Supplemental Table 1.

fiber family	k=1	1	k=2	2	k=3	3		
c	c1	c2	c1	c2	c1	c2	α_o	Error
[kPa]	[kPa]		[kPa]		[kPa]		[Deg]	
WT								
1	*2.081*	*7.558*	*0.091*	*10.846*	*0.012*	*0.662*	*0.670*	*27.58*	*0.152*
2	4.105	5.101	0.159	0.000	1.690	1.322	0.448	44.16	0.262
3	24.292	0.469	0.493	1.873	0.278	0.021	1.425	39.98	0.120
4	1.348	1.792	0.316	3.021	0.001	0.503	0.322	30.20	0.130
5	13.577	0.757	0.519	9.419	0.018	1.394	0.670	34.45	0.148
6	0.034	0.000	2.942	0.014	1.827	0.091	1.838	37.56	0.463
7	12.728	0.055	1.016	3.772	0.001	0.047	0.992	34.12	0.270
avg	**8.309**	**2.248**	**0.791**	**4.135**	**0.547**	**0.577**	**0.909**	**35.44**	**0.221**
std	8.247	2.720	0.922	4.027	0.773	0.543	0.508	5.25	0.114
								α from NLOM	
2a	0.162	1.876	0.344	1.767	0.067	3.667	0.266	**43.23**	0.223
HET									
1	*20.656*	0.185	0.532	0.051	0.429	*0.576*	*0.477*	*32.00*	*0.251*
2	10.188	0.954	0.434	2.298	0.115	1.377	0.480	31.22	0.147
3	7.344	0.735	0.380	2.350	0.076	2.057	0.342	30.21	0.181
4	4.280	0.727	0.538	0.112	0.244	6.439	0.226	36.54	0.192
5	4.324	11.267	0.152	4.256	0.082	0.061	1.141	29.30	0.151
6	1.351	4.326	0.113	0.014	0.162	3.065	0.235	36.12	0.180
avg	**9.359**	**2.773**	**0.407**	**1.814**	**0.189**	**2.102**	**0.533**	**31.85**	**0.184**
std	6.305	3.928	0.170	1.595	0.123	2.107	0.311	2.80	0.034
								α from NLOM	
5a	8.066	0.007	0.010	5.242	0.066	1.546	0.576	**20.19**	0.249
KO									
1	0.005	0.142	0.342	1.956	0.087	1.643	0.445	21.03	0.286
2	*0.234*	7.086	0.178	4.978	0.082	*0.265*	*0.937*	*30.86*	*0.157*
3	1.612	8.623	0.138	4.387	0.055	0.051	1.036	32.25	0.196
4	4.325	10.812	0.116	7.516	0.298	0.670	1.291	31.96	0.156
5	0.001	2.041	0.488	1.429	0.058	4.207	0.218	34.87	0.203
6	0.002	5.097	0.407	0.001	1.502	3.096	0.657	45.54	0.269
7	2.863	21.401	0.001	8.928	0.496	0.000	4.122	21.89	0.414
8	0.009	0.174	1.030	6.523	0.244	3.645	0.564	36.53	0.189
9	0.114	13.977	0.001	0.902	0.386	0.017	1.393	42.32	0.337
avg	**1.018**	**7.706**	**0.300**	**4.069**	**0.357**	**1.510**	**1.185**	**33.03**	**0.245**
std	1.500	6.588	0.305	2.990	0.432	1.607	1.101	7.70	0.083
								α from NLOM	
6a	0.174	3.407	0.628	3.439	0.001	3.498	0.522	51.10	0.300

Supplemental Table 1. Best-fit parameters for a 4-fiber family model determined using the simplex method for

passive Wild-type (WT), Heterozygous (HET), and Knockout (KO) mouse types for each mouse tested (n=22).

Fiber angle α_o was allowed to be free in all parameter estimations except where noted (2a, 5a, and 6a).