Supplementary Table 1. Compressive stress reduces cell layer thickness without altering cell volume.

Exp. #	Cell layer thickness[1] (μm)			Cell volume[2] ($\times 10^4 \mu m^3$)		
	Control	Compression	% change	Control	Compression	% change
1	8.5	7.5	-11.8	4.24	4.26	.05
2	28	25	-10.7	8.7	8.5	-2.3
3	14	13	-7.1	6.8	6.4	-5.9
4	20	17.5	-12.5	9.8	9.89	0.9
5	17.5	15.5	-11.4	13.9	13.6	-2.2
6	22	19.5	-11.3	11	10.9	-0.9
7	10.5	9.5	-9.5	5.2	5.14	-1.1
mean±SD			-10.6 ± 1.9*			-1.6 ± 2.3**

[1]The thickness of the cell layer was determined by measuring the number of X-Y slices between fluorescein-dextran layers and subtracting the thickness of the substrate (Figure 1A). [2]Cellular volumes were determined by first computing the area occupied by cells in a 72μm×72μm field using a threshold defined as the average cell boundary intensity value at multiple locations in a field. This area was then multiplied by the slice thickness, and all slices over the height of the cell layer were added together. * $p<0.01$ by paired Student's *t*-test. ** Not statistically different from cell volume before pressure by paired Student's *t*-test ($p>0.05$).