

**LOCAL VISCOELASTIC BEHAVIOR AND THE IMPACT ON MOTILITY OF NORMAL AND MALIGNANTLY TRANSFORMED FIBROBLASTS USING AFM**

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Morphological changes of the actin cytoskeleton have been observed during transitions of the cellular phenotype such as malignant transformation. It is expected that these changes alter cell elasticity. Malignant transformation has been also known to increase the capacity for motility relative to the normal cells. Our goal is to investigate whether there is a correlation between the elasticity of the lamellipodia and cell motility of normal and malignantly transformed fibroblasts. We have used new AFM-based microrheology technique in conjunction with Boyden chamber assays and measurements of lamellipodia extension. Our AFM technique enables local elasticity measurements. For an accurate evaluation of our microrheology data we expanded the Hertz model conventionally used to analyze these data by considering viscous contributions, the thinness of cells and the cell's ability to adhere to a substrate. We have observed the regions, which show significant differences in Young's modulus between the BALB3T3 fibroblasts and the SVT2 transformed cells with drastic differences in the Boyden chamber assay.