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Supplementary Materials for

Mitotic cell responses to substrate topological cues are independent of the molecular nature of adhesion

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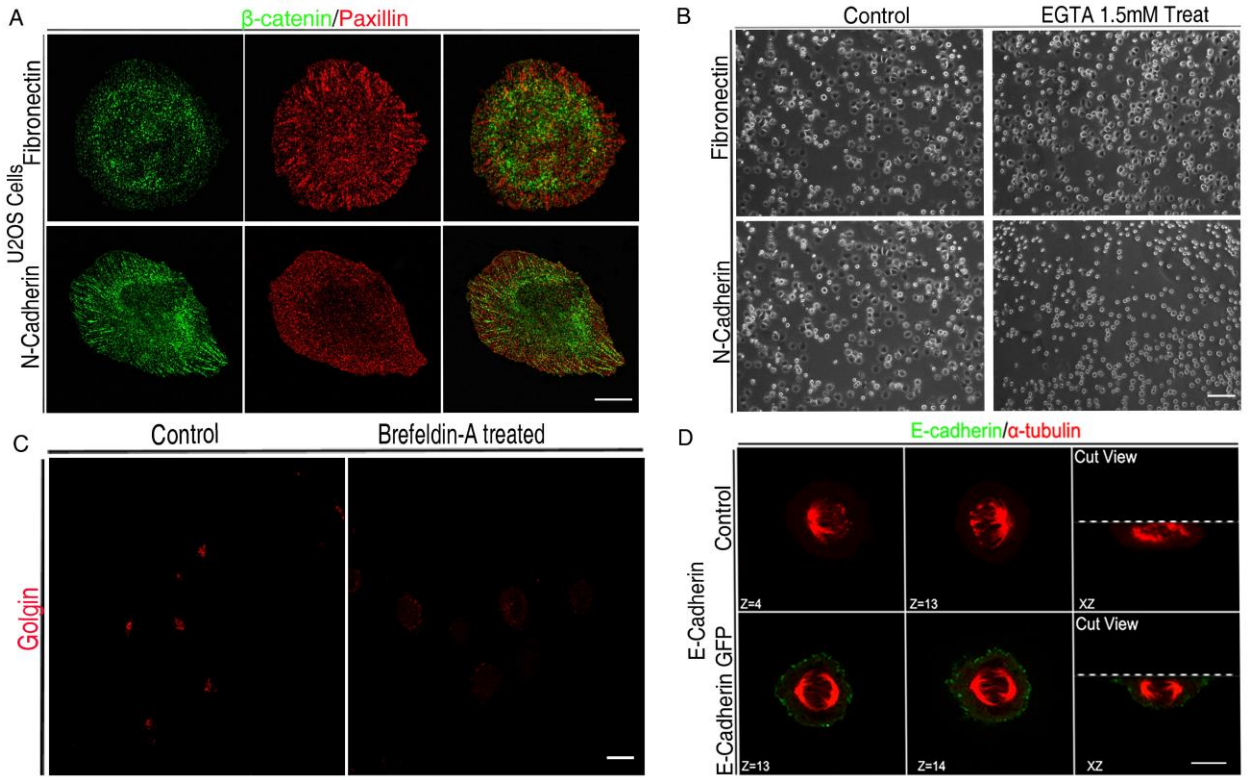

Fig. S1. Planar cadherin substrates drive cell divisions parallel to the plane of adhesion. (**A**) Representative images of interphase U2OS cells on Fibronectin (FN) or N-cadherin Fc at the plane of cell-substrate attachment. Cells were stained for β-catenin and paxillin. N=355 total number of interphase cells, across all conditions, from three independent experiments. (**B**) Phase contrast images of control and EGTA-treated HeLa cells on FN and N-cadherin Fc. N=363 total number of cells, across all conditions, from three independent experiments. (**C**) Fluorescent images of control and Brefeldin-A–treated interphase HeLa cells stained for Golgin. N=162 total number of interphase cells, across all conditions, from three independent experiments. (**D**) Representative optical sections and side projections (xz) of control and E-cadherin–GFP–expressing metaphase HeLa cells stained for β-tubulin. N=277 total number of metaphase cells, across all conditions, from three independent experiments. Scale bars, 10μm.

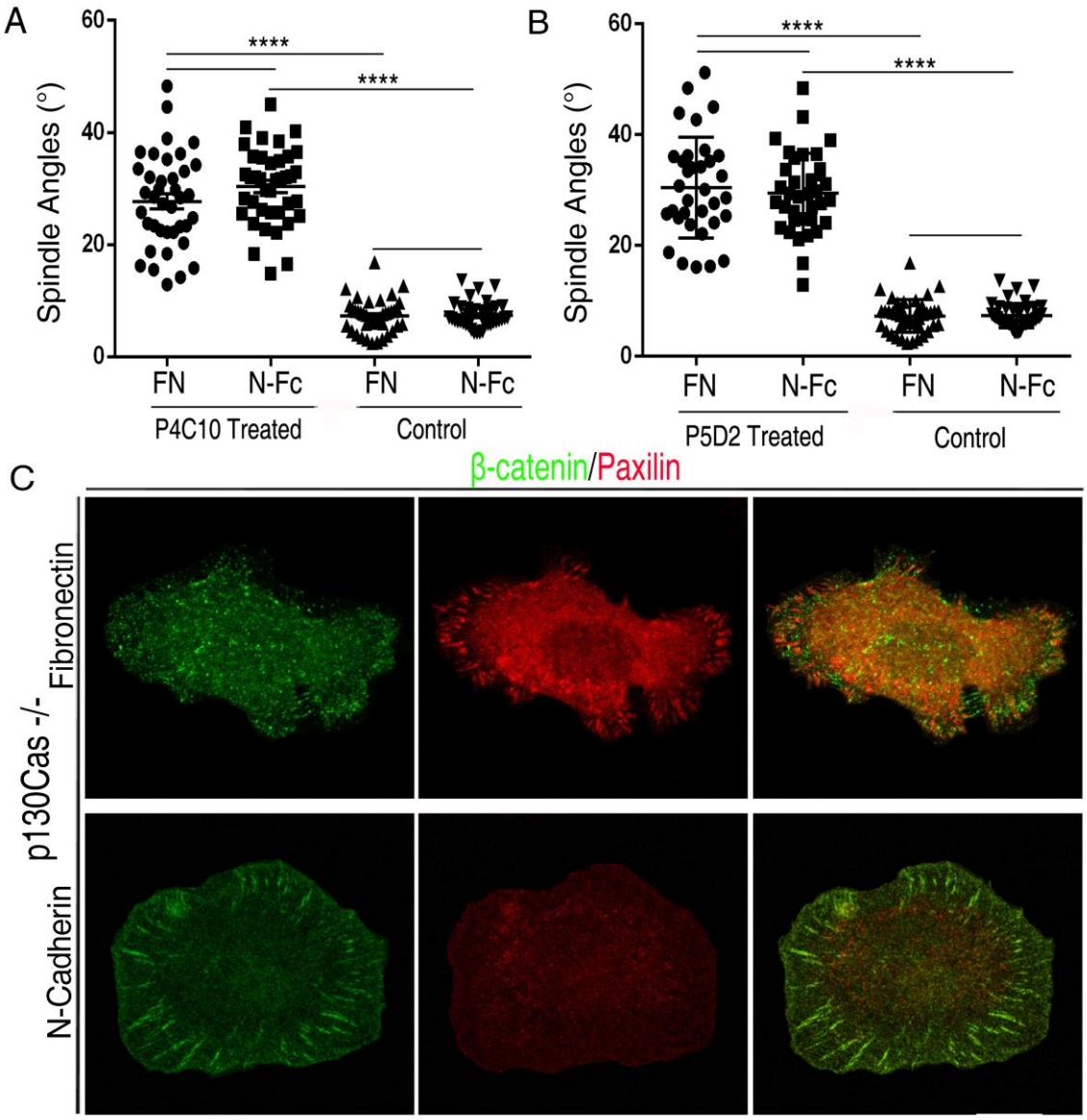

Fig. S2. Integrin activation is necessary for mitotic cell responses to planar substrates. (**A**) Distribution of substrate-to-spindle angles of metaphase control and P4C10-treated HeLa cells on Fibronectin (FN) and N-cadherin Fc (N-Fc) substrates. Data represent the mean±s.e.m. Control on FN, 7,272 ± 3,019°, N=40; P4C10-treated on FN 27,757± 8,282°, N=39; control on N-Fc 7.391 ± 2,212°, N=39; P4C10-treated on N-Fc 30,373±6,761°, N=39. *P* values calculated using Mann–Whitney test (****$P < 0.0001$). N = number of metaphase cells, from each condition, from three independent experiments. (**B**) Distribution of substrate-to-spindle angles of metaphase control and P5D2-treated HeLa cells in FN and N-Fc substrates. Data represent the mean±s.e.m. Control on FN, 7,295 ± 0.4646° N=41; P5D2-treated on FN 30.481 ±1,561°, N=34; control on N-Fc 7.355 ± 0.3525°, N=40; P5D2-treated on N-Fc 29,96 ± 1,201°, N=36. *P* values calculated using Mann–Whitney test (****$P < 0.0001$). *N* = number of metaphase cells from two independent experiments. (**C**) Representative images of interphase *p130Cas*$^{-/-}$ cells on FN and N-Fc. Cells were stained for β-catenin and paxillin. N=289 total number of interphase cells, across all conditions, from three independent experiments. Scale bar, 10μm.