Online Fig. 1. Mild pressure overload induces TNC expression in the myocardium and bone marrow. WT mice were subjected to abdominal TAC and the LVs were isolated at the indicated times post-TAC. (A) Total RNA was extracted and analyzed by qPCR using primers specific to TNC before (day 0) and at the indicated days post-TAC. The qPCR data were normalized against GAPDH. (B) LV sections before (top panel) and 3 days post-TAC (lower panel) were stained with a polyclonal anti-TNC antibody. (C) Total RNA isolated from bone marrow before and at the indicated days after TAC were analyzed by qPCR for the expression of TNC. N=3 animals per treatment.

Online Fig. 2. Representative M-mode tracings taken from the short-axis from sham operated mice before TAC (two top panels) and two months postsurgery (two low panels). Left panels are from wild type mice and right panels are from TNCKO mice. The number of animals in each group are shown in Table 1.

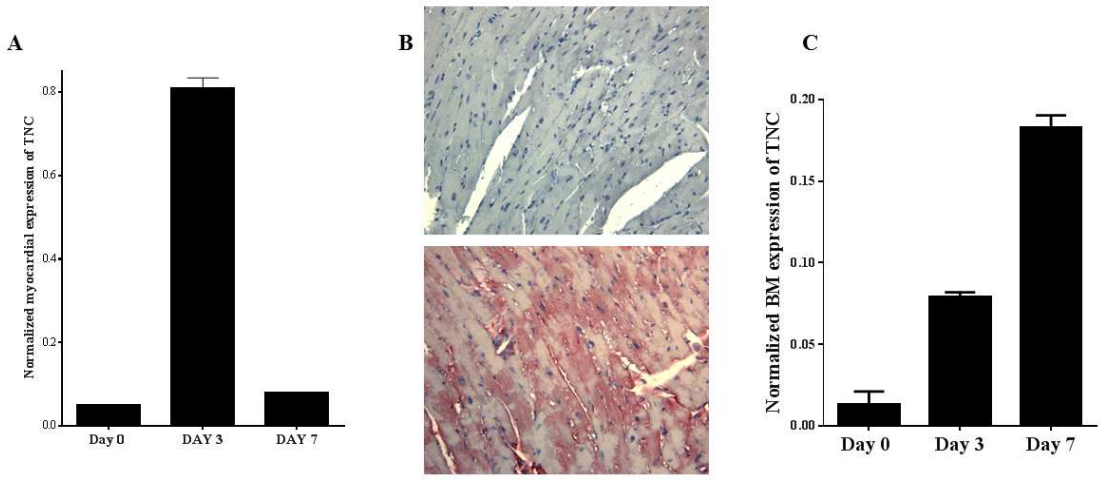
Online Fig. 3. TNC deficiency increased expression of the mRNA levels for markers of heart disease. Total RNA was extracted from wild type and TNCKO mice at the indicated times after TAC. The qPCR was performed on the samples using primers specific to each peptide. n=7/group per genotype. (*) represent significant difference compared to the control

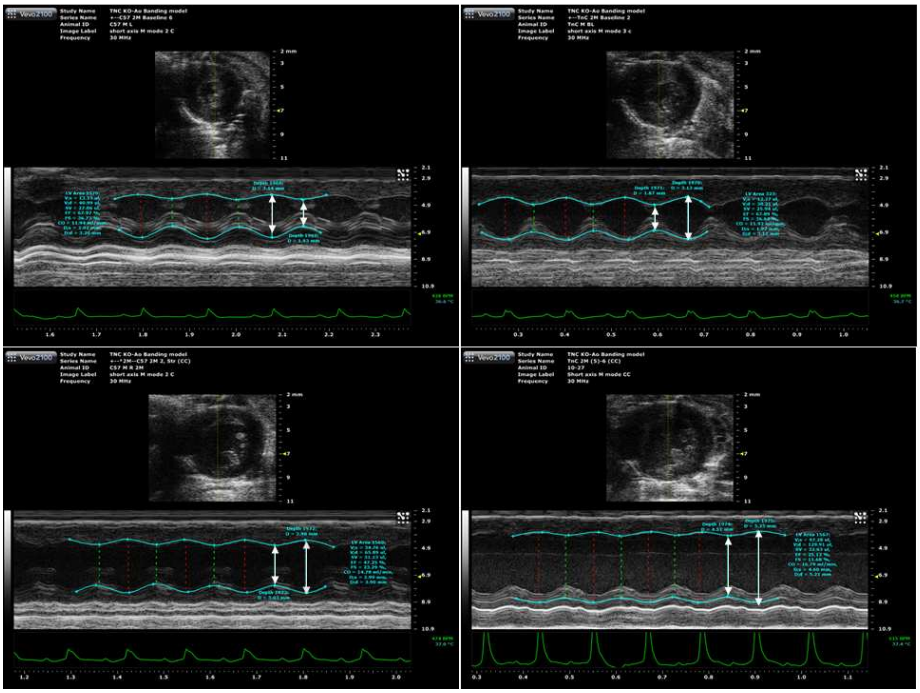
Online Fig 4. TNC deficiency does not influence blood pressure. Blood pressure gradient across the constriction site averaged 23.6 ± 2 mm Hg and 21±1 mm Hg (p=ns) for the control and TNC-KO cohorts at 1 month, respectively. At 2 months, the BP were 18.8±3 mm Hg and 22±1 mm Hg (P>0.05) in the control and TNC KO group, respectively. The increased pressure differentials resulted mainly from an increased proximal BP in the aortic constriction site: 135±3 mm Hg in the control group vs.135.2±2 mm Hg in the TNC-KO group at 1 month (p=ns). At 2 months, 132.3±3 mm Hg in the control mice vs. 136.7±3 mm Hg in the TNC-KO mice (p=ns).

No significant difference in the tail BP was found between the two mouse groups. The number of animals in each group is shown in Table 1.

Online Fig. 5. Representative flow cytometry experimental design of LVs for the two mice genotypes. LVs from the two mice genotypes were digested and the single cell population was gated for monocytes/macrophages before and 7 days post-TAC. Monocytes/macrophages are defined as CD45+/CD11b+/Ly6G- cells. They were further re-gated for the expression of CCR2 and Ly6C. The number of animals in each group is shown in Fig. 3.

Online Fig. 6. Echocardiographic analysis of cardiac function of recipient mice before TAC. The cardiac function of the recipient chimeric mice (W-T and T-W) and control mice (T-T and W-W) were evaluated as described above. The number of mice in each group is shown in the respective column. . The number of animals in each group is shown in Fig. 4.


A
Normalized myocardial expression of TNC
0.0
0.2
0.4
0.6
0.8
Day 0
DAY 3
DAY 7
B
C
Normalized BM expression of TNC
0.00
0.05
0.10
0.15
0.20
Day 0
Day 3
Day 7


Vevo2100
Study Name TNC KO-Ao Banding model
Series Name +/−C57 2M Baseline 6
Animal ID C57 M L
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Frequency 30 MHz
2 mm
Vevo2100
Study Name TNC KO-Ao Banding model
Series Name +/−TnC 2M Baseline 2
Animal ID TnC M BL
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Vevo2100
Study Name TNC KO-Ao Banding model
Series Name +/−?2M−C57 2M 2, 5Yr (CC)
Animal ID C57 M R 2M
Image Label short axis M mode 2 C
Frequency 30 MHz
2 mm
Vevo2100
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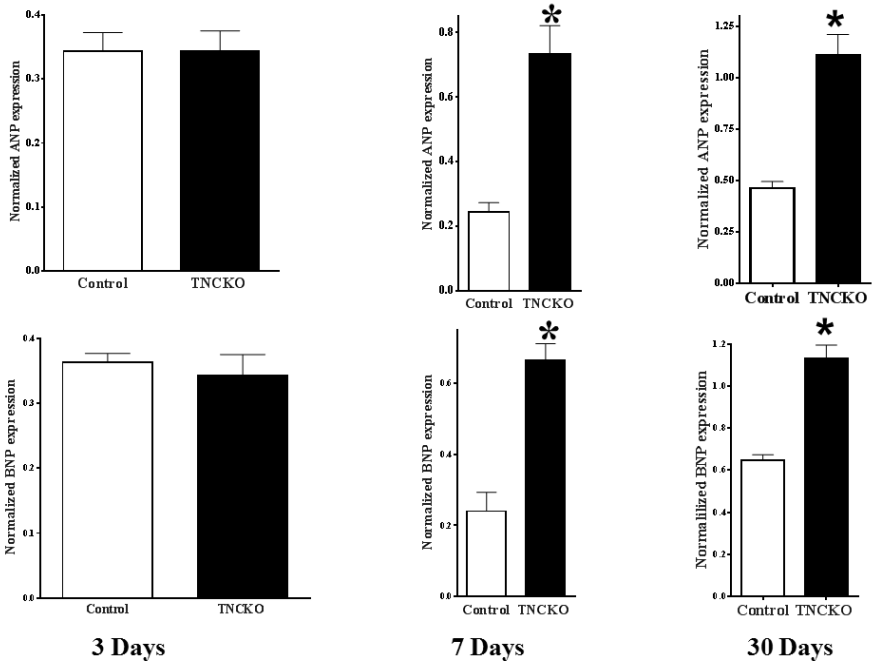
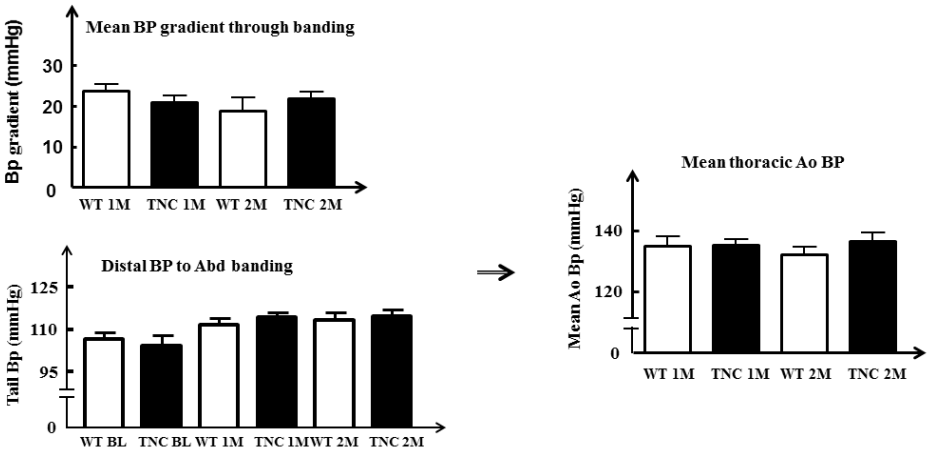
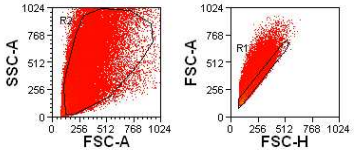
Animal ID 10-27
Image Label Short axis M mode CC
Frequency 30 MHz
2 mm

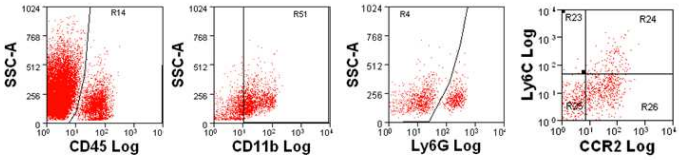

Normalized ANP expression
0.0
0.1
0.2
0.3
0.4
Control
TNCKO
Normalized ANP expression
0.0
0.2
0.4
0.6
0.8
*
Control
TNCKO
Normalized ANP expression
0.00
0.25
0.50
0.75
1.00
1.25
*
Control
TNCKO
Normalized BNP expression
0.0
0.1
0.2
0.3
0.4
Control
TNCKO
Normalized BNP expression
0.0
0.2
0.4
0.6
*
Control
TNCKO
Normalilized BNP expression
0.0
0.2
0.4
0.6
0.8
1.0
1.2
*
Control
TNCKO
3 Days
7 Days
30 Days


Mean BP gradient through banding
Bp gradient (mmHg)
30
20
10
0
WT 1M
TNC 1M
WT 2M
TNC 2M
Distal BP to Abd banding
Tail Bp (mmHg)
125
110
95
0
WT BL
TNC BL
WT 1M
TNC 1M
WT 2M
TNC 2M
Mean thoracic Ao BP
Mean Ao Bp (mmHg)
140
120
0
WT 1M
TNC 1M
WT 2M
TNC 2M

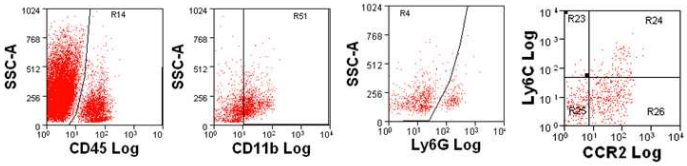
Baseline



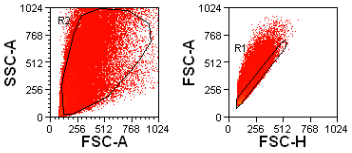
WT



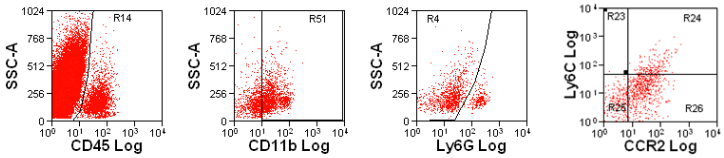
TNCKO



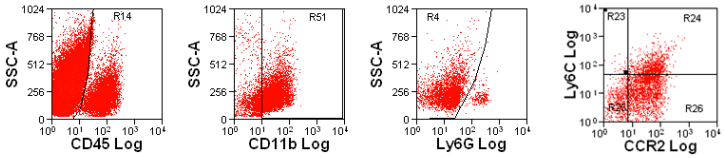
7 days post TAC

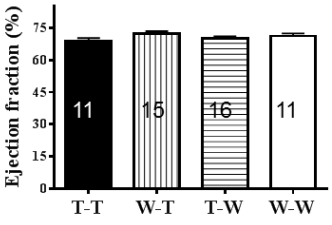


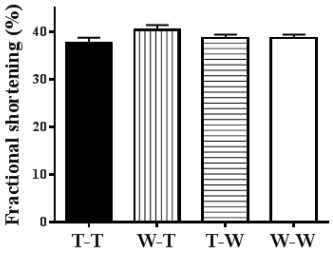
WT

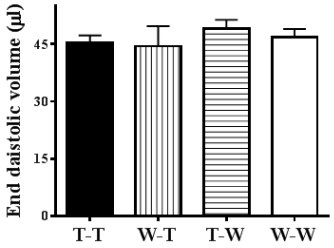


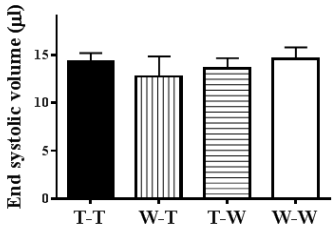
TNCKO




Ejection fraction (%)
75
60
45
30
15
0
11
15
16
11
T-T
W-T
T-W
W-W


Fractional shortening (%)
40
30
20
10
0
T-T
W-T
T-W
W-W


End daistolic volume (µl)
45
30
15
0
T-T
W-T
T-W
W-W


End systolic volume (µl)
15
10
5
0
T-T
W-T
T-W
W-W