

**Supplemental Table S4. AFM analysis of dsRNA and dsDNA in air.**

Theoretical length (bp)	AFM measured length in nm			Length in bp determined using theoretical rise per bp and AFM measured lengths			
	Number of molecules traced	Mean	Standard deviation	Using crystal structure values of 0.28 for A-RNA and 0.34 for B-DNA		Using AFM in air values of 0.29 for A-RNA <sup>1</sup> and 0.32 for B-DNA	
				Mean	Standard deviation	Mean	Standard deviation
521 bp <i>in vivo</i> dsRNA (HPLC)	198	146.2	4.3	522	15	504	15
504 bp <i>in vitro</i> dsRNA (HPLC)	222	141.0	3.8	504	14	486	13
228 bp DNA	178	75.2	2.7	221	8	235	8

[1] Herrero-Galán, E., Fuentes-Perez, M.E., Carrasco, C., Valpuesta, J.M., Carrascosa, J.L., Moreno-Herrero, F. and Arias-Gonzalez, J.R. (2012) Mechanical identities of RNA and DNA double helices unveiled at the single-molecule level. *Journal of the American Chemical Society*, **135**, 122-131.