Electronic Supplementary Information

For

RAFT-mediated polymerisation of dialkylaminoethyl methacrylates in *tert*-butanol

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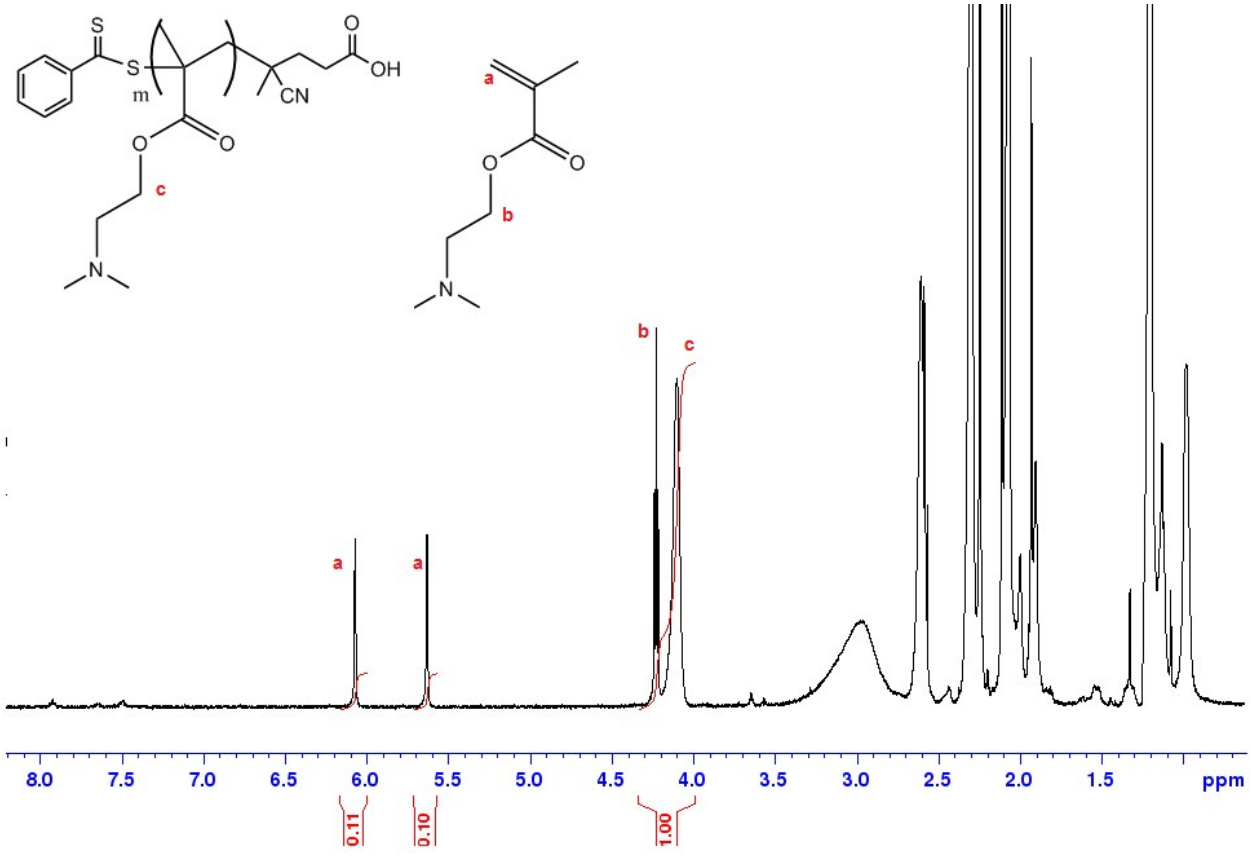
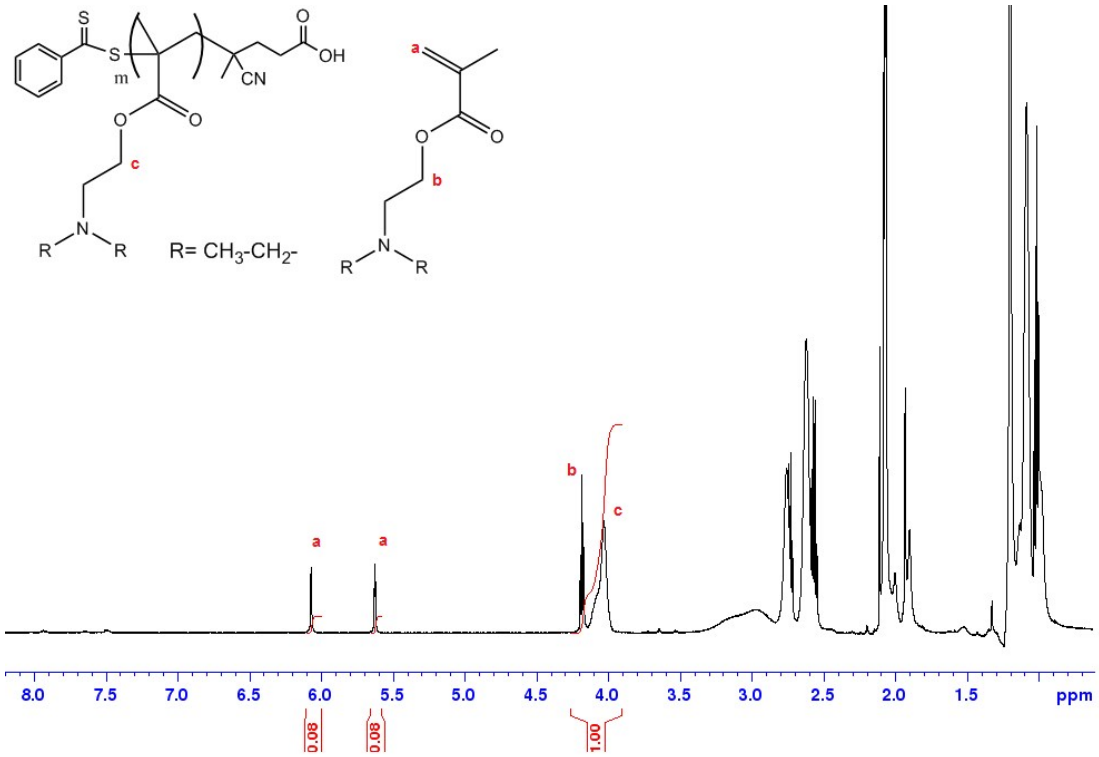
Monomer conversion is calculated as follows. The same calculation applies for all three monomer types.

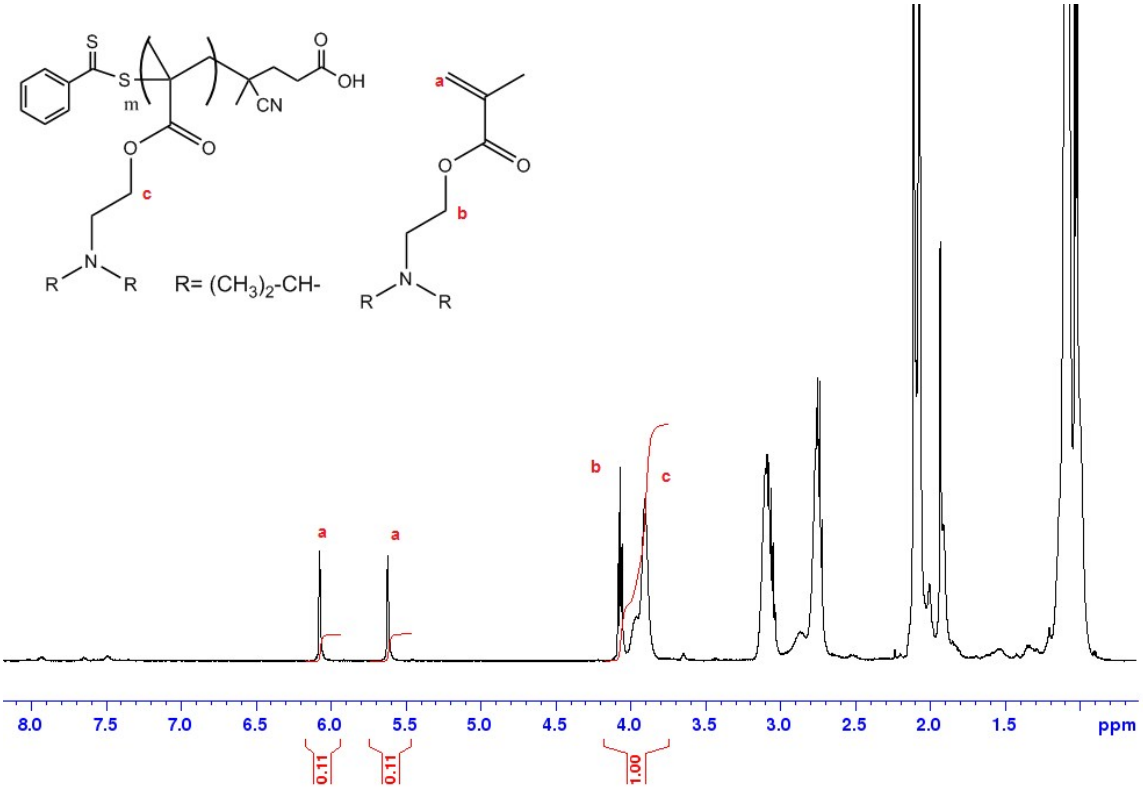
$$\%\ conv = \left(1 - \frac{2H_a}{H_{b+c} - 2H_a}\right) * 100$$



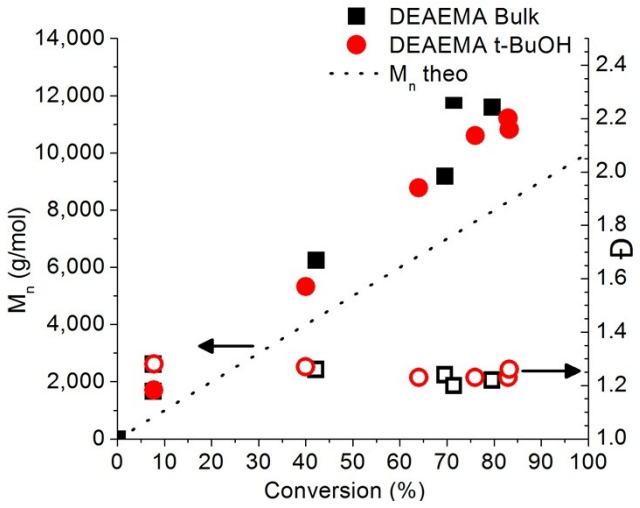
S1. ^{1}H NMR spectrum of DMAEMA polymerization in t-BuOH.



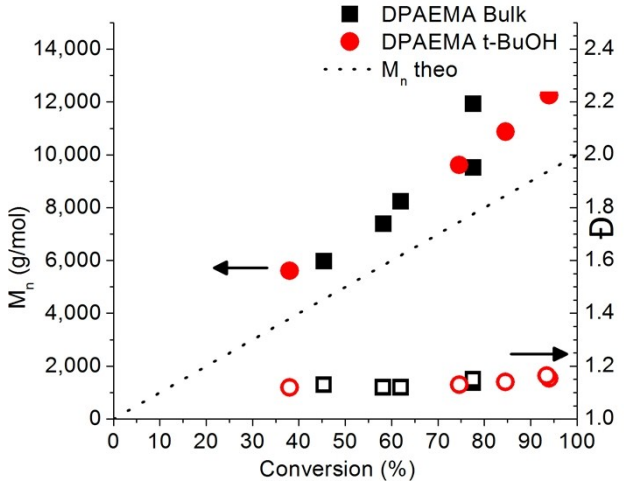
S2. ^{1}H NMR spectrum of DEAEMA polymerisation in t-BuOH.



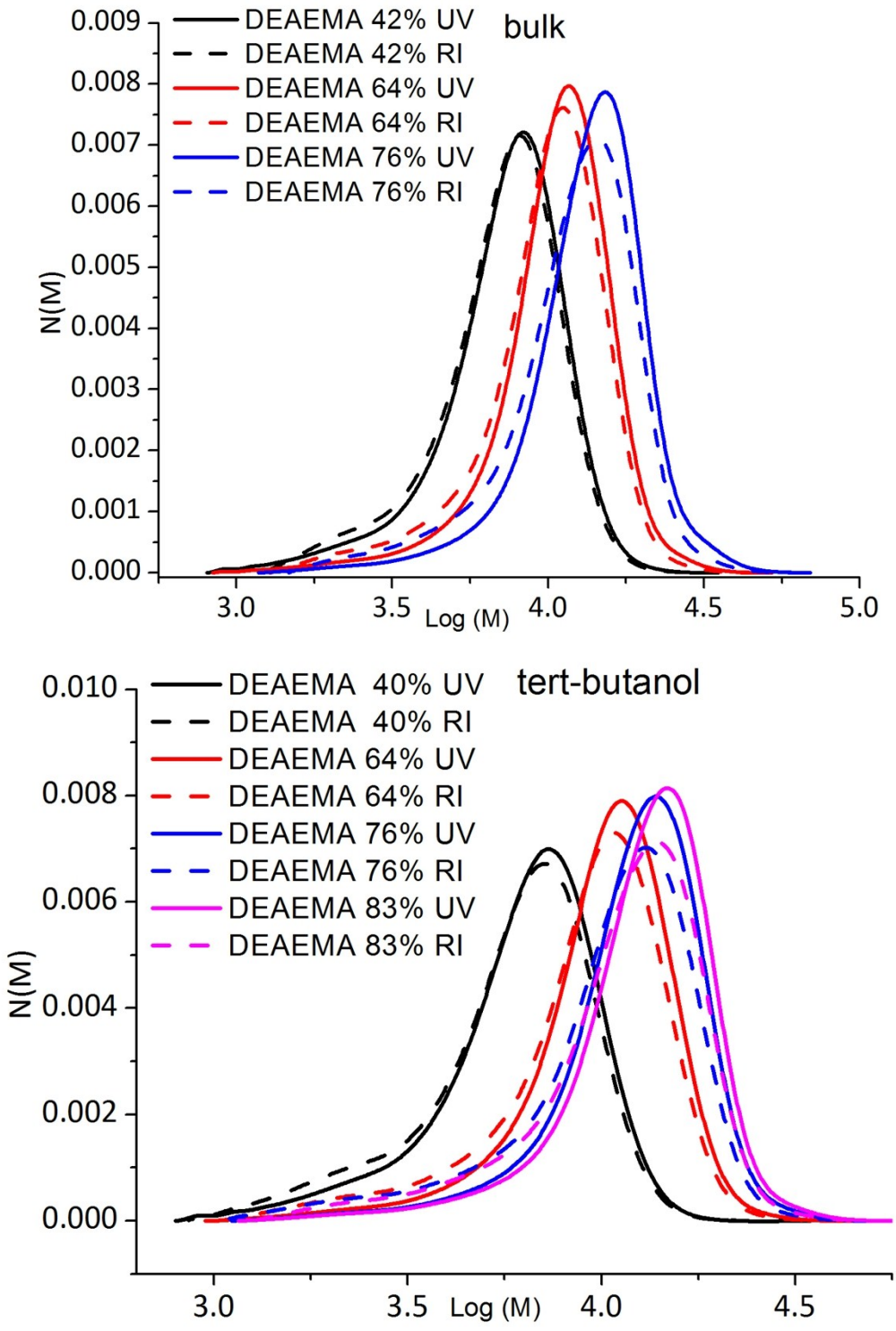
S3. ^{1}H NMR spectrum of DPAEMA polymerisation in bulk.



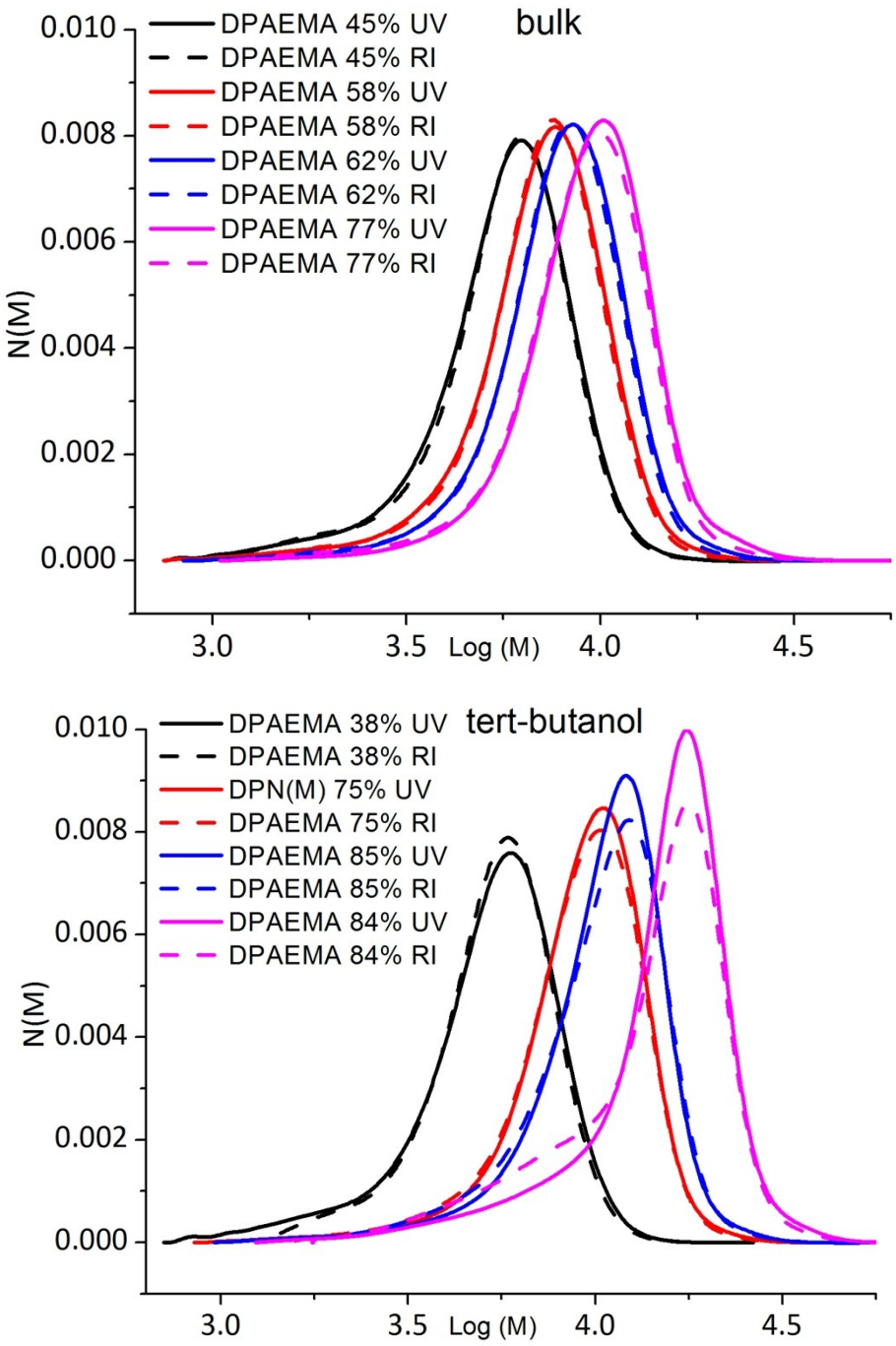
S4. Evolution of M_n vs. conversion of PDEAEMA, bulk and in tert-butanol via RAFT polymerisation at 70°C. DMAEMA: $[M]_0 : [CTP]_0 : [I]_0 = 318:5:1$.



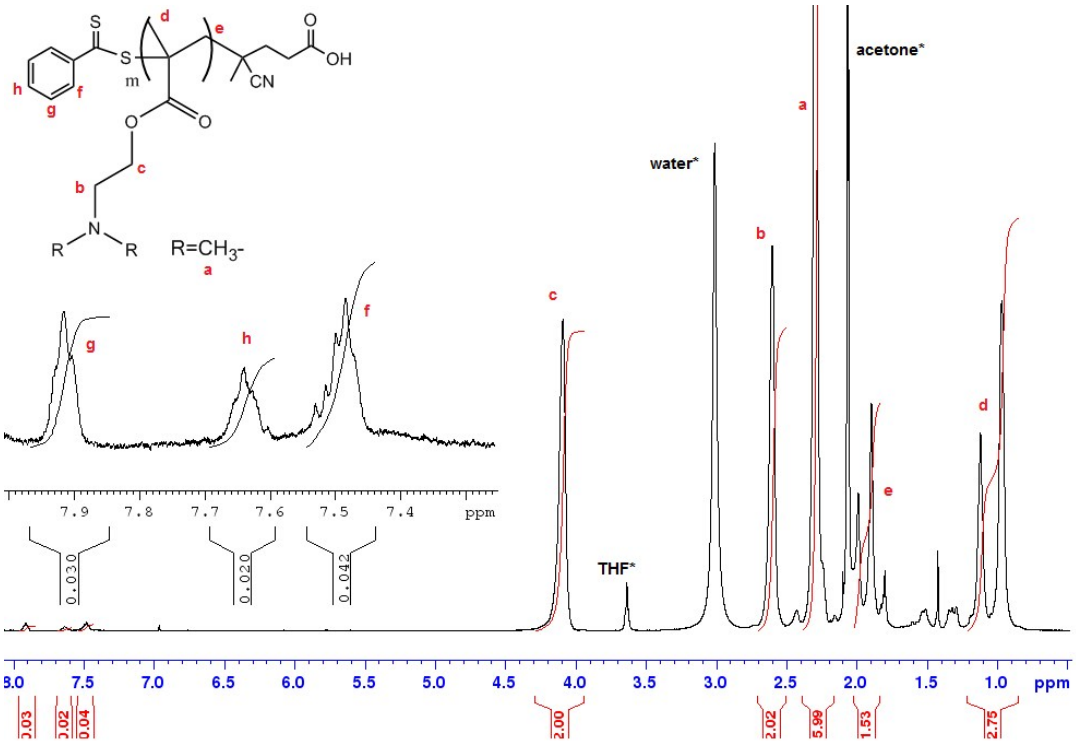
S5. Evolution of M_n vs. conversion of PDPAEMA, bulk and in tert-butanol via RAFT polymerisation at 70°C. DMAEMA: $[M]_0 : [CTP]_0 : [I]_0 = 318:5:1$.



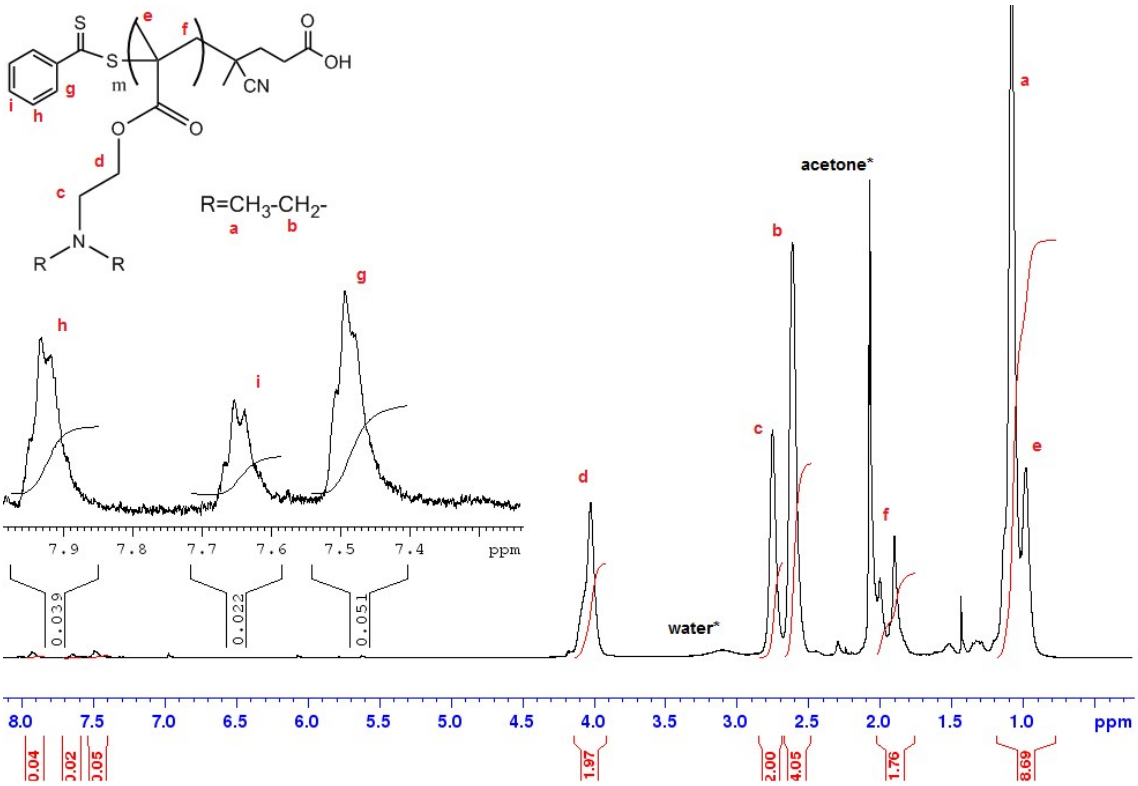
S6. Number-based MWDs of the polymerisation of DEAEMA in bulk and in tert-butanol via RAFT polymerisation at 70°C. $[M]_0 : [CTP]_0 : [I]_0 = 318:5:1$.



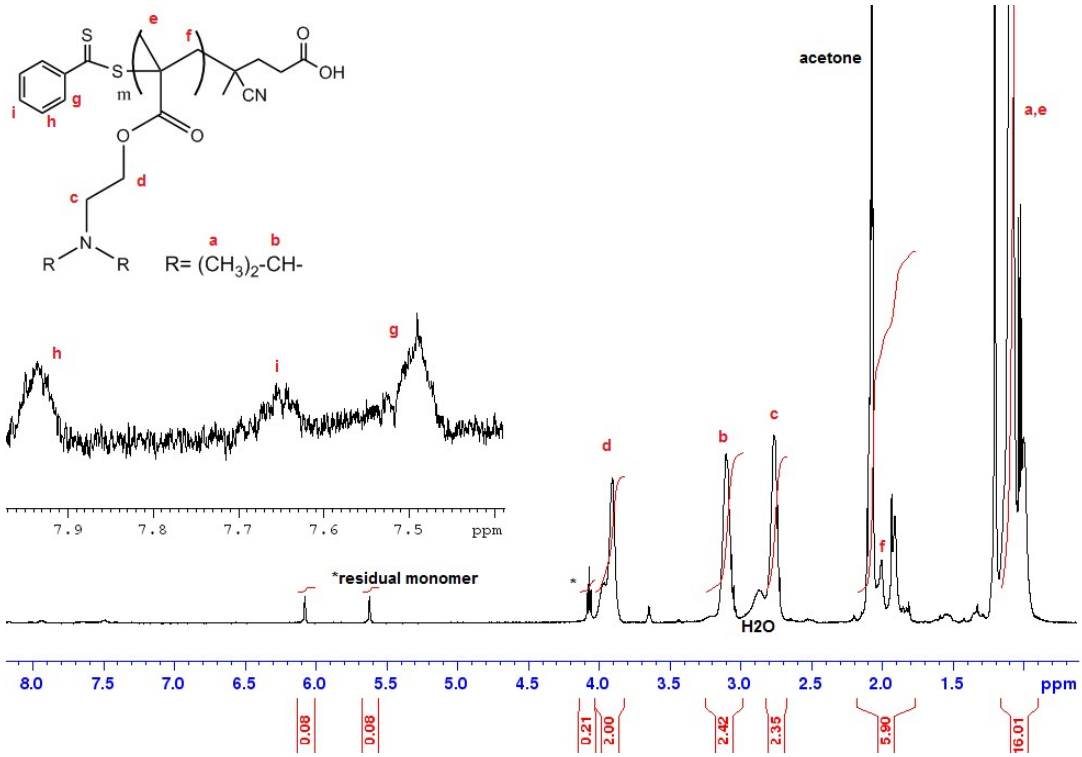
S7. Number-based MWDs of the polymerisation of DPAEMA in bulk and in tert-butanol via RAFT polymerisation at 70°C. $[M]_0 : [CTP]_0 : [I]_0 = 318:5:1$.



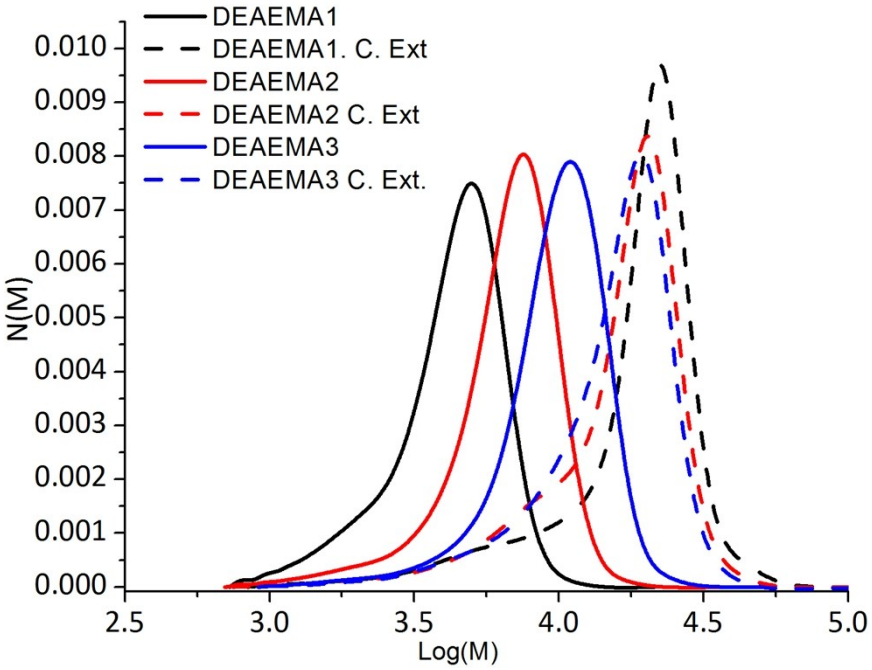
S8. ^{1}H NMR spectrum of PDMAEMA based macro-RAFT agent.



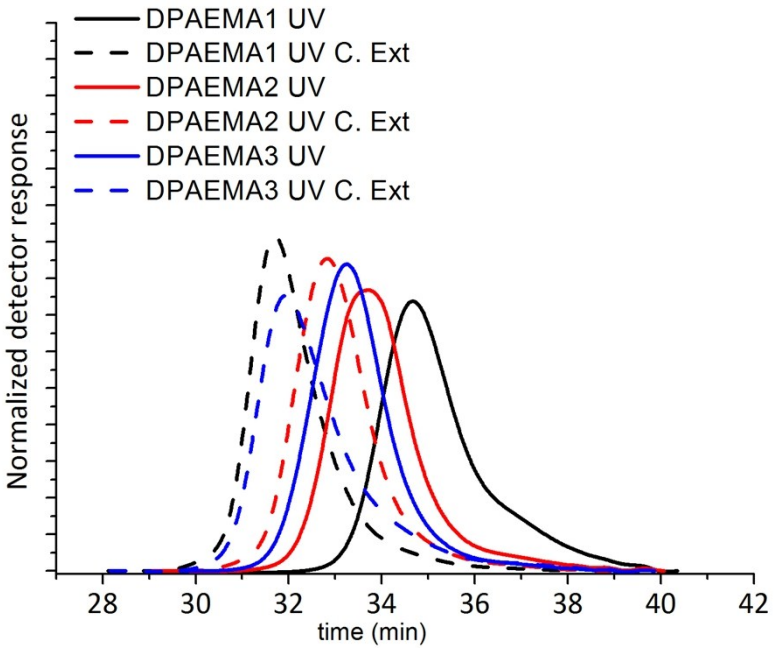
S9. ^{1}H NMR spectrum of PDEAEMA based macro-RAFT agent.



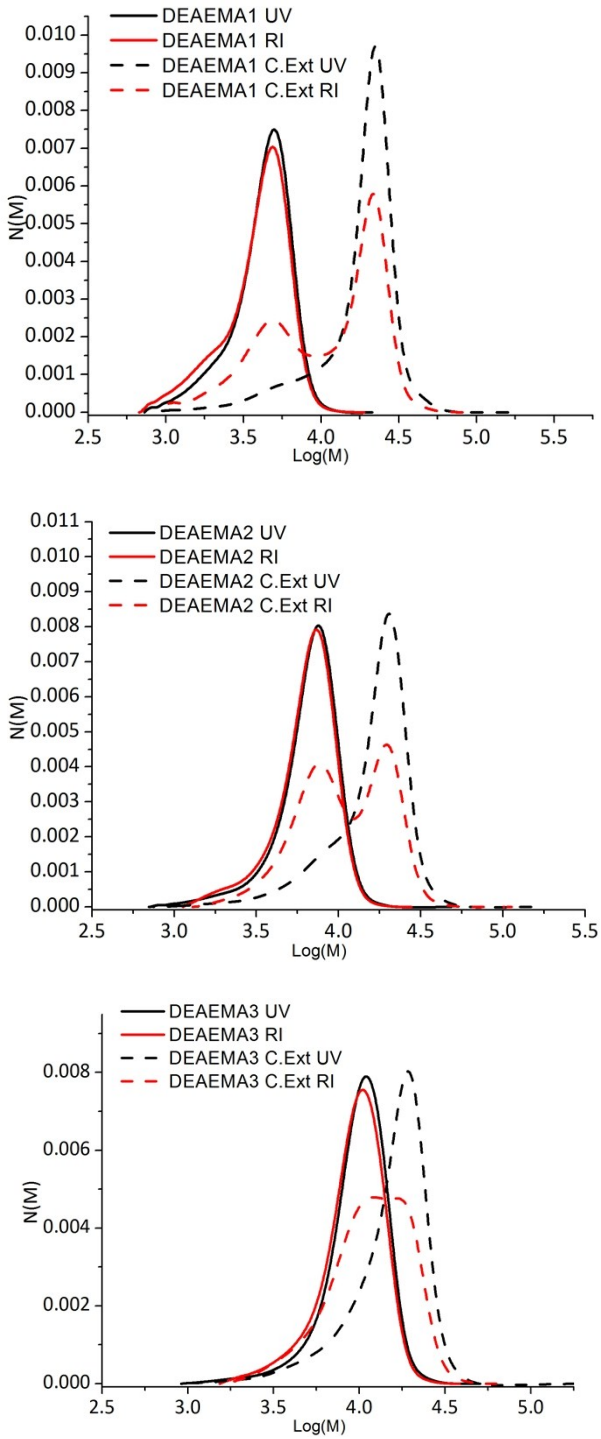
S10. ^{1}H NMR spectrum of PDPAEMA based macro-RAFT agent.



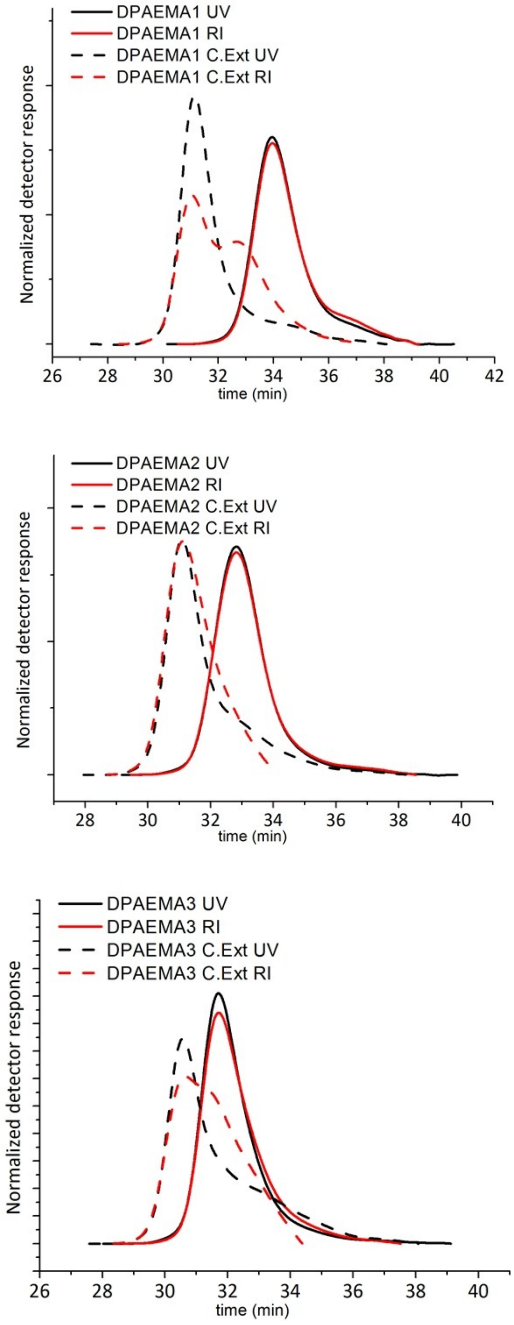
S11. Number-based MWDs of PDEAEMA macro-RAFT agents before and after chain-extension. [macro-RAFT]:[ACVA] = 5, in tert-butanol at 70°C.



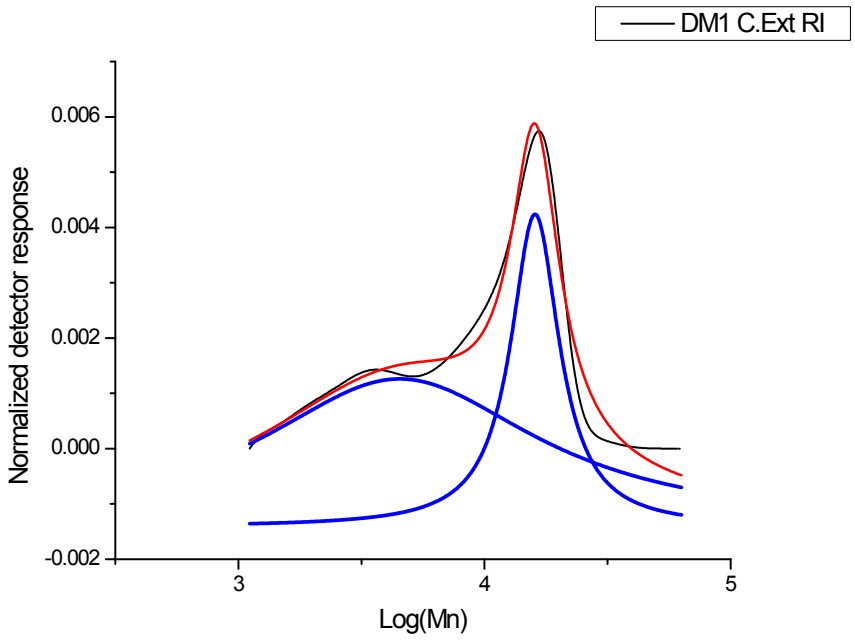
S12. GPC-UV traces of PDPAEMA macro-RAFT agents before and after chain-extension. [macro-RAFT]:[ACVA] = 5, in tert-butanol at 70°C.



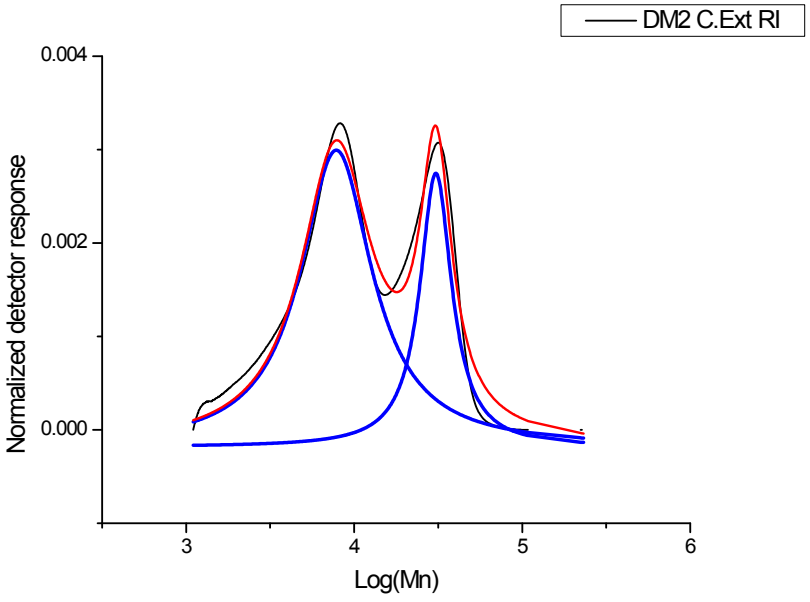
S13. Number-based MWDs of DE1, DE2, DE3 macro-RAFT agents before and after chain-extension. [macro-RAFT]:[ACVA] = 5, in tert-butanol at 70°C after 16h.



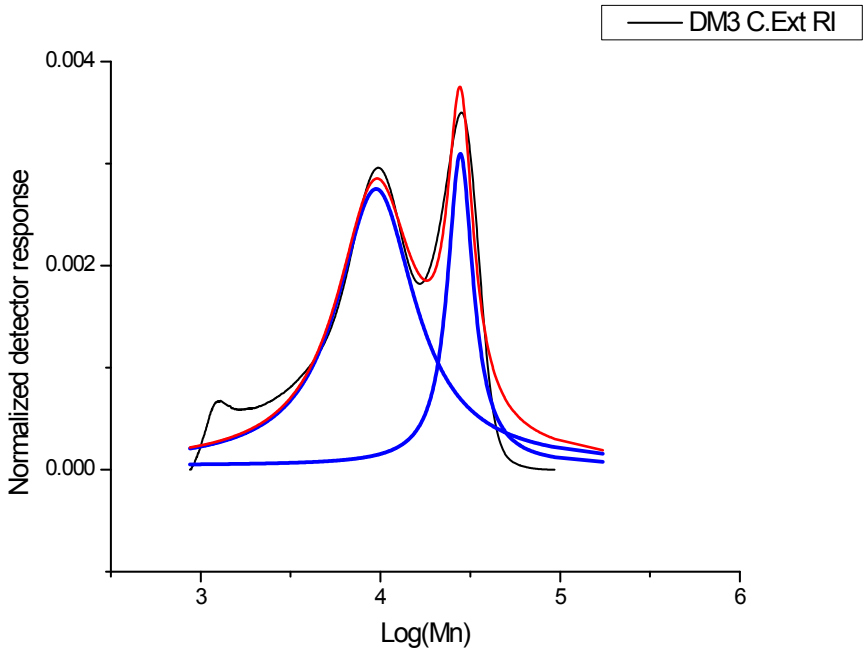
S14. GPC-UV-RI traces of DP1, DP2 and DP3 macro-RAFT agents before and after chain-extension. [macro-RAFT]:[ACVA] = 5, in tert-butanol at 70°C after 16h.



S15. Multi-peak fitting of the RI chain-extension trace of DM1.



S16. Multi-peak fitting of the RI chain-extension trace of DM2.



S17. Multi-peak fitting of the RI chain-extension trace of DM3.