

**FIBRONECTIN REMODELING AND INTEGRIN-CONTAINING STRUCTURES STUDIED BY CONFOCAL MICROSCOPY AND AFM**

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Fibronectin is a major component of the extracellular matrix (ECM) and is of particular interest in the study of cell motility due to its integrin binding site. Interaction of fibronectin dimers with specific integrins and other components at the cell surface directs fibronectin polymerization. The reorganization and polymerization of fibronectin are two important processes involved in cell motility. The structure and organization of fibronectin must reflect how it is laid down to aid in adhesion and the mechanism by which cells move or the strain they place on the matrix. In this study we use confocal microscopy to study the patterns of fibronectin networks illustrating the remodeling which may occur during adhesion and motility. We propose that since fibronectin stretching reduces affinity for integrins, fibronectin should be left attached to the substrate after the cell has moved. This pattern of reorganization due to motility should differ significantly from patterns due to polymerization for the purpose of adhesion only. Here the AFM is used to identify fibronectin containing fibers located outside the cell boundary and to study the orientation of the fibers relative to the tail (uropod) and receding edges of the cell. Some quantitative methods may be used to distinguish between fibronectin patterns due to adhesion and patterns resulting from strain placed on the ECM during motility. Integrin-containing structures are also studied to determine the degree to which their distribution resembles fibronectin patterns.