

IDENTIFICATION OF STRESS FIBRES AND FIBRONECTIN IN AFM IMAGES USING CONFOCAL MICROSCOPY

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The interaction of a cell with the material it contacts will determine whether the cell will have the capacity to respond appropriately to various stimuli. Cell motility, a process involving the attachment, spreading, and subsequent movement of the cell across a surface, is a response that is essential to survival. The cytoskeleton plays a pivotal role in cell motility and is composed of various protein filaments including microfilaments. Stress fibres (bundles of microfilaments) are believed to be the main force bearing components of the cell (1) and are known to terminate at focal contacts (2). Fibronectin is an extracellular matrix protein that may be involved in mediating adhesion between focal contacts and the substrate (3). Experiments presented in this presentation will outline progress made toward understanding the interaction of the cytoskeleton, focal contacts, fibronectin and the substrate. Immunofluorescent labelling and confocal microscopy are used to identify features in the AFM images. The relative distribution of cytoskeletal components as well as identification of microfilaments and fibronectin in AFM images of fixed, dried CV-1 cells has been achieved.

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