Electronic Supplementary Material (ESI) for Polymer Chemistry

Supporting Information

Synthesis of gradient copolymers by concurrent enzymatic monomer transformation and RAFT polymerization

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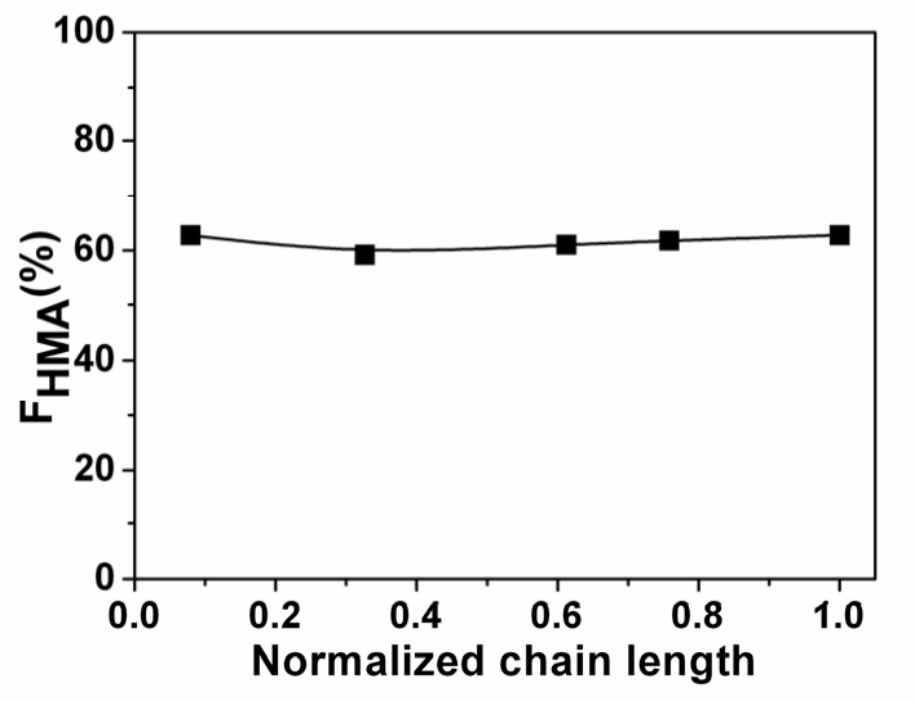
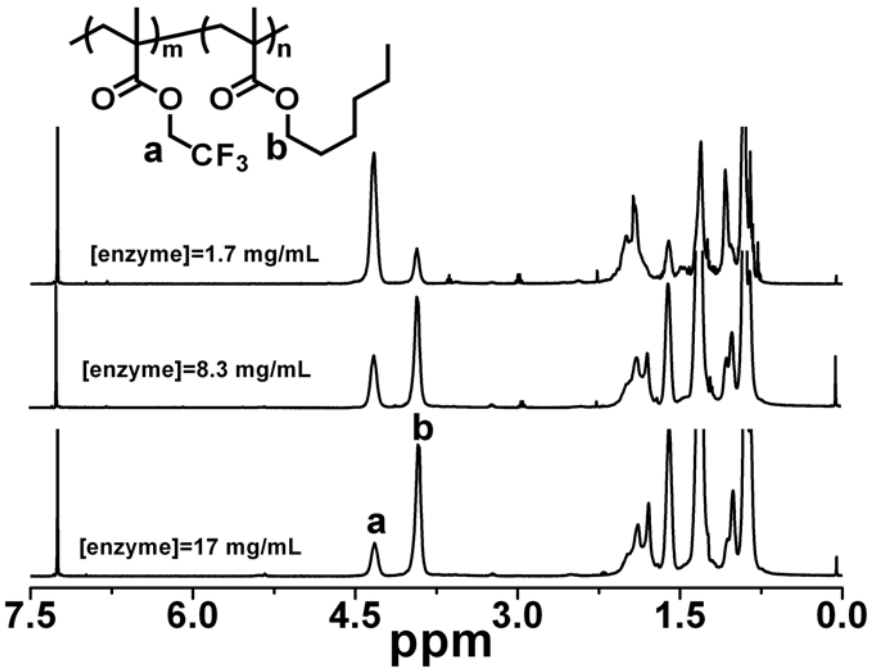
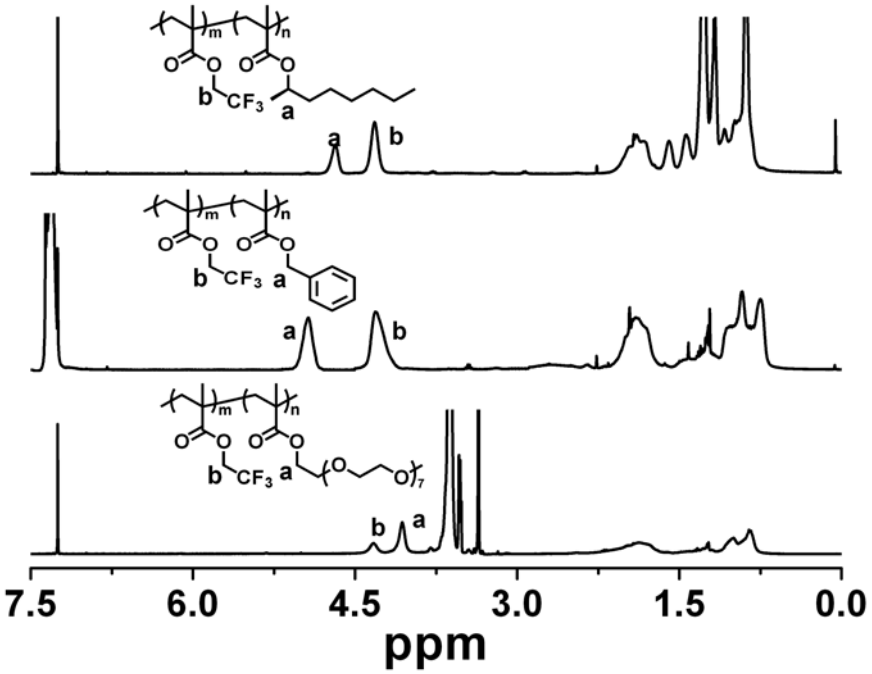
Supporting Data



SFig. 1. Cumulative RMA mole fraction (F_{RMA}) as a function of normalized chain length during random copolymerization of HMA and TFEMA.



SFig. 2. ^{1}H NMR spectra ($CDCl_3$) of gradient copolymers pHMA-*g*-pTFEMA catalyzed by different concentrations of enzyme after purification.



SFig. 3. ^{1}H NMR spectra ($CDCl_3$) of gradient copolymers based on different alcohols after purification. [CETPA] = 12.5 mM; [ABVN] = 4.2 mM; $[TFEMA]_0$ = 1.0 M; $[ROH]_0$ = 1.0 M

(BzOH and mPEG) or 2.0 M (2-octanol); [TEA] = 1.0 M; [Novozym435] = 8.3 mg/mL in 6.0 mL of toluene at 55 ^{o}C.

STab. 1. Information of gradient and random copolymers

polymer	F_{RMA}(%)	M_n	PDI	Tg^{onset} (^{o}C)
pTFEMA-g-pHMA	56	12800	1.25	21.6
pTFEMA-r-pHMA	60	11500	1.39	39.1
pTFEMA-g-pBzMA	42	8300	1.44	21.5
pTFEMA-r-pBzMA	50	10600	1.22	80.0
pTFEMA-g-pOMA	34	12600	1.22	28.3
pTFEMA-r-pOMA	50	7800	1.32	34.3