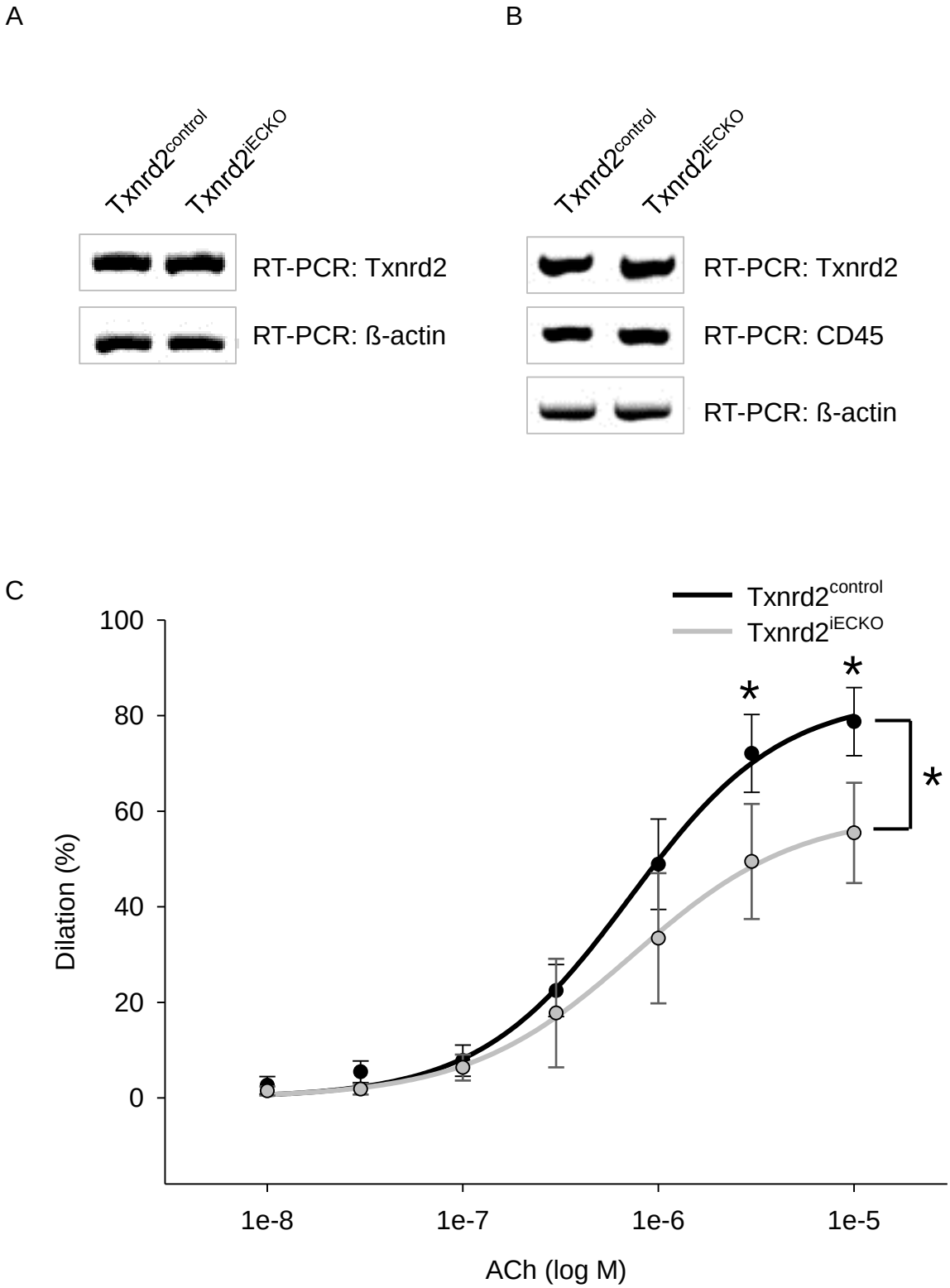
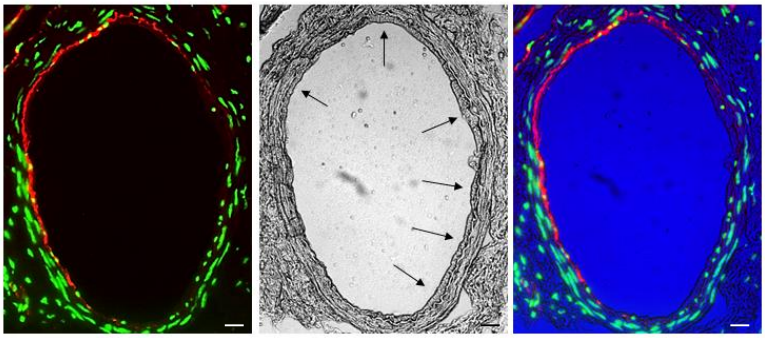
Supplemental Material

Suppl. Figure I

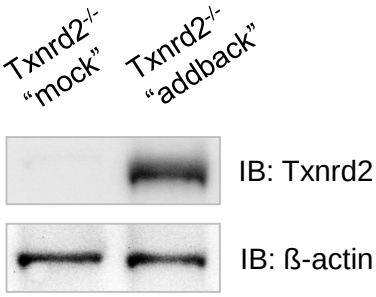


Suppl. Figure II

A



B



Suppl. Figure Legends

Suppl. Figure I:

No difference in the expression level of Txnrd2 in bone marrow tissue (A) nor in CD45-positive cells derived thereof (B) between Txnrd2^{control} and Txnrd2^{iECKO} mice C: Significantly impaired dilation of Txnrd2^{iECKO} femoral arteries in response to acetylcholine in the presence of L-NAME and catalase. Maximal dilation in Txnrd2^{control} = 84.0 ± 3.4 %, maximal dilation in Txnrd2^{iECKO} = 59.0 ± 1.7 %. *P<0.05

Suppl. Figure II:

A, left: the endothelial marker CD31 appears in red, the cell nuclei are stained by DAPI and appear in green color. Middle, in the brightfield image the vascular alterations are marked by multiple arrows. Right, combining both staining techniques defines that there are deposits on top of the endothelial lining. **B,** Confirmation of successful reconstitution of Txnrd2 expression in Txnrd2-deficient eEPCs (addback).

Table I, List of primer sequences used for genotyping

target	forward primer	reverse primer	product (bp)
Txnrd2 wildtype (WT)	CAGGTCACTAGGCTGTAGAGTTTGC	ATGTCCCAGTGTACTTATGATGAATC	133 bp
Txnrd2 floxed	CAGGTCACTAGGCTGTAGAGTTTGC	ATGTCCCAGTGTACTTATGAATC	181 bp
cre	GCCTGCATTACCGGTCGATGCAACGA	GTGGCAGATGGCGCGGCAACACCATT	~400 bp

Table II, List of primer sequences used for gene expression analysis

gene	forward primer	reverse primer	product (bp)
β-actin	CTACGAGGGCTATGCTCTCCC	CCGGACTCATCGTACTCCTGC	602
CD45	GTTTTCGCTACATGACTGCACA	AGGTTGTCCAACTGACATCTTTC	195
Txnrd2 E15-E18	TTCACGGTGGCGGATAGGGATGC	TGCCCAGGCCATCATCATCTGACG	485

Table III, List of antibodies used for immunohistochemistry/immunofluorescence

Primary antibody	Source	Dilution	Secondary antibody	Source	Dilution
CD31	BM4086, Acris Antibodies, Herford, Germany	1/200	biotinylated goat anti-rat antibody	Dianova; Hamburg, Germany	1/200
CD31	DIA-310, Dianova	1/50	goat anti-rat Alexa 488-conjugated IgG	Molecular Probes, Invitrogen, Karlsruhe, Germany	1/200
CD31 (DyLight 488-conjugated)	ABIN438314 antibodies-online, Atlanta, GA	1/50	-	-	-
CD31 (AlexaFluor 647-conjugated)	#102516,Biolegend, San Diego, CA, USA	1/100	-	-	-
CD45	#550539, BD Pharmingen, Heidelberg, Germany	1/50	biotinylated goat anti-rat antibody	Dianova	1/200
CD54/ Icam	#116110, Biolegend	1/100	goat anti-rat Alexa 488-conjugated IgG/ donkey anti-rat Cy3 conjugated IgG	Molecular Probes/ Jackson Immuno Research	1/200
CD106/ VCAM	#105708, Biolegend	1/100	goat anti-rat Alexa 488-conjugated IgG/ donkey anti-rat Cy3 conjugated IgG	Molecular Probes/ Jackson Immuno Research	1/200
Fibrin II beta	NYBT2G1, Accurate Chemical and Scientific Corporation, Westbury, NY, USA	1/200	biotinylated goat anti-mouse antibody	Molecular Probes	1/200
MCP1	ab8101, abcam, Cambridge, UK	1/100	goat anti-rat Alexa 488-conjugated IgG/ donkey anti-rat Cy3 conjugated IgG	Molecular Probes/ Jackson Immuno Research	1/200

Table IV, List of antibodies used for immunoblotting

Primary antibody	Source	Dilution	Secondary antibody	Source	Dilution
ß-actin	A2066, Sigma-Aldrich, Deisenhofen, Germany	1:1000	goat anti-rabbit IgG, HRP-conjugate	Dianova	1/5000
Tubulin	ab7291, Abcam, Cambridge, UK	1:10000	goat anti-mouse IgG, HRP-conjugate	Dianova	1/5000
Txnrd2	custom-made	non-diluted	goat anti-rat IgG, HRP-conjugate	Dianova	1/5000

Table V, Numerical data from all experiments

parameter	**Txnrd2^{control}**	**Txnrd2^{iECKO}**
Laser Doppler imaging		
blood flow (ratio occ vs. sham), 7 days	0.58±0.03	0.44±0.05
blood flow (ratio occ vs. sham), 14 days	0.72±0.06	0.4±0.09
blood flow (ratio occ vs. sham), 21 days	0.84±0.03	0.64±0.05
Angiogenesis		
capillary density in the calf muscle, % of sham	133.5±5.5%	115.2±4.2%
Arteriogenesis		
wall area, % of sham	362.6±15.7%	147.2±4.3%
wall thickness, % of sham	136.9±5.7%	112.3±3.8%
luminal diameter, % of sham	251.3±11.5%	164.9±5.8%
Microthrombus formation		
% of glomeruli with fibrin deposition	2.0±0.9 %	25.4±9.1%
Leukocyte migration		
rolling flux (n / 30s)	10.13±2.0	10.13±1.9
Leukocyte firm adherence, (n / 10^4 µm^2)	5.82±0.7	8.5±0.6
Leukocyte transmigration, (n / 10^4 µm^2)	22.8±1.8	35.2±1.6
eEPCs	**WT**	**KO**
intracellular ROS levels (mean fluorescence intensity)	16.06±0.6	26.87±1.93
mitochondrial membrane potential (ΔΨm) (JC-1 ratio)	1.03±0.05	0.85±0.04
ΔΨm, CCCP treatment (JC-1 ratio)	0.64±0.01	0.65±0.03
tube formation assay	**WT**	**KO**
branching points per visual field	16.1±3.6	3.2±1.9
	„mock“	**„addback“**
branching points per visual field	6.4±1.7	14.1±3