

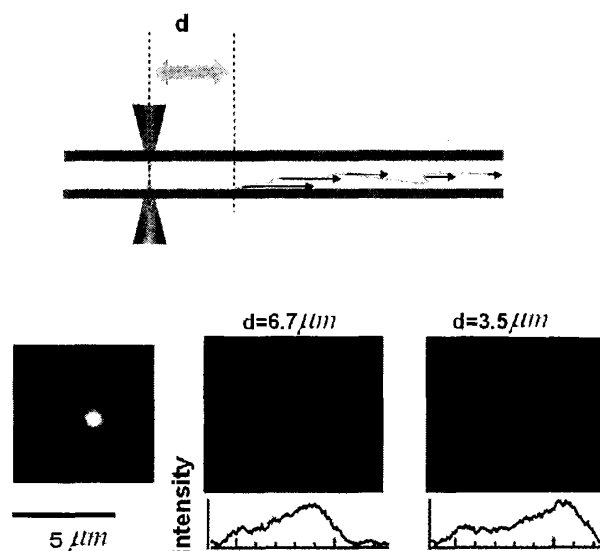
Stretching Single Molecular DNA by Temperature

Gradient

Department of Physics, The University of Tokyo Hong-Ren Jiang and Masaki Sano

Abstract

We present a new method to control the conformation of DNA by using temperature gradient. The conformations of one end tethered and two ends tethered DNA are measured in different temperature gradients up to $3K/\mu m$. The results show that temperature gradient can exert force on a single DNA and create internal tension within it. The magnitude of the force is of the order of $0.1 pN$ and is enough to manipulate and stretch DNA. This new way of manipulating DNA requires no beads and provides local control, while none of other methods can satisfy these two requirements at same time.



References

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