ARTICLE

Supporting Information

Functional microarray biochips promote micropatterned adhesion-cytoskeleton-nuclear coupling to guide endothelial force-sensing mechanotransduction

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Table S1. The characteristics of heterogeneous microarray biochips, including length of horizontal and vertical axis, aspect ratio, spreading area, and PVA thickness. The data present mean ± SD, n = 5.

Pattern types	AR-1	AR-2	AR-4
Length of horizontal axis (μm)	59.32±0.93	84.35±0.49	119.05±0.54
Length of vertical axis (μm)	59.68±1.20	42.02±0.93	29.52±0.54
Aspect ratio	1.00±0.035	2.01±0.04	4.05±0.06
Spreading area (μm^2)	2772.04±79.34	2791.30±63.07	2776.13±56.46
PVA thickness (nm)	66.8±4.5	66.5±4.9	70.9±8.3

Table S2. The characteristics of engineered HUVECs on heterogeneous microarray biochips, including length of horizontal and vertical axis, aspect ratio, spreading area. The data present mean ± SD, n = 5.

Pattern types	AR-1	AR-2	AR-4
Length of horizontal axis (μm)	57.90±1.53	84.30±0.84	118.42±1.44
Length of vertical axis (μm)	59.48±1.34	41.39±1.40	29.65±1.16
Aspect ratio	0.97±0.05	2.04±0.08	4.00±0.17
Spreading area (μm^2)	2634.42±139.56	2739.96±91.42	2757.53±104.77

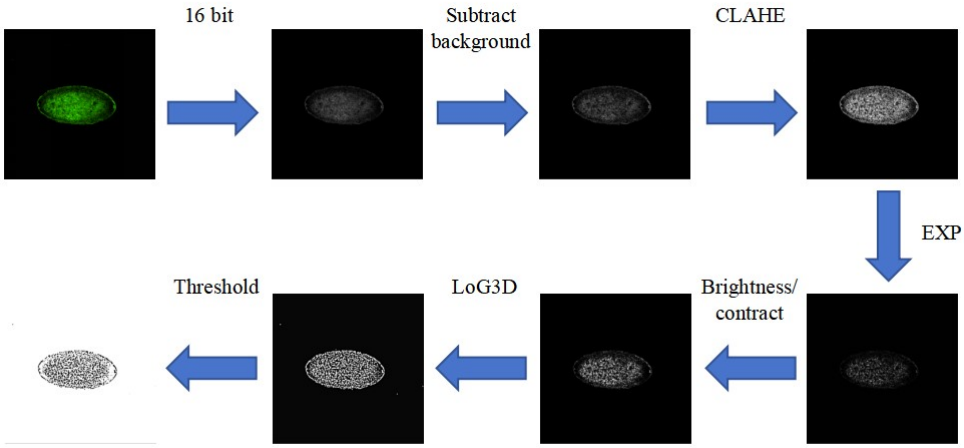

Fig. S1 Analysis process to calculate total FA area and average FA size by ImageJ software.

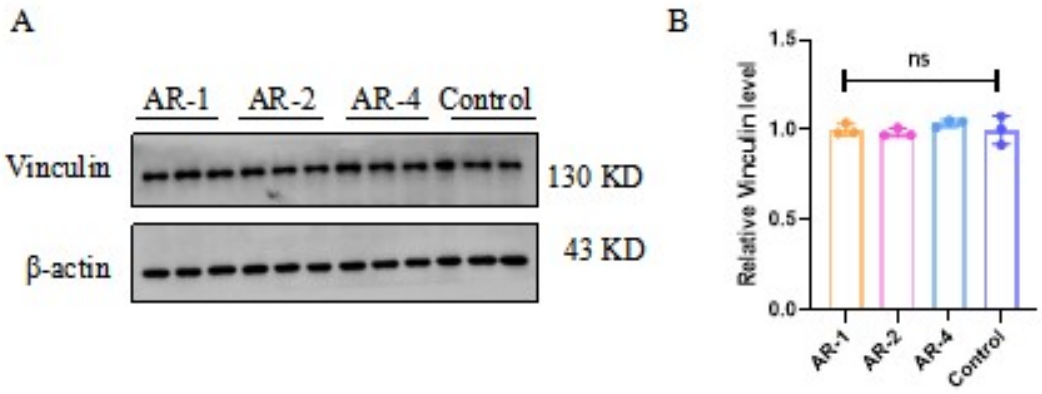

Fig. S2 (A) WB analysis of Vinculin after disturbing piezo using GsMTx4. (B) Related Vinculin expression level. n = 3, ns, not significant.

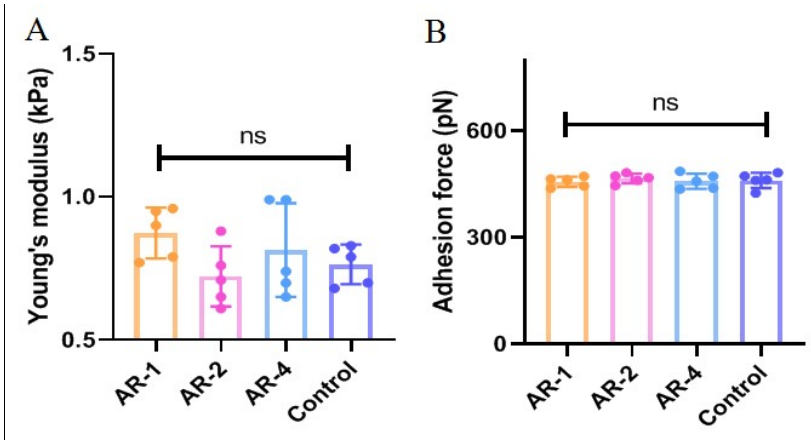

Fig. S3 (A) Young's modulus after cytochalasin D treatment. (B) Adhesion force after cytochalasin D treatment. The data present mean ± SD. n = 5; ns, not significant.

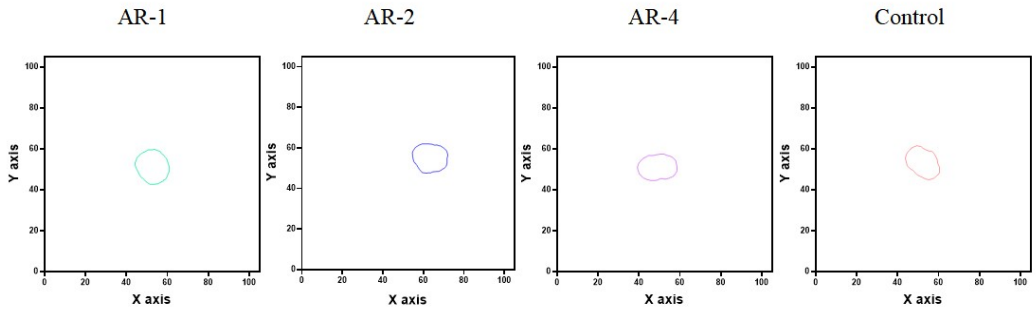

Fig. S4 Nuclear track maps of the HUVECs on the microarray biochips.

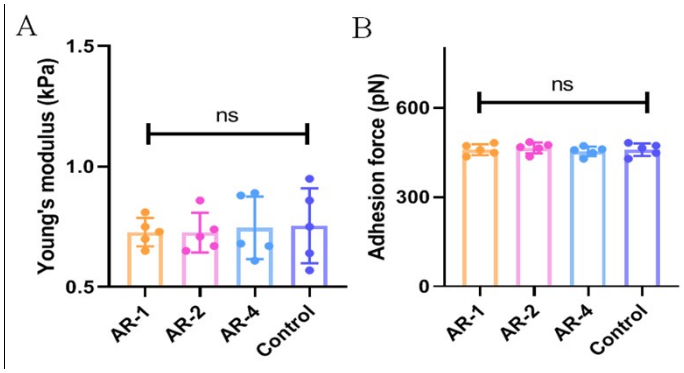

Fig. S5 (A) Young's modulus after blebbistatin treatment. (B) Adhesion force after blebbistatin treatment. The data present mean ± SD. n = 5; ns, not significant.

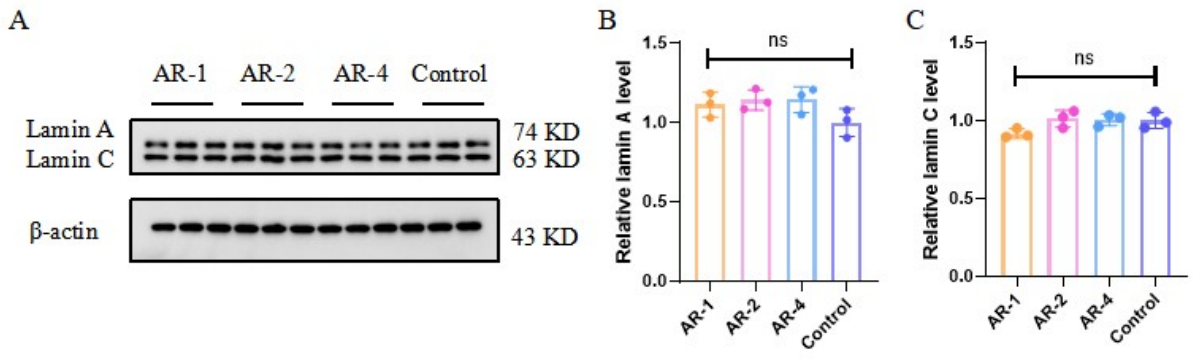

Fig. S6 (A) WB analysis of lamin A/C after disturbing cytoskeleton structures using blebbistatin. (B) Related lamin A expression level. (C) Related lamin C expression level. n = 3, ns, not significant.

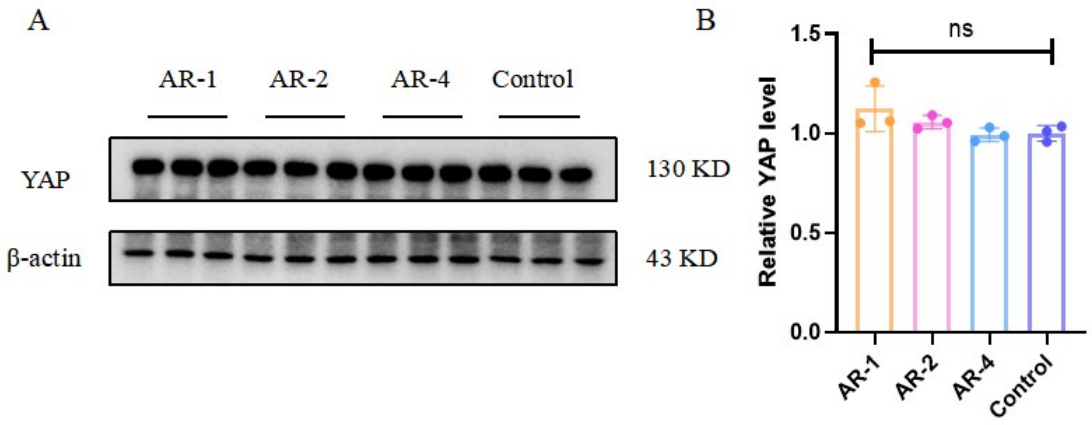

Fig. S7 (A) WB analysis of YAP after disturbing cytoskeleton structures using blebbistatin. (B) Related YAP expression level. n = 3, ns, not significant

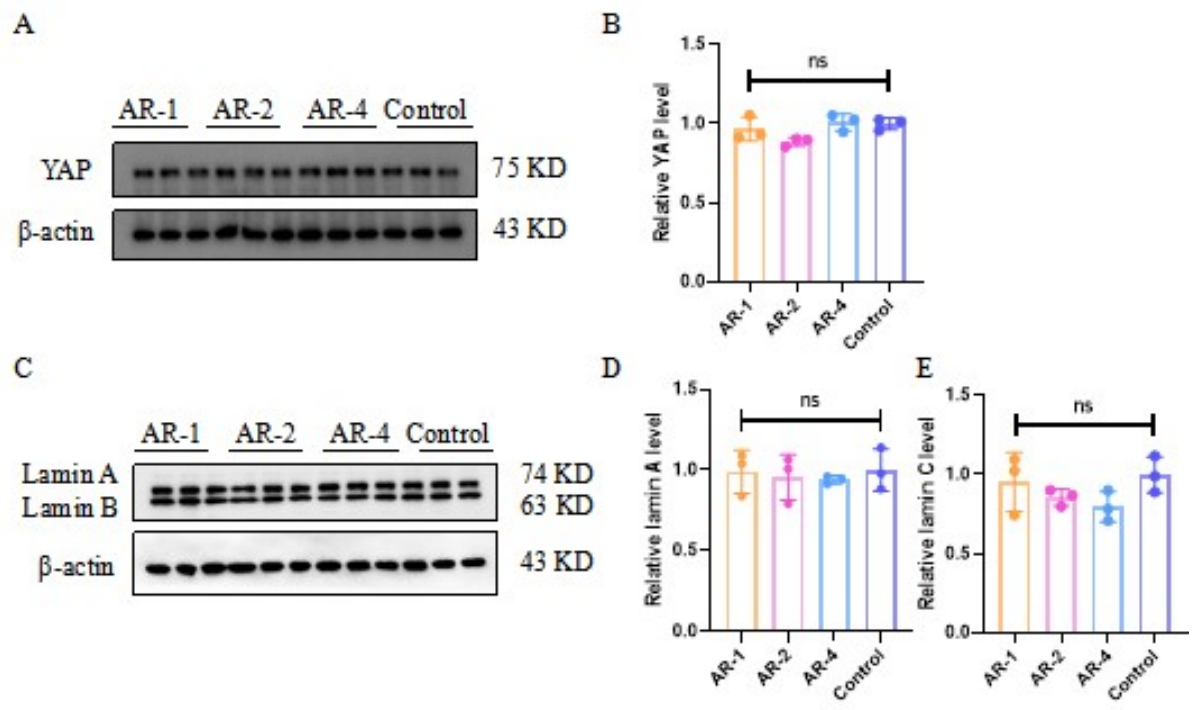

Fig. S8 (A) WB analysis of YAP after disturbing piezo using GsMTx4. (B) Related YAP expression level. (C) WB analysis of lamin A/C after disturbing piezo using GsMTx4. (D) Related lamin A expression level. (E) Related lamin C expression level. n = 3, ns, not significant.