

Measuring thermodynamic properties of nucleic acid nanostructures

Andre Estévez-Torres^{a*}

a. Sorbonne Université and CNRS, Laboratoire Jean Perrin, Paris, France

* andre.estevez-torres@upmc.fr

Nucleic acid nanostructures can be engineered for different purposes. Two examples are the manufacture of nanoobjects with precise geometry, as in DNA origami, or the design of RNA strands that regulate gene expression, known as riboregulators. While these two constructions increasingly find applications, few experimental methods exist for assessing the way they fold and function. In the first part of my talk I will describe a method for observing and controlling the folding pathway of 2D origami at the nanoscale using AFM [1]. In the second part, I will present how in vitro transcription-translation can be used to characterize the thermodynamics and the functional performance of translational riboregulators [2].

[1] J. Lee Tin Wah et al. ACS nano., 2016, <http://dx.doi.org/10.1021/acsnano.5b05972>

[2] A. Senoussi et al. ACS Synth Biol., 2018, <http://dx.doi.org/10.1021/acssynbio.7b00387>