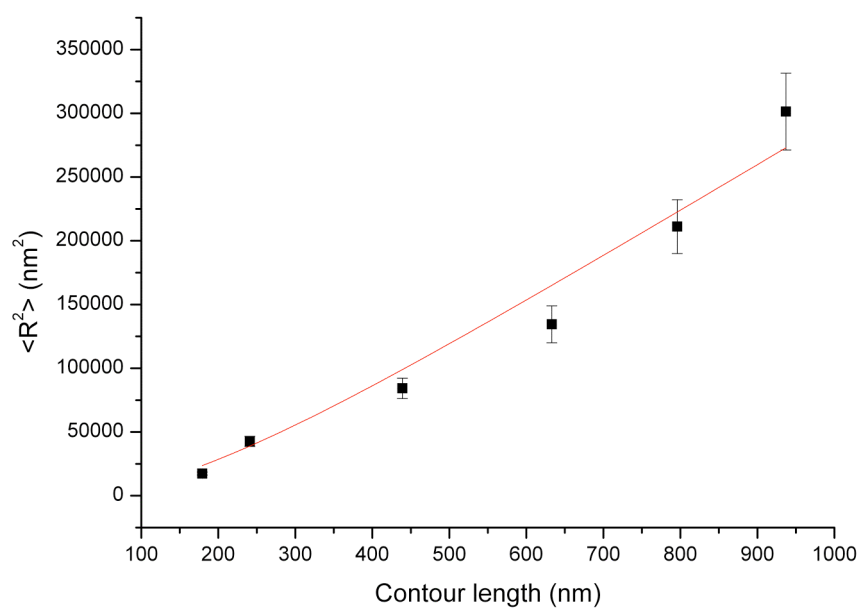


Supplementary Figure 1: AFM image of DNA molecules in solution containing 1mM of  $\text{MgCl}_2$  and 1mM of  $\text{NaCl}$ . The AFM images were very difficult to obtain because there are not enough binding points. The image shows that DNA are lying on mica surface with very few crossings. Size of image is 2 mm x 2mm.



Supplementary Figure 2: Graph obtained when we plot the mean square value of the end-to-end distance as a function of the contour length (DNA molecules in 1mM of  $\text{NaCl}$  and 1 mM of  $\text{MgCl}_2$ ). The fit (solid line) corresponds to the worm like chain model in 2 dimensions (eq. 3) with  $L_p$  as fitting parameter. The obtained value of  $L_p$  is  $90 \pm 6$  nm.