Investigation of Synthetic Copolymers Capable of Interacting with Double-Stranded DNA

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We have previously reported the synthesis of copolymers 1-3 capable of interacting with double-stranded DNA and their investigation by atomic force microscopy [1-3]. Copolymer 1 is a copolymer of acrylamide and N- (2-dimethylamino-propyl )-acrylamide. Copolymer 2 is a copolymer of acrylamide and N- (2-dibenzylamino-ethyl )-acrylamide. Copolymer 3 is a copolymer of acrylamide and 1-(4-methylpiperazin-1-yl )-propenone.

The aim of this work is the investigation of these copolymers. The synthesized copolymers 1-3 was studied by NMR, IR spectroscopy and gel permeation chromatography (GPC). Molecular mass distribution of copolymers synthesized by free-radical copolymerization has been evaluated by means of analytic GPC at room temperature to the column of (10 × 400 mm) filled with a resin CL Sepharose 2B using a 0.2 M solution of NaCl as eluent. The samples have a broad molecular mass distribution. All the copolymers contain positively charged groups. It was shown that the investigated copolymers form various complexes with negatively charged double-stranded DNA.

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REFERENCES

