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Research note

The effects of charge on the persistence length of biopolymers

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Abstract

Flexibility and rigidity of biopolymers in mechanical structure have been investigated several times. Persistence length of a polymer is an exact factor to specify value of flexibility. No doubt that existence of charge on the polymers would have effect on the value of flexibility and therefore change in the persistence length of the polymer. In this study, by use of molecular dynamic simulation and Gaussian chain model (bead-spring model), we have investigated the effect of electric charge and salt concentration on the persistence length of the biopolymers in the cell. This simulation has been able to provide acceptable detail in the results.

Keywords: actin, biopolymer, electric charge, molecular dynamic simulation, persistence length

For full article, refer to the Persian section