

Abstract Submitted
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Persistency of single-stranded DNA: the interplay between base sequences and base stacking¹ BAE-YEUN HA, ANIRBAN SAIN, JEFF Z.Y. CHEN — The chain persistency of single-stranded (ss) DNA at a high-salt limit mainly arises from the so called base-stacking interaction between consecutive bases along the strand; stacking is appreciable only for purine-purine (e.g., *A-A*) and purine- pyrimidine stacks (e.g., *A-T*), stiffening the strand, but is negligible for pyrimidine stacks (i.e., *T-T*, *T-C*, and *C-C*). We develop an exactly-solvable model for describing the stacking-induced persistency of heterogeneous ssDNA. Using this, we study the interplay between the heterogeneity of sequences and base stacking in determining the persistency. Our results demonstrate how the sequence information can influence the conformational properties of ssDNA.

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