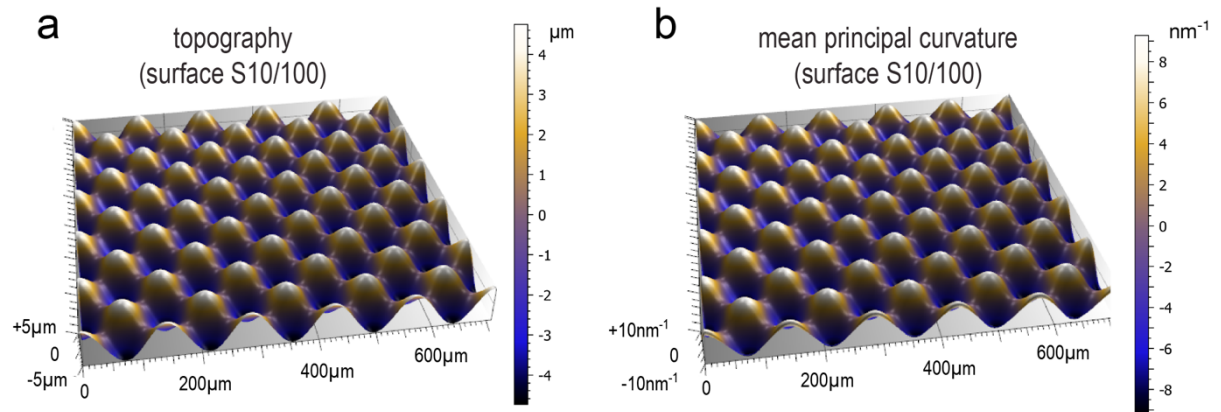


Curvotaxis directs cell migration through cell-scale curvature landscapes.

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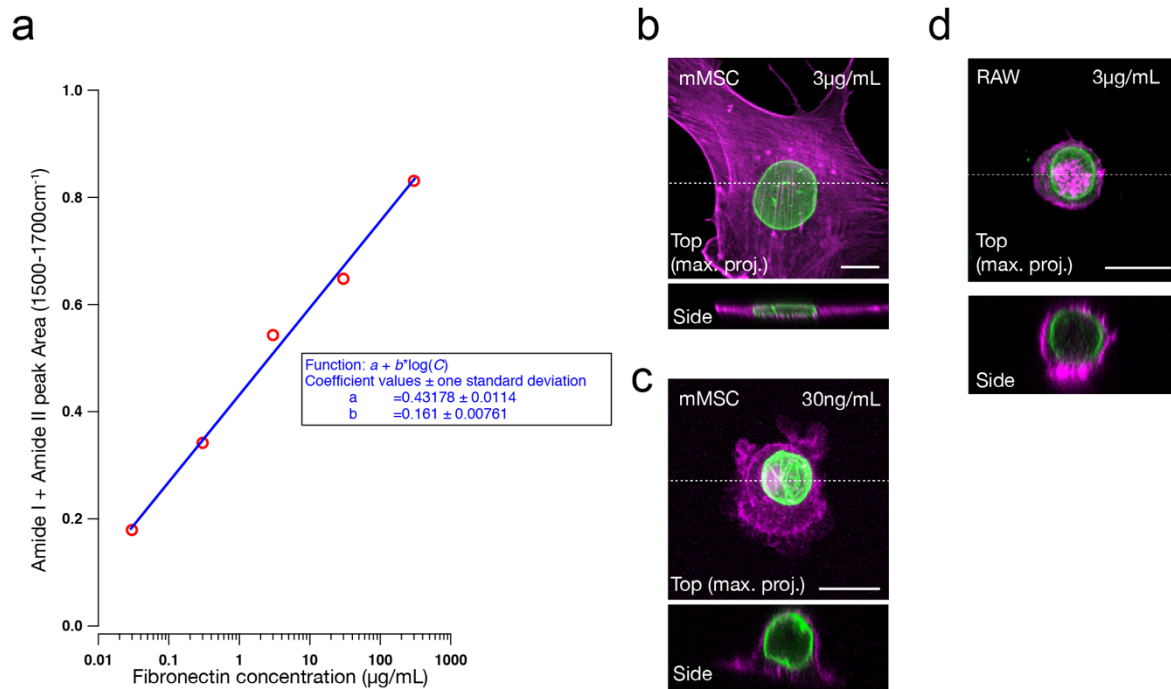
Supplementary Information



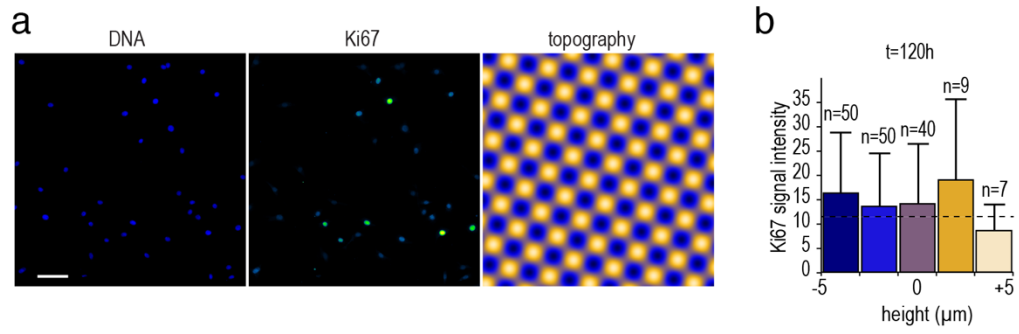
C

Surface	S3/30	S1/100	S3/100	S5/100	S10/100	S30/300
Period (μm)	30	100	100	100	100	300
Amplitude (μm)	3	1	3	5	10	30
Rho (μm)	22	912	313	182	92	283
Curvature max. (nm^{-1})	45,4	1,9	3,2	5,5	10,9	3,5

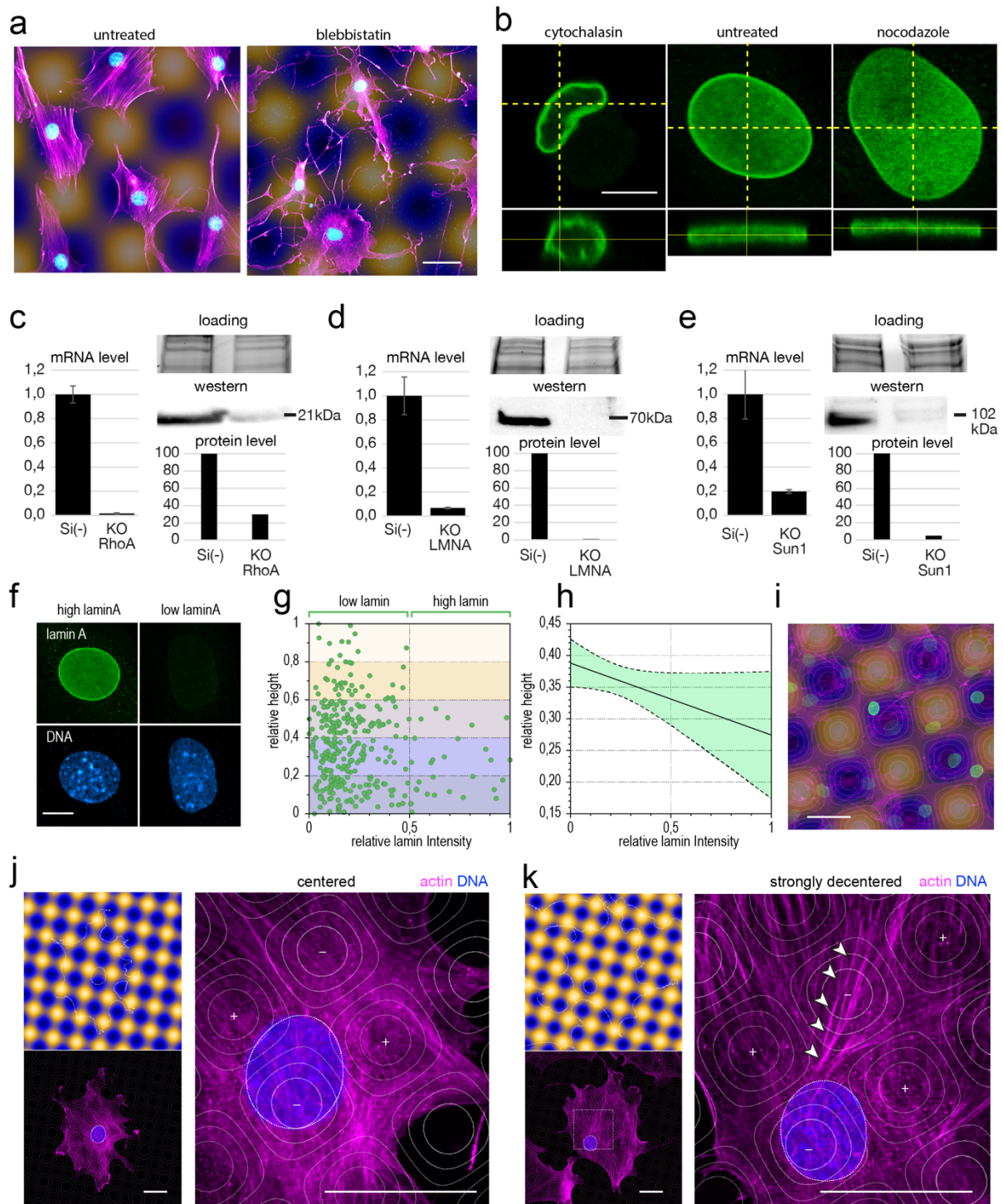
Supplementary figure 1. (a and b). Surface analysis showing a topographical map of the S10/100 surface (a) and the corresponding curvature map (b). Curvature is visualized using the mean curvature: $\mathbf{K}_{\text{mean}} = \frac{1}{2} * (\mathbf{\kappa}_1 + \mathbf{\kappa}_2)$ where $\mathbf{\kappa}_1$ is the maximal curvature and $\mathbf{\kappa}_2$ is the minimal curvature. (c) Numerical description of the sinusoidal surfaces used in this study.



Supplementary figure 2. (a) Relation between amid peak intensity and fibronectin concentration. **(b and c)** Impact of ligand density on actin cytoskeleton (magenta) and nuclear lamina (green) on mMSC spreading. **(d)** Actin cytoskeleton (magenta) and lamina (green) of a macrophage (RAW cell). Scale bars: 10μm.

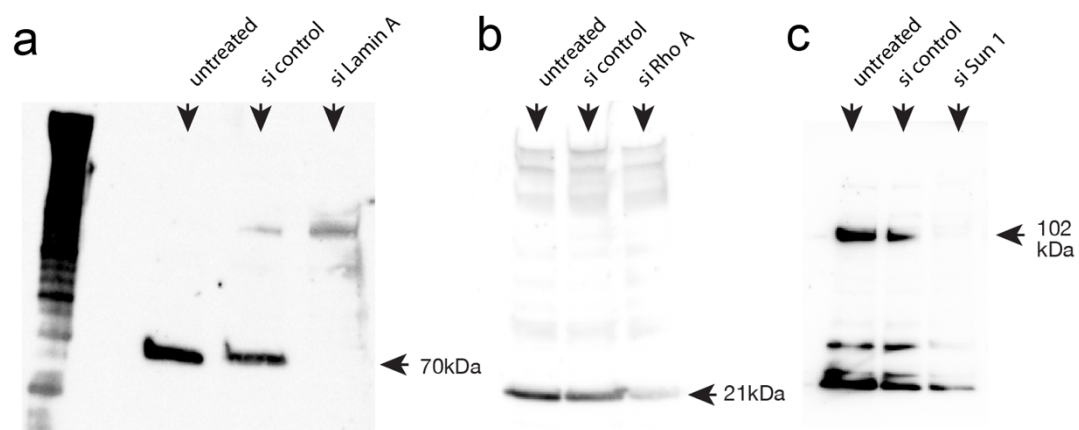


Supplementary figure 3. (a and b) Ki67 staining of cells on a S10/100 surface and quantification of the signal according to surface topography. Scale bar: 100μm.



Supplementary figure 4. (a) Impact of blebbistatin on cells stained for actin. **(b)** Impact of cytochalasin and nocodazole on nuclear envelope morphology. **(c, d and e)** Impact of siRNA treatments on targeted mRNAs and proteins levels. (RhoA in **c**, LaminA in **d** and Sun1 in **e**). **(f, g, h and i)** Effect of siRNAs targeting laminA on cell distribution. Endogenous laminA

variations detected after immunostaining (**f**) is correlated with surface topography (**g**, **h** and **i**). (**j and k**) Immunostainings of cells adhering on S3/30 surfaces showing surface topography, DNA and the actin cytoskeleton. Arrowheads highlight actin stress fibers. Scale bars: 30 μ m in (a), 10 μ m in (b), 5 μ m in (f), 50 μ m in (i), 30 μ m in (j) and (k).



Supplementary figure 5. Full uncropped western blots showing Lamin A, Rho A and Sun 1 proteins from total protein extracts of untreated or RNAi treated C3H10 cells.