

SUPPORTING INFORMATION

Novel Biodegradable Poly(disulfide amine)s for Gene Delivery with High Efficiency and Low Cytotoxicity

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Content

Experiment Procedures

^1H NMR & FPLC poly(CBA-DAE)

^1H NMR & FPLC poly(CBA-DAB)

^1H NMR & FPLC poly(CBA-DAH)

Experiment Procedures

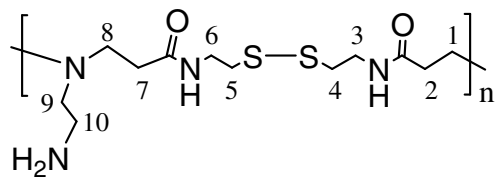
^1H Nuclear magnetic resonance (^1H NMR)

The ^1H NMR spectra of the synthesized poly(disulfide amine)s in D_2O were recorded at 400 MHz.

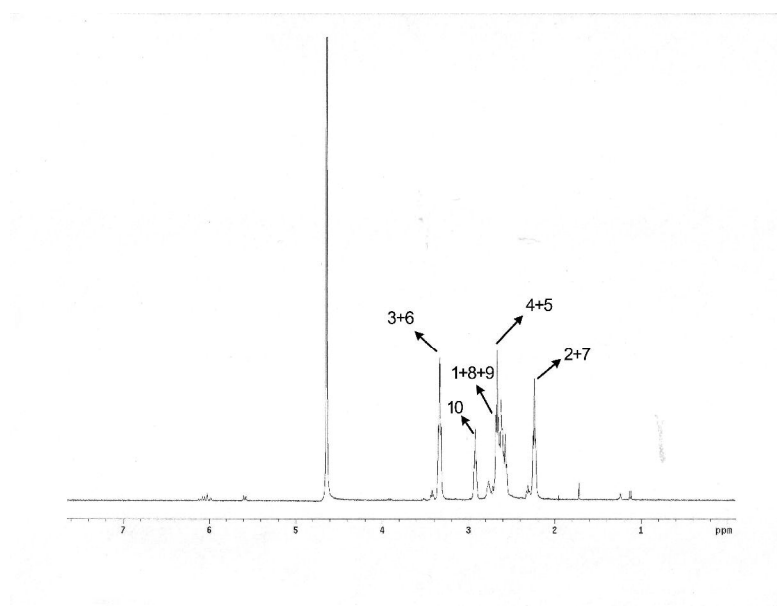
Fast protein liquid chromatography (FPLC)

FPLC measurements were performed using an AKTA FPLC system with a Superose 12 column, and ultraviolet and refractive index detectors. Polymers were loaded into the column as a concentration of 25 mg/mL and eluted with Tris buffer (pH 7.4), which were calibrated using a poly[*N*-(2-hydroxypropyl)-methacrylamide] (pHPMA) standards.

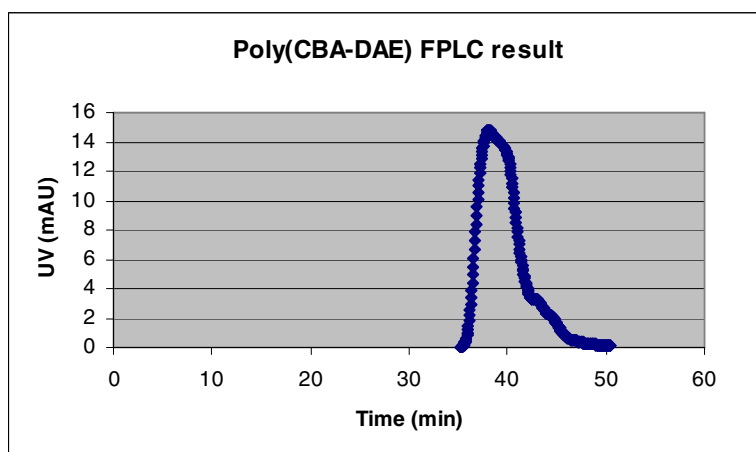
^1H NMR & FPLC of poly(CBA-DAE)



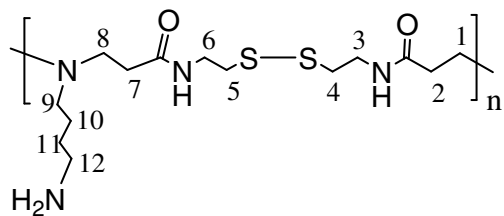
^1H NMR, poly(CBA-DAE): 2.91 (NCH₂CH₂NH₂, 2H), 2.64 (NCH₂CH₂NH₂, 2H), 2.63 (NCH₂CH₂CO, 4H), 2.22 (NCH₂CH₂CO, 4H), 3.34 (CONHCH₂CH₂SS, 4H), 2.62 (CH₂SSCH₂, 4H)



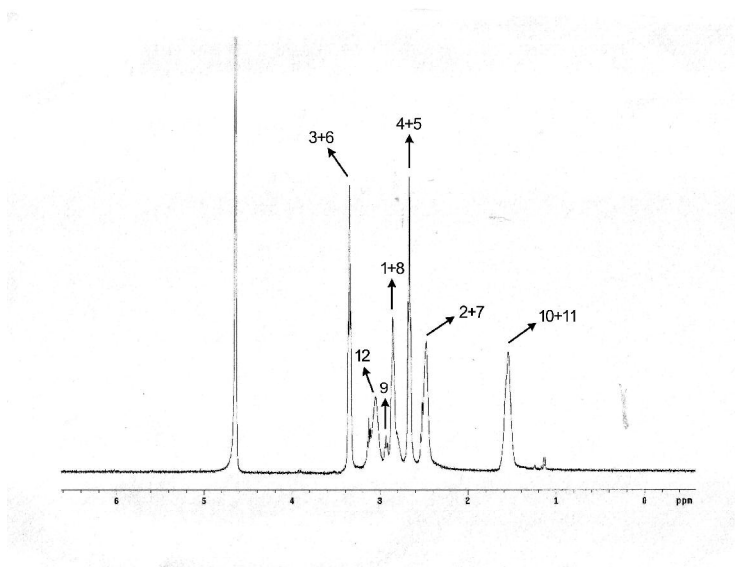
FPLC of poly(CBA-DAE) ($M_n = 2.85$ kDa, $M_w = 3.34$ kDa, PDI = 1.17)



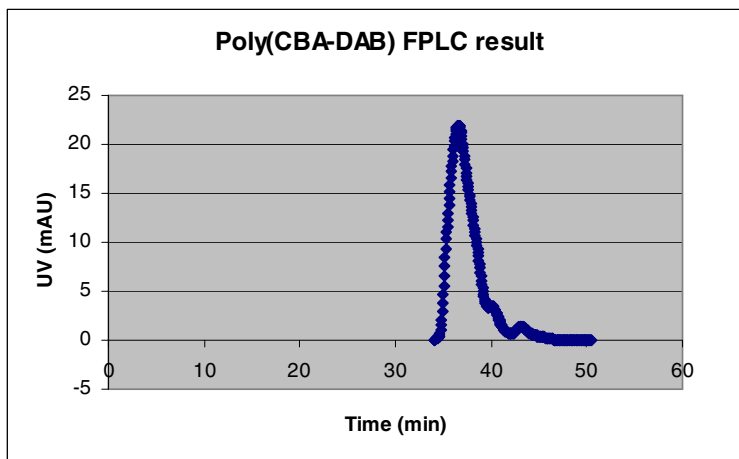
^1H NMR & FPLC of poly(CBA-DAB)



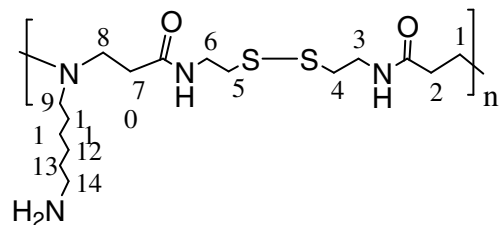
^1H NMR, poly(CBA-DAB): 3.08 (NCH₂CH₂CH₂CH₂NH₂, 2H), 1.58 (NCH₂CH₂CH₂CH₂NH₂, 2H), 1.58 (NCH₂CH₂CH₂CH₂NH₂, 2H), 2.91 (NCH₂CH₂CH₂CH₂NH₂, 2H), 2.82 (NCH₂CH₂CO, 4H), 2.48 (NCH₂CH₂CO, 4H), 3.38 (CONHCH₂CH₂SS, 4H), 2.63 (CH₂SSCH₂, 4H)



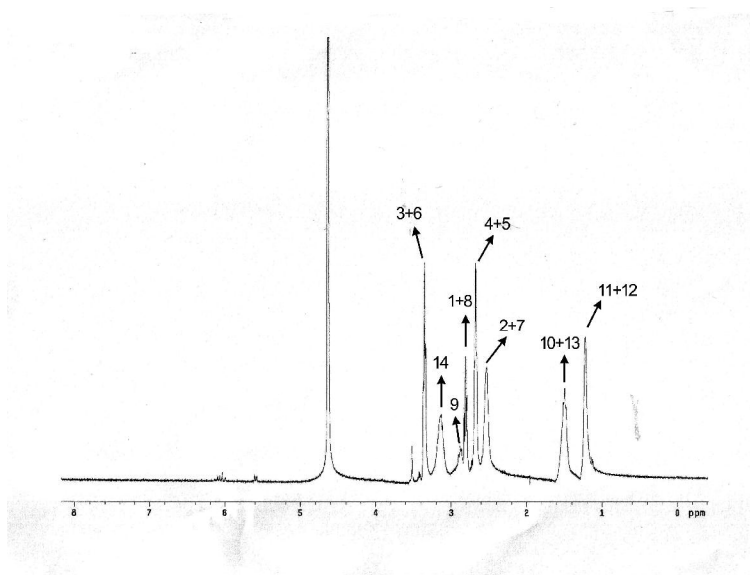
FPLC of poly(CBA-DAB) ($M_n = 4.23$ kDa, $M_w = 4.72$ kDa, PDI = 1.12)



¹H NMR & FPLC of poly(CBA-DAH)



¹H NMR, poly(CBA-DAH): 3.15 (NCH₂CH₂CH₂CH₂CH₂CH₂NH₂, 2H), 1.48 (NCH₂CH₂CH₂CH₂CH₂CH₂NH₂, 2H), 1.19 (NCH₂CH₂CH₂CH₂CH₂CH₂NH₂, 2H), 1.19 (NCH₂CH₂CH₂CH₂CH₂CH₂NH₂, 2H), 1.48 (NCH₂CH₂CH₂CH₂CH₂CH₂NH₂, 2H), 2.85 (NCH₂CH₂CH₂CH₂CH₂CH₂NH₂, 2H), 2.81 (NCH₂CH₂CO, 4H), 2.52 (NCH₂CH₂CO, 4H), 3.35 (CONHCH₂CH₂SS, 4H), 2.65 (CH₂SSCH₂, 4H)



FPLC of poly(CBA-DAH) ($M_n = 3.12$ kDa, $M_w = 3.52$ kDa, PDI = 1.13)

