SUPPLEMENTARY MATERIALS

How stiff is DNA?

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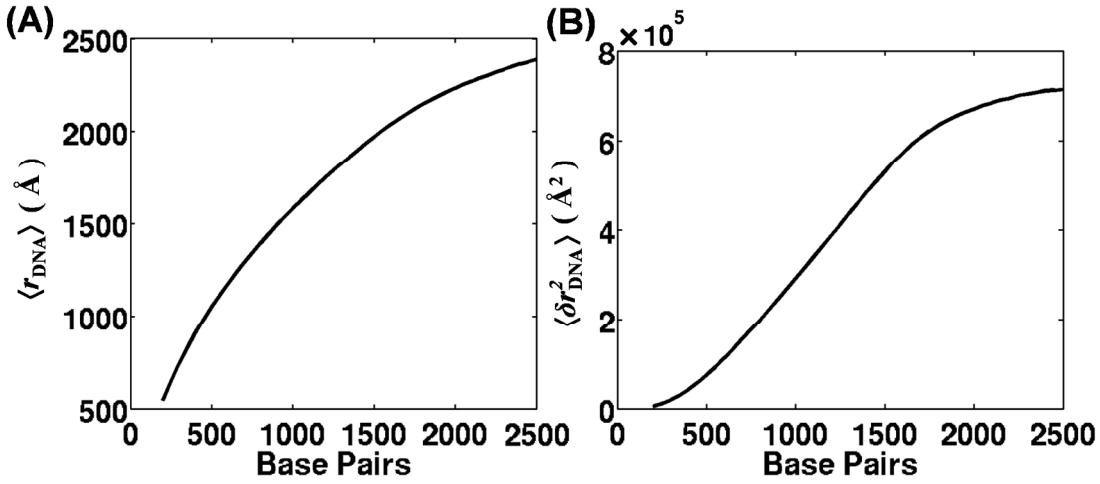

Figure S1 – Chain-length dependence of (A) the average and (b) the associated variance of the end-to-end distance of long, ideal, inextensible, twisted wormlike chains (more than 200 bp). The DNA model is naturally straight with 10.5 bp/turn and elastic constants scaled to yield a persistence length of ~500 Å.

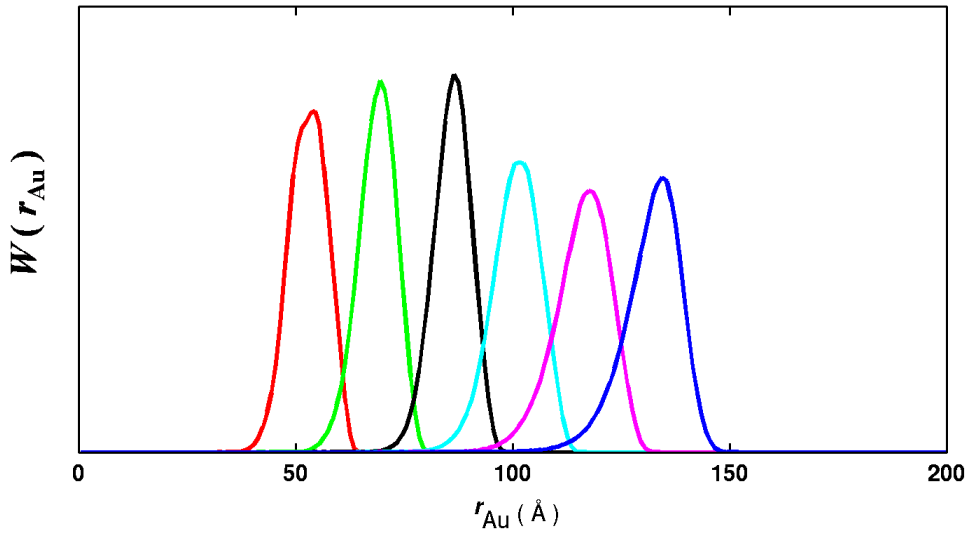

Figure S2 – Simulated probability density distributions of the end-to-end distance r_{Au} between gold nanocrystals attached via '**stiff**', extended tethers to the ends of **mixed-sequence** DNA duplexes of 10 bp (red), 15 bp (green), 20 bp (black), 25 bp (cyan), 30 bp (magenta), and 35 bp (blue). See Table 1 for the means and variances of these normalized profiles.

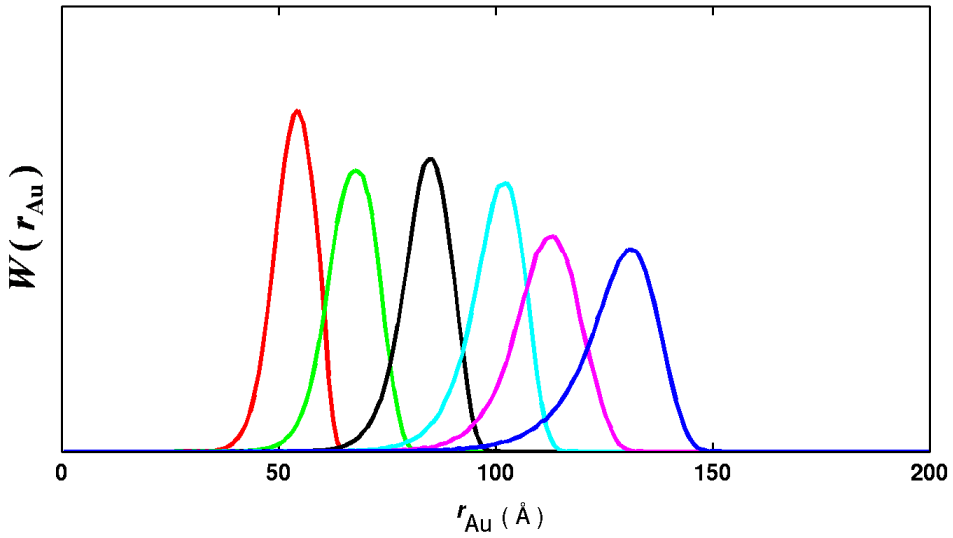

Figure S3 – Simulated probability density distributions of the end-to-end distance r_{Au} between gold nanocrystals attached via '**stiff**', extended tethers to the ends of **sequence-dependent** DNA duplexes of 10 bp (red), 15 bp (green), 20 bp (black), 25 bp (cyan), 30 bp (magenta), and 35 bp (blue). See Table 1 for the means and variances of these normalized profiles.

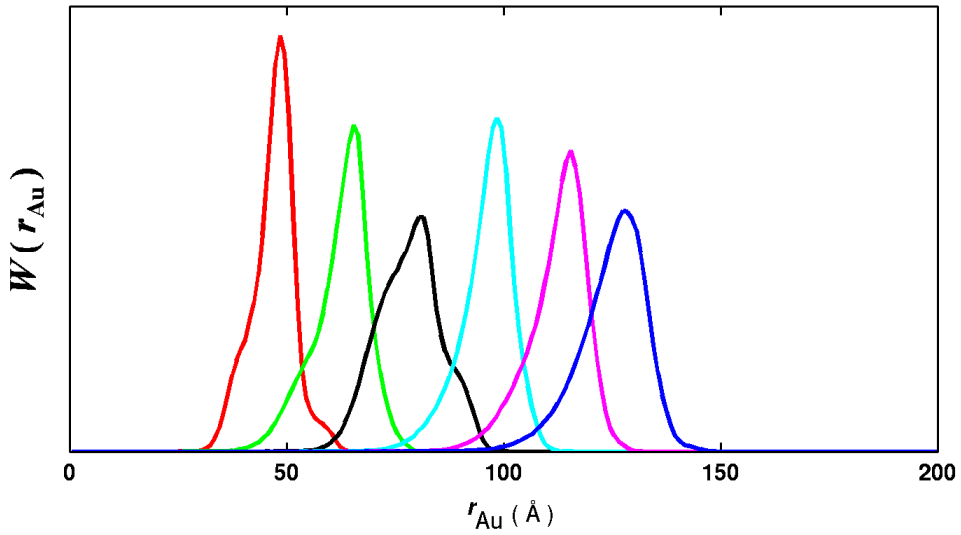

Figure S4 – Simulated probability density distributions of the end-to-end distance r_{Au} between gold nanocrystals attached via '**flexible**', extended tethers to the ends of **ideal, inextensible** DNA duplexes of 10 bp (red), 15 bp (green), 20 bp (black), 25 bp (cyan), 30 bp (magenta), and 35 bp (blue). See Table 1 for the means and variances of these normalized profiles.