



Universidad
Carlos III de Madrid

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Unraveling molecular complexity by manipulating single molecules one at a time

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Abstract

Recent developments in micro and nano technologies allow for the controlled manipulation of individual molecules by exerting and detecting forces in the piconewton range. The possibility to detect such tiny forces together with the ability of measuring extensions with nanometer resolution allows scientists to monitor molecular reactions in real time (e.g. folding) and characterize thermodynamics and kinetics of individual molecules (e.g. nucleic acids and proteins) within unprecedented accuracy.

In this talk I will review some applications of single molecule experiments to molecular biophysics putting particular emphasis on the use optical tweezers technology to mechanically manipulate single molecules (nucleic acids and proteins). I will also present a few experimental results obtained in our lab on mechanical unzipping of nucleic acids aiming to characterize the energetics of the double helix and the translocation motion of enzymes involved in DNA replication.

- **DÍA Y HORA: El viernes, el 17 de junio de 2011 a las 12:30**
- **LUGAR: Edificio Sabatini. Aula 2.1.C19**