Optical Mapping of Transcription Factor Binding Sites on Single DNA Molecules Using Nanofluidic Devices

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Figure 1 taken from Developmental Biology, Seventh Edition, Figure 5.35. Figure 2 taken from Molecular and Cellular Biology Animations: Development and Impact on Student Learning, Cell Biology Education, Vol.4, 169, 2005.

DNA-Protein Complex Mapping

Transcription factors (TFs) bound to specific regions on T7 genomic DNA stretched on polylysine cover slides. The values in μm show the binding position of TF with reference to the left end of the DNA molecule. The value in brackets show the TF binding position in terms of percentage of total DNA length.

References:

• Lighting up individual DNA binding proteins with quantum dots, Yuval Ebenstein et.al., Nanoletters, Vol 9, No.4, 1598, 2009.
• Detection of single DNA molecules by multicolor quantum dot end-labeling, Aurelien Crut et.al., Nucleic Acids Research, Vol 33, No.11, e98, 2005.