

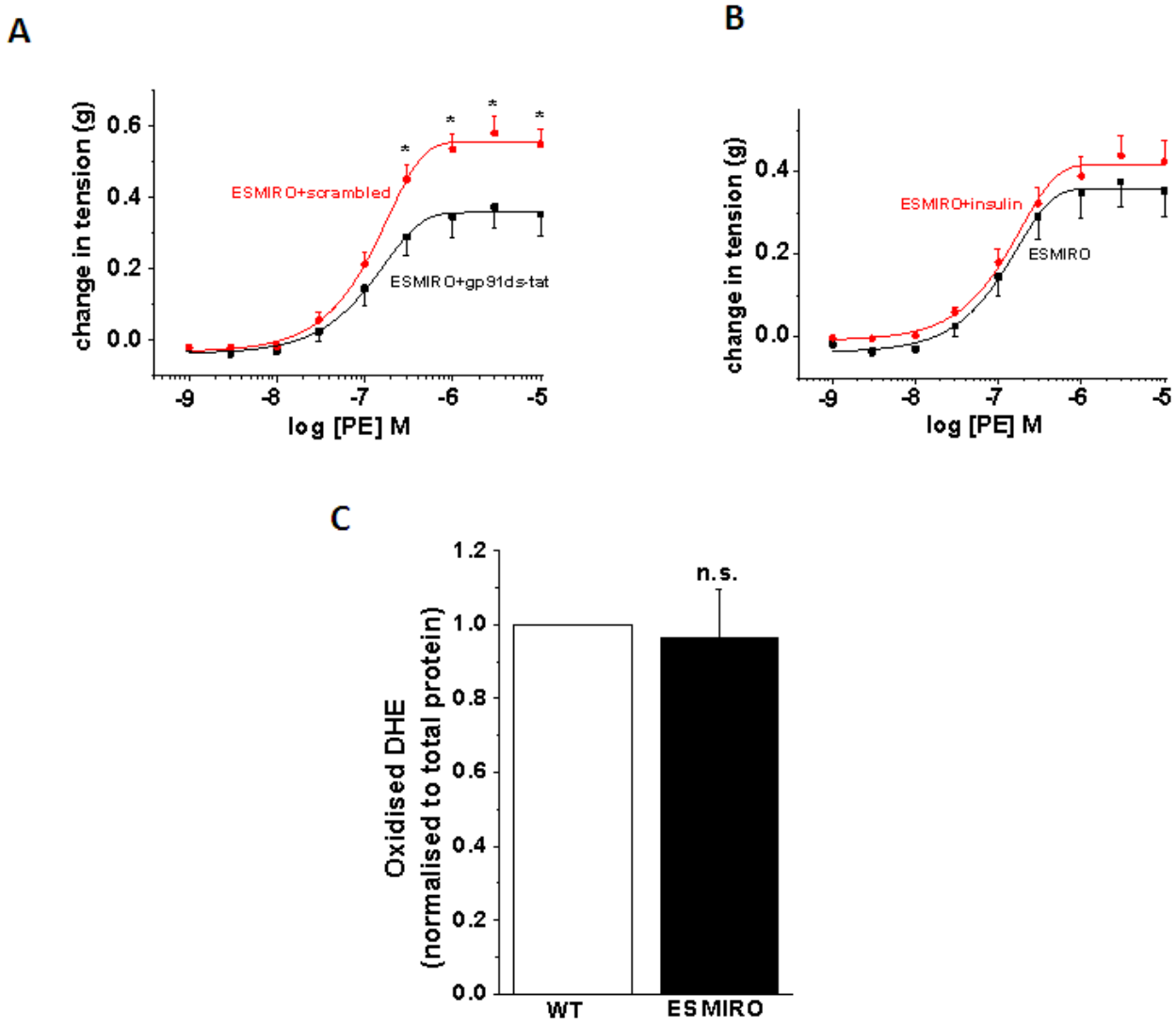
SUPPLEMENTARY DATA

Supplementary Table 1. Table showing different gene specific primers used in real-time PCR.

gene	Forward (5'-3')	Reverse(5'-3')
Hact	CGTGAAAAGATGACCCAGATCA	TGGTACGACCAGAGGCATACAG
Nox1	TCGACACACAGGAATCAGGA	TTACACGAGAGAAATTCTTGGG
Nox2	GGTCCAGTGC GTGTTGCT	GCGGTGTGCAGTGCTATCAT
Nox2 (KO)	ACTCCTTGGGTCAGCACTGG	GTTCTGTCCAGTTGTCTTCG
Nox3	CCGGCAGATCCAATAGAAGT	GTCACTCCCTTCGCCTCTCT
Nox4	GGAGACTGGACAGAACGATTCC	TGTATAACTTAGGGTAATTTCTAGAGTGAATGA
Duox1	GGCCTGGATTCTCCTGGTTGGGA	AACAAGGCGCTGCAGCCGAG
Duox2	CAGCGCTACGACGGCTGGTT	GCTTAGCCGGCGAGGGTTGG
P47	AGAGTCGCCAGGGCACTCT	TCTTCGCCTGGCTGTCAGT
P67	AAGCTGTTTGCCTGTGAGGT	CTTCATGTTGGTTGCCAATG
P22	GGAGCGATGTGGACAGAAGTA	GCACCGACAACAGGAAGTG
SOD1	GGACCTCATTTTAATCCTCACTCTAAG	GGTCTCCAACATGCCTCTCTTC
SOD2	CACACATTAACGCGCAGATCA	GGTGGCGTTGAGATTGTTCA
SOD3	GGGATGGATCTAGAGCATTAAAGGA	ACACCTTAGTTAACCAGAAATCTTTTC
eNOS	CTGGAGCACCCACGCT	AGCGGTGAGGGTCACACAG
catalase	GCTGAGAAGCCTAAGAACGCAAT	CCCTTCGCAGCCATGTG
veCad	TCAACGCATCTGTGCCAGAGAT	CACGATTTGGTACAAGACAGTG

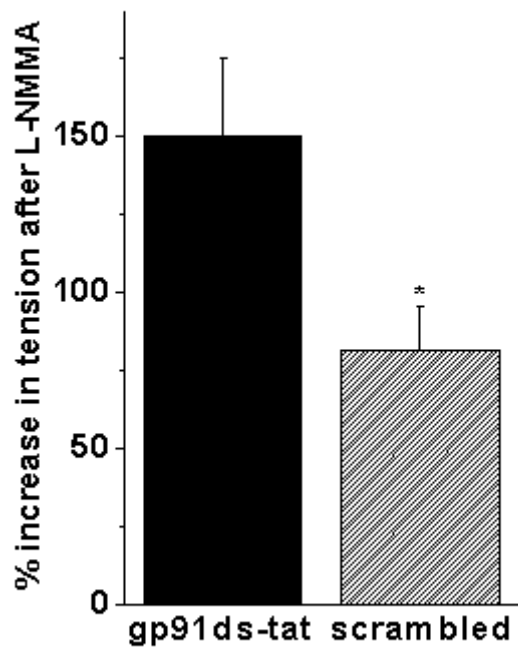
SUPPLEMENTARY DATA

Supplementary Figure 1. (A) Contraction curves of aortic rings from ESMIRO mice with indicated acute treatments in response to phenylephrine (PE). (B) Contraction curves of gp91ds-tat treated aortic rings from ESMIRO mice before and after insulin (100mU/mL for 2 hours) treatment in response to PE. (C) Normalised oxidised DHE level in endothelium denuded aorta of wild type (WT) and ESMIRO mice measured by HPLC based DHE analysis (n=4 mice in each group).



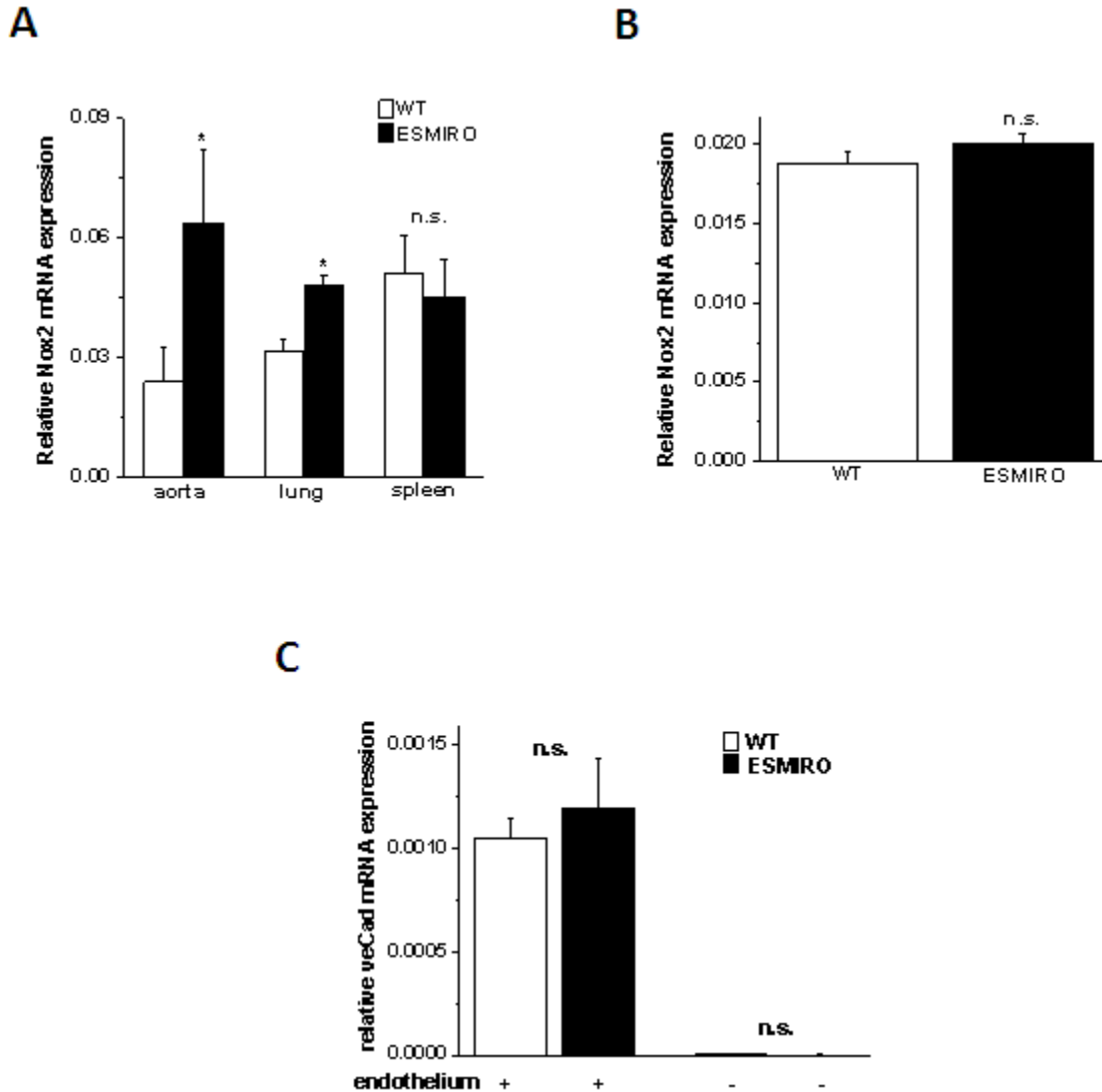
SUPPLEMENTARY DATA

Supplementary Figure 2. Increase in PE (10 μ M) induced tension by L-NMMA (100 μ M for 0.5 hours) in aortic rings from IR^{+/-} mice with indicated acute treatment (n= at least 4 mice in each group * denotes P<0.05).



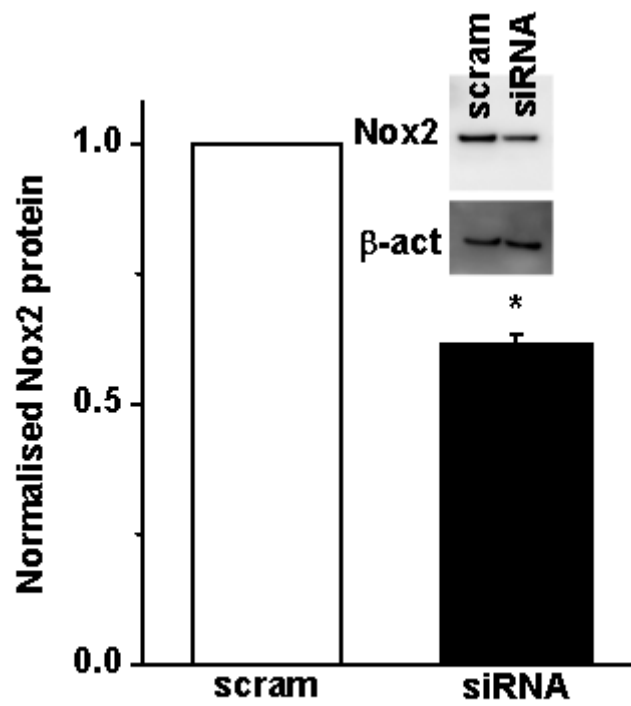
SUPPLEMENTARY DATA

Supplementary Figure 3. (A) Relative Nox2 mRNA expression in aorta, lungs and spleen of wild type (WT) and ESMIRO mice. (B) Relative Nox2 mRNA expression in endothelium denuded aorta of WT and ESMIRO. (C) Relative veCad mRNA expression in whole aorta and endothelium denuded aorta of WT and ESMIRO mice (n= at least 4 mice in each group; * denotes P<0.05).



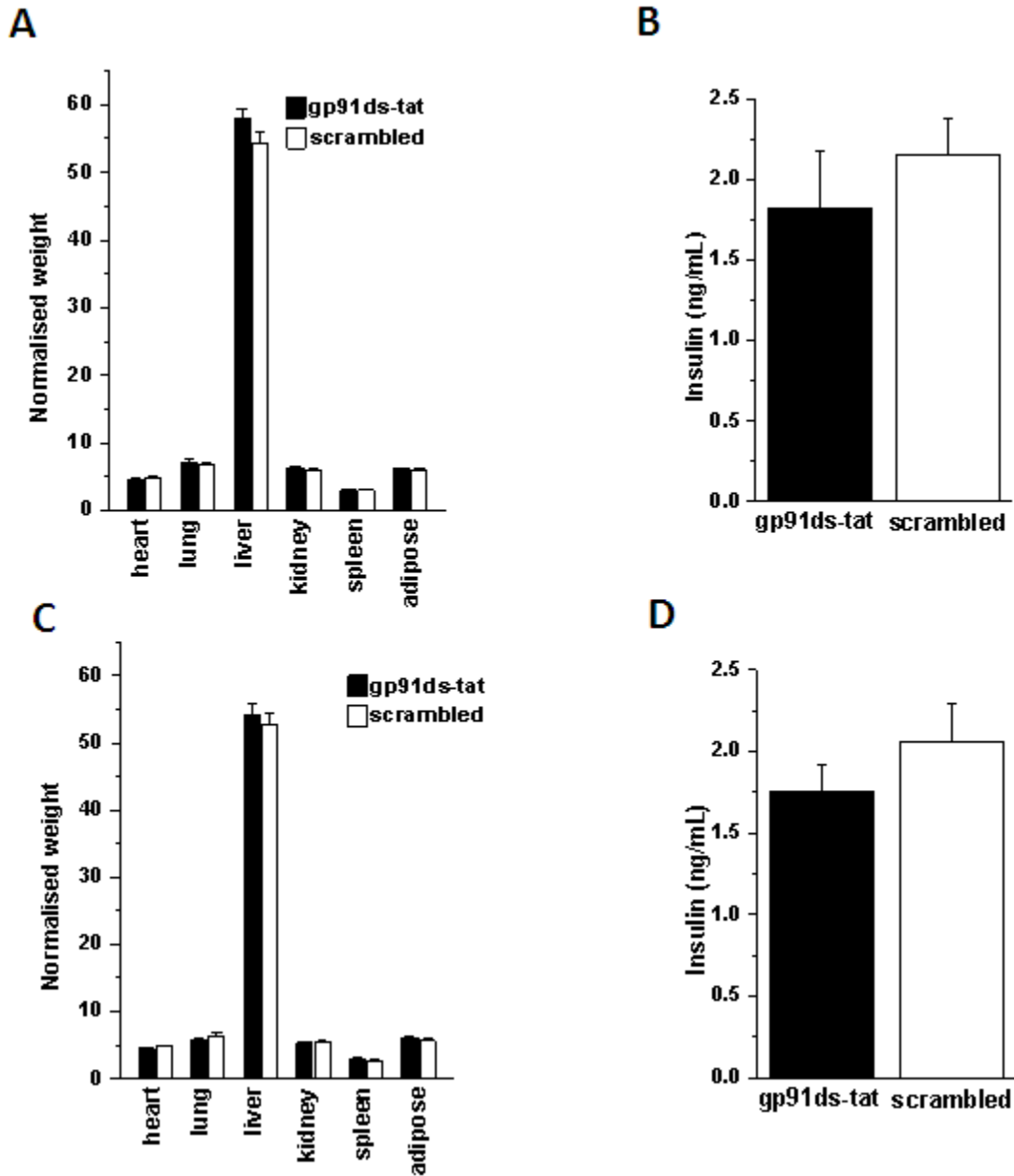
SUPPLEMENTARY DATA

Supplementary Figure 4. Normalised Nox2 protein expression in PEC of ESMIRO mice after Nox2 or scrambled siRNA treatment (n=3; insets show representative blots of Nox2 and β -actin * denotes $P < 0.05$).



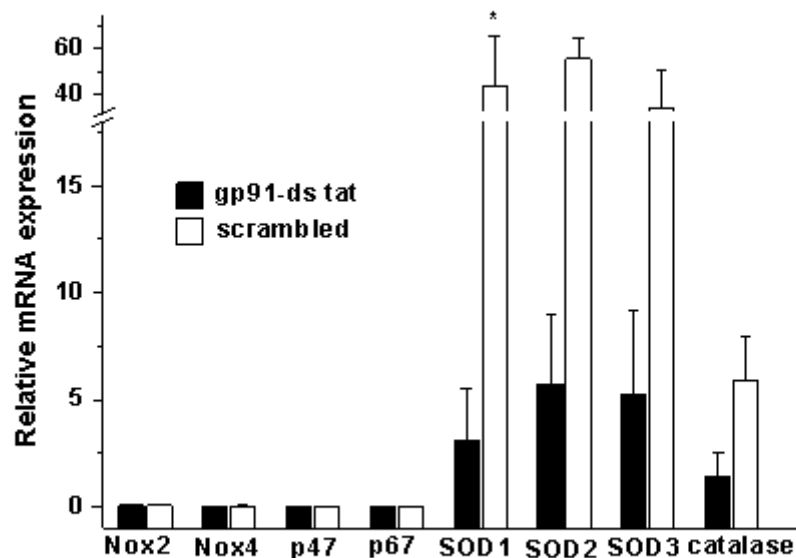
SUPPLEMENTARY DATA

Supplementary Figure 5. Effect of chronic infusion of gp91ds-tat or scrambled peptide on weight and fasting insulin in ESMIRO or IR^{+/-} mice. **(A)** Normalised weight of individual organs of ESMIRO. **(B)** Mean plasma insulin levels of ESMIRO. **(C)** Normalised weights of individual organs of IR^{+/-}. **(D)** Mean plasma insulin levels in IR^{+/-} mice (n=at least 4 mice in each group).



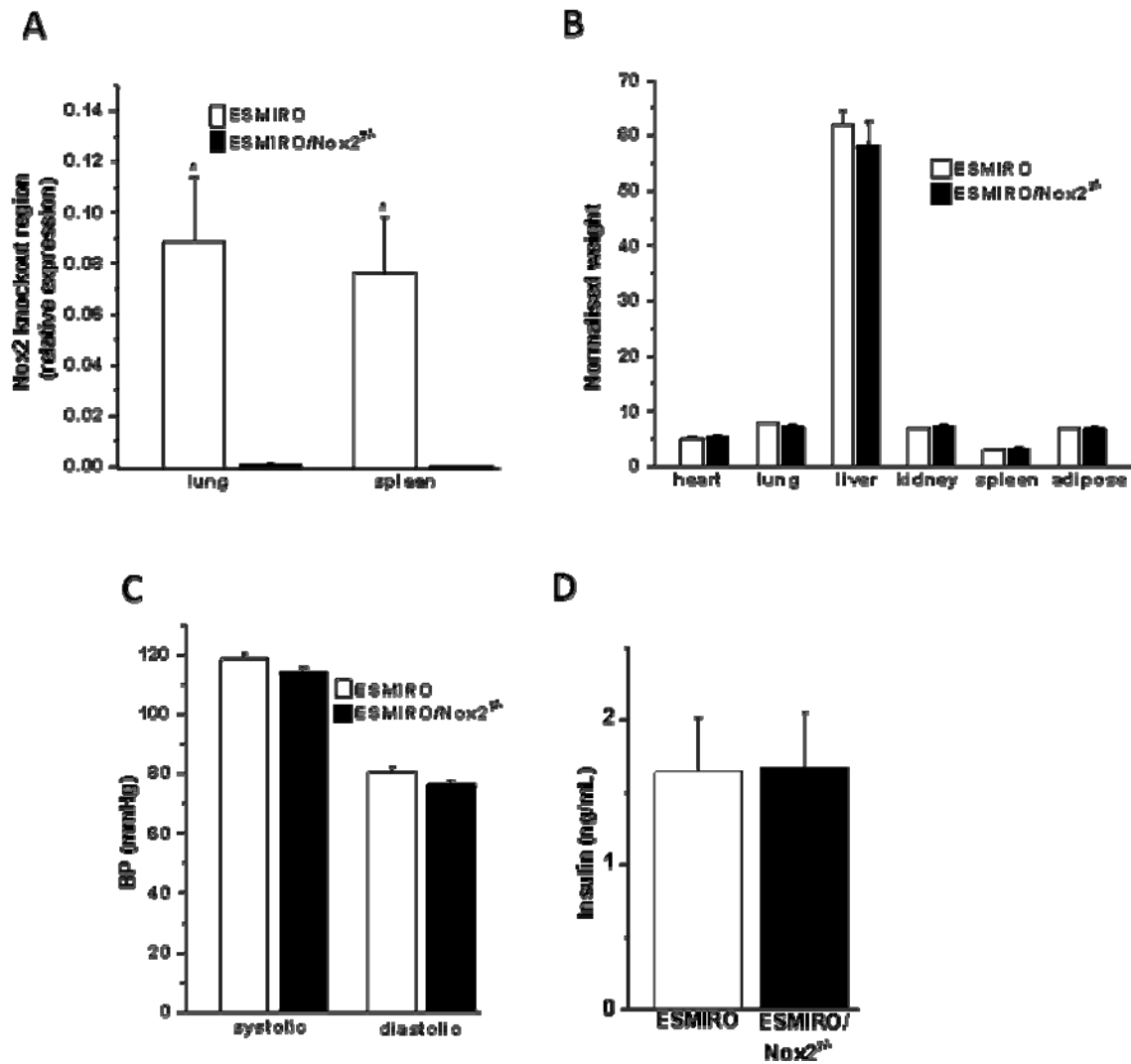
SUPPLEMENTARY DATA

Supplementary Figure 6. Relative mRNA expression of different ROS related genes (SOD=superoxide dismutase) in PEC of ESMIRO mice infused with gp91ds-tat or scrambled peptide through osmotic pump (n=3 mice in each group; * denotes $P < 0.05$).



SUPPLEMENTARY DATA

Supplementary Figure 7. (A) Relative expression of Nox2 mRNA in lung and spleen of ESMIRO and ESMIRO/Nox2^{y/-} mice. (B) Normalised organ weight (C) blood pressure (D) plasma insulin concentration of ESMIRO and ESMIRO/Nox2^{y/-} mice (n= at least 4 mice in each group).



SUPPLEMENTARY DATA

Supplementary Figure 8. Relative mRNA expression of different ROS related genes (cat denotes catalase, SOD=superoxide dismutase) in PEC of ESMIRO and ESMIRO/Nox2^{y/-} mice (n=3 mice in each group; * denotes P<0.05).

