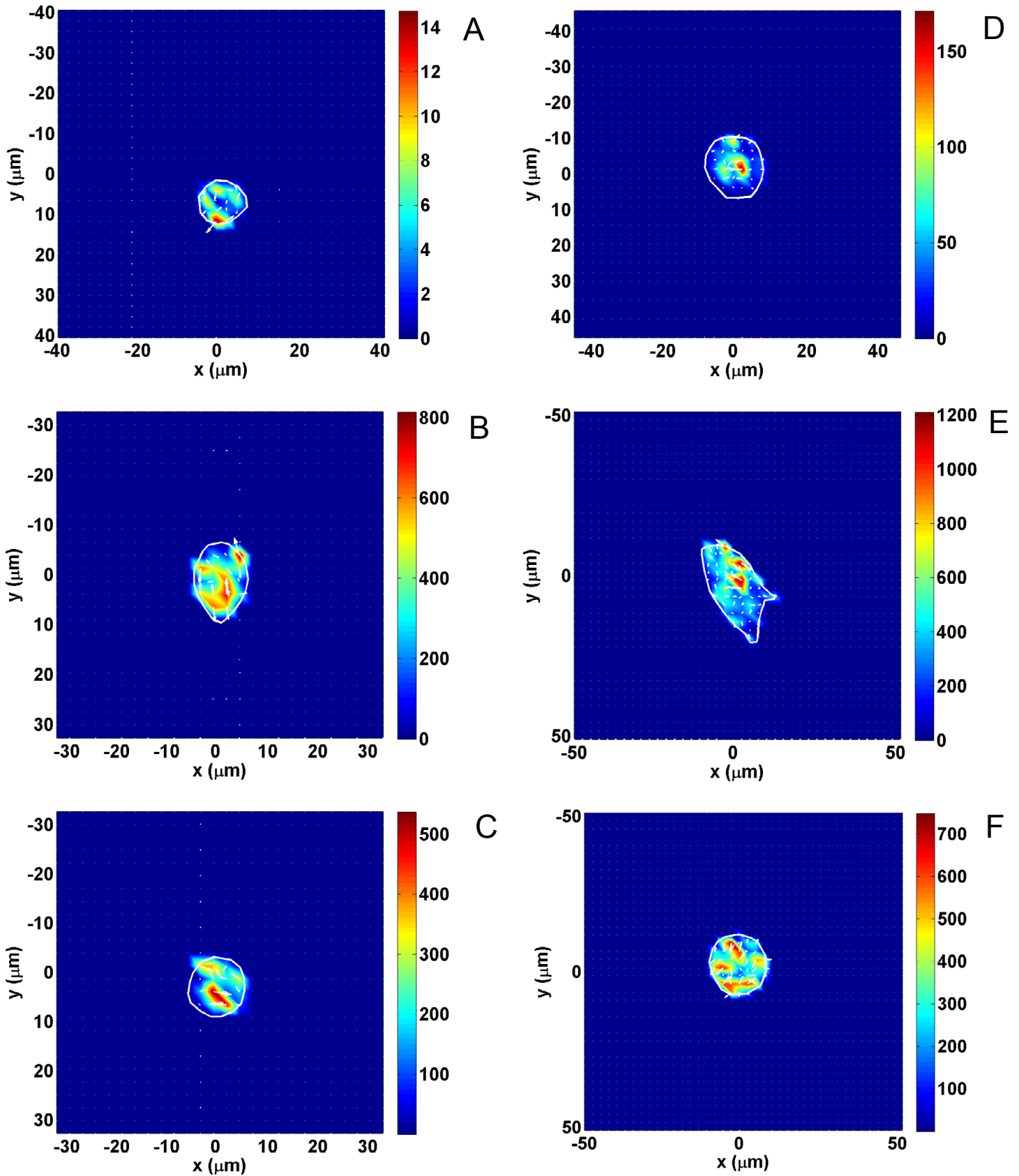
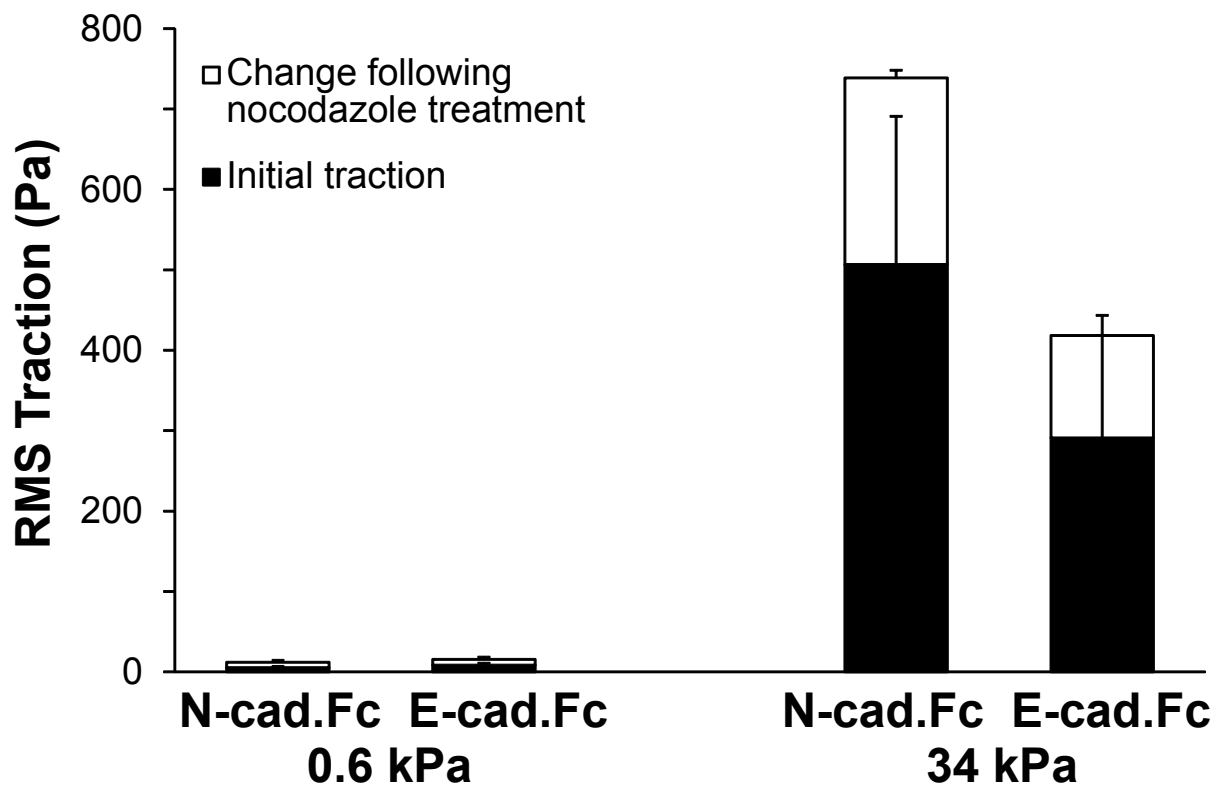


**Fig. S1. N-cadherin mechanotransduction is ligand selective.** MTC measurements of the force-induced stiffening response of NCHO cells probed with beads coated with N-cad.Fc (black squares), E-cad.Fc (black circles) or C-cad.Fc (gray circles).



**Fig. S2. Traction force ‘heat maps’ of cells on rigid (34 kPa) or soft (0.6 kPa) hydrogels coated with E-Cad.Fc or with N-Cad.Fc ligand. (A-C)** Traction force heat maps of single MDA-MB-435 cells on soft (A: 0.6 kPa) and rigid (B: 34 kPa) gels coated with N-Cad.Fc (homophilic ligand), and an MDA-MB-435 cell on a rigid (C: 34 kPa) gel coated with N-Cad.Fc (heterophilic ligand). **(D-F)** Traction force heat maps of single MDKC cells on soft (D: 0.6 kPa) and rigid (E: 34 kPa) gels coated with E-Cad.Fc (homophilic ligand), and an MDCK cell on a rigid (F: 34 kPa) gel coated with N-Cad.Fc (heterophilic ligand).



**Fig. S3. Nocodazole treatment increased traction stresses exerted by the cells on cadherin substrates.** RMS (root-mean-square) traction forces (Pa) generated by MDA-MB-435 cells on cadherin-coated gels. Cells were cultured in the absence of serum on soft (0.6 kPa) and semi-rigid (34 kPa) polyacrylamide gels coated with either N-cad.Fc or E-cad.Fc. The filled bars indicate traction stresses in the absence of nocodazole, and the white bars show the increase in traction forces after treating the cells with nocodazole.