

## **Probing Rad51-DNA interactions by changing DNA twist**

### **[Supplementary Information]**

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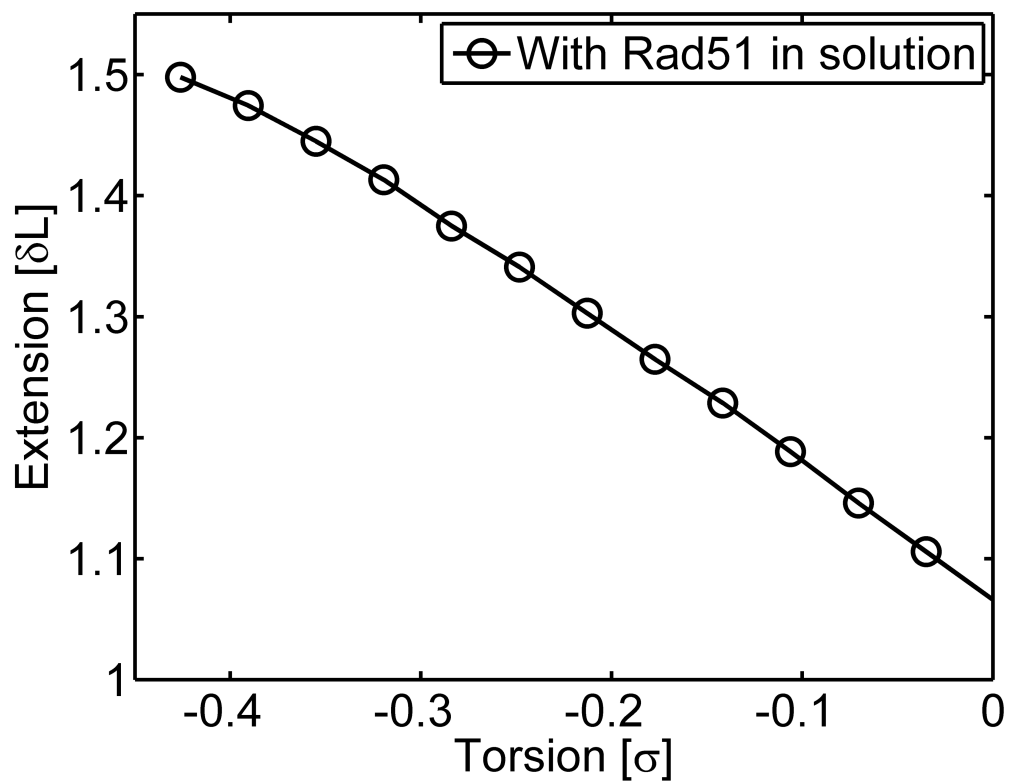
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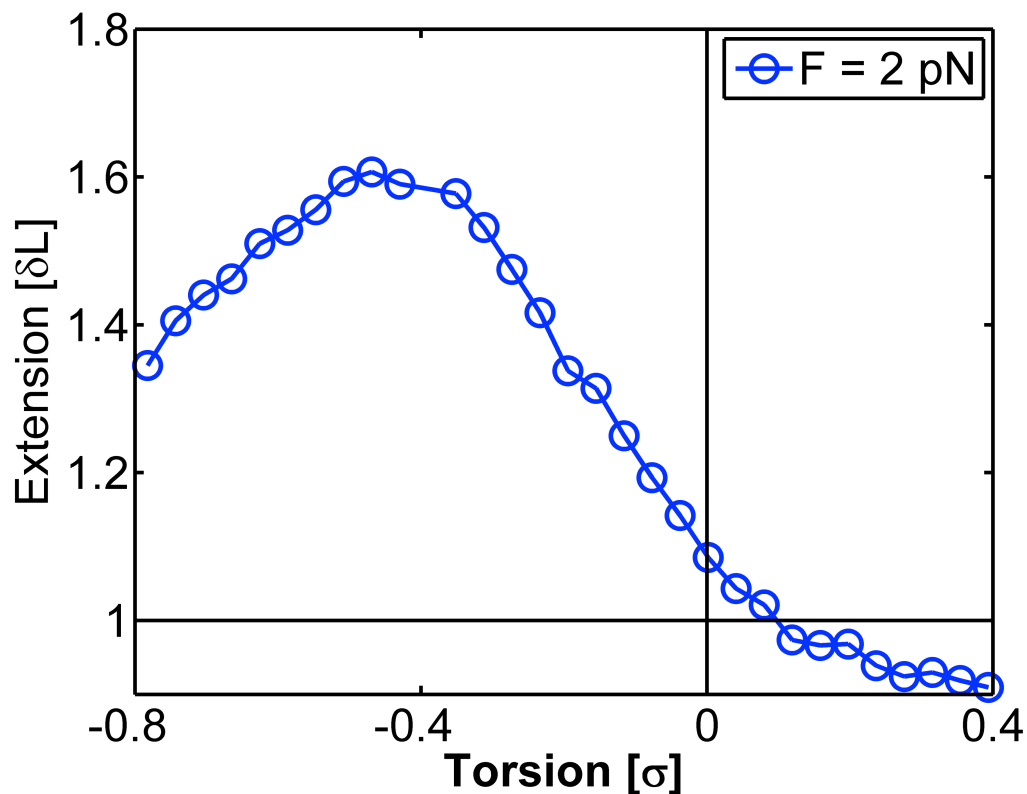
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**Figure S1:** Torsion/Extension curve of a Rad51-dsDNA filament assembled at  $\sigma = -0.43$  (18.6 bp/turn) and kept in the presence of saturating amounts of Rad51 in the solution during progressive rewinding toward natural helicity of protein-free DNA ( $\sigma = 0$ ).



**Figure S2:** Behaviour of Rad51-dsDNA complexes over a broader range of DNA twist changes. The Rad51-dsDNA complexes formed in the presence of ATP reach their maximum extension for the enforced DNA helicity corresponding to ca 18.6 bp/turn ( $\sigma = -0.43$ ). When the DNA was overwound above  $\sigma = 0$ , we observed shortening of the end-to-end distance, which may be explained by progressive dissociation of Rad51 and formation of localized plectonemes. There is a partial dissociation of Rad51 as DNA is overwound above  $\sigma = 0$  or underwound below  $\sigma = -0.5$ .