

429a Dynamics of Immobilized Ssdna for DNA Microarrays

Min Sun Yeom

All biosensors consist of probe molecules immobilized on a surface and are based on hybridization. The dynamics of immobilized single strand DNAs should be studied closely to obtain the optimal performance of biological sensors by maximizing the probe density not to occur overlap between immobilized ssDNAs. The dynamics also give useful information to understand base-pair mismatch between probe DNA and target. In order to understand the dynamics of immobilized ssDNAs, Molecular dynamics simulations were carried out for three types of ssDNAs at different temperatures. I calculate the radius of motion and the probability distribution of end-to-end distances. I analyze these properties as a function of the length of ssDNA and temperature.