Electronic Supplementary Material (ESI) for Soft Matter.
This journal is © The Royal Society of Chemistry 2016

Electronic Supplementary Information

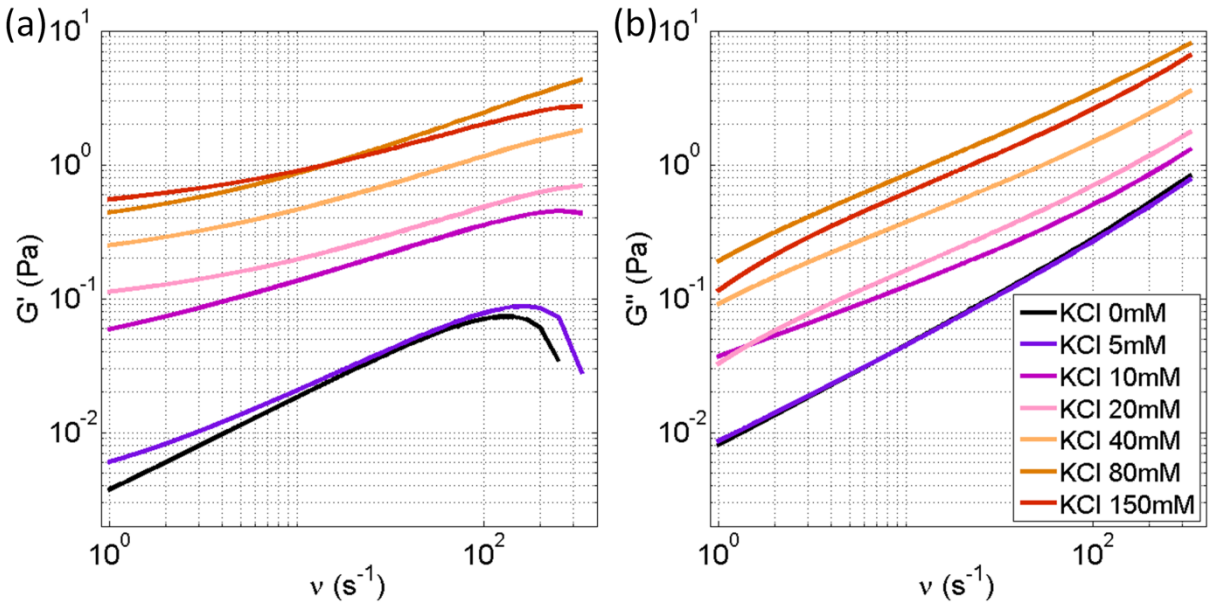

Fig. S1: Storage modulus G‘ (a) and loss modulus G‘‘ (b) calculated from the MSDs shown in Fig. 2 (keratin 8/18 networks (c = 0.5 g/l) with different concentrations of KCl). The calculations were done by fitting a stretched exponential to the MSD and then transforming the fit according to Mason (T. G. Mason, *Rheol. Acta*, 2000, **39**, 371-378). Both *G’* and *G’’* become higher for increasing KCl concentrations. No minima or plateau moduli G_0 can be observed.
The drop at large frequencies of G’ occurs when the slope α of the MSD approaches 1. When α is larger than 1, corresponding to super-diffusion, then *G’* becomes negative. Due to the limited number of beads this does not necessarily have a physical reason.

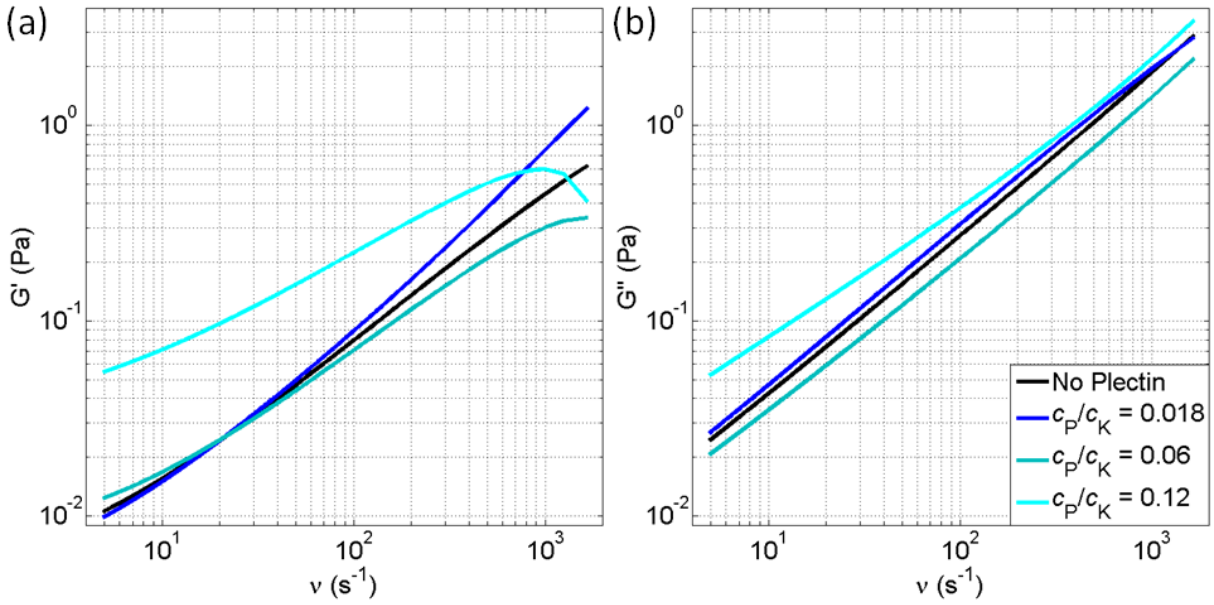

Fig. S2: Storage modulus G‘ (a) and loss modulus G‘‘ (b) calculated from the MSDs shown in Fig. 4 (keratin 8/18 networks (c = 0.5 g/l) with different concentrations of plectin). The calculations were done as explained above. Again both *G’* and *G’’* become higher for increasing plectin concentrations and no minima or plateau moduli G_0 can be observed.
The drop at large frequencies seen for c_P/c_K = 0.12 occurs when the slope α of the MSD approaches 1. When α is larger than 1, corresponding to super-diffusion, then *G*’ becomes negative. Due to the limited number of beads this does not necessarily have a physical reason.

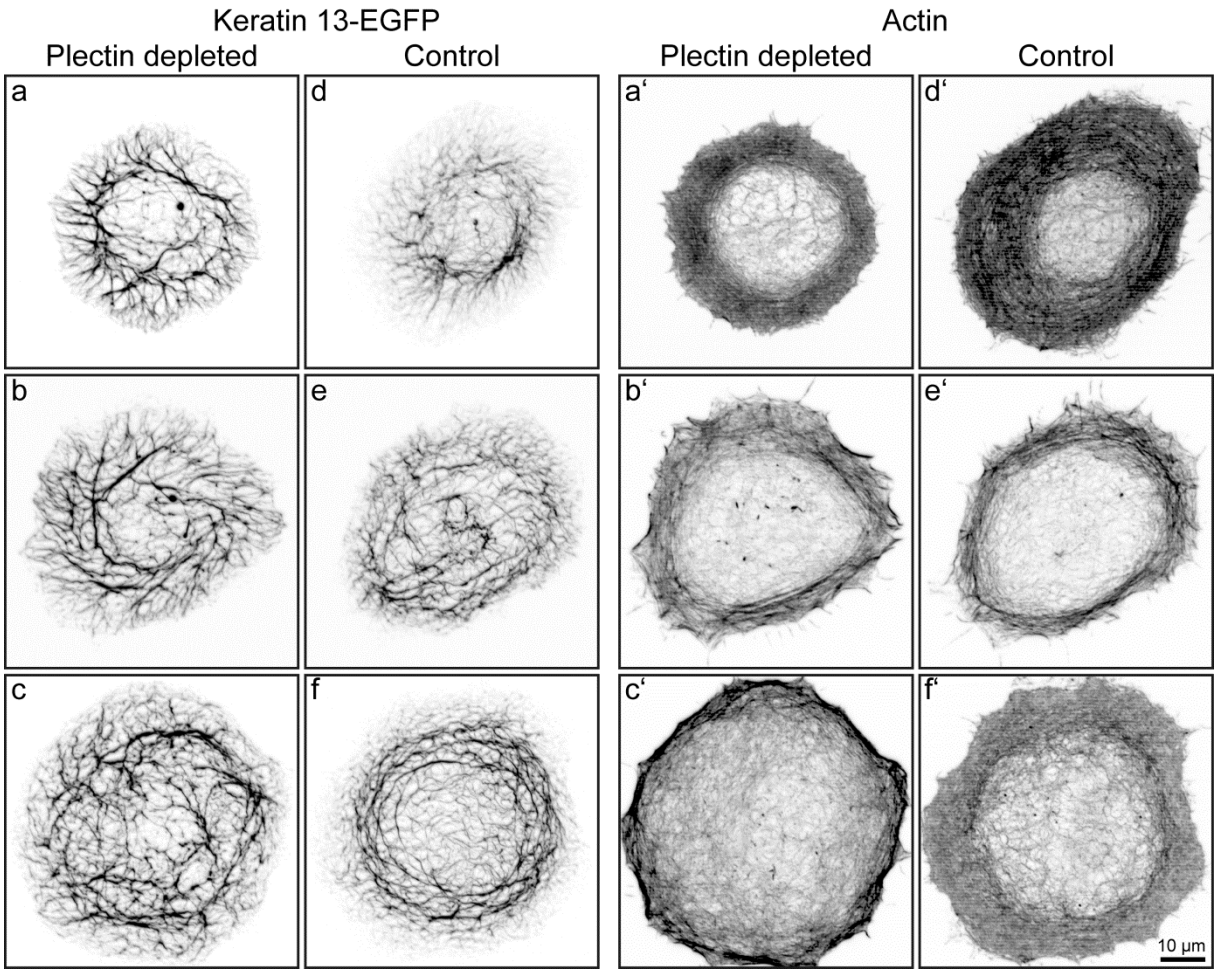

Fig. S3: The fluorescence images show three plectin depleted and three control A431 cell clones after membrane extraction. Cells were prepared and imaged in the same way as those shown in Fig. 5. Keratin 13-EGFP fluorescence is shown in the left images (a-f), and corresponding phalloidin staining of actin on the right (a’-f’). The peripheral keratin filament bundles are thicker in plectin depleted cells in comparison to control cells. Actin staining does not show visible differences between plectin depleted and control cells.

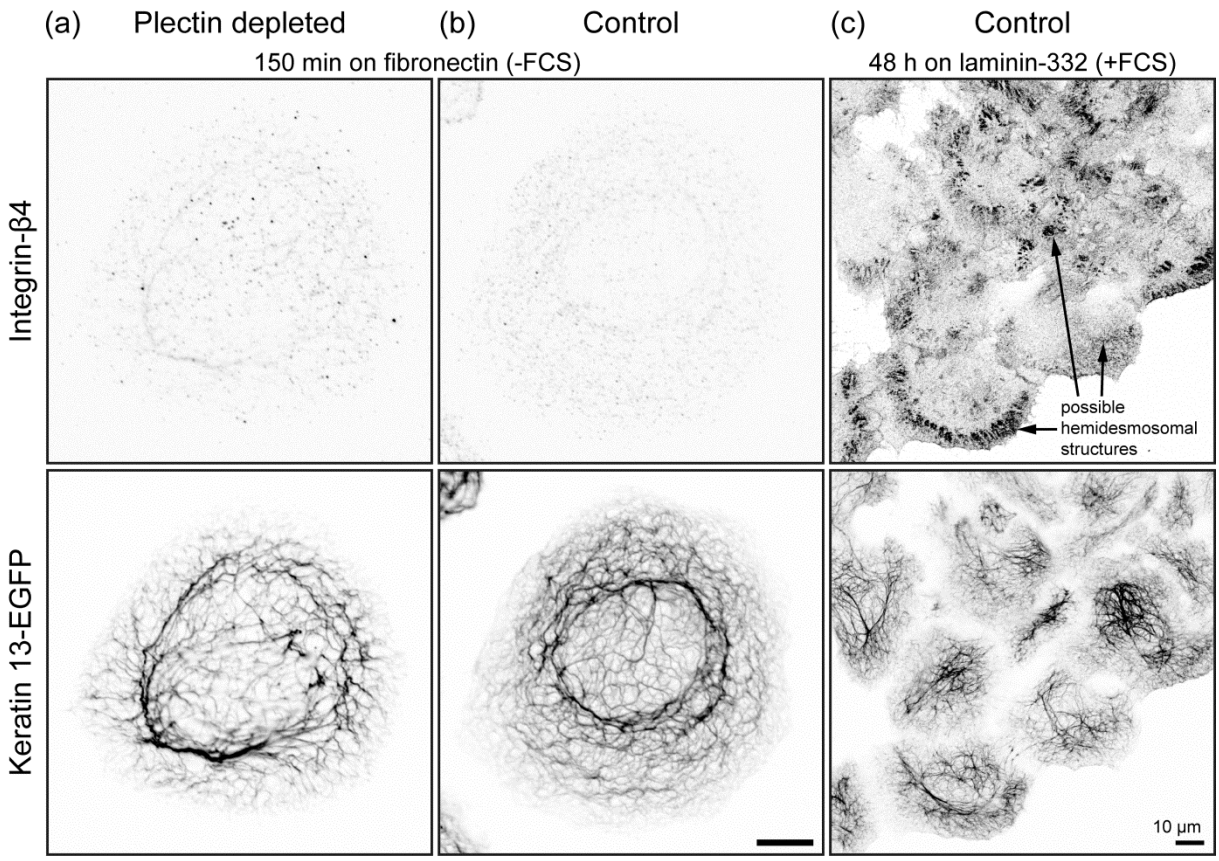

Fig. S4: Immunostaining of integrin-β4 in A431 cell clones with normal and reduced plectin levels. The cells were methanol/acetone fixed prior to recording. Images depicting integrin-β4 immunofluorescence (top row) and corresponding keratin 13-EGFP fluorescence (bottom row) show a plectin depleted cell (a) and a control cell with normal plectin level (b). Both cells were grown in the same way as for microrheology experiments and were recorded at their bottom plane by structured illumination (Carl Zeiss ApoTome.2). Both clones did not form hemidesmosomal structures on fibronectin within 150 min (140 min without FCS) after seeding. In contrast, a control clone (c) that was cultivated on a laminin-332-rich matrix for 48 h with 10% FCS presented strong integrin-β4 immunofluorescence in patches indicating the presence of hemidesmosomal structures (arrows). In this instance, the cells were recorded with a confocal laser scanning microscope (Carl Zeiss LSM 710 Duo) at the bottom focal plane.