Supporting Figures

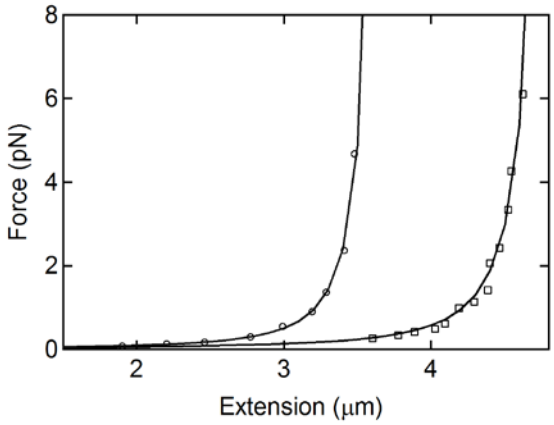

Figure S1. Worm-like-chain fit to extension measurements of bare DNA and DNA in the presence of EtBr (10 μM) at low pulling force. Formula below was used to fit the data with the persistence length and the contour length of the molecule as fitting parameters. Bare DNA was fitted with a persistence length of 53.2 nm and a contour length of 3.62 μm. DNA with intercalators was fitted with a persistence length of 54.7 nm and a contour length of 4.54 μm. We obtain force versus extension curves of bare DNA molecules and DNA molecules with EtBr. The curves are fitted using the worm-like-chain model,[1]

$$F = \frac{k_B T}{A}\left[\frac{1}{4(1-z/L)^2} - \frac{1}{4} + \frac{z}{L} + \sum_{i=2}^{i\leq 7}\alpha_i\left(\frac{z}{L}\right)^i\right]$$

Here, A is the bend persistence length, z is molecule extension, L is contour length, α_2= -0.5164228, α_3=-2.737418, α_4=16.07497, α_5=-38.87607, α_6=39.49944, α_7=-14.17718. Fitting the experimental data to this model allows us to obtain the parameters A and L of the molecule under study.

Reference

1. Bouchiat, C.; Wang, M. D.; Allemand, J. F.; Strick, T.; Block, S. M.; Croquette, V., Estimating the persistence length of a worm-like chain molecule from force-extension measurements. *Biophysical Journal* **1999,** 76, (1), 409-413.

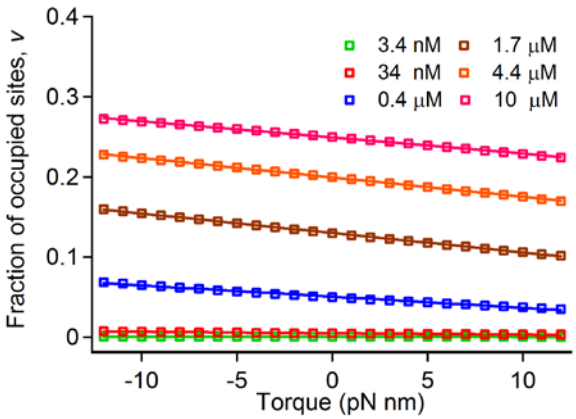

Figure S2. Fraction of DNA sites occupied by EtBr (eq 4 in the main text). The curves can be well approximated using a linear model.