

Figure S1. Endothelial NOX5 expression increased albumin nitrotyrosine levels in mesenteric fat of mice fed a HFD for 10 weeks. Representative Western blot and protein levels of albumin nitrotyrosine in total lysates of mesenteric fat. Control diet: Control Cre (n=12), Nox5/Cre (n=11); High-fat diet: Control Cre (n=10), Nox5/Cre (n=12). Values are expressed as median with confidence interval. Protein levels are relative to B-ACTIN. # $p < 0.05$, diet differences (dotted lines); * $p < 0.05$: genotype differences (solid lines). Statistical test used: Aligned Rank ANOVA.

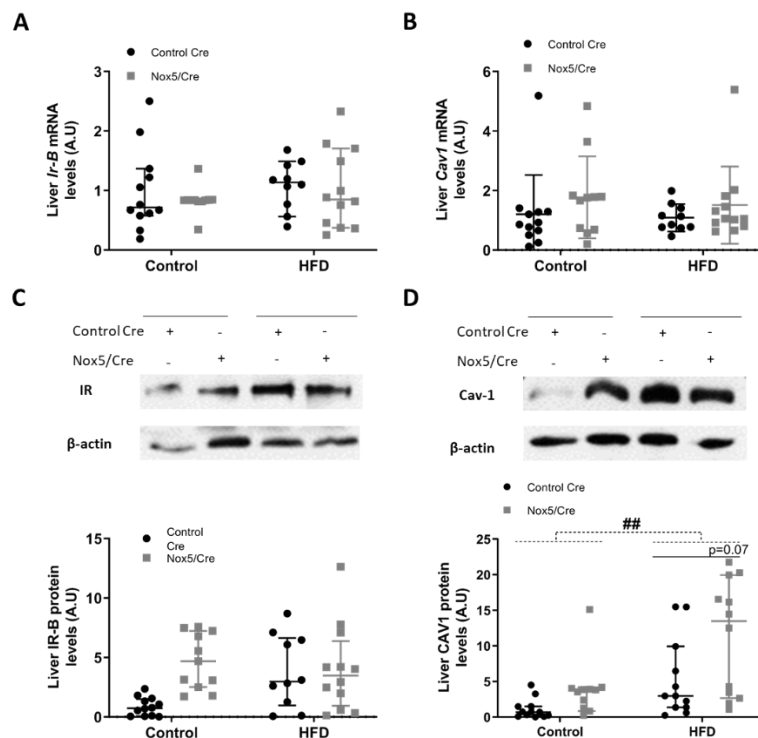


Figure S2. Endothelial NOX5 expression tended to increase *Cav1* levels in liver in mice fed with HFD for 10 weeks. (A) *Ir-B* mRNA levels in liver. (B) *Cav1* mRNA levels in liver. (C) Representative Western blot and protein levels of IR-B in total lysates of liver. (D) Representative Western blot and protein levels of CAV1 in total lysates of liver. Control diet: Control Cre (n=12), Nox5/Cre (n=11); High-fat diet: Control Cre (n=10), Nox5/Cre (n=12). Values are expressed as median with confidence interval. mRNA levels are relative to Gapdh. Protein levels are relative to B-ACTIN. ## $p < 0.01$: diet differences (dotted lines); * $p < 0.05$: genotype differences (solid lines). Statistical test used: Aligned Rank ANOVA.

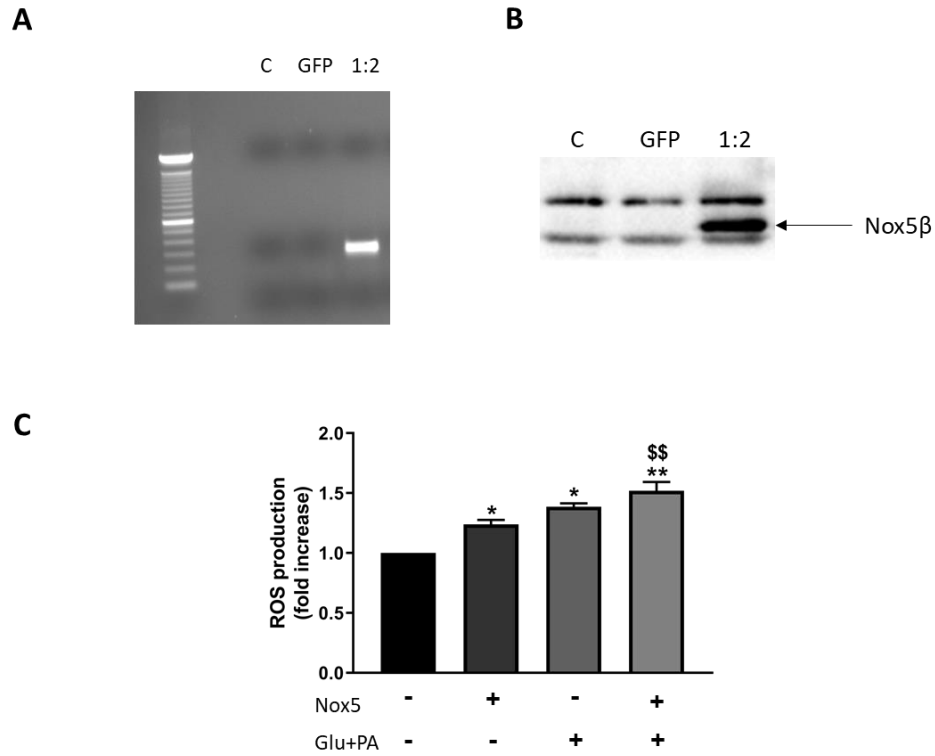


Figure S3. NOX5 transfection of bEnd.3 cell line. (A) Conventional PCR for Nox5 detection after 24 hours of transfection. (B) Representative Western Blot of NOX5 after 24 hours of transfection. (C) Measure of NOX5 activity by Amplex Red after 24 hours of transfection. Cells were treated for 5 hours with 30 mM glucose and 300 μ M palmitic acid to promote NOX5 activity. Amplex Red assay was performed following manufacturer instructions (#A12222, Thermo Fisher Scientific). Fold increase is relative to the control group (Nox(-)/Glu+PA(-)). Values are expressed as mean \pm SEM. * p <0.05: differences relative to Nox(-)/Glu+PA(-); ** p <0.01: differences relative to Nox(-)/Glu+PA(+). Statistical test used: ANOVA.

Table S1. Biochemical parameters determined from plasma samples of mice. Concentration of cholesterol, HDL, TGC, Glucose and ALT was determined from plasma samples obtained before mice were sacrificed.

	Control		High-Fat	
	WT	NC	WT	NC
Cholesterol (mg/dl)	64,41±17,10	61,50±17,10	101,88±28,97 ^{xx}	98,58±13,43 ^{xx}
HDL (mg/dl)	34,42[4,84;42,70]	41,57[13,55;49,15]	49,47[34,72;55,91]	43,01[38,03;48,91]
TGC (mg/dl)	64,75±21,34	62,66±14,12	87±15,26 ^x	83,75±13,75 ^x
Glucose (mg/dl)	82,99±23,28	93,36±22,40	172,27±30,41 ^{xxx}	136,33±25,31 ^{xxx;#}
ALT (U/L)	24,50[16,44;44,30]	25,05[22,20;27,40]	57,60[27,60;101,10]	37,70[21,10;41,55]