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Tensional Homeostasis in Single Fibroblasts Probed with Traction Force Microscopy ROSTISLAV BOLTYANSKIY, HENRY FOOTE, AARON MERTZ, KATHRYN ROSOWSKI, HOLLY LAURIDSEN, VALERIE HORSLEY, JAY HUMPHREY, MARTIN SCHWARTZ, ERIC DUFRESNE, None — Many tissue types, including skin and blood vessels, respond to mechanical perturbations by remodeling to maintain a constant level of stress. This is called tensional homeostasis. Does similar remodeling and adaptation occur in single cells? To address this question, we have developed a technique to measure cell traction forces as the extra-cellular matrix is stretched. The time- and strain-dependent cellular response sheds light on active adaptive processes, like tensional homeostasis, and passive mechanical properties, such as stiffness.

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None

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