Electronic Supplementary Material (ESI) for Soft Matter

Supplementary material: Cellular mechanoadaptation to substrate mechanical properties: contributions of substrate stiffness and thickness to cell stiffness measurements using AFM.

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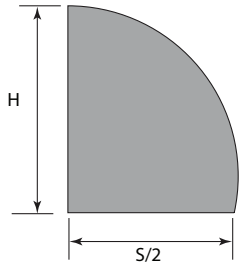
1 Supplementary Figure

(a) Cell Dimensions : Volume 524 µm^3

Cell Spread S (µm)	Cell Height H (µm)
2	9.90
5	9.38
10	7.56
15	5.13
20	3.22



(b) Nucleus Dimensions : Volume 65.45 µm^3

Cell Spread S (µm)	Location of nucleus centre Y (µm)	Equilateral radius r_1 (µm)	Polar radius r_2 (µm)
2	4.95	2.5	2.5
5	4.69	2.5	2.5
10	3.78	2.5	2.5
15	2.56	2.75	2.07
20	1.61	3.39	1.36

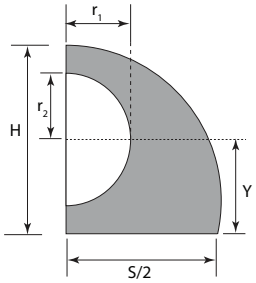


Fig. S 1: Cellular geometries used in the main paper. (a) Cell dimensions for different spread geometries subject to constant volume. (b) Position and dimensions of the nucleus for different spread geometries subject to constant nuclear volume.

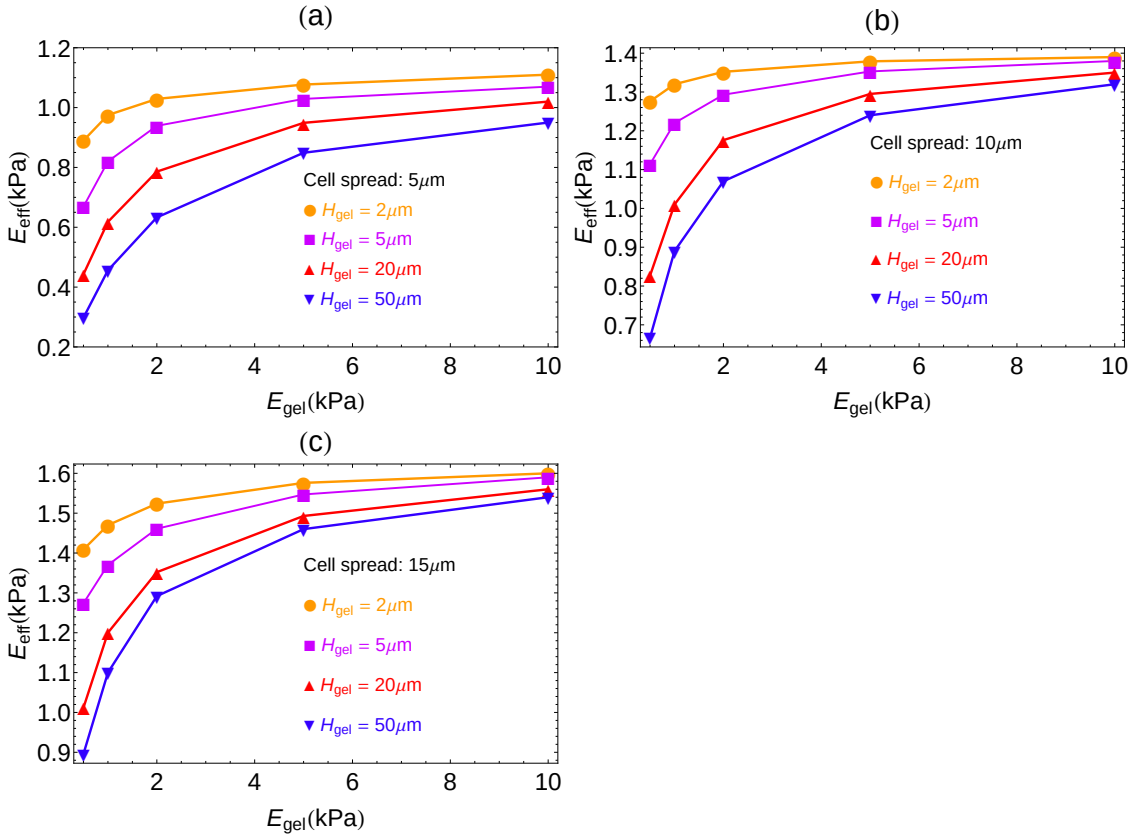


Fig. S2: E_{eff} versus E_{gel} for cell without nucleus at different cellular spreads S obtained for different values of H_{gel}. (a), (b) and (c) correspond to S equal to 5 μm, 10 μm and 15 μm, respectively.

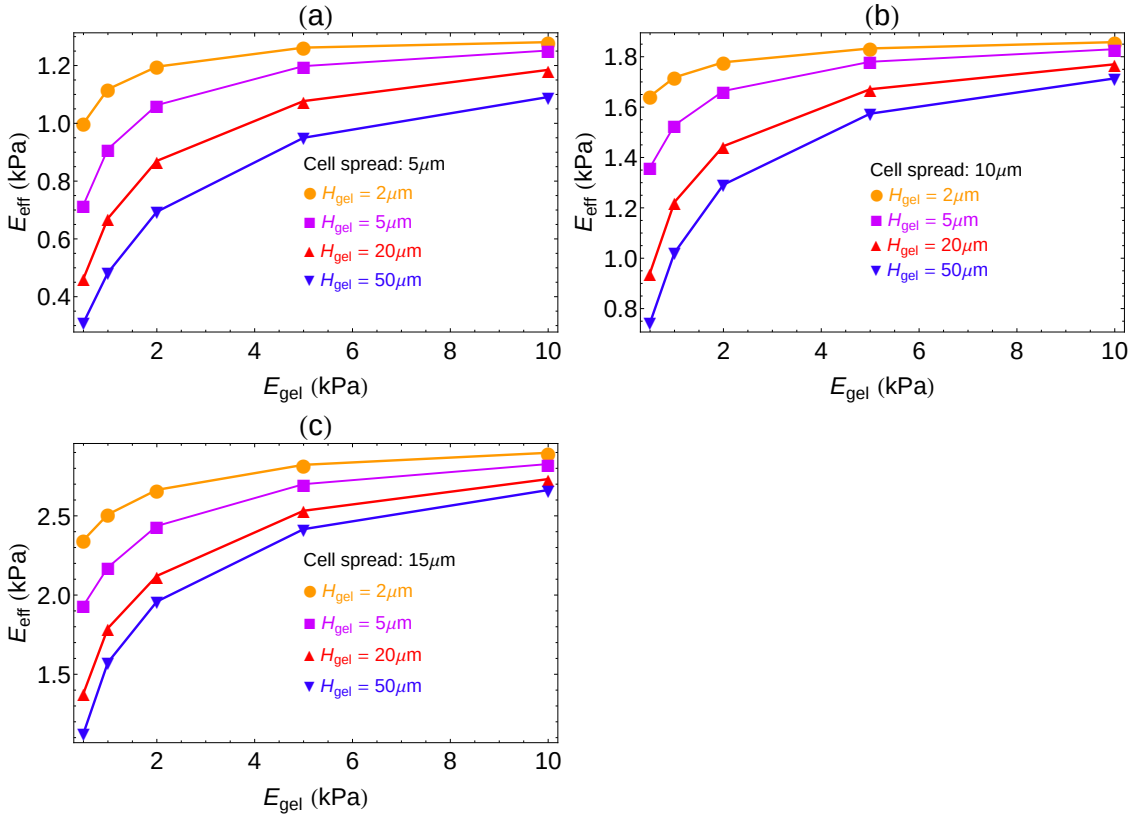


Fig. S3: E_{eff} versus E_{gel} for cell with nucleus at different cellular spreads S obtained for different values of H_{gel}. (a), (b) and (c) correspond to S equal to 5 μm, 10 μm and 15 μm, respectively.

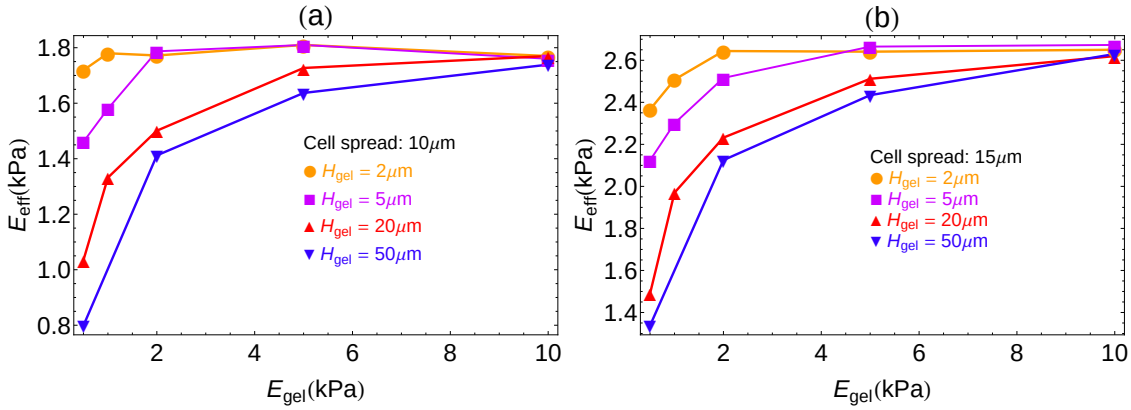


Fig. S 4: E_{eff} versus E_{gel} for cell without nucleus but with pre-stress of $\sigma_0 = 0.5$ kPa at different cellular spreads S, obtained for different values of H_{gel}. (a) and (b) correspond to S equal to 10 μm and 15 μm, respectively.

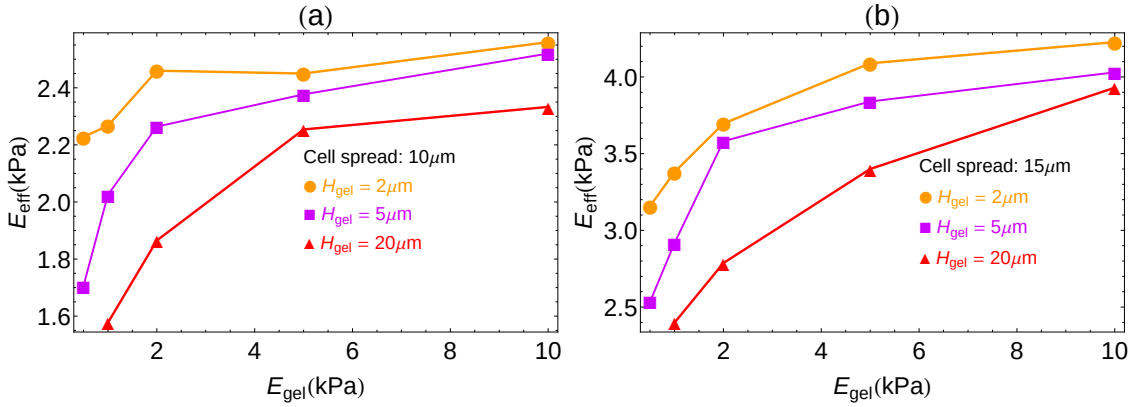


Fig. S5: E_{eff} versus E_{gel} for cell with nucleus and pre-stress of $\sigma_0 = 0.5$ kPa at different cellular spreads S, obtained for different values of H_{gel}. (a) and (b) correspond to S equal to 10 μm and 15 μm, respectively.