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Supporting Information

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for

Dynamic Conformational Behavior and Molecular Interaction Discrimination of DNA/Binder Complexes by Single-Chain Stretching in a Micro-Device

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MOVIES

"DNA stretching": Fluorescence microscopy observation in real time of the stretching progress of individual T4 DNA molecules (0.1 μM in buffer solution, labeled by YOYO) under an electric field of 10 V/cm in the micropillar region of the micro-device. Frame size is 60 μm × 60 μm.

"DNA Unfolding 1" and "DNA Unfolding 2": Fluorescence microscopy observation in real time of the kinetic unfolding and stretching progress of individual T4 DNA molecules (0.1 μM in buffer solution, labeled by YOYO) compacted by Spermine (10 μM) under an electric field of 20 V/cm in the micropillar region of the micro-device. The movie "DNA Unfolding 1" shows a large number of individual chains. In the movie "DNA Unfolding 2", an individual compact DNA molecules shows repeatedly the typical sequence of conformation changes — unfolding, stretching, and compacting — when it migrates through the micropillar region. Frame size is 60 μm × 60 μm for both movies.

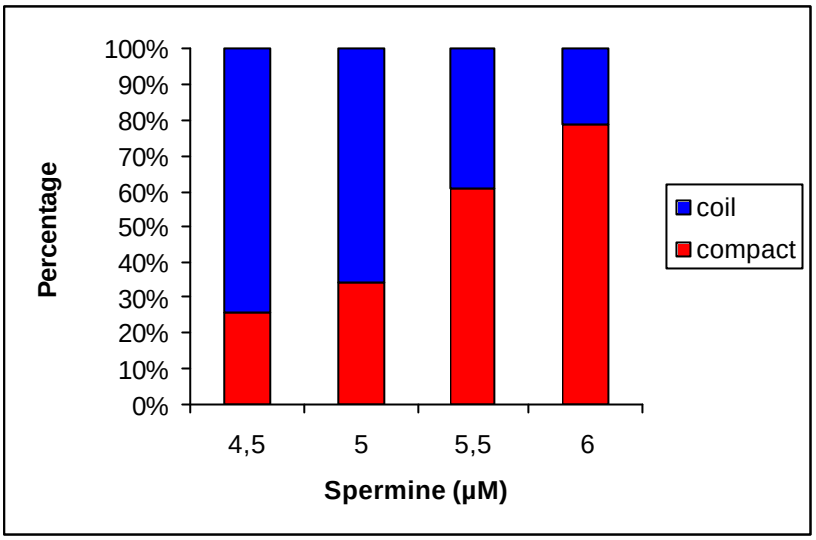

Figure S1. DNA compaction (0.1 µM T4 DNA in 10 mM Tris-HCl buffer) by spermine: percentage of coil (blue) and compact (red) states as a function of spermine concentration in the coexistence region.