

Fig S1: Illustration of the two different binding modes of HU. At low protein concentrations individually bound HU proteins induce flexible hinge type DNA bending (bends between 0 and 160 °). At high protein concentrations HU-DNA filaments with HU proteins closely packed side-by-side are formed.

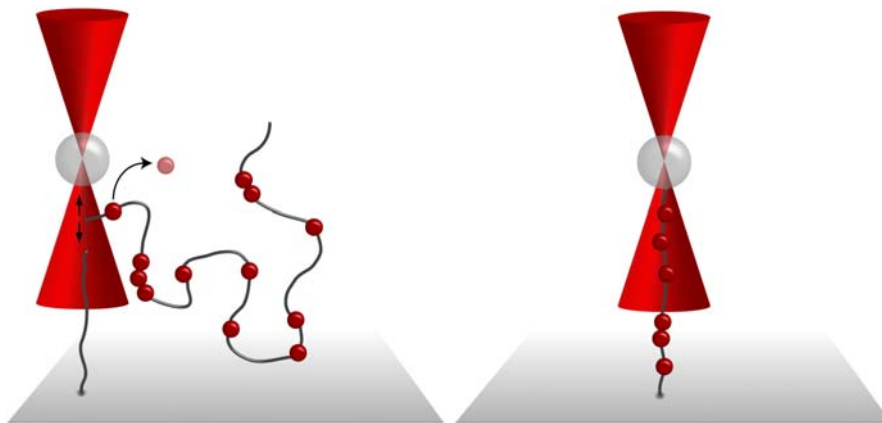


Fig S2: Illustration of the differences in experimental layout between DNA unzipping and DNA stretching experiments. In both types of experiments one extremity of the DNA (with a digoxigenin, DIG) is attached to a surface via anti-DIG antibodies. In DNA unzipping experiments (left panel) a streptavidin-coated bead is attached to an internally biotinylated DNA construct. The biotin is attached directly adjacent to a nick permitting DNA unzipping upon the application of force. An unzipping force landscape determined by the local A/T-content of the DNA is obtained. The force-induced dissociation of DNA-bound proteins can be seen as peaks superimposed on this landscape. In DNA stretching experiments (right panel) a streptavidin-coated bead is attached to a biotin at the second extremity. Upon application of force the mechanical effects of bound proteins on the bare DNA response can be recorded. In the case of HU DNA bending is reflected in enhanced DNA flexibility, whereas filament formation along DNA is seen as DNA stiffening.