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Integrin endocytosis on elastic substrates mediates mechanosensing

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Abstract

Tissue mechanics provides an appropriate niche for cell growth and functions. Integrin proteins play a pivotal role in mechanosensing associated with both extracellular matrix and intracellular cytoskeleton proteins. Endocytosis of integrin β1 of BMMSCs on collagen I-coated soft substrates promotes cell differentiation, providing a mechanism that cell sense elasticity through integrin. To determine whether other integrin subunits act the same way in BMMSCs, we carried on immunocytochemical staining and biotin labeling experiments to assay their subcellular distribution on stiff and soft hydrogels. Our results indicate that, consistent with our previous studies conducted on β1 integrin, more integrin α1 and α2 were internalized on