

Supporting Tables

Supporting Table 1. Overview of dimensions and resulting stiffness of high aspect ratio nanopillars.

Effective shear modulus calculated by combining equations (1) and (2):

$$\bar{G}' = \frac{3}{16} \left(\frac{d}{l} \right)^2 fE * \Delta k$$

Diameter Tip (nm)	Height (µm)	Pitch (µm)	Fill Factor	Individual pillar spring constant (k, pN/nm)	Poisson ratio (ν)	Effective Shear Modulus (\bar{G}', kPa)
70	2.35	1	0.0044	3.9	0.37	9
70	1.6	1	0.0044	10.6	0.37	16
90	1.35	1	0.0064	51.7	0.37	70
100	1.9	0.5	0.0314	11.4	0.37	87
115	1.95	1	0.0104	47.8	0.37	93

Supplementary Table 2. Primers used for measuring gene expression of cardiomyogenic, chondrogenic and osteogenic function.

Mouse gene name		Primer Sequence	Amplicon size
18s ribosomal RNA (housekeeping gene)	Fwd	AAGTCCCTGCCCTTTGTACACA	100
	Rev	GATCCGAGGGCCTCACTAAAC	
<i>COL1A1</i> (Collagen type 1 alpha 1 chain)	Fwd	AACGAGATCGAGCTCAGAGG	99
	Rev	GACTGTCTTGCCCCAAGTTC	
<i>COL2A1</i> (Collagen type 2 alpha 1 chain)	Fwd	ACGAAGCGGCTGGCAACCTCA	73
	Rev	CCCTCGGCCCTCATCTCTACATCA	
<i>COL10A1</i> (Collagen type 10 alpha 1 chain)	Fwd	TTCTCCTACCACGTGCATGTG	191
	Rev	AGGCCGTTTGATTCTGCATT	
<i>ACAN</i> (Aggrecan)	Fwd	GTGAGGACCTGGTAGTGCGAGTGA	103
	Rev	GAGCCTGGGCGATAGTGGAATATA	
<i>SOX9</i> (SRY-Box 9)	Fwd	GGAAGGGAGAGAGAGAGAGAAA	138
	Rev	CGGGATTTAAGGCTCAAGGT	
<i>RUNX2</i> (Runx family transcription factor 2)	Fwd	AAGTGCGGTGCAAACCTTCT	90
	Rev	TCTCGGTGGCTGCTAGTGA	
<i>OCN</i> (Osteocalcin)	Fwd	CTGACCTCACAGATGCCAAG	98
	Rev	GTAGCGCCGGAGTCTGTTC	
<i>OPN</i> (Osteopontin)	Fwd	TCAGGACAACAACGGAAAGGG	139
	Rev	GGAACCTTGCTTGACTATCGATCAC	
<i>MYOG</i> (Myogenin)	Fwd	GAGACATCCCCCTATTTCTACCA	106
	Rev	GCTCAGTCCGCTCATAGCC	
<i>MYH7</i> (Myosin heavy chain 7)	Fwd	CTCAAGCTGCTCAGCAATCTATTT	153
	Rev	GGAGCGCAAGTTTGTGATAAGT	
<i>ASF1B</i> (Anti-silencing function 1B histone chaperone)	Fwd	CCTCCGGTTCGAGATCAGC	185
	Rev	GGATGGGTTTGGGGCATCAG	