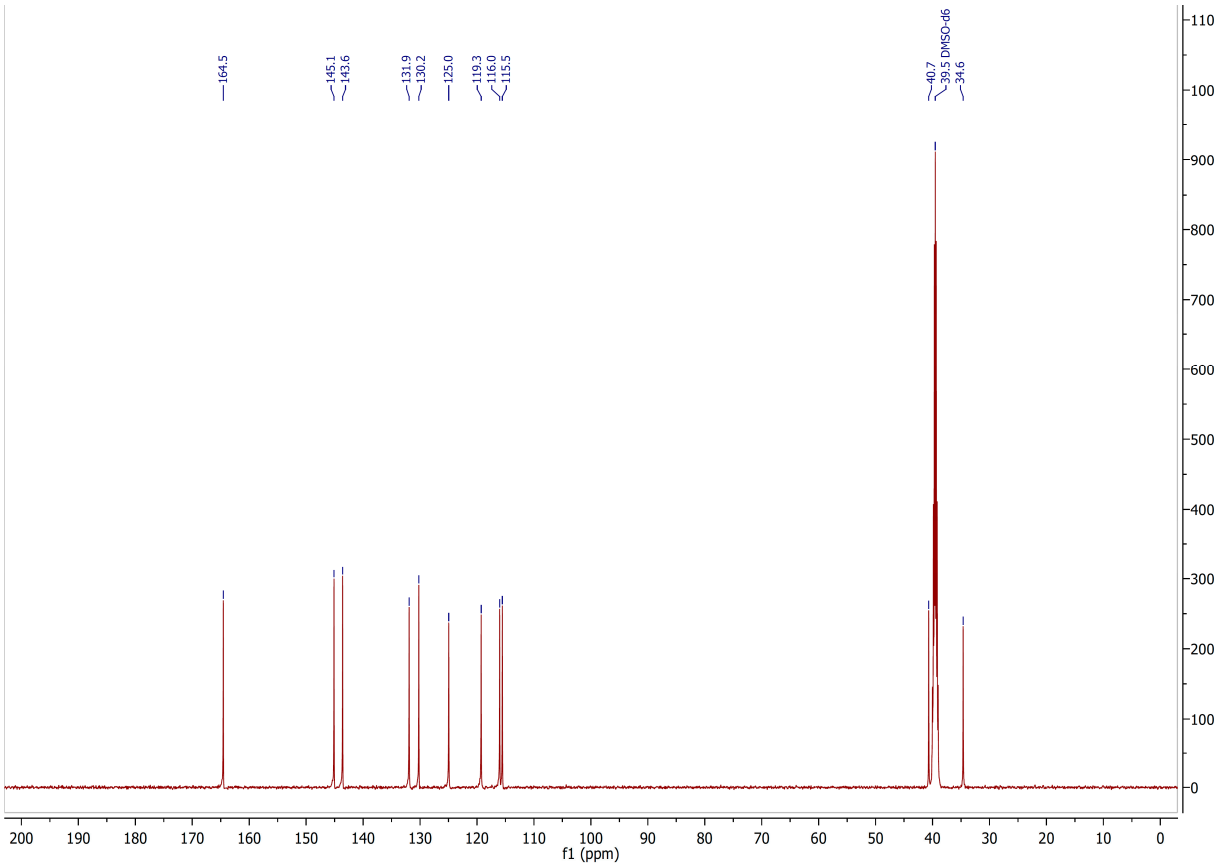


Figure S17: ^{13}C-NMR(DA) (DMSO-d6, 126 MHz)

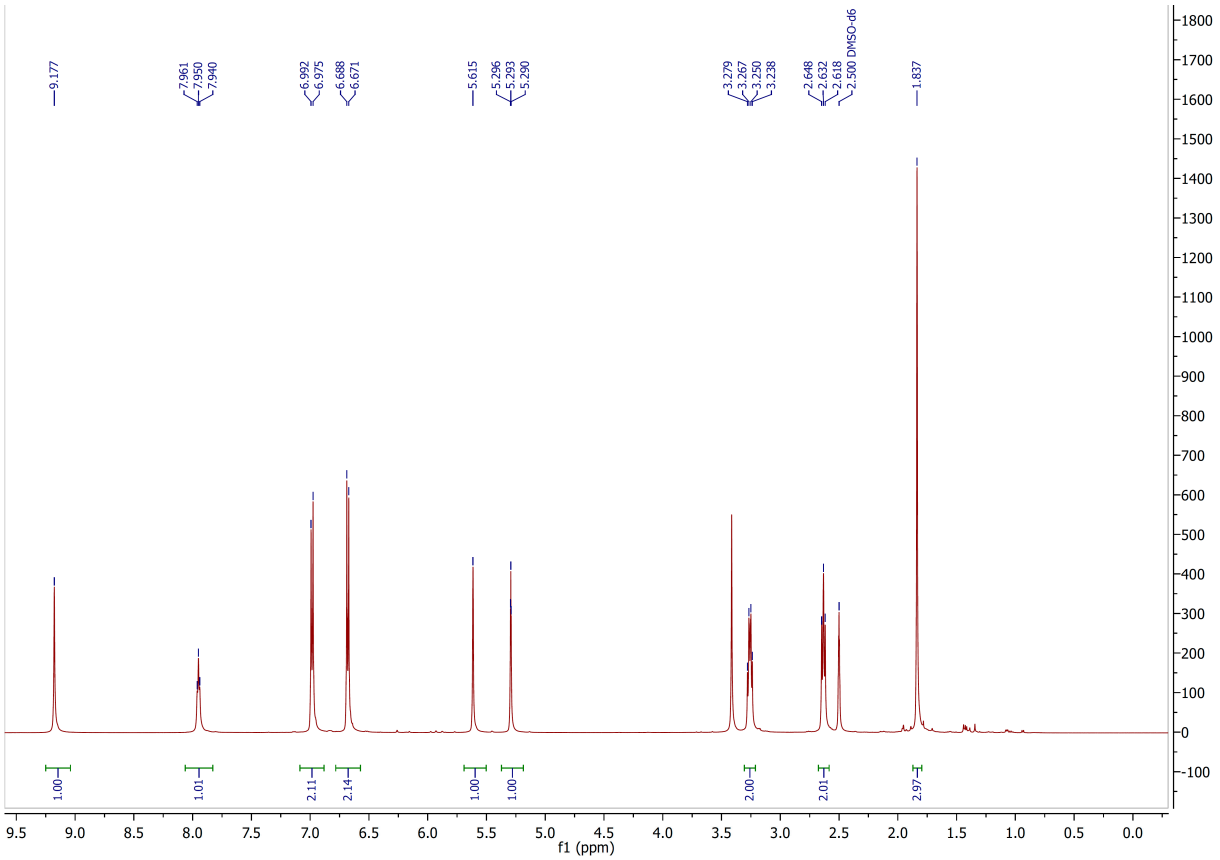


Figure S18: ^{1}H-NMR(TMA) (DMSO-d6, 500 MHz)

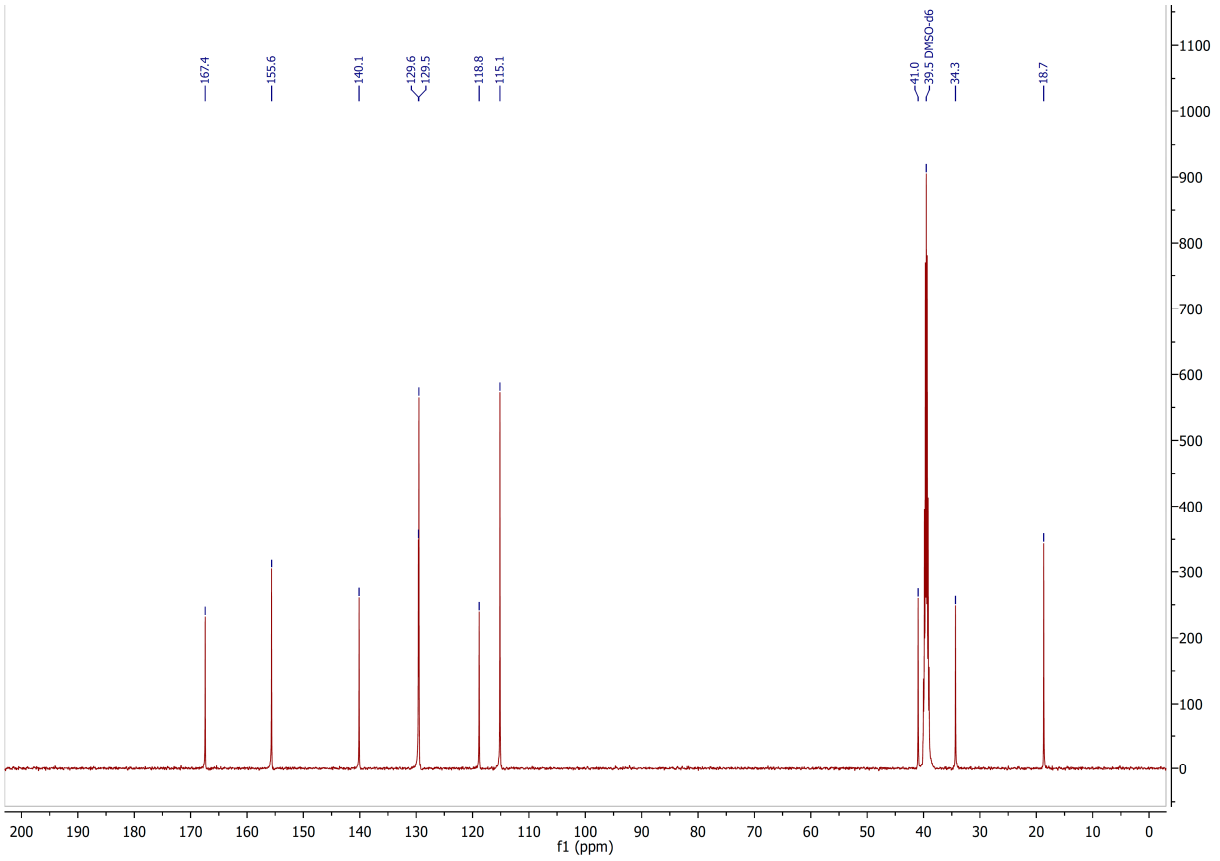


Figure S19: ^{13}C-NMR(TMA) (DMSO-d6, 126 MHz)

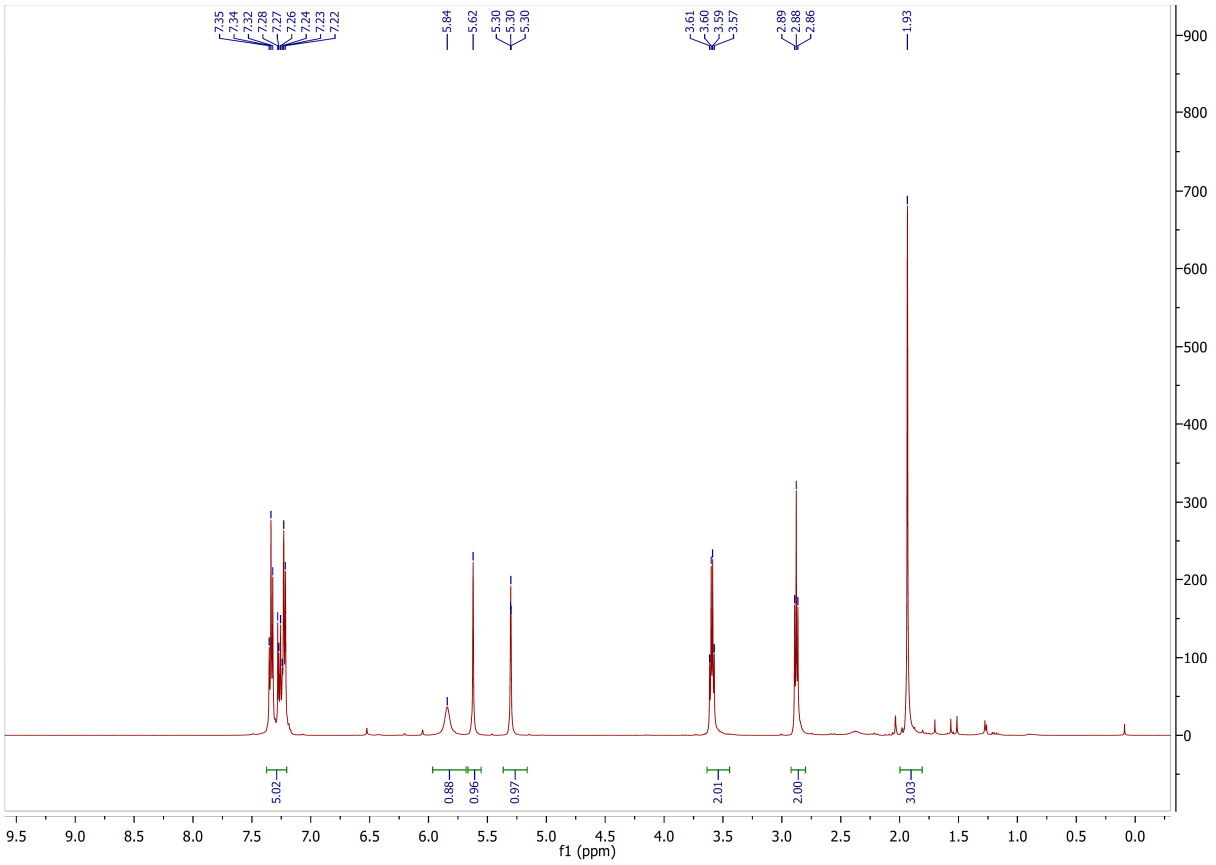


Figure S20: ^{1}H-NMR(PMA) ($CDCl_3$, 500 MHz)

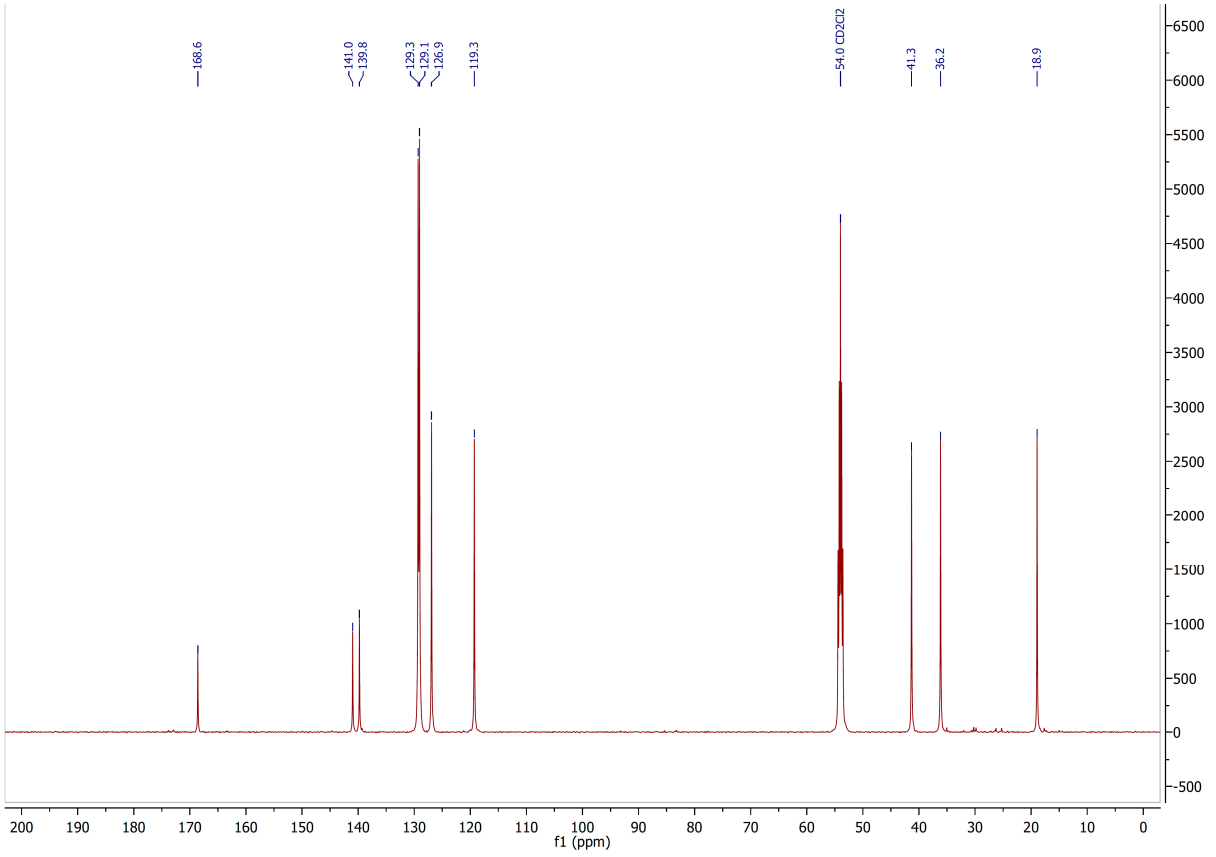
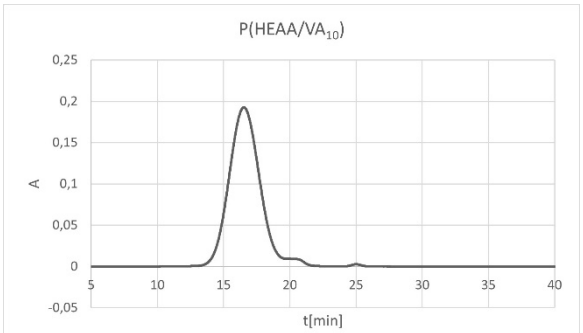
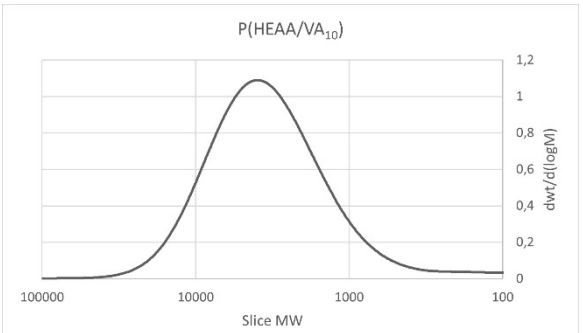


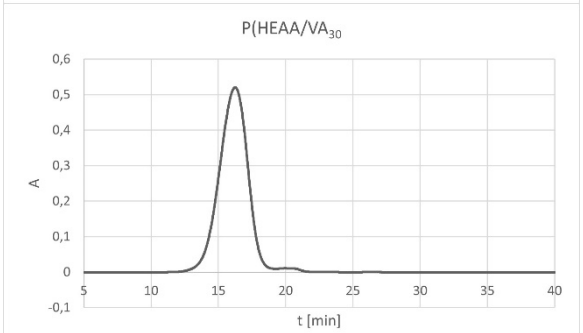
Figure S21: ^{13}C-NMR(PMA) (CD_2Cl_2, 126 MHz)

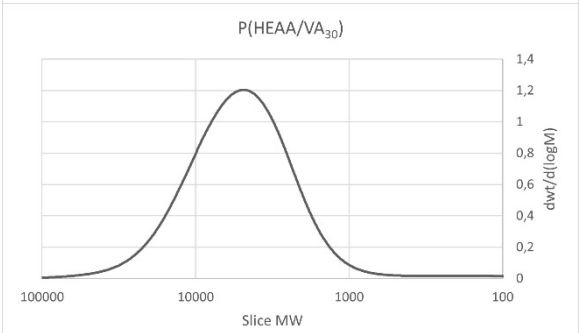
GPC:

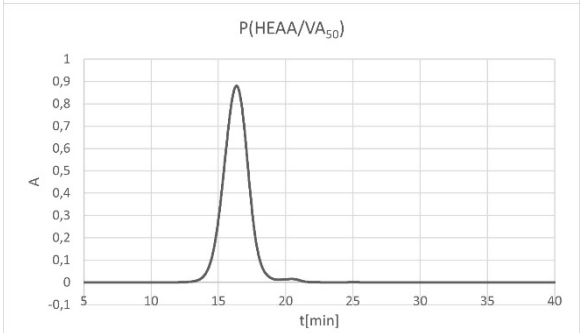
GPC measurements from Waters GPC system with a column of polysulfone styrene. Chromatograms of the presented polymers are shown here, where the retention times where taken from and used for molecular weight calculations.

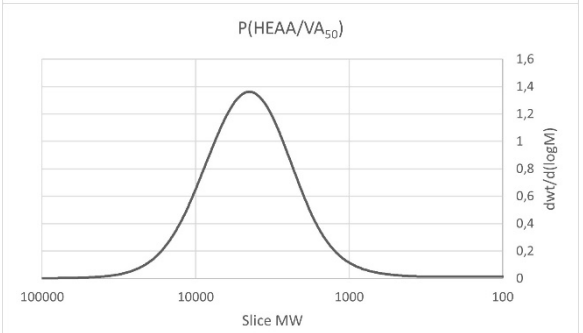


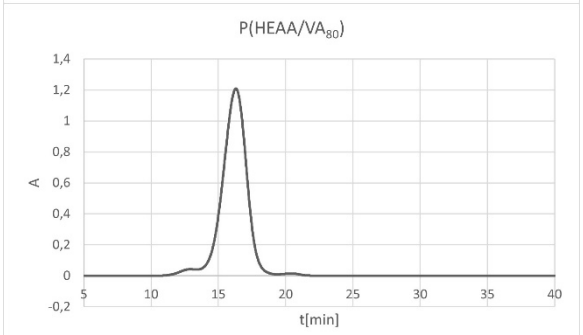


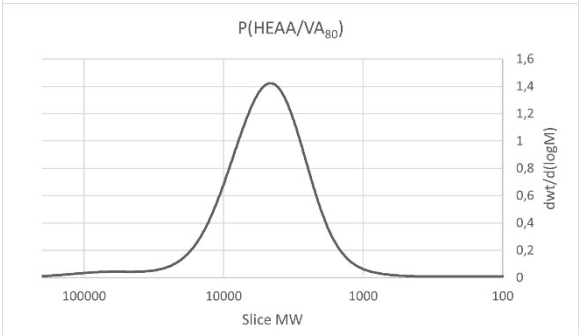


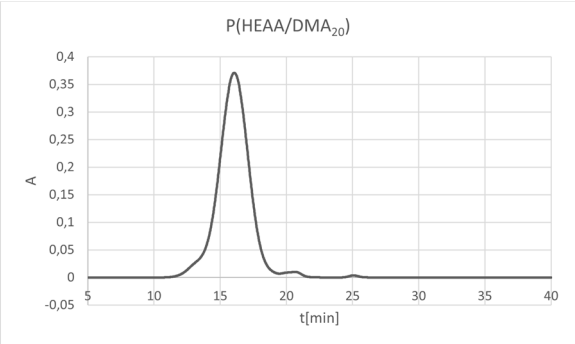


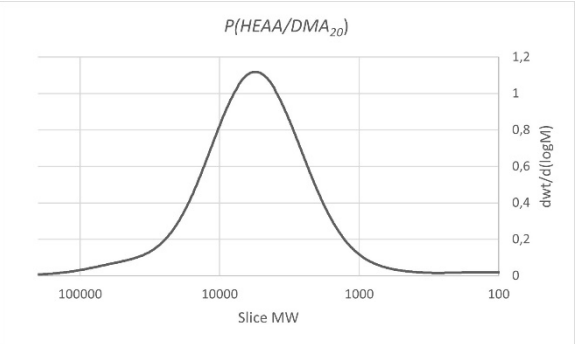


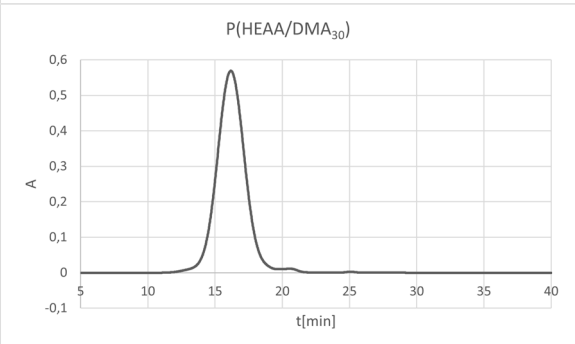


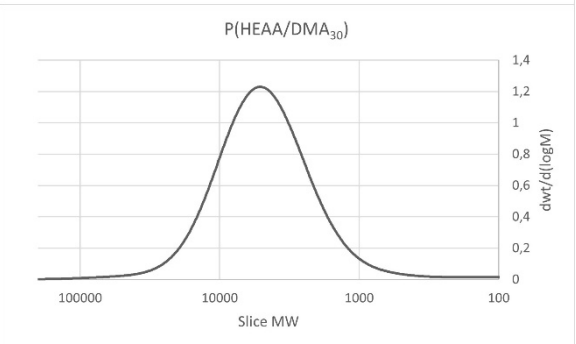


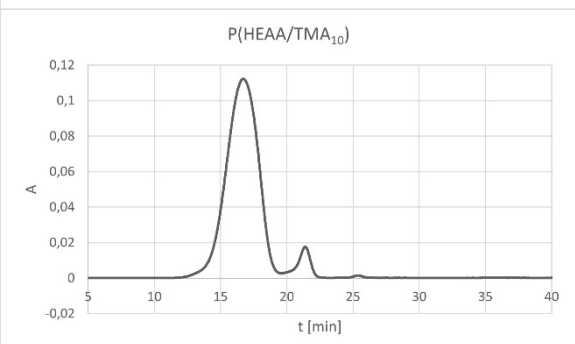


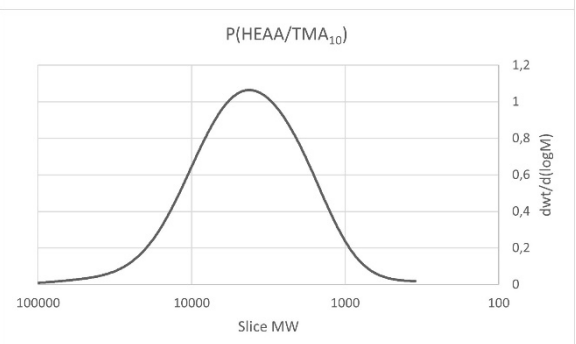

P(HEAA/DMA20)
A
t[min]

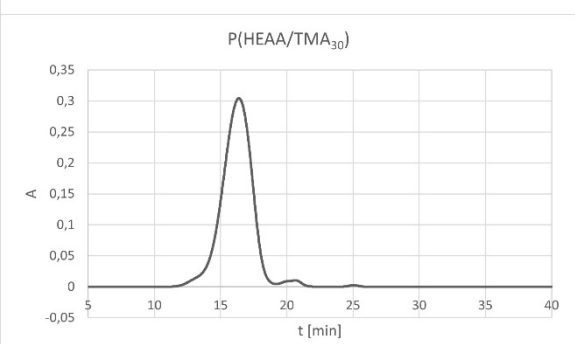

P(HEAA/DMA20)
dwt/d(logM)
Slice MW

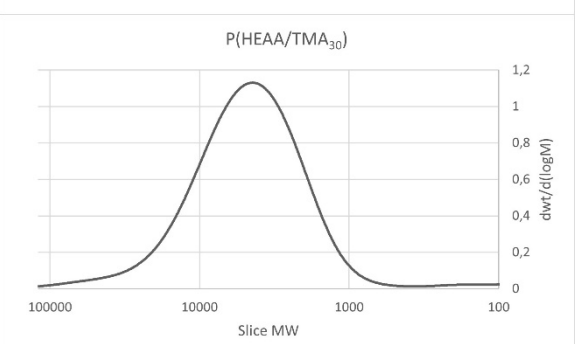

P(HEAA/DMA30)
A
t[min]

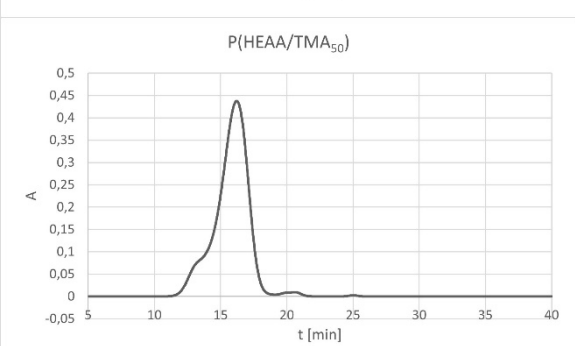

P(HEAA/DMA30)
dwt/d(logM)
Slice MW

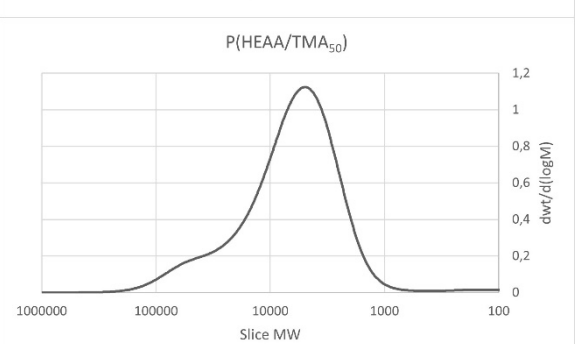

P(HEAA/TMA10)
A
t [min]

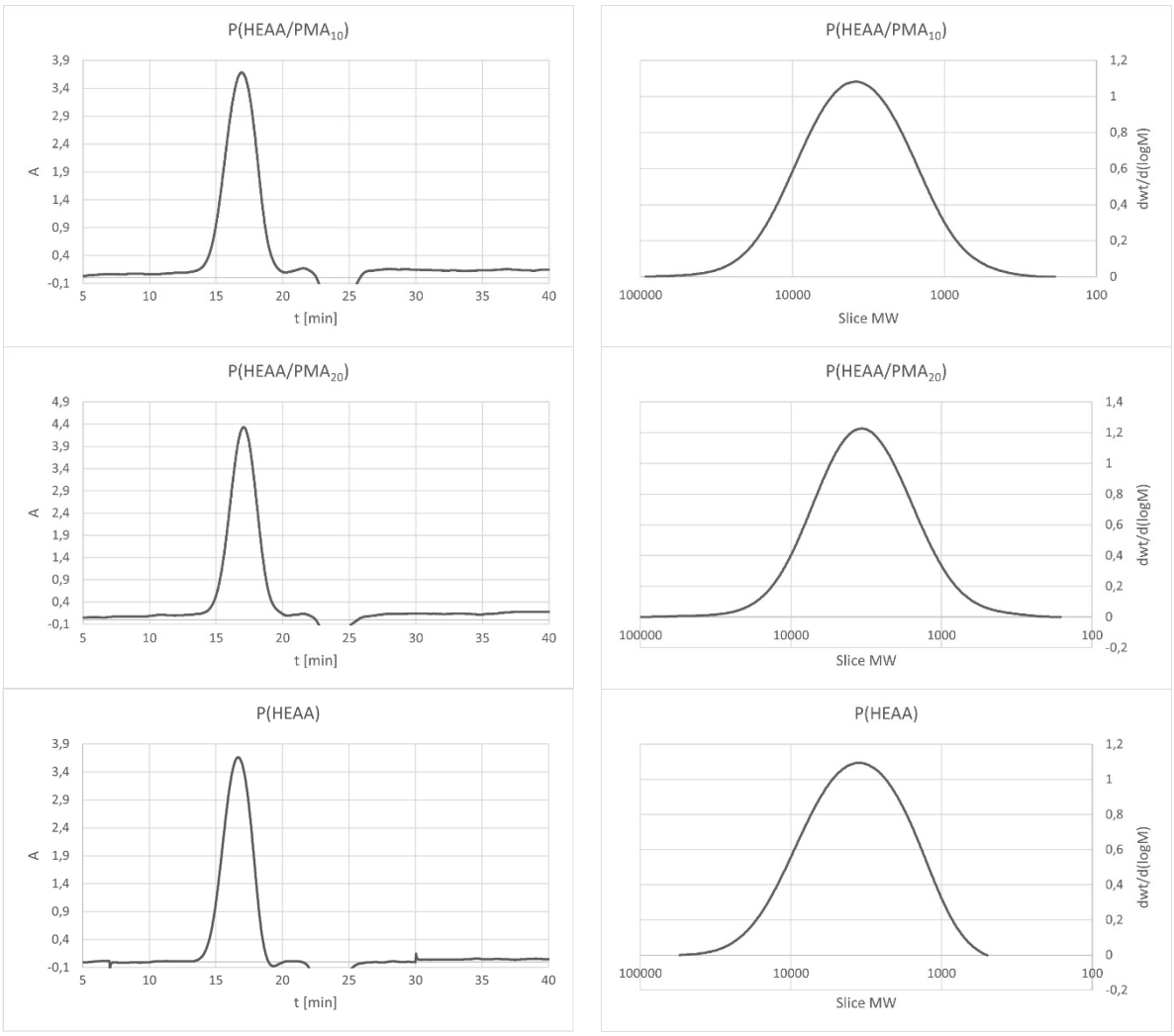

P(HEAA/TMA10)
dwt/d(logM)
Slice MW


P(HEAA/TMA30)
A
t [min]

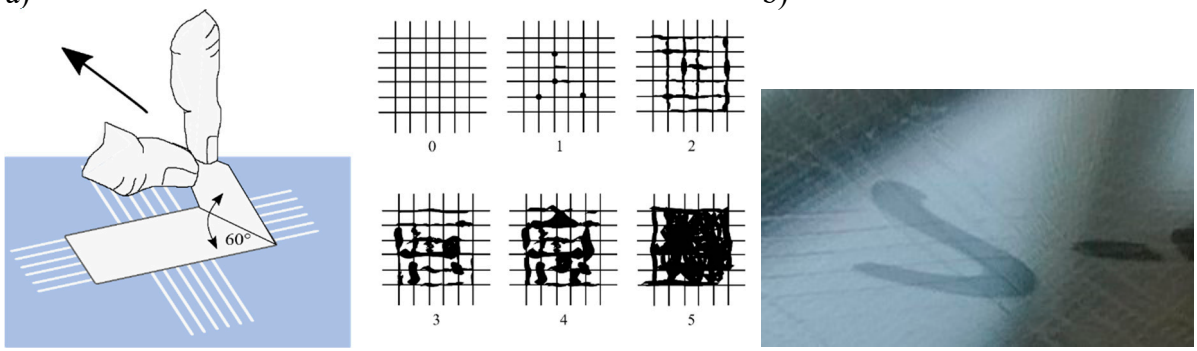

P(HEAA/TMA30)
dwt/d(logM)
Slice MW


P(HEAA/TMA50)
A
t [min]


P(HEAA/TMA50)
dwt/d(logM)
Slice MW



a) b)



Adhesion test: a) Cross-cut test according to DIN EN ISO 2409: ISO scale 0 - 5, 0 = cut edges clean and no detachment of grid squares, 1 = less than 5% of test area affected, 2 = 5 - 15%; 3 = 15 - 35%, 4 = 35 - 65%, 5 = higher than 65% of test area affected, b) adhesion test: P(HEAA/DMA$_{10}$) on glass: cross-cut class 0. Only one tested sample was photo-documented.