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**The Compaction of Multi-kbp Long Dna Molecules by Crowders Measured by Tpm**

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In cells, DNA compaction is induced by a wide variety of nucleoproteins binding to DNA, as well as the presence of high concentrations of non-binding crowders. Using Tethered Particle Motion, we monitor the conformational changes of DNA molecules up to 15 kbp in length, when immersed in a medium crowded with PEG and BSA. Combining these experimental results with polymer physics modeling, we show that the reversible coil-globule transition induced by crowders can be observed by TPM, and that the transition crowder concentration decreases with the length of the DNA molecule.