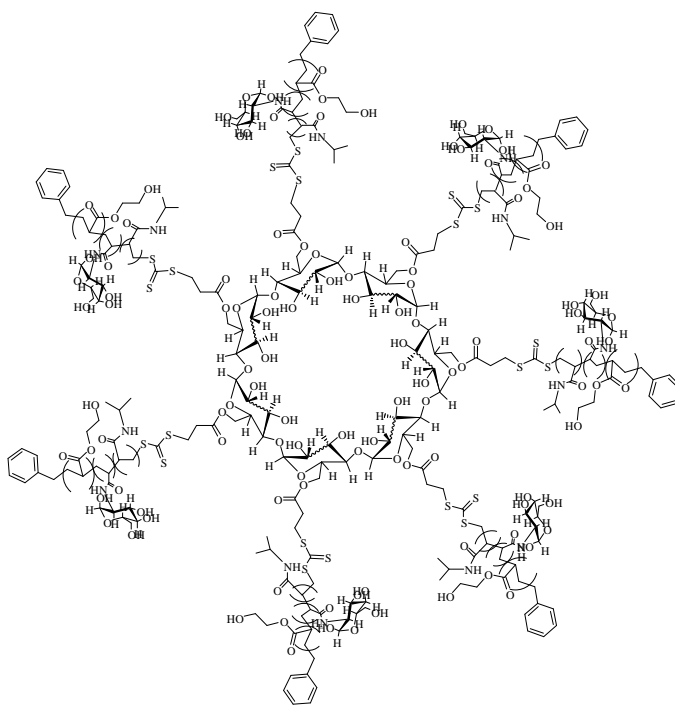


Spherical glycopolymer architectures via RAFT: from stars with β -cyclodextrin core to thermo-responsive core-shell particles

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Preparation of seven-arm star PAGA-PNiPAAm

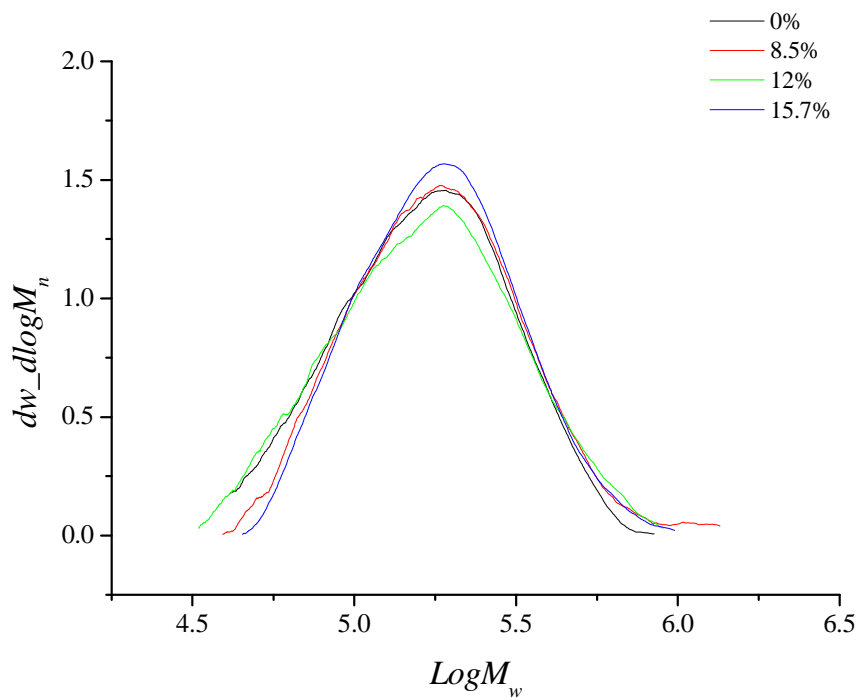


Seven-arm star PAGA star polymer, NIPAAm, and ACPA were mixed together with 0.6 ml solvent (Water: DMSO=1:1) in a Schlenk tube. The mixture was then degassed with five freeze-pump-thaw cycles. The polymerization was performed in a water bath at 60 °C for three hours. Aliquots of the reaction solution were withdrawn at regular intervals. The polymerization was terminated by placing the samples in an ice bath for 5 minutes. The conversion was determined via NMR using the unpurified reaction mixture. The

polymer was purified by dialysis against distilled water for three days at room temperature, and then put into freeze dryer to remove all the water.

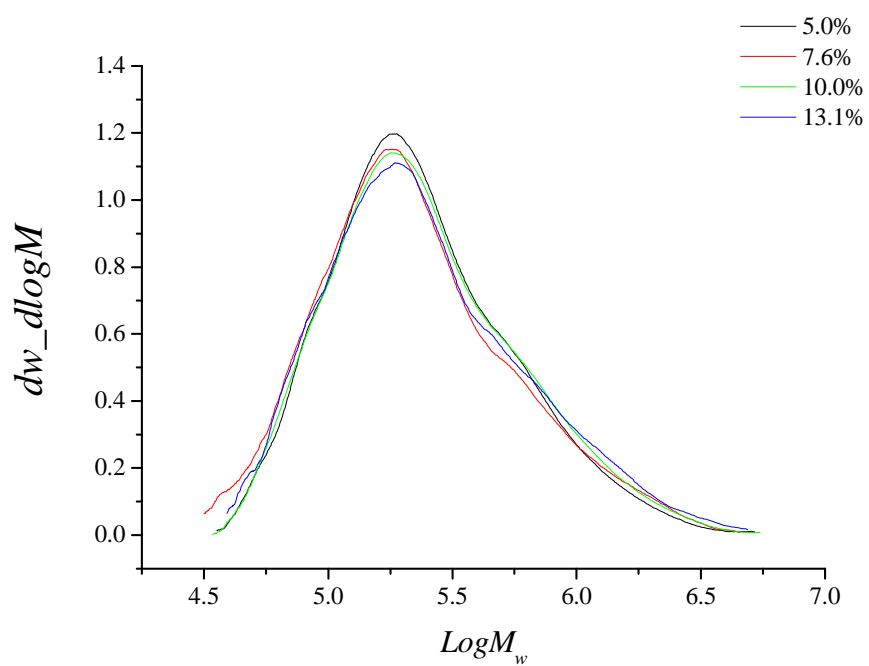
Batch 1

M_n (PAGA)	[RAFT]	[NIPAAm]	T°	Reaction time	conversion	M_n (theo)	M_n (GPC)	PDI
g mol^{-1}	mol L^{-1}	mol L^{-1}	°C	h	%	g mol^{-1}	g mol^{-1}	-
100000	2.0×10^{-3}	0.2	60	1.5	0	100000	128600	1.41
100000	2.0×10^{-3}	0.2	60	1	8.5	105700	131400	1.42
100000	2.0×10^{-3}	0.2	60	1.5	12	108700	123000	1.5
100000	2.0×10^{-3}	0.2	60	2	15.7	111400	137400	1.35



Batch 2

M_n (PAGA) g mol^{-1}	[RAFT] mol L^{-1}	[NIPAAm] mol L^{-1}	T° $^\circ\text{C}$	Reaction time h	conversion %	M_n (theo) g mol^{-1}	M_n (GPC) g mol^{-1}	PDI
133500	$1.0 \cdot 10^{-3}$	0.2	60	0.5	5	142100	67000	2.3
133500	$1.0 \cdot 10^{-3}$	0.2	60	1	7.6	145500	101000	1.87
133500	$1.0 \cdot 10^{-3}$	0.2	60	1.5	10	148800	131000	1.55
133500	$1.0 \cdot 10^{-3}$	0.2	60	3	13.1	154300	134000	1.53



Batch 3

M_n (PAGA)	[RAFT]	[NIPAAm]	T°	Reaction time	conversion	M_n (theo)	M_n (GPC)	PDI
g mol^{-1}	mol L^{-1}	mol L^{-1}	$^\circ\text{C}$	h	%	g mol^{-1}	g mol^{-1}	-
142100	4.9×10^{-5}	0.01	60	0.5	3	146800	184000	1.49
142100	4.9×10^{-5}	0.01	60	1	6	151600	171000	1.47
142100	4.9×10^{-5}	0.01	60	1.5	7	153200	167800	1.33
142100	4.9×10^{-5}	0.01	60	2	7.2	157900	154400	1.43
142100	4.9×10^{-5}	0.01	60	2.5	10	161000	152000	1.4
142100	4.9×10^{-5}	0.01	60	3	12.0	165800	154800	1.35
142100	4.9×10^{-5}	0.01	60	22.5	15.0	171700	155000	1.35

