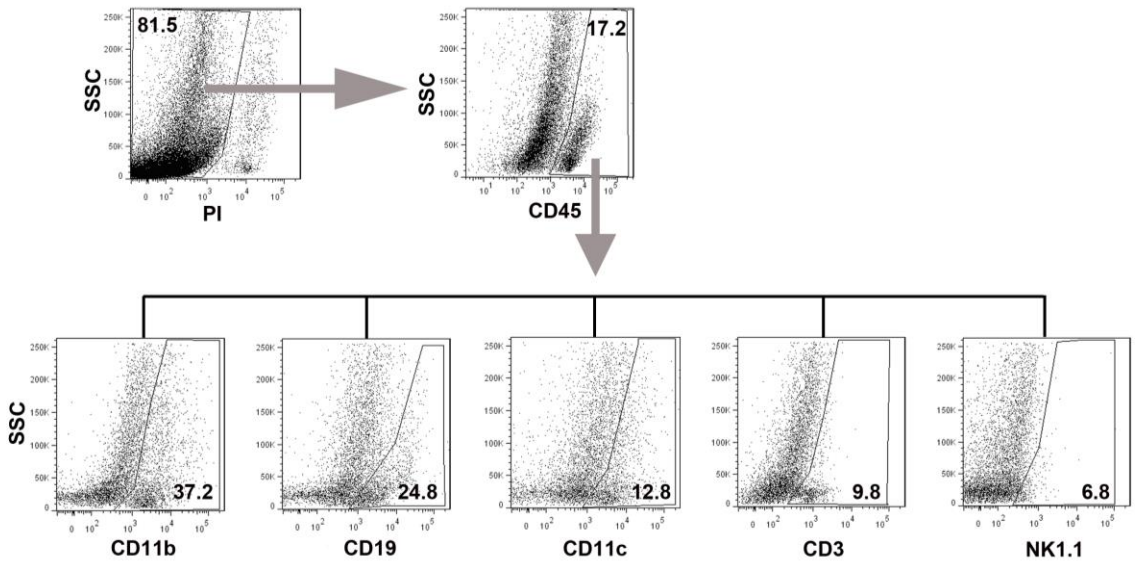
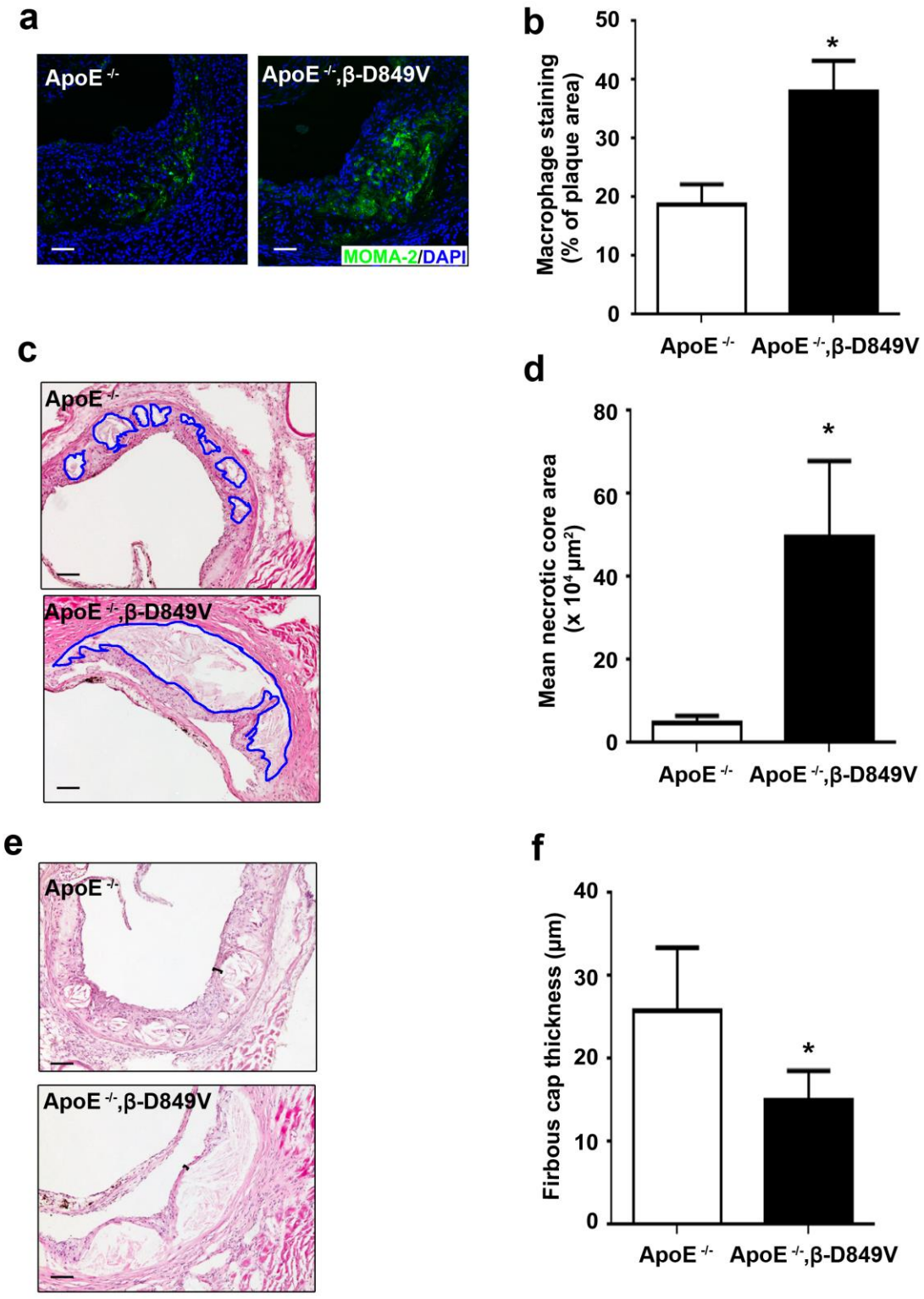
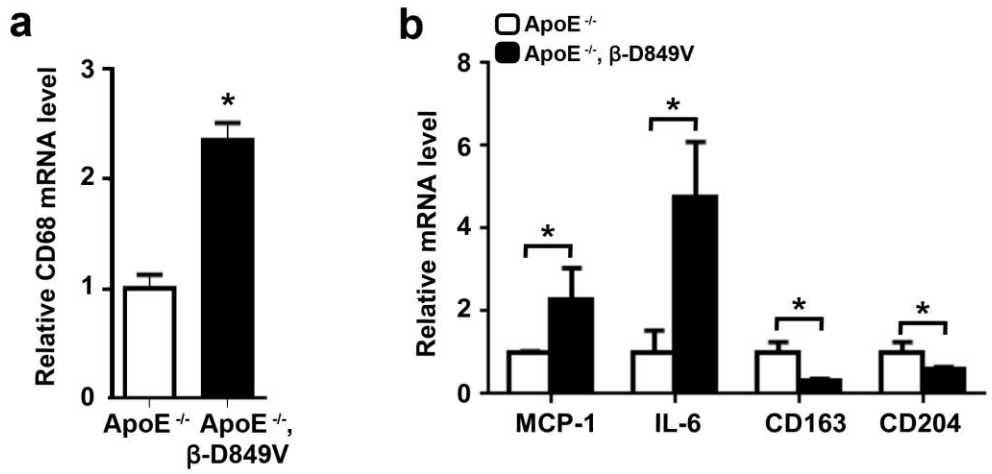


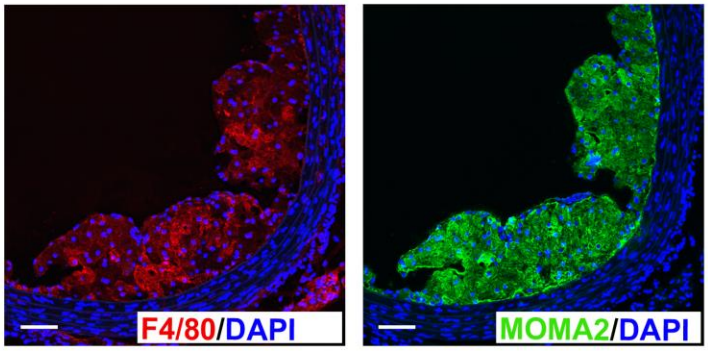
Supplementary Figure 1. Gating strategy for flow cytometry analysis of mouse aorta. Cell suspensions from mouse aorta digested with enzyme cocktail were stained with propidium iodide (PI), anti-CD45 (FITC), anti–CD11b (PerCy5.5), anti-CD19 (APC.Cy7), and anti-CD11c (PE), anti-CD3 (APC), and anti-NK1.1(PE.Cy7) antibodies; numbers in the gate in the top two panels represent the percentage of PI^- and $CD45^+$ cells of all analyzed cells. The numbers in the bottom five panels represent the percentages of $CD11b^+$, $CD19^+$, $CD11c^+$, $CD3^+$ and $NK1.1^+$cells among all PI^- $CD45^+$ cells.


a
ApoE -/-
ApoE -/-,β-D849V
MOMA-2/DAPI
b
Macrophage staining (% of plaque area)
50
40
30
20
10
0
*
ApoE -/-
ApoE -/-,β-D849V
c
ApoE -/-
ApoE -/-,β-D849V
d
Mean necrotic core area (x 10⁴ µm²)
80
60
40
20
0
*
ApoE -/-
ApoE -/-,β-D849V
e
ApoE -/-
ApoE -/-,β-D849V
f
Firbous cap thickness (µm)
40
30
20
10
0
*
ApoE -/-
ApoE -/-,β-D849V

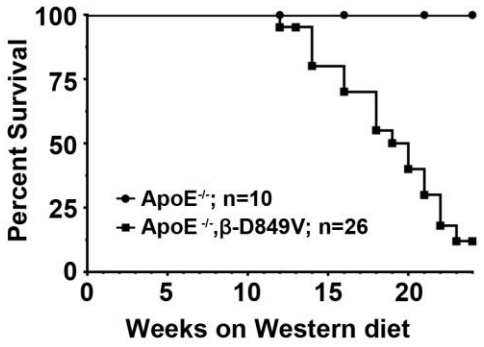
Supplementary Figure 2. Macrophage area, necrotic core area and fibrous cap thickness. (a) Cross sections from the aortic roots of ApoE$^{-/-}$ and ApoE$^{-/-}$, β-D849V mice after 8 weeks of WD were stained with MOMA2 antibody(green). (b) Macrophage staining was quantified from ApoE$^{-/-}$ and ApoE$^{-/-}$, β-D849V mice in (a) and expressed as percent of total plaque area (n=6). (c) Representative images of aortic root cross sections from ApoE$^{-/-}$ and ApoE$^{-/-}$, β-D849V mice after 16 weeks of WD stained with H&E. Blue lines show the boundary of the necrotic core. (d) Quantification of necrotic core size in aortic roots from mice in (c) (n=7). (e) Representative sections of aortic roots from ApoE$^{-/-}$ and ApoE$^{-/-}$, β-D849V mice after 16 weeks of WD stained with H&E. Bracketed regions show a representative measurement of the fibrous cap thickness.(f) Quantitative analysis of fibrous cap thickness in (e) (n=7), All data were assessed using Student's *t*-test and are present as mean ± s.e.m. **P*<0.01. Scale bar, 100μm.



Supplementary Figure 3. Expression of M1 and M2 macrophage markers. (a) RNA was extracted from aortic arches of ApoE$^{-/-}$ and ApoE$^{-/-}$, β-D849V mice after 16 weeks of WD. mRNA levels of a common macrophage marker CD68 were measured and normalized to GAPDH by qRT-PCR(n=3). (b) Expression of M1 macrophage markers (MCP-1, IL-6) and M2 macrophage markers (CD163, CD204) in aortic arches of ApoE$^{-/-}$ and ApoE$^{-/-}$, β-D849V mice after 16 weeks of WD was quantified and normalized to CD68 expression by qRT-PCR(n=3). *P<0.05 by Student's t-test. All data represent mean ± s.e.m..



Supplementary Figure 4. F4/80 and MOMA2 staining of macrophages in the descending aorta. Consecutive cross sections from ApoE$^{-/-}$, β-D849V mice after 8 weeks of WD were stained with F4/80 antibody (red) and MOMA2 antibody (green). Scale bar, 100μm.



Supplementary Figure 5. Survival curve for ApoE$^{-/-}$ and ApoE$^{-/-}$, β-D849V mice on WD. ApoE$^{-/-}$ and ApoE$^{-/-}$, β-D849V mice were fed WD at 4 weeks of age for 24 weeks. ApoE$^{-/-}$, β-D849V mice show significantly decreased survival on WD.

Fig. 2f

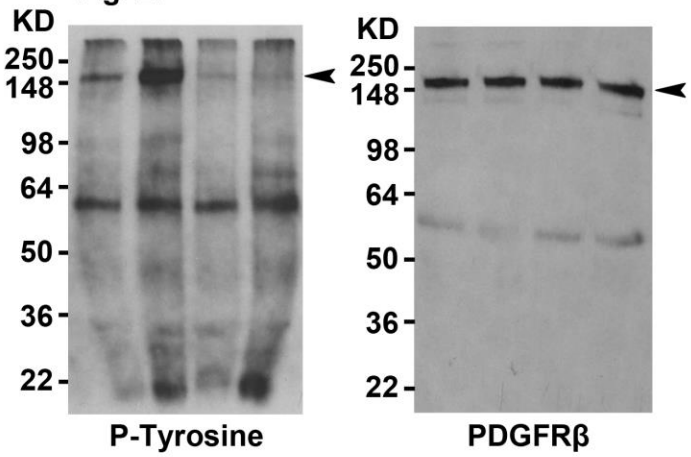


Fig. 7a

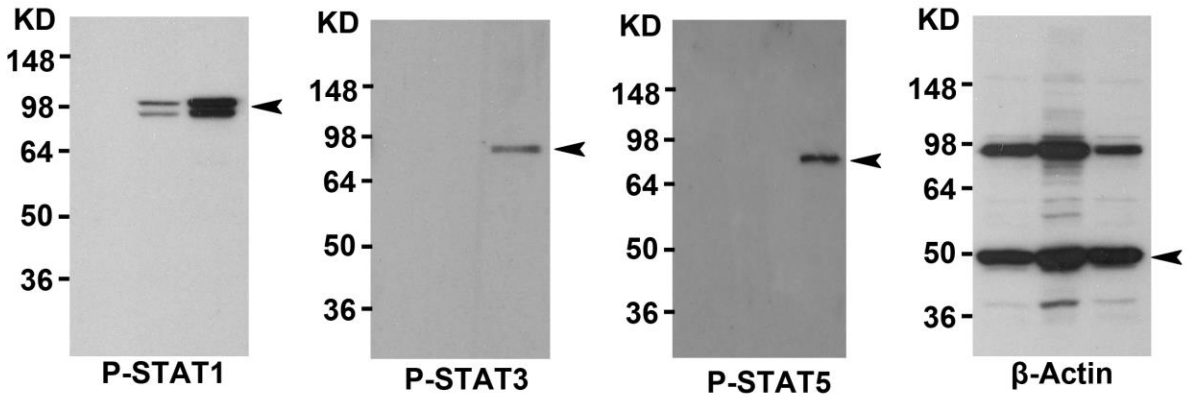


Fig. 7b

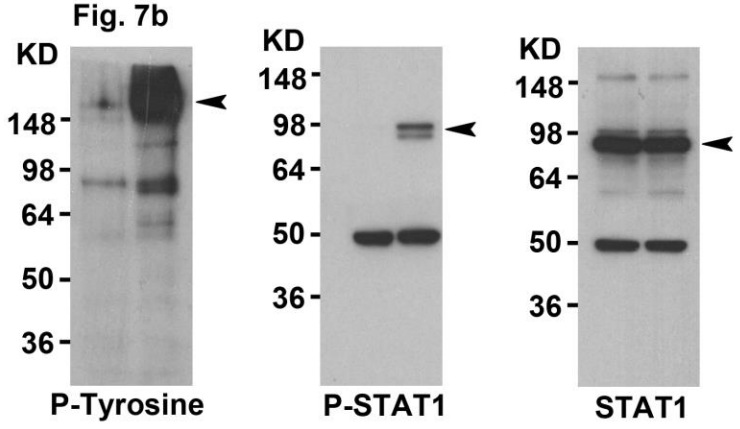
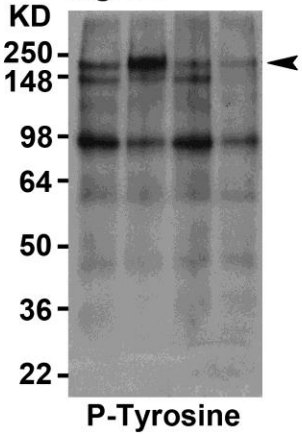


Fig. 7c



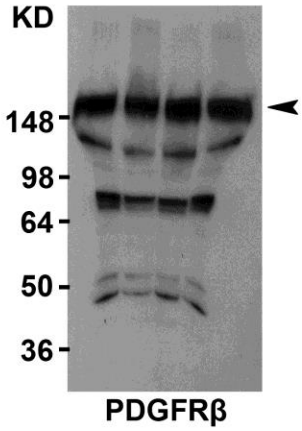
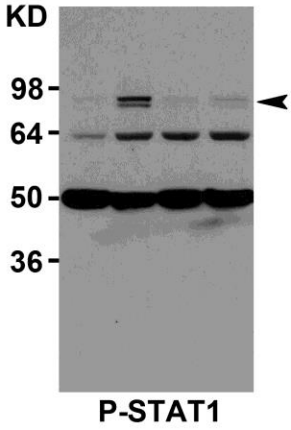


Fig. 7d



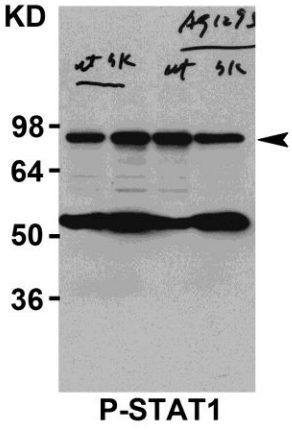
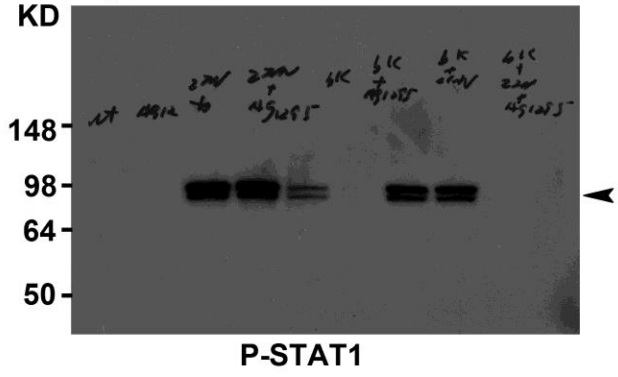


Fig. 7e



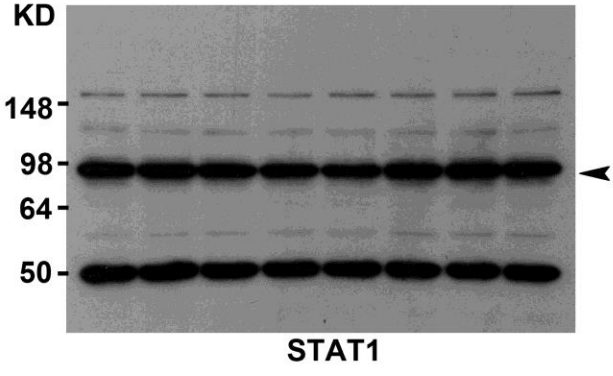
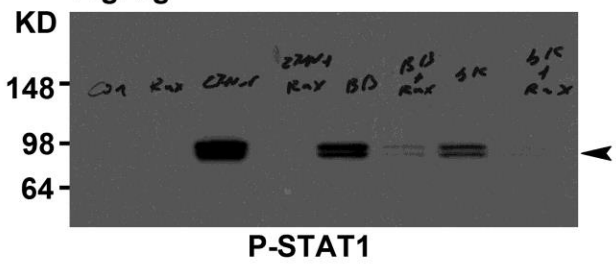
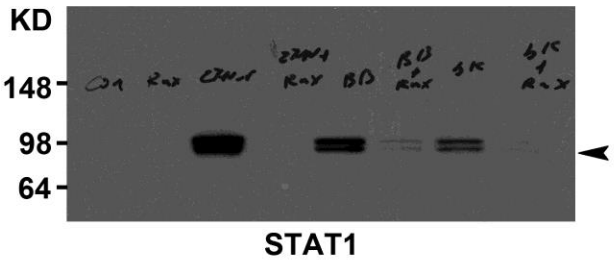
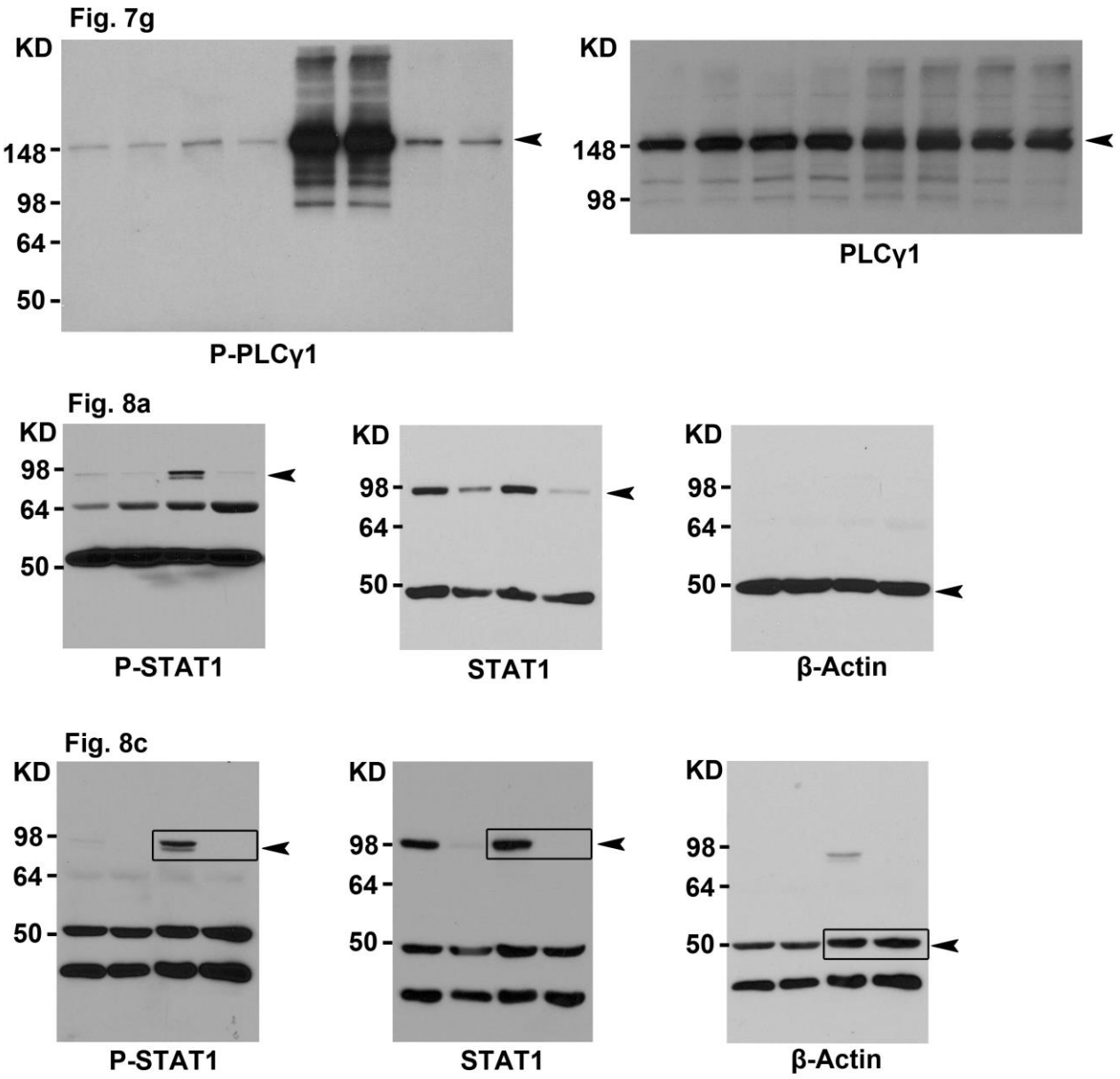


Fig. 7g







Supplementary Figure 6. Full scans of Western blots in the main text.

Supplementary Table1. Primers for Real-Time PCR

Name	Forward	Reverse
IL-1β	ATGGGCAACCACTTACCTATTT	GTTCTAGAGAGTGCTGCCTAATG
TNF-α	CTGAGTTCTGCAAAGGGAGAG	CCTCAGGGAAGAATCTGGAAAG
IFN- α	GATGCCCAGCAGATCAAGAA	CATGCAGCAGATGAGTCCTT
IFN-β	ATCCAAGAGATGCTCCAGAATG	CCAGGAGACGTACAACAATAGTC
IFN-γ	CTCTTCCTCATGGCTGTTTCT	TTCTTCCACATCTATGCCACTT
CCL2	AGCACCAGCCAACTCTCACT	CGTTAACTGCATCTGGCTGA
CCL3	ATACAAGCAGCAGCGAGTACCAGT	ACAGAGAAGAACAGCAAGGGCAGT
CCL5	TCGTGCCCACGTCAAGGAGTATTT	TCTTCTCTGGGTTGGCACACACTT
CCL6	AAATACCAGGGCAGGCCAGAGAAT	ACCCAAGGACAGCCACAAGGATAA
CCL7	ACCAACCTAGGAGCCAAGAAGCAA	AAGACCATTCCTTAGGCGTGACCA
CCL9	GCCGGGCATCATCTTTATCAGCAA	TGGCAGTTCACACCCTTCTCTTCA
CCL12	ACCATCAGTCCTCAGGTATTGGCT	ACTGGCTGCTTGTGATTCTCCTGT
CXCL9	ATCTTCCTGGAGCAGTGTGGAGTT	AGGGATTTGTAGTGGATCGTGCCT
CXCL10	ATATCGATGACGGGCCAGTGAGAA	AATGATCTCAACACGTGGGCAGGA
CXCL11	AACGGCTGCGACAAAGTTGAAGTG	TATGAGGCGAGCTTGCTTGGATCT
Col1a2	TCTCCTGGAAATGTTGGCCCATCT	AATCCGATGTTGCCAGCTTCACCT
Col3a1	AGGTGGACCAGGCAATGATGGAAA	TTCCTTTAGGACCAGGGAAACCCA
Tnc	TATCGCAACTGGAAGGCCTATGCT	TTGCTCAGGTTATCCAGTCCAAGC
Vcan	TGTGGATCATCTGGATGGCGATGT	CAAAGCCATTTCTCCAAGCTGCCT
Bgn	AGCTCCTCCAGGTTGTCTAT	CAAGAGGGCCTACTATAATGGC
MCP-1	CTCACCTGCTGCTACTCATTC	ACTACAGCTTCTTTGGGACAC
IL-6	CCAGAGTCCTTCAGAGAGATACA	CCTTCTGTGACTCCAGCTTATC
CD163	TGACGACAACTTCAGCAAAGA	CCAGAACCAGCTCCCAATTTA
CD206	CCAAATGATGAGCTGTGGATTG	GCTCTCCAGGAAGCCATTTA
GAPDH	CTGGAGAAACCTGCCAAGTA	AAGAGTGGGAGTTGCTGTTG