Supplement Table 1: RT-PCR Profiler Micro Array

Apoptosis Array

Gene	AVG ΔCt		2^-ΔCt		Fold change
	siRNA	Control	siRNA	Control	siRNA/Control
ABL1	18.1	17.84	0.000004	0.000004	-1.2
AKT1	18.1	17.47	0.000004	0.000006	-1.55
APAF1	18.1	18.08	0.000004	0.000004	-1.01
BAD	18.1	9.37	0.000004	0.001511	-424.61
BAG1	18.1	17.16	0.000004	0.000007	-1.92
BAG3	18.1	4.48	0.000004	0.044811	-12590.08
BAG4	18.1	18.08	0.000004	0.000004	-1.01
BAK1	18.1	18.08	0.000004	0.000004	-1.01
BAX	18.1	18.08	0.000004	0.000004	-1.01
BCL10	18.1	9.22	0.000004	0.001677	-471.14
BCL2	18.1	17.68	0.000004	0.000005	-1.34
BCL2A1	18.1	18.08	0.000004	0.000004	-1.01
BCL2L1	18.1	17.38	0.000004	0.000006	-1.65
BCL2L10	18.1	18.08	0.000004	0.000004	-1.01
BCL2L11	18.1	18.08	0.000004	0.000004	-1.01
BCL2L2	18.1	11.58	0.000004	0.000327	-91.77
BCLAF1	16.25	16.74	0.000013	0.000009	1.4
BFAR	18.1	18.08	0.000004	0.000004	-1.01
BID	18.1	18.08	0.000004	0.000004	-1.01
BIK	18.1	17.96	0.000004	0.000004	-1.1
NAIP	18.1	18.08	0.000004	0.000004	-1.01
BIRC2	18.1	14.89	0.000004	0.000033	-9.25
BIRC3	18.1	18.08	0.000004	0.000004	-1.01
XIAP	18.1	18.08	0.000004	0.000004	-1.01
BIRC6	18.1	18.08	0.000004	0.000004	-1.01
BIRC8	18.1	18.08	0.000004	0.000004	-1.01
BNIP1	18.1	9.03	0.000004	0.001913	-537.45
BNIP2	18.1	16.74	0.000004	0.000009	-2.57
BNIP3	18.1	16.12	0.000004	0.000014	-3.94
BNIP3L	18.1	13.4	0.000004	0.000093	-25.99
BRAF	18.1	18.08	0.000004	0.000004	-1.01
NOD1	15.59	18.08	0.00002	0.000004	5.62
CARD6	18.1	18.08	0.000004	0.000004	-1.01
CARD8	18.1	18.08	0.000004	0.000004	-1.01
CASP1	16.39	8.59	0.000012	0.002595	-222.86
CASP10	18.1	14.44	0.000004	0.000045	-12.64
CASP14	18.1	17.69	0.000004	0.000005	-1.33
CASP2	18.1	18.08	0.000004	0.000004	-1.01
CASP3	18.1	12.82	0.000004	0.000138	-38.85

Inflammation Array

Gene	AVG ΔCt		2^-ΔCt		Fold change
	siRNA	Control	siRNA	Control	siRNA/Control
ABCF1	20.03	19.09	0.000001	0.000002	-1.92
BCL6	14.28	19.09	0.00005	0.000002	28.05
C3	20.03	19.09	0.000001	0.000002	-1.92
C4A	20.03	19.09	0.000001	0.000002	-1.92
C5	20.03	19.09	0.000001	0.000002	-1.92
CCL1	20.03	19.09	0.000001	0.000002	-1.92
CCL11	20.03	19.09	0.000001	0.000002	-1.92
CCL13	20.03	19.09	0.000001	0.000002	-1.92
CCL15	20.03	19.09	0.000001	0.000002	-1.92
CCL16	20.03	19.09	0.000001	0.000002	-1.92
CCL17	20.03	19.09	0.000001	0.000002	-1.92
CCL18	20.03	14.11	0.000001	0.000057	-60.55
CCL19	20.03	19.09	0.000001	0.000002	-1.92
CCL2	7.63	6.27	0.005048	0.012958	-2.57
CCL20	20.03	13.71	0.000001	0.000075	-79.89
CCL21	20.03	19.09	0.000001	0.000002	-1.92
CCL23	20.03	19.09	0.000001	0.000002	-1.92
CCL24	12.86	12.73	0.000135	0.000147	-1.09
CCL25	20.03	19.09	0.000001	0.000002	-1.92
CCL26	9.79	8.75	0.00113	0.002323	-2.06
CCL3	12.47	9.46	0.000176	0.00142	-8.06
CCL4	11.16	9.71	0.000437	0.001194	-2.73
CCL5	14.81	1.77	0.000035	0.293209	-8422.31
CCL7	14.52	19.09	0.000043	0.000002	23.75
CCL8	20.03	19.09	0.000001	0.000002	-1.92
CCR1	18.32	18.31	0.000003	0.000003	-1.01
CCR2	20.03	19.09	0.000001	0.000002	-1.92
CCR3	18.18	18.51	0.000003	0.000003	1.26
CCR4	20.03	19.09	0.000001	0.000002	-1.92
CCR5	20.03	19.09	0.000001	0.000002	-1.92
CCR6	20.03	19.09	0.000001	0.000002	-1.92
CCR7	20.03	19.09	0.000001	0.000002	-1.92
CCR8	20.03	19.09	0.000001	0.000002	-1.92
CCR9	20.03	19.09	0.000001	0.000002	-1.92
CEBPB	20.03	8.28	0.000001	0.003217	-3444.31
CRP	20.03	19.09	0.000001	0.000002	-1.92
CX3CR1	20.03	19.09	0.000001	0.000002	-1.92
CXCL1	9.83	-5.43	0.001099	43.111474	-39238.98
CXCL10	8.05	4.89	0.003773	0.033726	-8.94

Supplement Table 1 (continued): RT-PCR Profiler Micro Array

Apoptosis Array

Gene	AVG ΔCt		2^-ΔCt		Fold change
	siRNA	Control	siRNA	Control	siRNA/Control
CASP5	18.1	18.08	0.000004	0.000004	-1.01
CASP6	18.1	7.66	0.000004	0.004944	-1389.16
CASP7	18.1	18.08	0.000004	0.000004	-1.01
CASP8	18.1	18.08	0.000004	0.000004	-1.01
CASP9	18.1	18.08	0.000004	0.000004	-1.01
CD40	16.33	18.08	0.000012	0.000004	3.36
CD40LG	18.1	18.08	0.000004	0.000004	-1.01
CFLAR	18.1	18.08	0.000004	0.000004	-1.01
CIDEA	17.91	13.11	0.000004	0.000113	-27.86
CIDEB	18.1	18.08	0.000004	0.000004	-1.01
CRADD	18.1	18.08	0.000004	0.000004	-1.01
DAPK1	18.1	18.08	0.000004	0.000004	-1.01
DFFA	18.1	6.82	0.000004	0.008851	-2486.67
FADD	18.1	18.08	0.000004	0.000004	-1.01
FAS	18.1	3	0.000004	0.125	-35119.87
FASLG	18.1	18.08	0.000004	0.000004	-1.01
GADD45A	7.92	5.71	0.004129	0.019104	-4.63
HRK	18.1	18.08	0.000004	0.000004	-1.01
IGF1R	18.1	18.08	0.000004	0.000004	-1.01
LTA	18.1	17.8	0.000004	0.000004	-1.23
LTBR	10.01	14.68	0.00097	0.000038	25.46
MCL1	7.69	9.72	0.004843	0.001186	4.08
NOL3	18.1	18.08	0.000004	0.000004	-1.01
PYCARD	18.1	7.5	0.000004	0.005524	-1552.09
RIPK2	18.1	5.47	0.000004	0.022561	-6338.83
TNF	18.1	18.08	0.000004	0.000004	-1.01
TNFRSF10A	18.1	18.08	0.000004	0.000004	-1.01
TNFRSF10B	12.71	12.65	0.000149	0.000156	-1.04
TNFRSF11B	18.1	18.08	0.000004	0.000004	-1.01
TNFRSF1A	18.1	18.08	0.000004	0.000004	-1.01
TNFRSF21	18.1	18.08	0.000004	0.000004	-1.01
TNFRSF25	18.1	18.08	0.000004	0.000004	-1.01
CD27	18.1	18.08	0.000004	0.000004	-1.01
TNFRSF9	18.1	18.08	0.000004	0.000004	-1.01
TNFSF10	14.26	6.58	0.000051	0.010453	-205.07
CD70	18.1	9.76	0.000004	0.001153	-324.03
TNFSF8	18.1	18.08	0.000004	0.000004	-1.01
TP53	18.1	18.08	0.000004	0.000004	-1.01
TP53BP2	11.15	18.07	0.00044	0.000004	121.1

Inflammation Array

Gene	AVG ΔCt		2^-ΔCt		Fold change
	siRNA	Control	siRNA	Control	siRNA/Control
CXCL12	18.53	18.35	0.000003	0.000003	-1.13
CXCL13	20.03	19.09	0.000001	0.000002	-1.92
CXCL14	20.03	19.09	0.000001	0.000002	-1.92
CXCL2	14.76	5.81	0.000036	0.017824	-494.56
CXCL3	6.98	10.93	0.007922	0.000513	15.45
CXCL5	18.42	7.58	0.000003	0.005226	-1833.01
CXCL6	17	19.09	0.000008	0.000002	4.26
CXCL9	20.03	19.09	0.000001	0.000002	-1.92
ICEBERG	20.03	19.09	0.000001	0.000002	-1.92
IFNA2	20.03	19.09	0.000001	0.000002	-1.92
IL10	20.03	5.64	0.000001	0.020054	-21469.49
IL10RA	20.03	19.09	0.000001	0.000002	-1.92
IL10RB	20.03	12.61	0.000001	0.00016	-171.25
IL13	20.03	19.09	0.000001	0.000002	-1.92
IL13RA1	15.72	19.09	0.000019	0.000002	10.34
IL17C	20.03	19.09	0.000001	0.000002	-1.92
IL1A	20.03	19.09	0.000001	0.000002	-1.92
IL1B	20.03	19.09	0.000001	0.000002	-1.92
IL1F10	20.03	19.09	0.000001	0.000002	-1.92
IL1F5	20.03	12.96	0.000001	0.000126	-134.36
IL1F6	20.03	19.09	0.000001	0.000002	-1.92
IL1F7	20.03	19.09	0.000001	0.000002	-1.92
IL1F8	20.03	11.63	0.000001	0.000316	-337.79
IL1F9	20.03	19.09	0.000001	0.000002	-1.92
IL1R1	17.8	14.03	0.000004	0.00006	-13.64
IL1RN	6.04	5.6	0.015198	0.020617	-1.36
IL22	20.03	19.09	0.000001	0.000002	-1.92
IL5	20.03	19.09	0.000001	0.000002	-1.92
IL5RA	20.03	19.09	0.000001	0.000002	-1.92
IL8	5.93	1.18	0.016402	0.441351	-26.91
IL8RA	20.03	19.09	0.000001	0.000002	-1.92
IL8RB	20.03	19.09	0.000001	0.000002	-1.92
IL9	20.03	19.09	0.000001	0.000002	-1.92
IL9R	20.03	19.09	0.000001	0.000002	-1.92
LTA	20.03	19.09	0.000001	0.000002	-1.92
LTB	20.03	19.09	0.000001	0.000002	-1.92
LTB4R	20.03	19.09	0.000001	0.000002	-1.92
MIF	8.14	8.83	0.003545	0.002197	1.61
SCYE1	19.54	19.09	0.000001	0.000002	-1.37

Supplement Table 1 (continued): RT-PCR Profi

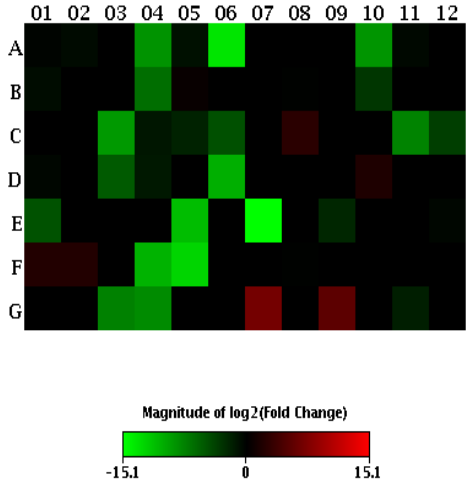
Apoptosis Array

Gene	AVG ΔCt		2^-ΔCt		Fold change
	siRNA	Control	siRNA	Control	siRNA/Control
TRADD	12.6	18.08	0.000161	0.000004	44.63
TRAF2	18.1	18.08	0.000004	0.000004	-1.01
TRAF3	17.68	15.85	0.000005	0.000017	-3.56
TRAF4	18.1	18.08	0.000004	0.000004	-1.01
B2M	0.95	-1.02	0.517632	2.027919	-3.92
HPRT1	11.87	10.9	0.000267	0.000523	-1.96
RPL13A	12.7	3.08	0.00015	0.118257	-786.88
GAPDH	0	0	1	1	1
ACTB	4.06	4.27	0.000005	0.000004	1

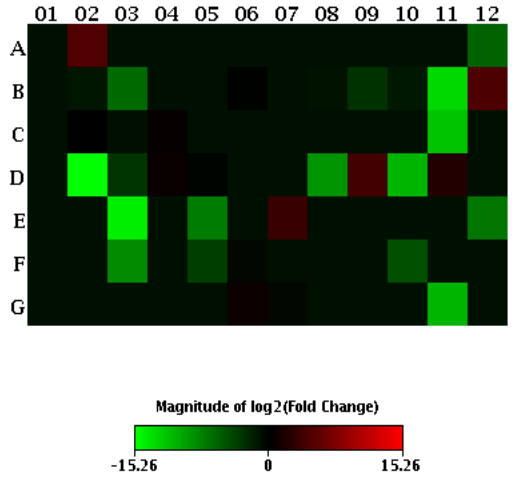
Inflammation Array

Gene	AVG ΔCt		2^-ΔCt		Fold change
	siRNA	Control	siRNA	Control	siRNA/Control
TNF	20.03	19.09	0.000001	0.000002	-1.92
CD40LG	20.03	19.09	0.000001	0.000002	-1.92
TOLLIP	20.03	9.13	0.000001	0.001785	-1910.85
XCR1	20.03	19.09	0.000001	0.000002	-1.92
B2M	1.64	19.09	0.320856	0.000002	179049.63
HPRT1	16.82	19.09	0.000009	0.000002	4.82
RPL13A	10.2	3.99	0.00085	0.062935	-74.03
GAPDH	0	0	1	1	1
ACTB	4.53	4.31	0.043285	0.403321	1

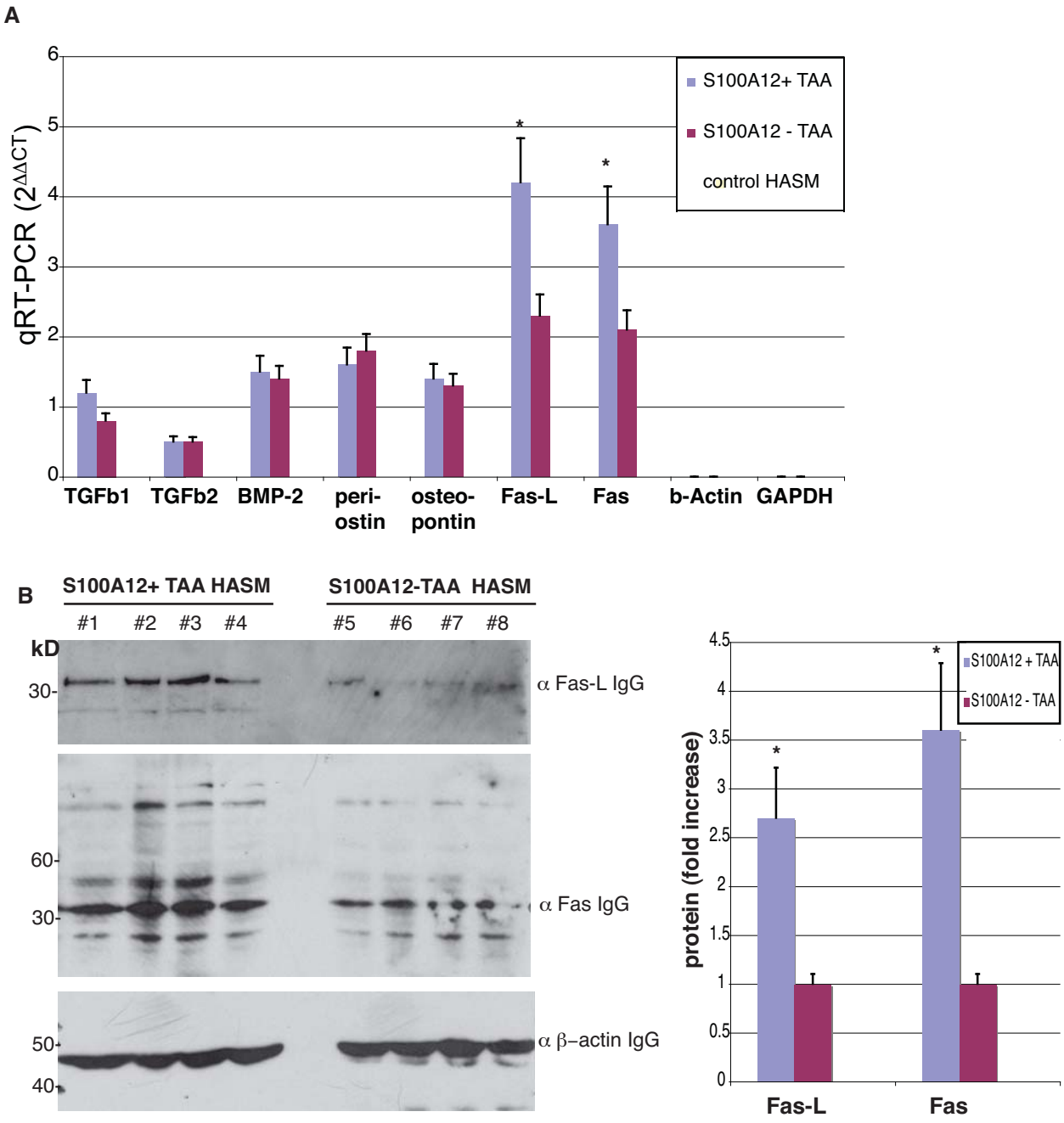
Apoptosis -Array



Inflammation-Array

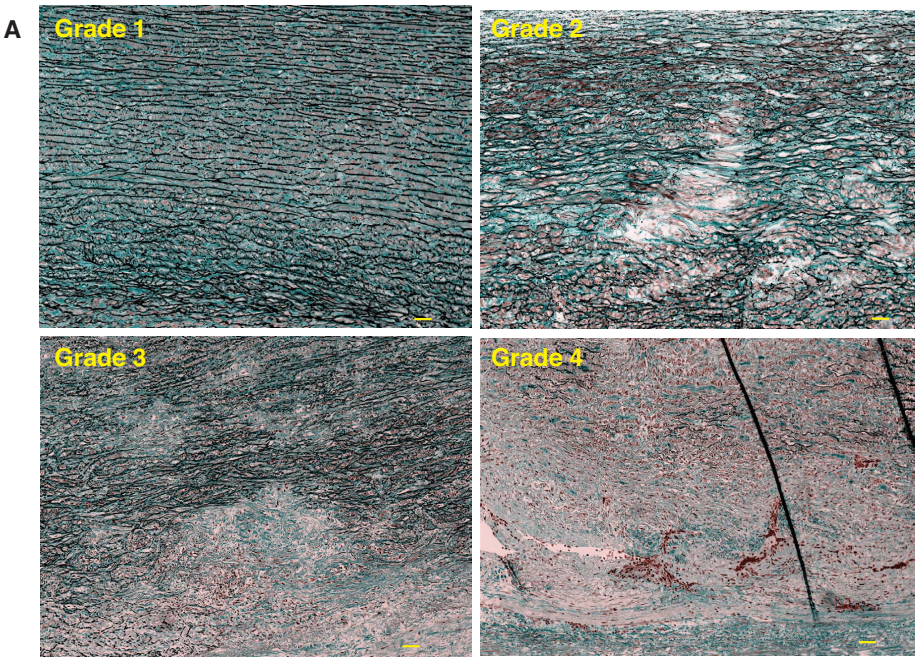


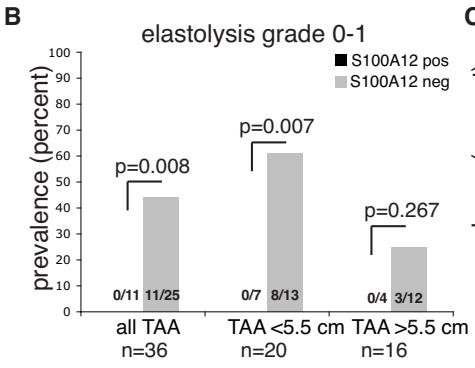
Supplement Figure 2

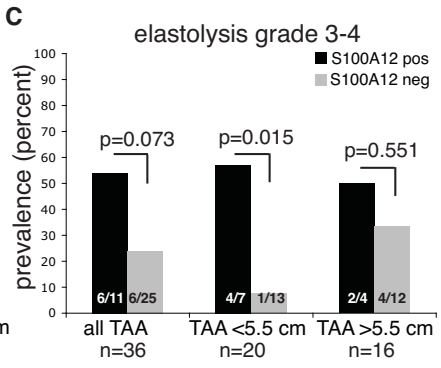


Supplement Figure 2. Increased expression of Fas and FasL in HASMC with S100A12 expression. A. Changes in gene expression of members of the TGF-ß signaling pathways and apoptosis regulating genes measured by q-RT-PCR in HASMC from TAA's normalized to the gene expression in control HASMC. B. Changes in protein expression of Fas-L and Fas in HASMC from TAA's with S100A12 expression (lane 1-4) and in HASMC from TAA's without S100A12 expression (lane 5-8) shows 2.5-3.5 fold increase upon semiquanitative analysis with densitometry (* $p<0.01$).

Supplement Figure 1







Supplement Figure 1. Quantification of elastic aortic fibers in 36 patients with clinically stable thoracic aortic aneurysms. **A.** Movat stain shows medial elastic fiber stained in black for grading of elastic fiber loss: grade 1 with minimal loss, grade 4 with complete loss in some full-thickness portion of the media, and grade 2 and 3 were intermediate (scale bar = 10 micrometer).
B. For smaller TAA, Grade 0-1 elastolysis are more prevalent among S100A12 negative aneurysms (p=0.007), while grade 3-4 is more prevalent among S100A12 positive TAA (p=0.015). This relationship is not observed among larger TAA. For each subset (i.e. all TAA, TAA<5.5 cm, or TAA>5.5cm, we compared frequencies using a two-sided Chi-square test for two independent proportions. We applied a Bonferroni correction to the 0.05 significance level of 0.05/3=0.0167.