Electronic Supplementary Information (ESI)

Study of the RAFT homopolymerization and copolymerization of *N*-[3-(dimethylamino)propyl]-methacrylamide hydrochloride and evaluation of the cytotoxicity of the resulting homo- and copolymers

Pratyawadee Singhsa,[a,b] Hathaikarn Manuspiya[a] and Ravin Narain*[b]

[a] Department of Chemical and Materials Engineering, Donadeo Innovation Centre for Engineering, Edmonton, AB T6G 2G6, Canada. Email: narain@ualberta.ca

[b] The Petroleum and Petrochemical College, Center of Excellence on Petrochemical and Materials Technology, Chulalongkorn University, Soi Chulalongkorn 12, Pathumwan, Bangkok 10330, Thailand.

Table S1 Effect of CTP/ACVA ratio on synthesis of p(DMAPMA.HCl)-based macroCTA and consequent effect of monomer concentration on the self-chain extension of DMAPMA.HCl

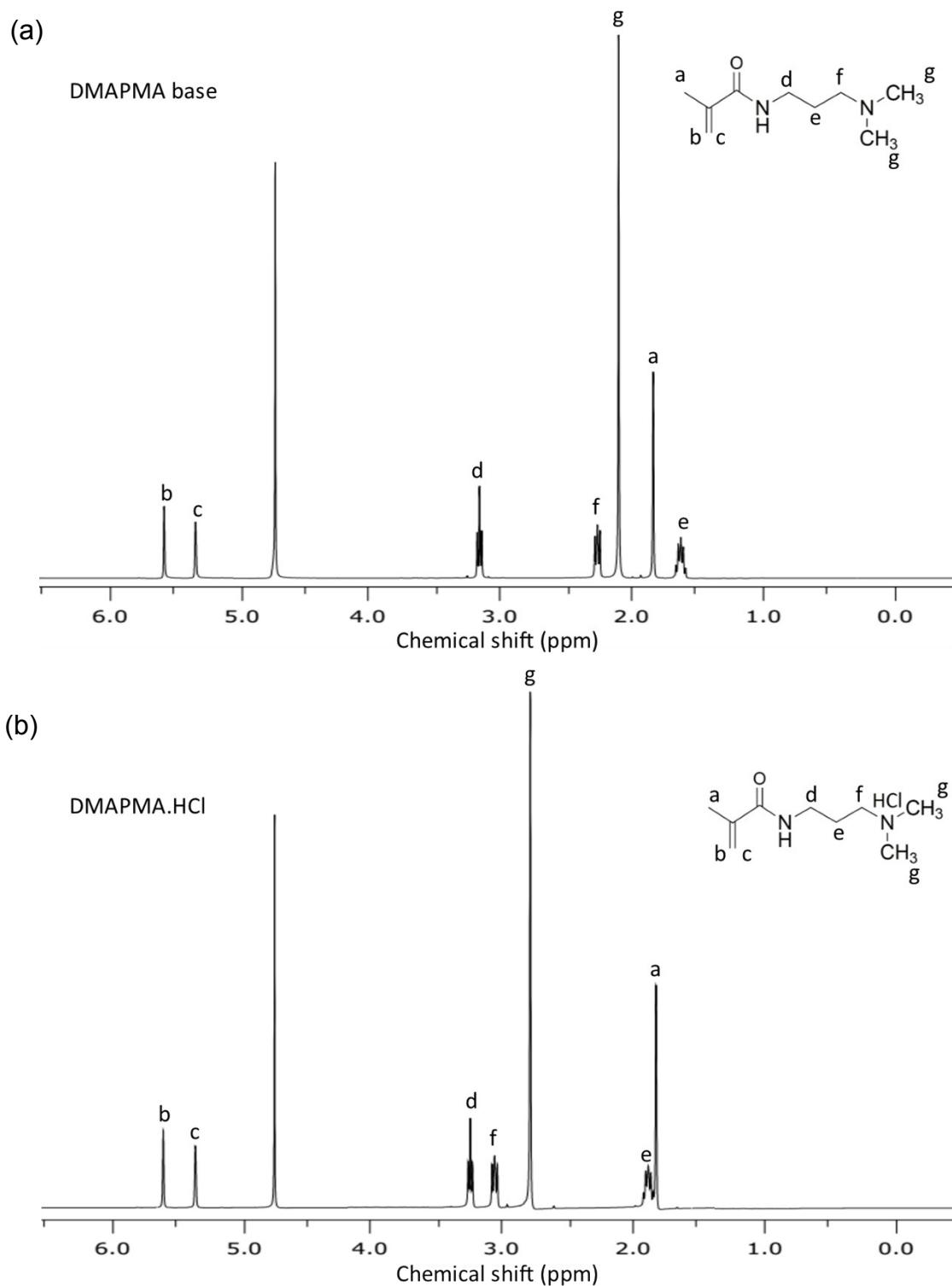| Sample	MacroCTA (Block 1)				Self-chain extension (Block 2)			
	[CTP]/[ACVA]	%Conv.	M_n (x 10^4)	M_w/M_n	[DMAPMA.HCl]	%Conv.	M_n (x 10^4)	M_w/M_n
pDD-2-0.2	2	65	1.35	1.21	0.2 M	92	3.25	1.34
pDD-2-0.5	2	65	1.35	1.21	0.5 M	95	3.31	1.37
pDD-5-0.2	5	60	1.25	1.18	0.2 M	70	2.68	1.29
pDD-5-0.5	5	60	1.25	1.18	0.5 M	74	2.77	1.31

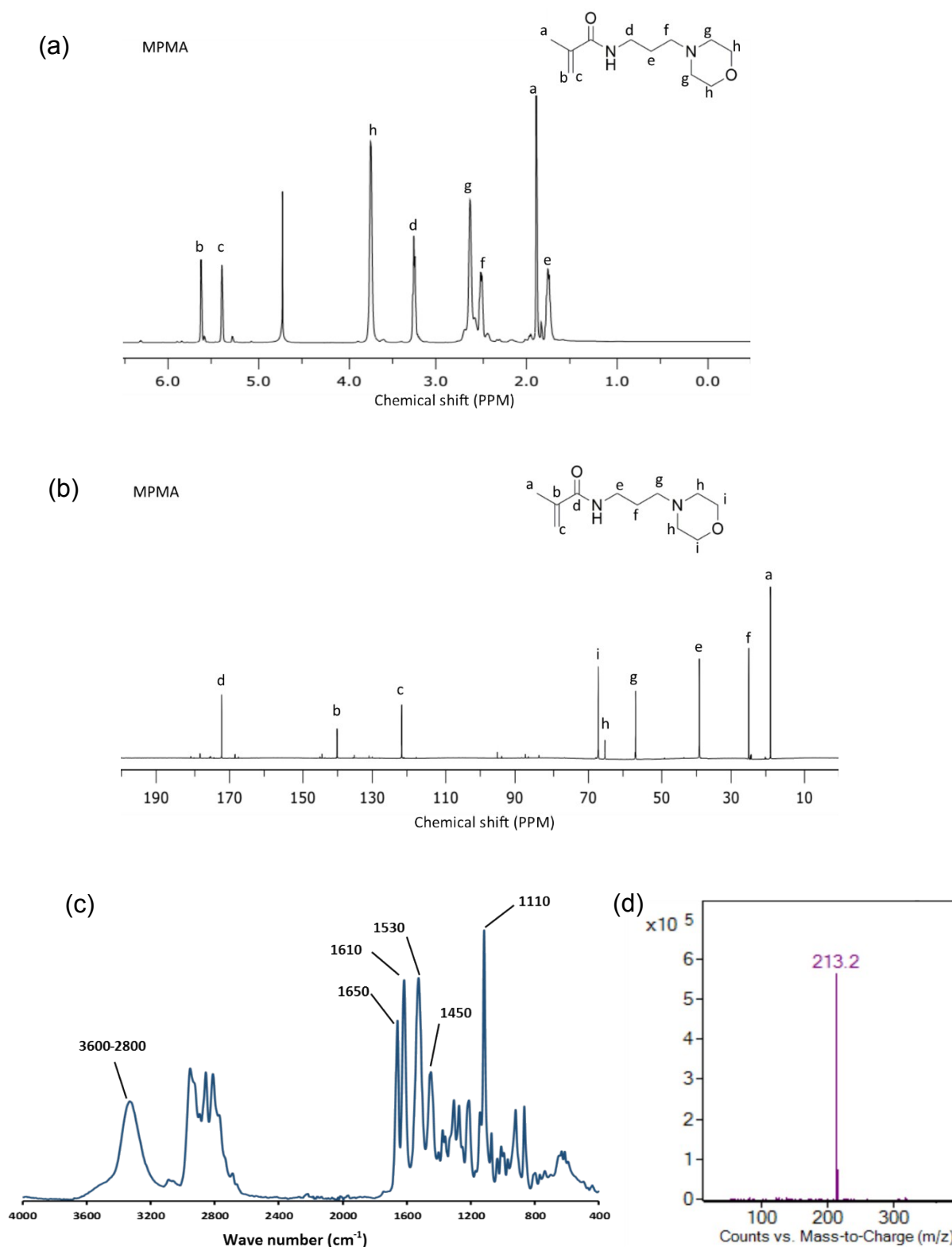**Fig. S1** ^{1}H NMR spectra of (a) DMAPMA base monomer, (b) DMAPMA.HCl monomer.

Fig. S2 Characterization of MPMA monomer: (a) ^{1}H NMR spectra, (b) ^{13}C NMR spectra, (C) FT-IR spectra, and (d) LC-ESI-MS spectra.
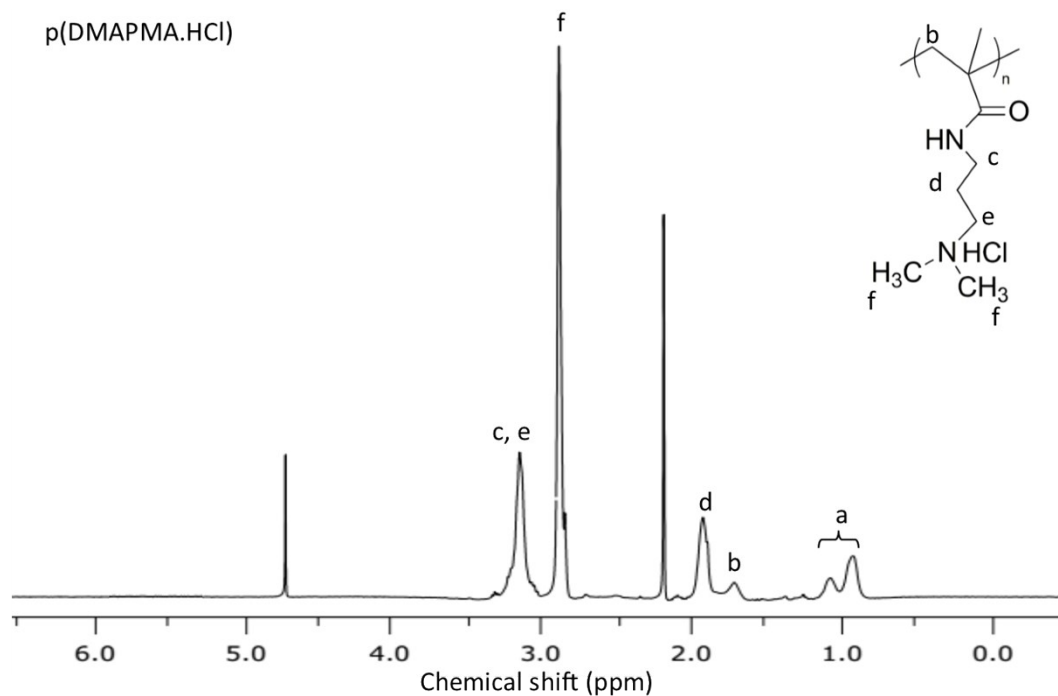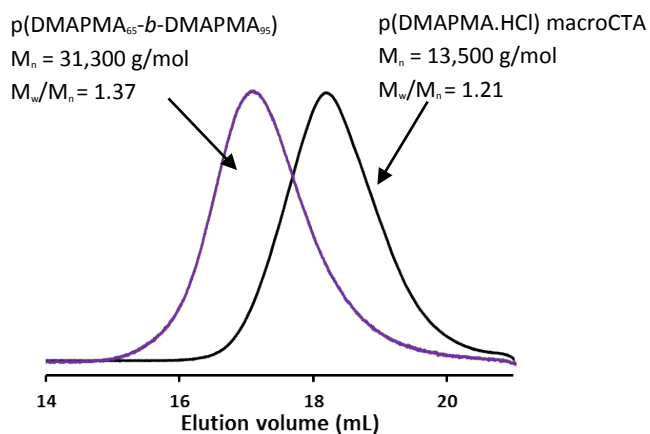
Fig. S3 ^{1}H NMR spectra of pDMAPMA.HCl.

Fig. S4 GPC traces of p(DMAPMA.HCl)-based macroCTA and self-chain extension reaction with [CTP]/[ACVA] = 2 /1 and monomer concentration of 0.5 M at 70 °C in the solvent mixture of acidic water/2-propanol = 2:1.
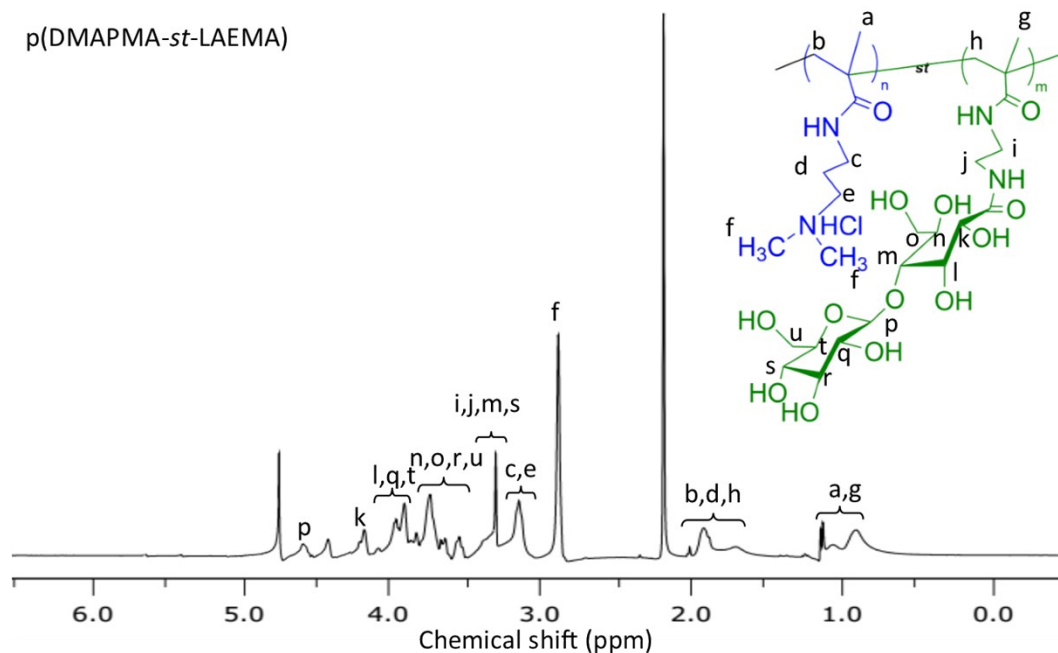
S5

Fig. S5 ^{1}H NMR spectra of p(DMAPMA-*st*-LAEMA).

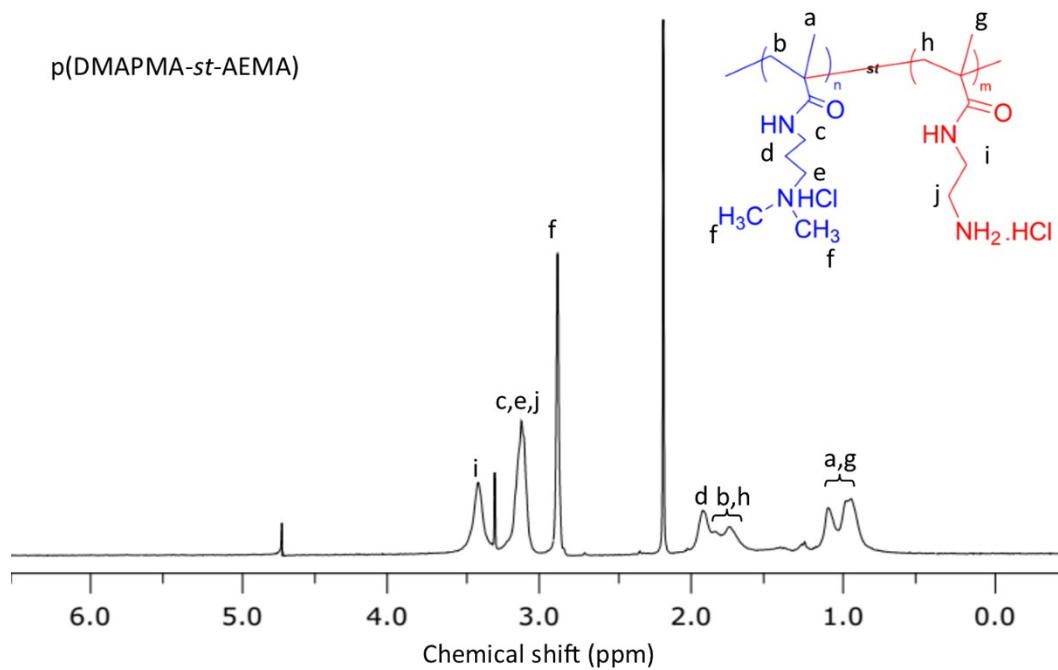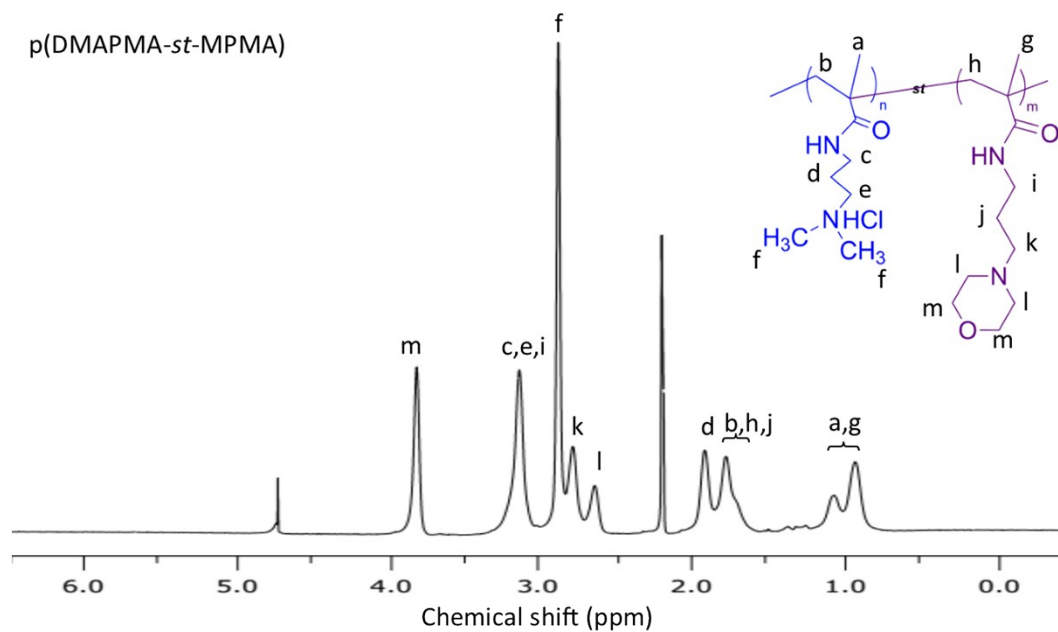**Fig. S6** ^{1}H NMR spectra of p(DMAPMA-*st*-AEMA).
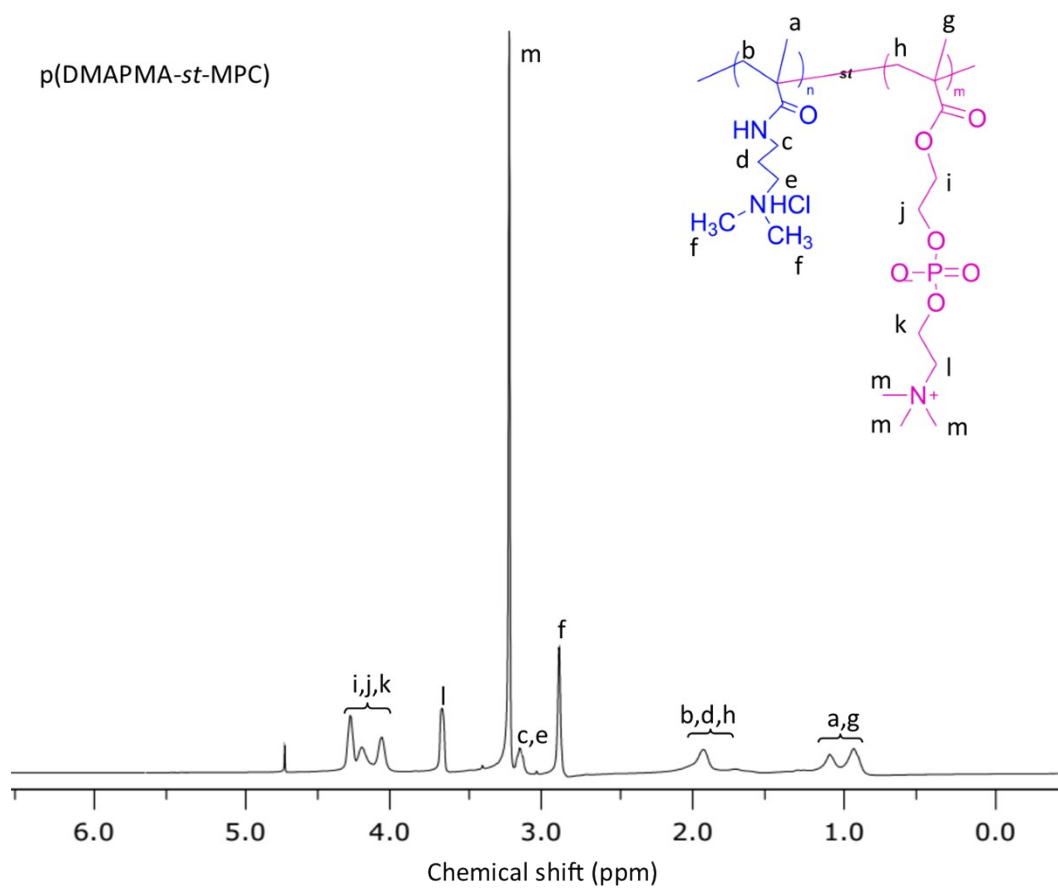
Fig. S7 ^{1}H NMR spectra of p(DMAPMA-*st*-MPMA).

Fig. S8 ^{1}H NMR spectra of p(DMAPMA-*st*-MPC).