

Supplementary Information

Elastic properties of cells in the context of confluent cell monolayers: impact of tension and surface area regulation

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Figure S1:

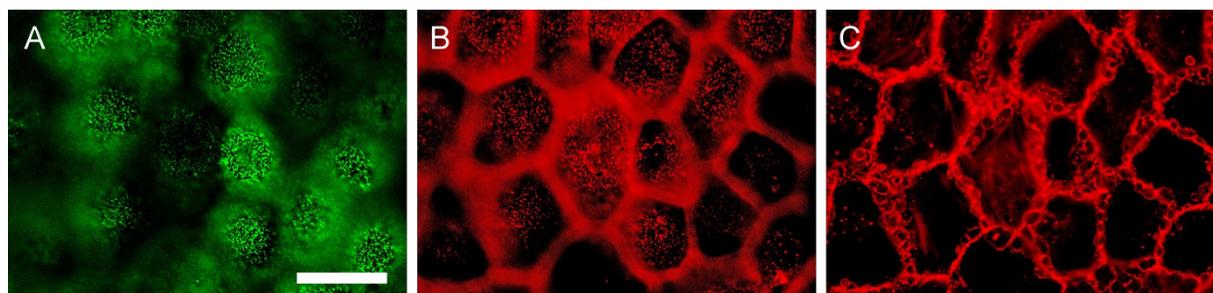


Figure S1: Fluorescence micrographs of MDCK II cells treated with blebbistatin. A: Ezrin is labeled in green showing protein distribution at the cellular apex. B: F-actin is labeled in red displaying F-actin arrangement at the cellular apex. C: F-actin in the basolateral region of the cells. Fluorescence microscopy images show no change in the ezrin and F-actin distribution on the cellular apex after exposure to blebbistatin in comparison to untreated cell (Fig. 3). However, at the basal part of the cells, huge blebs are observable. Scale bar: 20 μ m.

Figure S2:

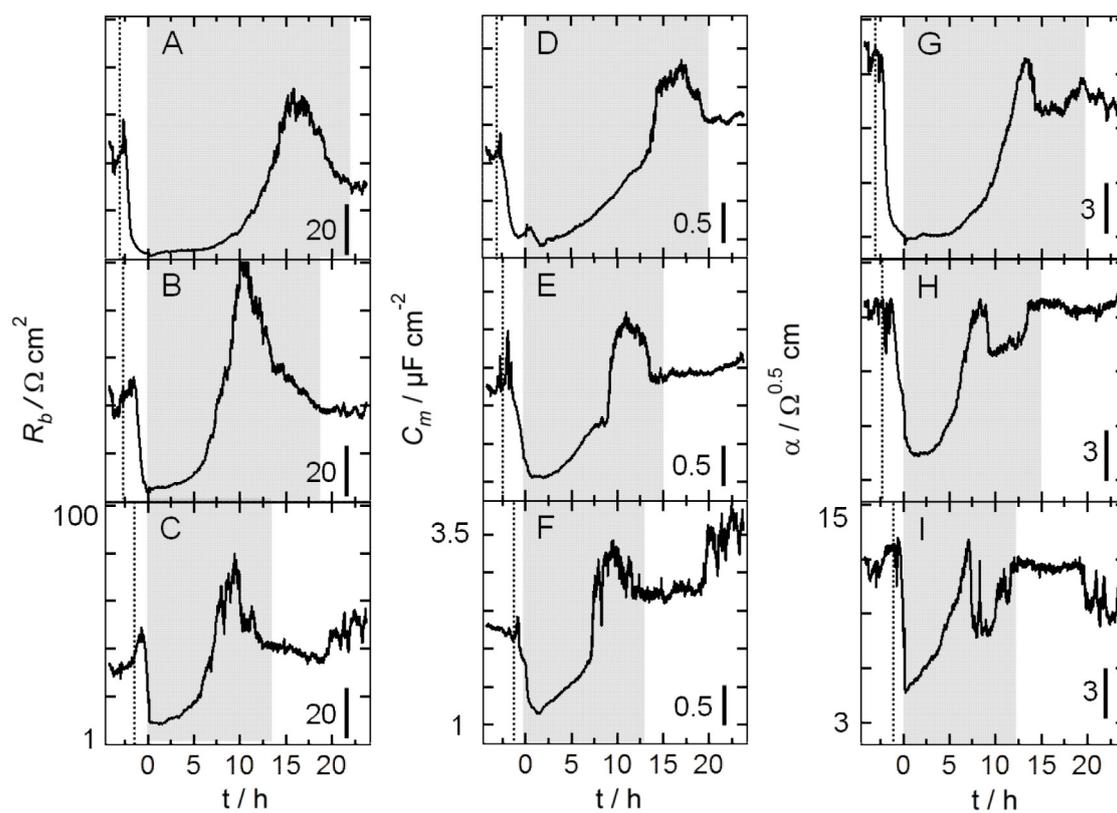


Figure S2: Reversibility of cholesterol depletion from MDCK II cells measured with the ECIS method, with different exposure times to MBCD (10 mM) and removal of MBCD after 32 h. Dotted lines indicate point of substance addition. Grey area shows recovery period until the respective parameter regains its value prior to MBCD treatment.

Figure S3:

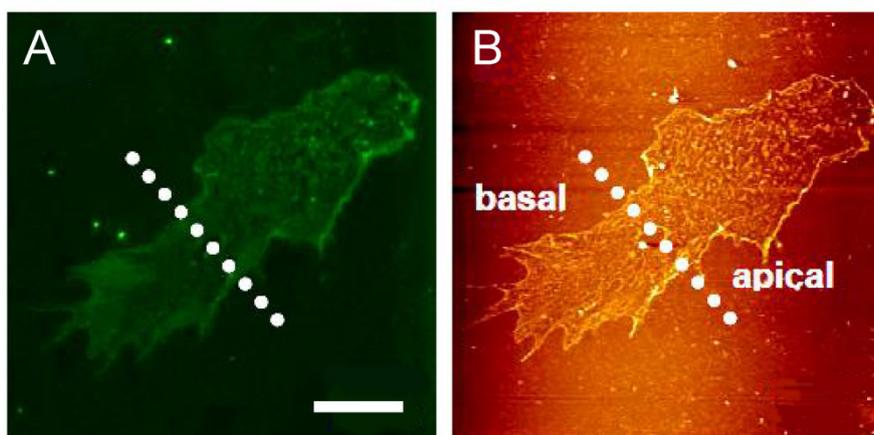


Figure S3: MDCK II cell opened by squirting-lysis. A: Fluorescence micrograph showing remaining actin fibers stained with Alexa Fluor 488 phalloidin. B: Corresponding AFM image showing microvilli on the apical side and stress fibers on the basal side. Scale bar: 10 μm .

Figure S4:

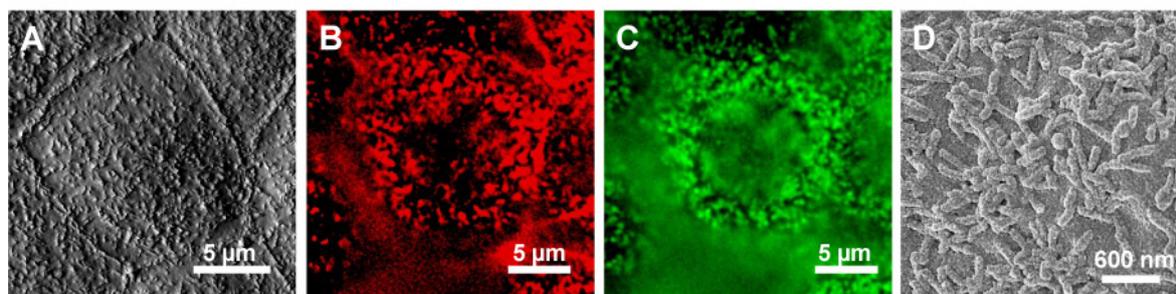


Figure S4: Surface characterization of confluent MDCK II cells. A: AFM deflection image. B: Fluorescence micrograph of F-actin and (C) ezrin staining, demonstrating co-localized structures in the apical part of the cell. D: SEM image of the surface of MDCK II cells. Clearly visible are membrane protrusions.

Figure S5:

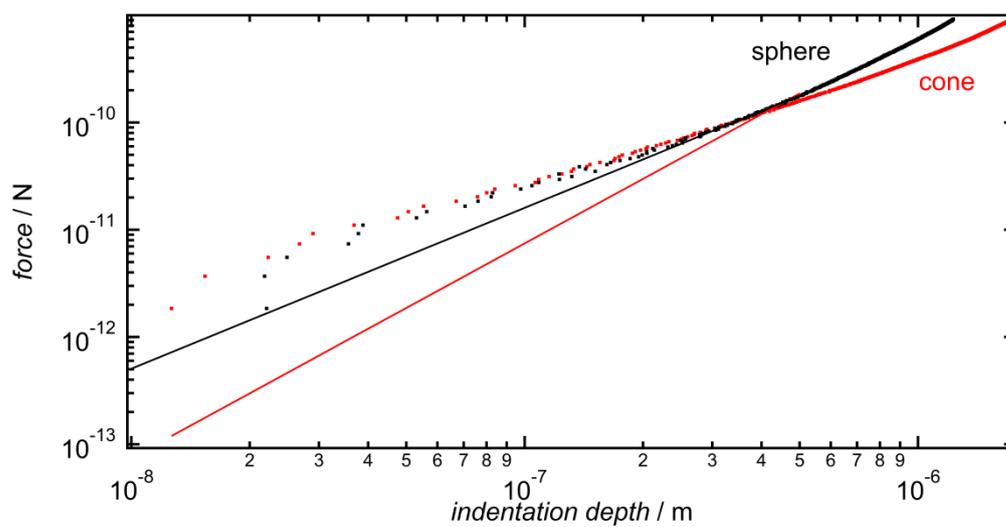


Figure S5: Log-log plot of the averaged force-indentation curves from Fig. 2 using a pyramidal (ret dots) and $2\ \mu\text{m}$ large spherical indenter (black dots). The Sneddon model assuming a conical indenter (red solid line) and the original Hertz model valid for spherical indenter (black solid line) were fitted to up to an indentation depth of 500 nm.