

Gene	$\log_2 FC$	Gene	$\log_2 FC$	Gene	$\log_2 FC$
<i>WIF1</i>	-1,814	<i>CCND2</i>	+3,376	<i>FZD2</i>	+1,536
<i>FGF4</i>	-1,664	<i>CXXC4</i>	+2,976	<i>APC</i>	+1,366
<i>PITX2</i>	-1,174	<i>SFRP4</i>	+2,826	<i>KREMEN1</i>	+1,236
<i>WNT6</i>	-1,054	<i>WNT2B</i>	+2,096	<i>FZD8</i>	+1,186
<i>DVL1</i>	-1,014	<i>SFRP1</i>	+1,926	<i>FZD4</i>	+1,086
		<i>DKK3</i>	+1,766	<i>PRICKLE1</i>	+1,066

Table S1. Stiffness-dependent mRNA expression profile of members of the Wnt/beta-catenin signaling pathway in ARPE-19 cells (RT² Profiler PCR Array). Declaration of differences in expression between soft ($E = 30$ kPa) and stiff ($E = 80$ kPa) substrate as $\log_2 FC$. Cutoff of genes shown based on $|\log_2 FC| \geq 1$. Resulting selection of 17 genes with a change in expression out of 84 investigated genes. Order based on $\log_2 FC$. Normalization on *ACTB*, *B2M*, *GAPDH*, *HPRT1* and *RPLP0* as endogenous controls. Expression data from $n = 1$ experiment.

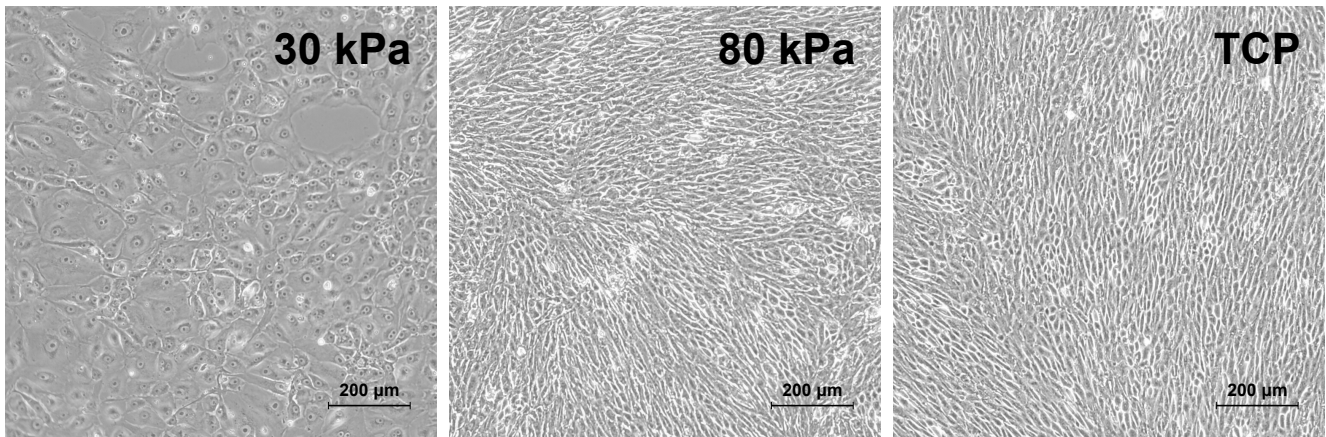


Figure S1. Stiffness-dependent morphology of ARPE-19 cells after three weeks of culture on substrates of different Young's modulus (phase contrast microscopy). Morphology of cells on soft ($E = 30$ kPa) and stiff ($E = 80$ kPa) substrate as well as on standard tissue culture plastic (TCP) is shown.

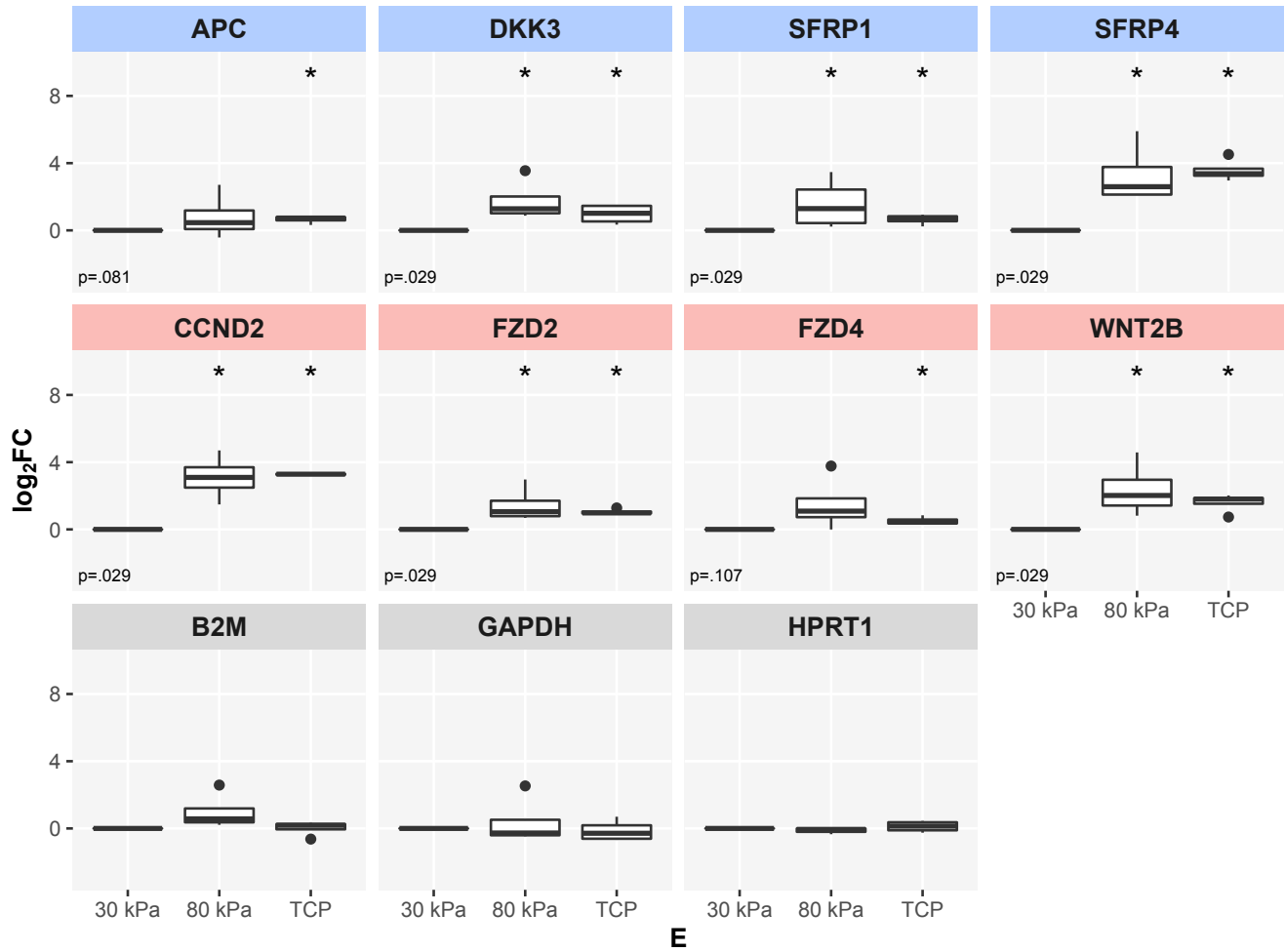


Figure S2. Stiffness-dependent transcription of members of the Wnt/beta-catenin signaling pathway in ARPE-19 cells for validation of qPCR array data (qPCR). Expression data from $n = 4$ independent experiments, visualization as $\log_2 FC$ with $E = 30\text{kPa}$ as reference. Coloring of antagonistic (blue) and agonistic (red) impact on the activity of the Wnt/beta-catenin signaling pathway. Normalization on *B2M*, *GAPDH* and *HPRT1* as endogenous controls (gray). Statistical significance between each two interventions was assessed by Wilcoxon-Mann-Whitney test with $E = 30\text{kPa}$ as reference. $p \leq 0,05$ (*), $p \leq 0,01$ (**) and $p \leq 0,001$ (***). Global p-values were determined using Kruskal-Wallis test. Benjamini-Hochberg procedure was applied for multiple testing correction.

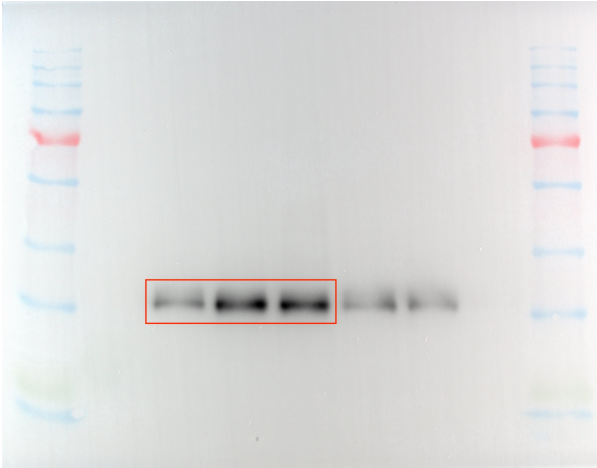


Figure S3. Stiffness-dependent expression of SFRP1 (≈ 35 kDa) in ARPE-19 cells (full western blot) with the three lanes of interest from left to right representing $E = 30$ kPa, $E = 80$ kPa and TCP (red rectangle).

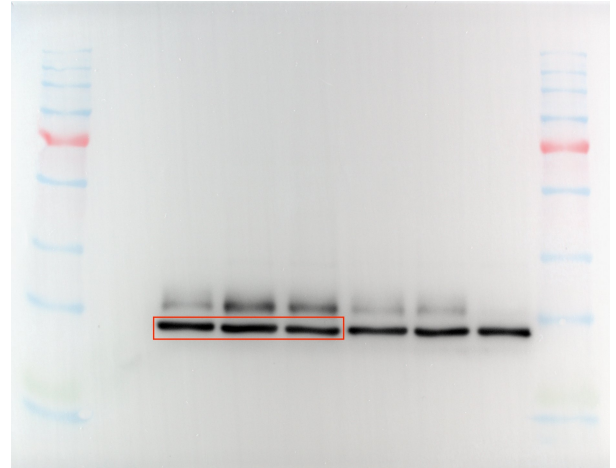


Figure S4. Loading control GAPDH (≈ 38 kDa) in ARPE-19 cells (full western blot) with the three lanes of interest from left to right representing $E = 30$ kPa, $E = 80$ kPa and TCP (red rectangle).



Figure S5. Stiffness-dependent expression of Wnt-2b (≈ 41 kDa) in ARPE-19 cells (full western blot) with the three lanes of interest from left to right representing $E = 30$ kPa, $E = 80$ kPa and TCP (red rectangle).

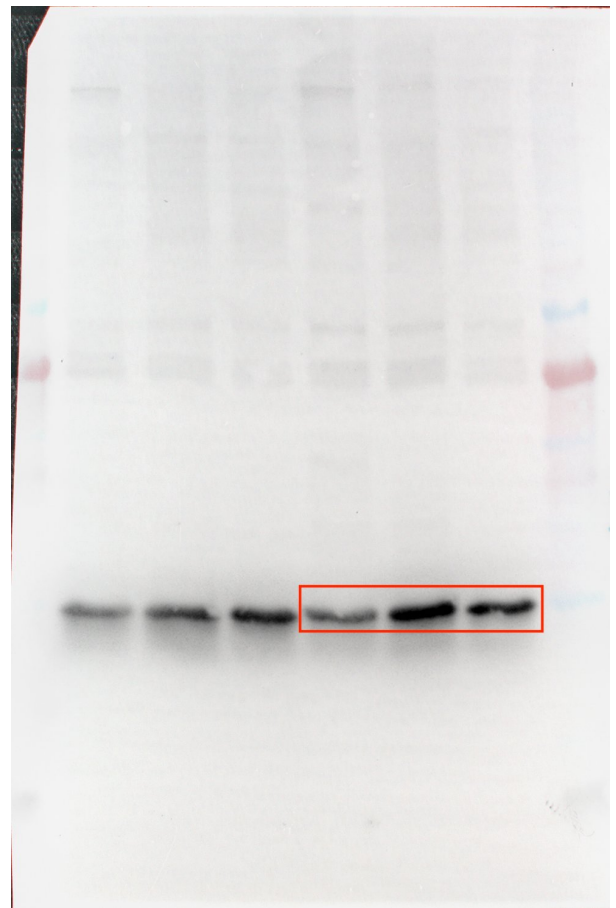


Figure S6. Loading control GAPDH (≈ 38 kDa) in ARPE-19 cells (full western blot) with the three lanes of interest from left to right representing $E = 30$ kPa, $E = 80$ kPa and TCP (red rectangle).

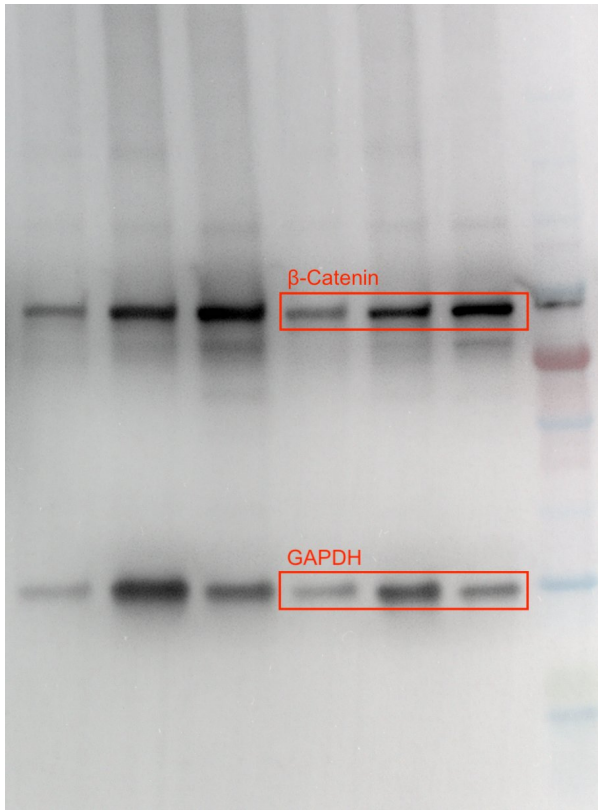


Figure S7. Stiffness-dependent expression of beta-catenin (≈ 92 kDa) and loading control GAPDH (≈ 38 kDa) in ARPE-19 cells (full western blot) with the three lanes of interest from left to right representing $E = 30$ kPa, $E = 80$ kPa and TCP (red rectangles).

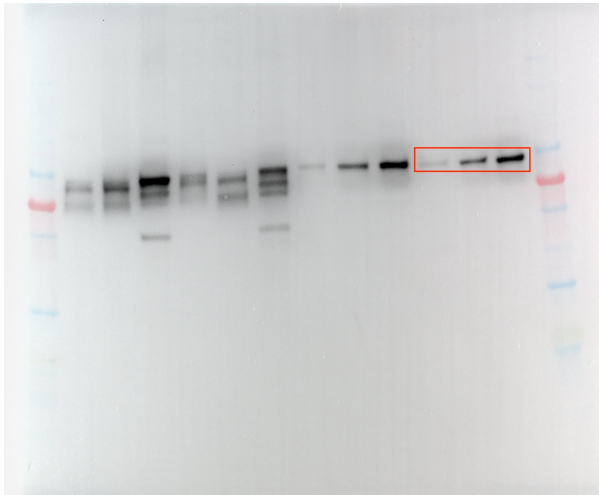


Figure S8. Stiffness-dependent expression of Non-phospho (active) beta-catenin (Ser45) (≈ 92 kDa) in ARPE-19 cells (full western blot) with the three lanes of interest from left to right representing $E = 30$ kPa, $E = 80$ kPa and TCP (red rectangle).

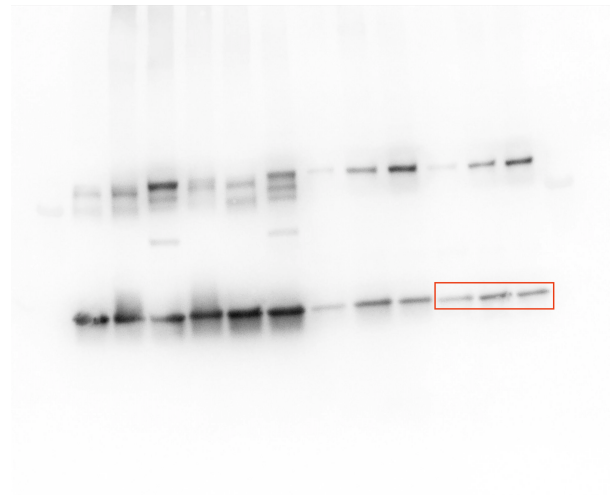


Figure S9. Loading control GAPDH (≈ 38 kDa) in ARPE-19 cells (full western blot) with the three lanes of interest from left to right representing $E = 30$ kPa, $E = 80$ kPa and TCP (red rectangle).

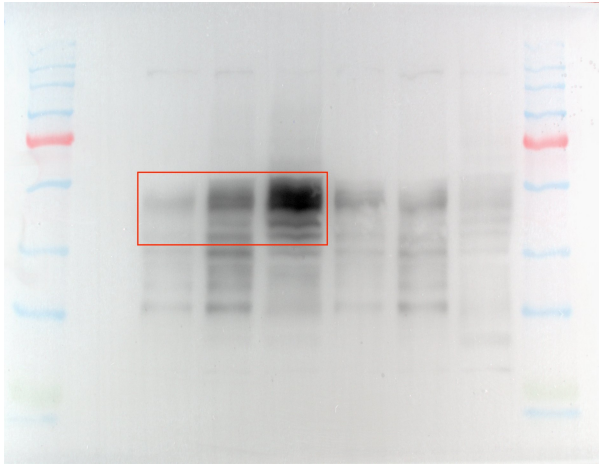


Figure S10. Stiffness-dependent expression of MITF ($\approx 50\text{kDa}$ to 75kDa) in ARPE-19 cells (full western blot) with the three lanes of interest from left to right representing $E = 30\text{kPa}$, $E = 80\text{kPa}$ and TCP (red rectangle).

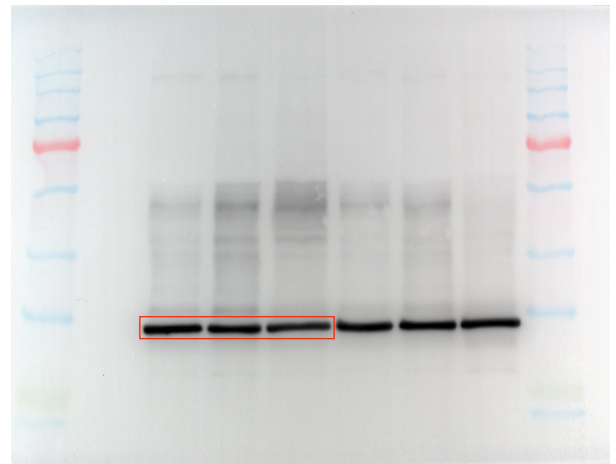


Figure S11. Loading control GAPDH ($\approx 38\text{kDa}$) in ARPE-19 cells (full western blot) with the three lanes of interest from left to right representing $E = 30\text{kPa}$, $E = 80\text{kPa}$ and TCP (red rectangle).

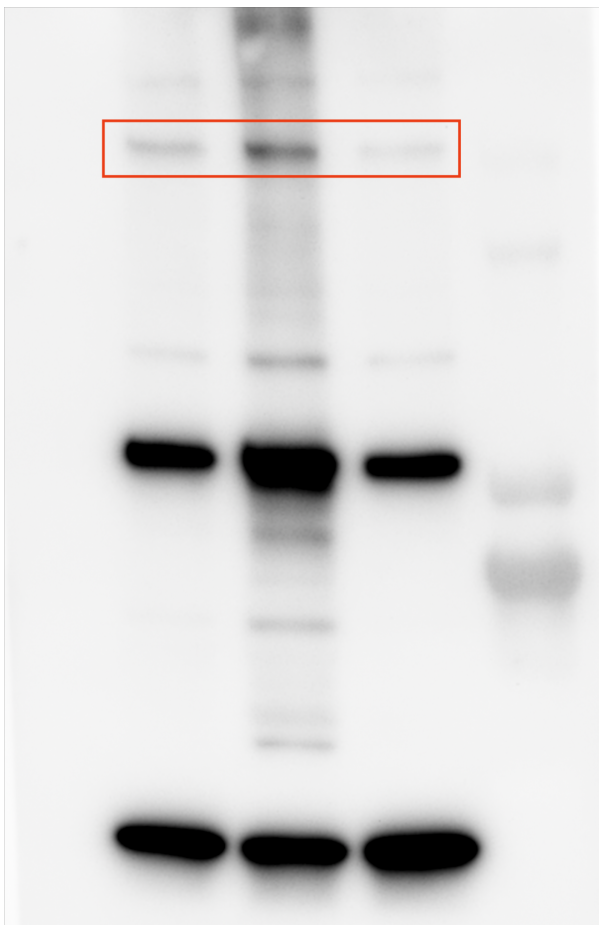


Figure S12. Stiffness-dependent expression of Dicer ($\approx 220\text{kDa}$) in ARPE-19 cells (full western blot) with the three lanes of interest from left to right representing $E = 30\text{kPa}$, $E = 80\text{kPa}$ and TCP (red rectangle).

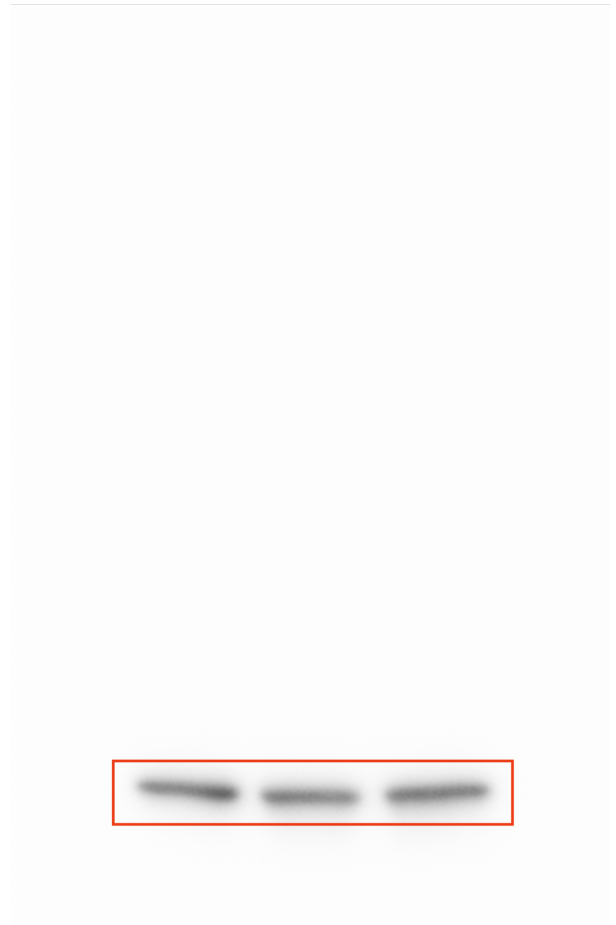


Figure S13. Loading control GAPDH ($\approx 38\text{kDa}$) in ARPE-19 cells (full western blot) with the three lanes of interest from left to right representing $E = 30\text{kPa}$, $E = 80\text{kPa}$ and TCP (red rectangle).