Supplementary Materials for: Analytical description of extension, torque and supercoiling radius of a stretched twisted DNA

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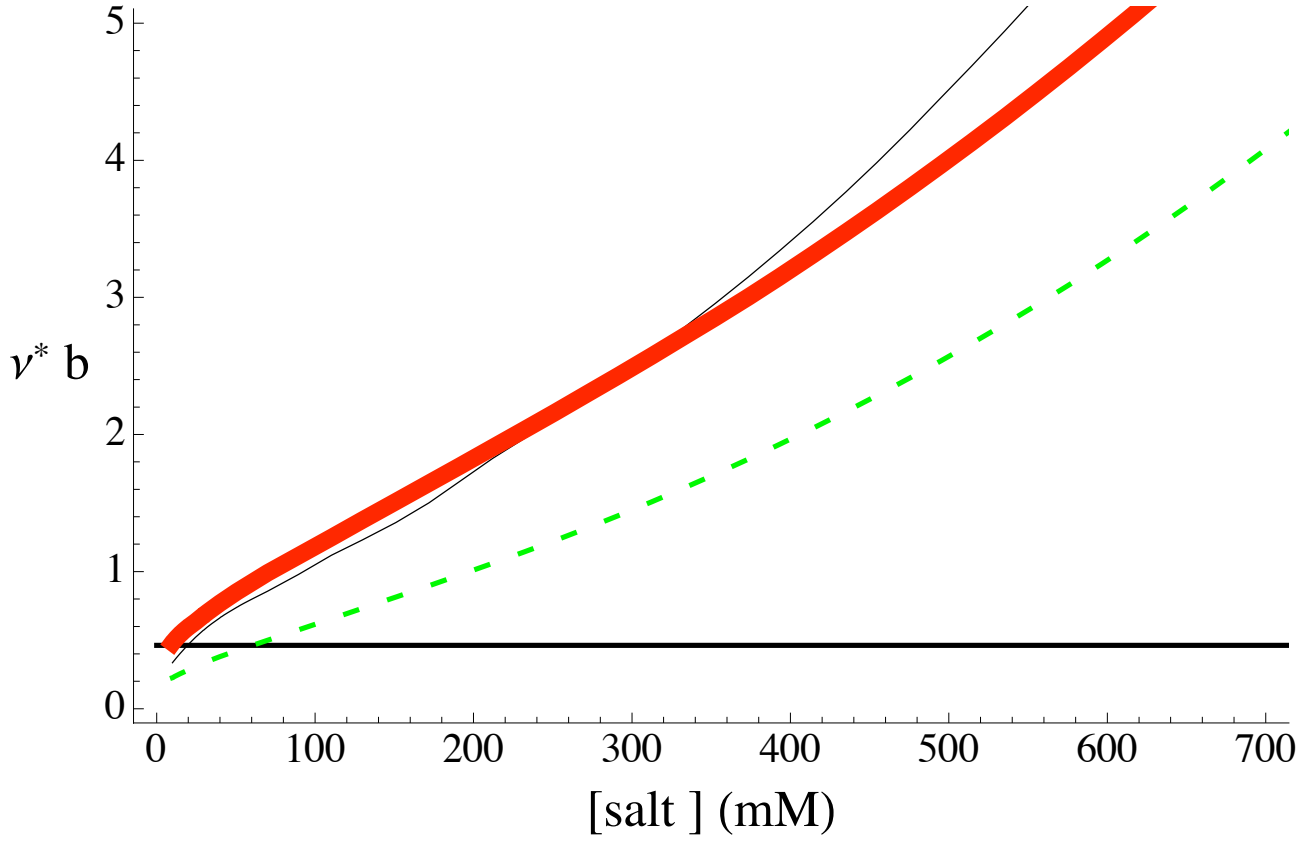
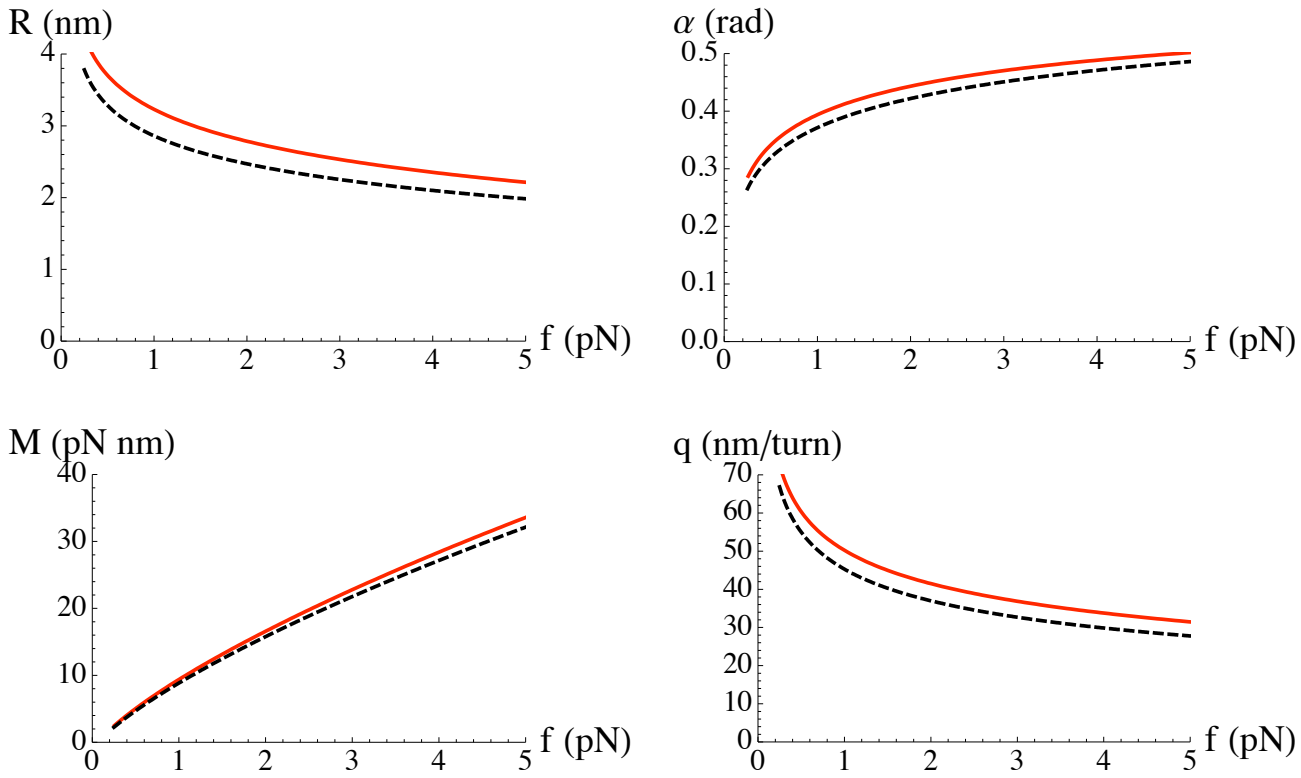


SUPP. FIG. 1: Comparision of the effective charge $\nu^\star$ appearing in Eq. 2 as given by: (a) Stigter [1, 2] with $a = 1$ nm (thick, red); (b) Ubbink & Odijk [3] $\nu^\star = \xi/L_B$ with ξ given in their Table 7 (thin, black); (c) Maffeo *et al* [4] $\nu^\star = \chi\nu$ with $\chi = 0.42$ and $a = 1.2$ nm (short dashed, green); (d) Manning counter-ion condensation theory $\nu^\star = 0.46$ (constant line). The DNA structural charge corresponds to $\nu\, b = 1$.



SUPP. FIG. 2: Comparison between the solutions of $\boldsymbol{\nabla}\mathcal{G} = \mathbf{0}$ (plain lines, red) and formulae (14), (16), and (17) (dashed lines, black), at 100mM with $a = 1$ nm, $A = 50$ nm, and $C = 95$ nm.

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[4] C. Maffeo, R. Schöpflin, H. Brutzer, R. Stehr, A. Aksimentiev, G. Wedemann, and R. Seidel, Phys. Rev. Lett. **105**, 158101 (2010).