

Supporting information

Towards DNA sensing polymers: interaction between acrylamide/3-(N, N-dimethylaminopropyl)-acrylamide and DNA phage λ at various N/P ratios

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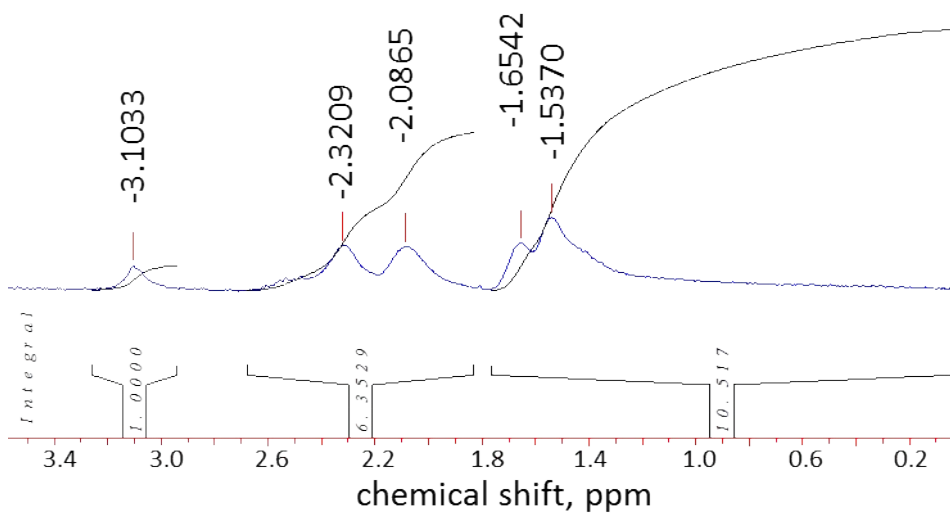


Figure 1 ¹H NMR spectrum of acrylamide/3-(N, N-dimethylaminopropyl)-acrylamide copolymer.

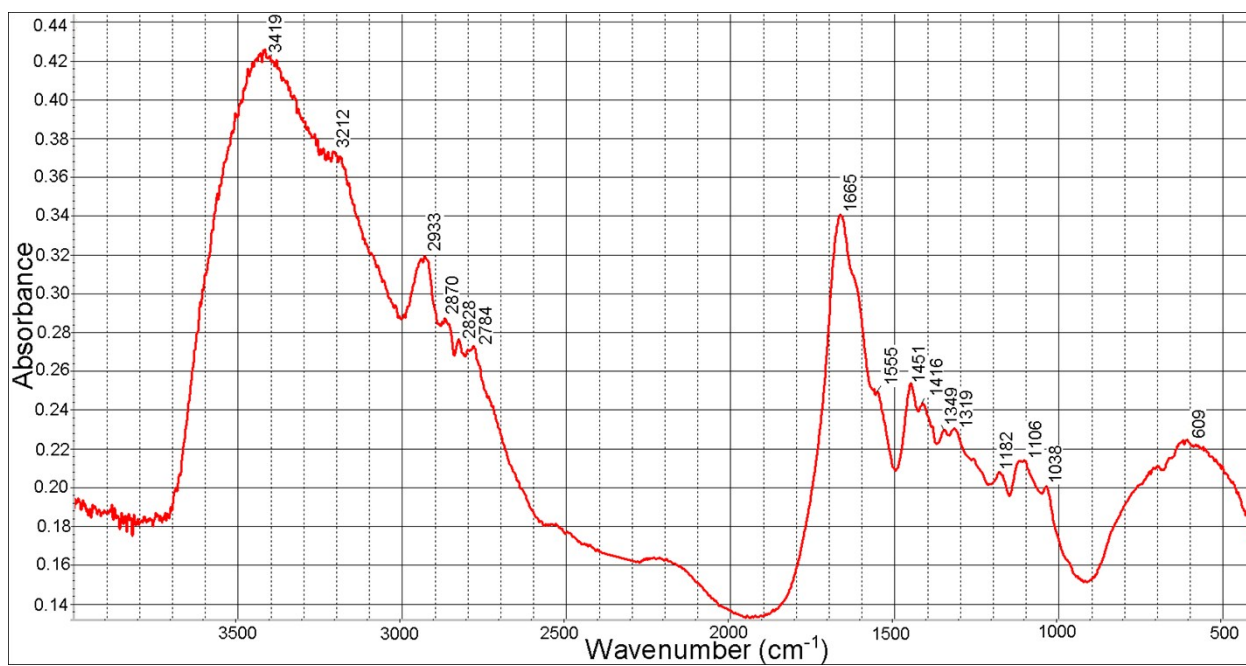


Figure 2 IR spectrum of acrylamide/3-(N, N-dimethylaminopropyl)-acrylamide copolymer.

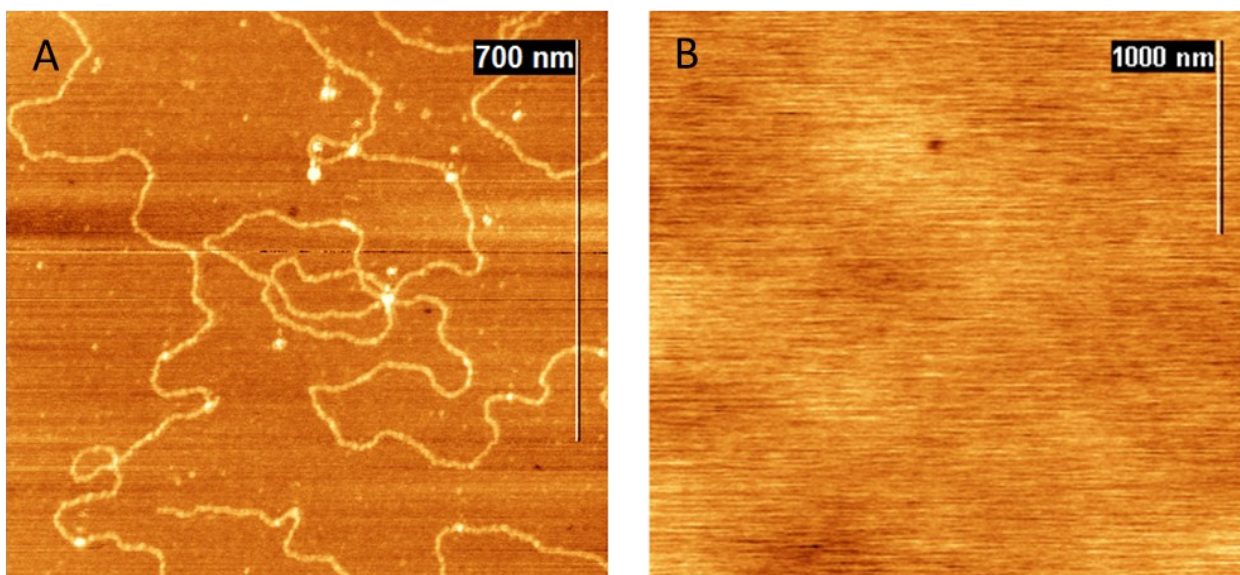


Figure 3 SI Topography images obtained by AFM: (A) DNA phage λ , (B) pure copolymer AADMAPA.

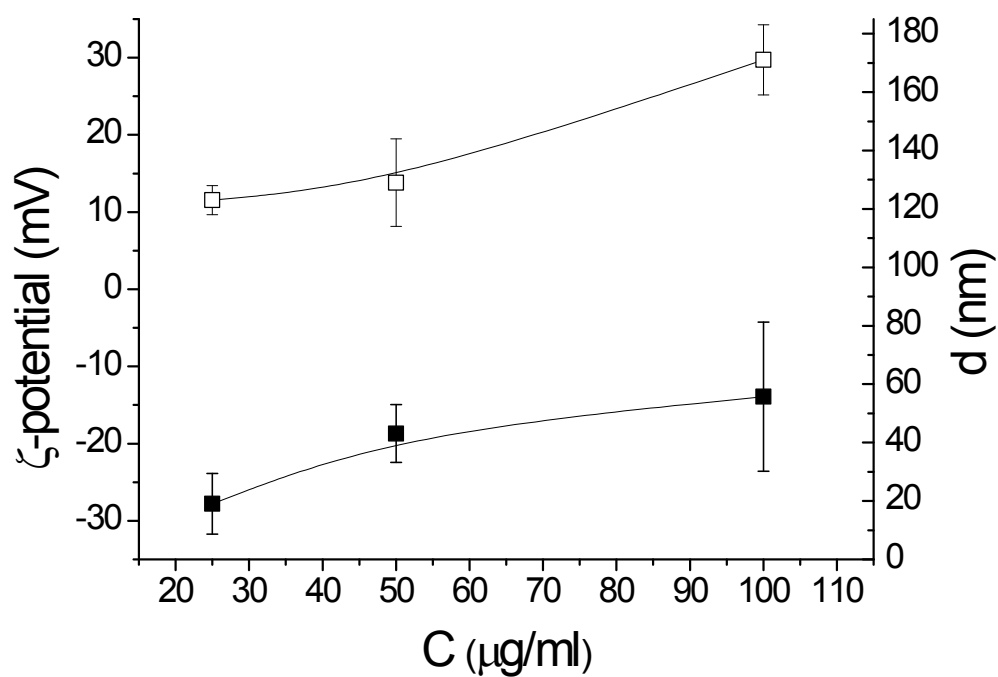


Figure 4 SI The dependence of ζ - potential (filled squares) and the hydrodynamic radius (open squares) of DNA phage λ on its concentration in aqueous solution.

Table 1 SI DNA (λ -phage – DNA (48.5 kbp, Fermentas)) μg amounts and μl of its water solution added to 1000 μl of the water solution of copolymer (concentration of AADMAPA was 0.1 $\mu\text{g}/\mu\text{l}$) to obtain AADMAPA/DNA complexes at different N/P ratios.

N/P	DNA, μg	water, μl
-	0	0
10	6	20
5	12	40
3.3	17.7	59
2.5	23.7	79
2	29.4	98
1.7	35.4	118
1.4	41.1	137
1	58.5	195

Table 2 SI Zeta (ζ)-potential, average diameter (D) and volume (V) of polyplexes at different N/P ratios.

N/P ratio	Peak 1		Peak 2		Peak 3		ζ -potential (mV)
	D, nm	V, %	D, nm	V, %	D, nm	V, %	
10	-	-	60	65	630	35	21 ± 7
5	-	-	70	69	650	31	20 ± 3
3.33	-	-	70	74	660	26	20 ± 4
2.5	-	-	70	63	710	37	14 ± 3
2	-	-	100	42	700	58	-17 ± 5
1.67	-	-	80	49	810	51	-32 ± 4
1.43	20	39	110	25	730	36	-33 ± 5
1	30	58	90	23	690	19	-43 ± 7