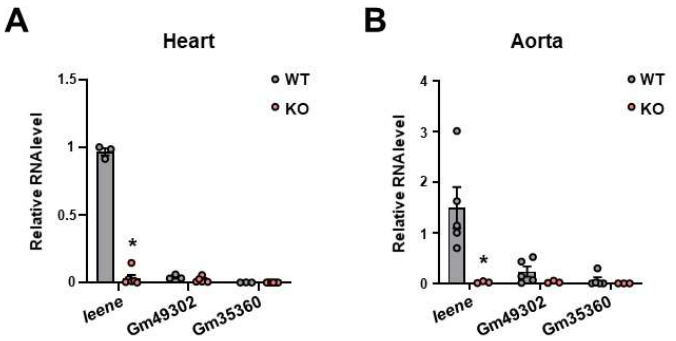
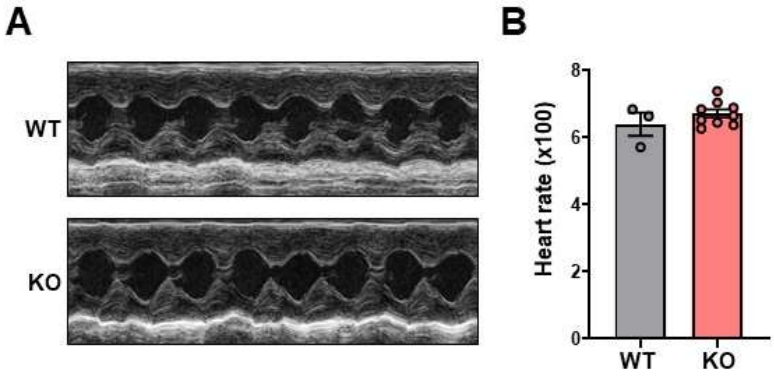
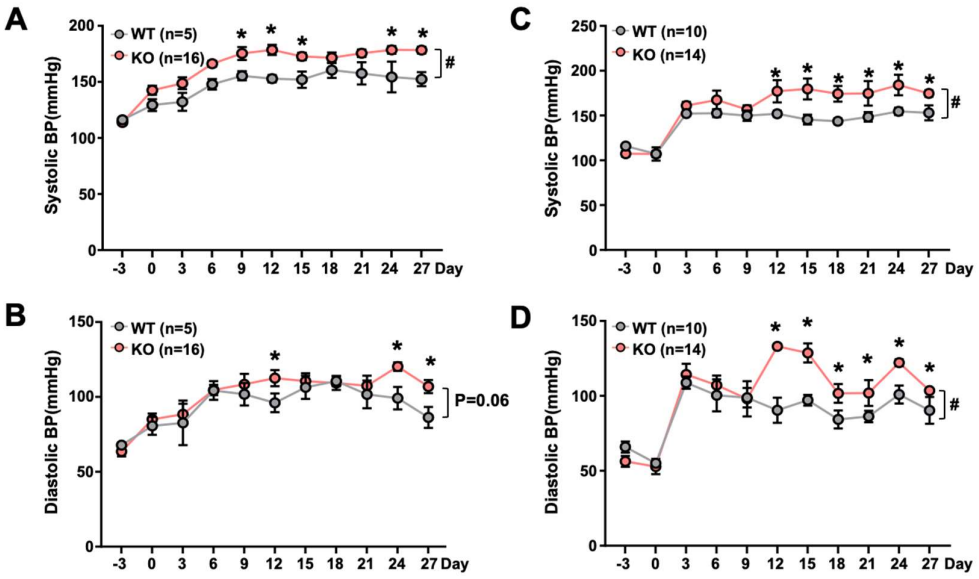
Supplementary Materials



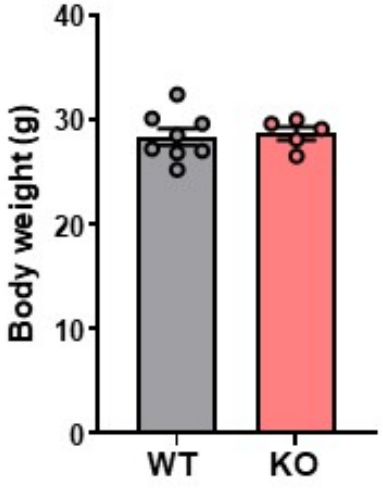
Supplemental Figure S1. qPCR of Gm41148 (leene), Gm49302, and Gm35360 in mouse heart (A) and aorta (B). 36b4 was detected as internal control. Data represent mean±SEM. *P< 0.05 compared to WT based on t test. n=3-6/group.



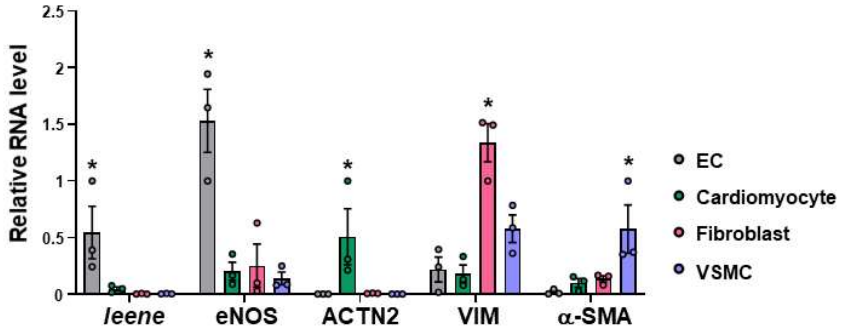
Supplemental Figure S2. Heart function in WT and KO male mice at 6 month-old at baseline. (A) Representative M-mode images of echocardiography and (B) heart rate from WT and *leene*-KO mice. n=3-9 mice per group. Data are represented as mean ± SEM.



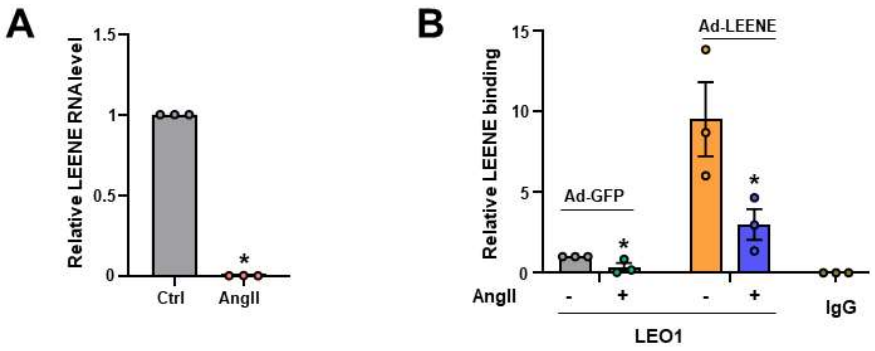
Supplemental Figure S3. BP in two other batches of mice. Systolic and diastolic BP in AngII-infused male mice of 6 month-old (A,B) and 4 month-old (C,D). n=5-16 mice per group in (A,B) and n=10-14 mice per group in (C,D). Data are represented as mean ± SEM. *P<0.05 between WT and KO mice at the same time point based on two-tailed Student's t-test. #P<0.05 between WT and KO based on repeated-measures t-test.



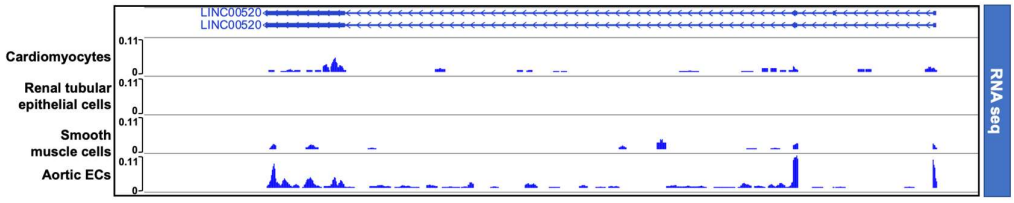
Supplemental Figure S4. Body weight of 6 month-old WT and KO male mice with AngII infusion. n=5-8 mice per group. Data are represented as mean ± SEM.



Supplemental Figure S5. qPCR of leene and cell type markers in four different cell types in WT mice. Data are represented as mean±SEM. *P< 0.05 compared among 4 cell types based on one-way ANOVA followed by Dunnett's test.



Supplemental Figure S6. AngII decreases LEENE and its interaction with LEO1. (A) qPCR of LEENE in HUVECs treated with vehicle control or AngII (100 nM) for 48h. (B) RIP-qPCR with LEO1 antibody to detect the interaction of LEENE and LEO1. The relative enrichment in Ad-GFP sample was set as 1. IgG was used as an antibody control. Data are represented as mean±SEM from three independent experiments. *P <0.05 based on t test.



Supplemental Figure S7. LEENE transcription levels in 4 human cell types. RNA-seq data retrieved from ENCODE and Epigenome Roadmap showing LEENE RNA transcription in multiple human cell types as indicated.

Supplemental Table S1. Sequences of primers

Gene/Primer ID	Species	Assay	Sequence
36B4	mouse	RT-PCR	Forward: AGATTCGGGATATGCTGTTGGC Reverse: TCGGGTCCTAGACCAGTGTTC
iNOS	mouse	RT-PCR	Forward: GTTCTCAGCCCAACAATACAAGA Reverse: GTGGACGGGTCGATGTCAC
KLF4	mouse	RT-PCR	Forward: GGCGAGTCTGACATGGCTG Reverse: GCTGGACGCAGTGTCTTCTC
KLF2	mouse	RT-PCR	Forward: GAGCCTATCTTGCCGTCCTTT Reverse: CACGTTGTTTAGGTCCTCATCC
eNOS	mouse	RT-PCR	Forward: CTTGACCCAATAGCTGCTCAG Reverse: CACCTACGACACCCTCAGTG
AGF	mouse	RT-PCR	Forward: ATGCACAGATCGGAGATGACT Reverse: CATGCAGGGTCTTCTCATTCAC
ATP2B1	mouse	RT-PCR	Forward: TGAAGGAGCTGCGATCCTCTT Reverse: CTGTTCCTGCTCAATTCGACT
leene	mouse	RT-PCR	Forward: TCTCACCCCTTCCTGGTACAT Reverse: CCCCTTTGTCCTTCCTAGGTC
VCAM1	mouse	RT-PCR	Forward: AGTTGGGGATTCGGTTGTTCT Reverse: CCCCTCATTCCTTACCACCC
BNP	mouse	RT-PCR	Forward: CTGAAGGTGCTGTCCCAGAT Reverse: CCTTGGTCCTTCAAGAGCTG
COL1	mouse	RT-PCR	Forward: GCTCCTCTTAGGGGCCACT Reverse: ATTGGGGACCCTTAGGCCAT
MYH7	mouse	RT-PCR	Forward: ATCAATGCAACCCTGGAGAC Reverse: CGAACATGTGGTGGTTGAAG
Gm49302	mouse	RT-PCR	Forward: CTGGCACCCACTAGGATGAC Reverse: AGCAAATGGTCCCTTGGGTT
Gm35360	mouse	RT-PCR	Forward: AGCCGTTGGAAAAGGGTGAA Reverse: CTGAGAAGGTGCTACGGGTG
ACTN2	mouse	RT-PCR	Forward: CATCGAGGAGGATTTCAGGAAC Reverse: CAATCTTGTGGAACCGCATTTT
α-SMA	mouse	RT-PCR	Forward: GACTCTCTTCCAGCCATCTTTC Reverse: GACAGGACGTTGTTAGCATAGA
VIM	mouse	RT-PCR	Forward: TCCACACGCACCTACAGTCT Reverse: CCGAGGACCGGGTCACATA
LEENE	human	RT-PCR	Forward: TTTCCCTCTTTGGGGTCTCA Reverse: GCCCTTTGATGAGTGAGTCG
VCAM1	human	RT-PCR	Forward: GTCAATGTTGCCCCCAGAGA Reverse: TTTTCGGAGCAGGAAAGCCC
eNOS	human	RT-PCR	Forward: TGATGGCGAAGCGAGTGAAG Reverse: ACTCATCCATACACAGGACCC
ACTB	human	RT-PCR	Forward: CATGTACGTTGCTATCCAGGC Reverse: CTCCTTAATGTCACGCACGAT