

Supplementary Figures file S1: Heart

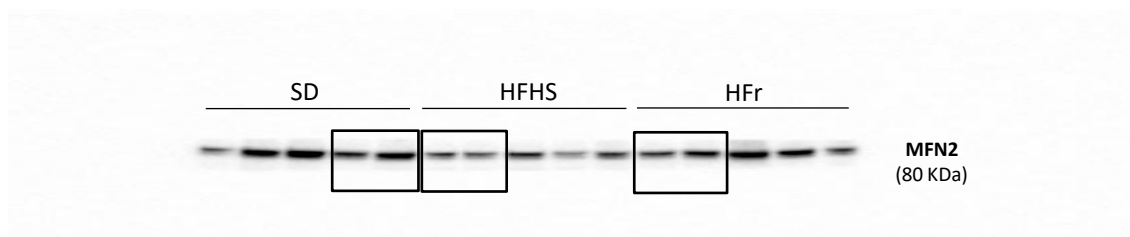


Supplementary Figure S1a. Representative western blotting for β -actin in mouse heart.

Representative whole blots of β -actin protein used in manuscript.

SD (Standard Diet, controls), HFHS (High-Fat High-Sucrose) and HFr (High-Fructose).

The bands enclosed in the boxes are reported in Figure 5.

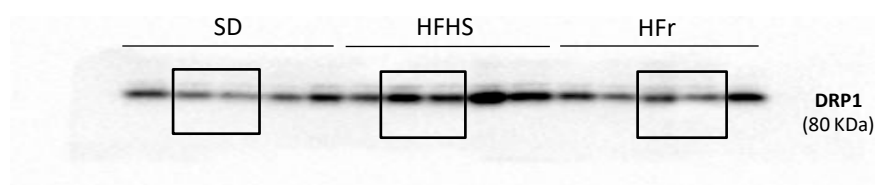


Supplementary Figure S1b. Representative western blotting for MFN2 in mouse heart.

Representative whole blots of MFN2 protein used in manuscript.

SD (Standard Diet, controls), HFHS (High-Fat High-Sucrose) and HFr (High-Fructose).

The bands enclosed in the boxes are reported in Figure 8 (A).

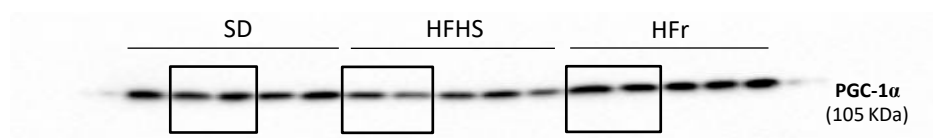


Supplementary Figure S1c. Representative western blotting for DRP1 in mouse heart.

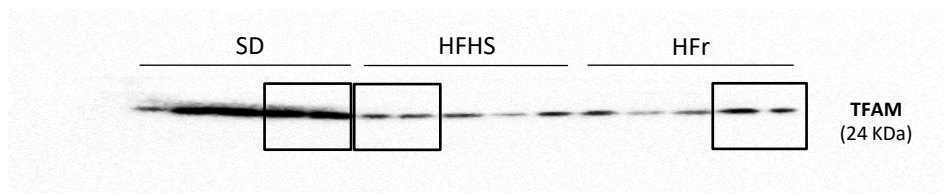
Representative whole blots of DRP1 protein used in manuscript.

SD (Standard Diet, controls), HFHS (High-Fat High-Sucrose) and HFr (High-Fructose).

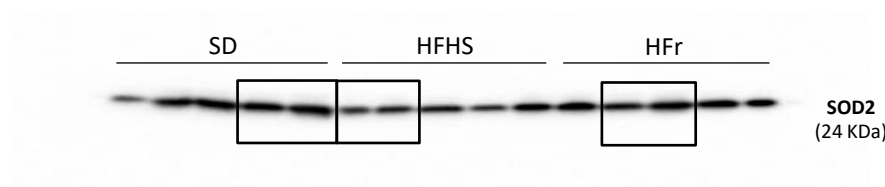
The bands enclosed in the boxes are reported in Figure 8 (B).



Supplementary Figure S1d. Representative western blotting for PGC-1 α in mouse heart.
Representative whole blots of PGC-1 α protein used in manuscript.
SD (Standard Diet, controls), HFHS (High-Fat High-Sucrose) and HFr (High-Fructose).
The bands enclosed in the boxes are reported in Figure 7 (A).



Supplementary Figure S1e. Representative western blotting for TFAM in mouse heart.
Representative whole blots of TFAM protein used in manuscript.
SD (Standard Diet, controls), HFHS (High-Fat High-Sucrose) and HFr (High-Fructose).
The bands enclosed in the boxes are reported in Figure 7 (B).

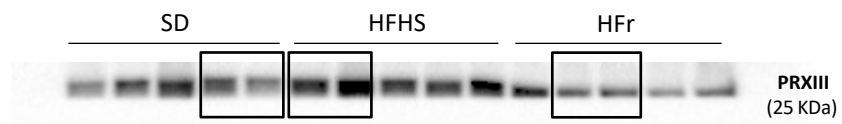


Supplementary Figure S1f. Representative western blotting for SOD2 in mouse heart.

Representative whole blots of SOD2 protein used in manuscript.

SD (Standard Diet, controls), HFHS (High-Fat High-Sucrose) and HFr (High-Fructose).

The bands enclosed in the boxes are reported in Figure 5 (A).

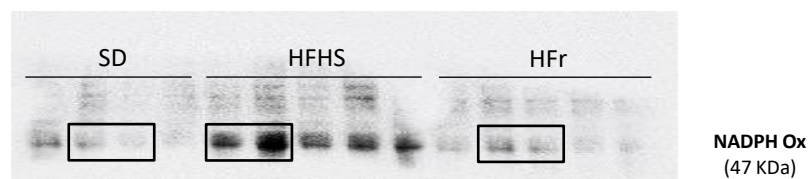


Supplementary Figure S1g. Representative western blotting for PRXIII in mouse heart.

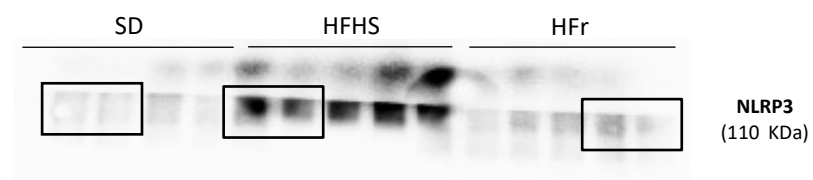
Representative whole blots of PRXIII protein used in manuscript.

SD (Standard Diet, controls), HFHS (High-Fat High-Sucrose) and HFr (High-Fructose).

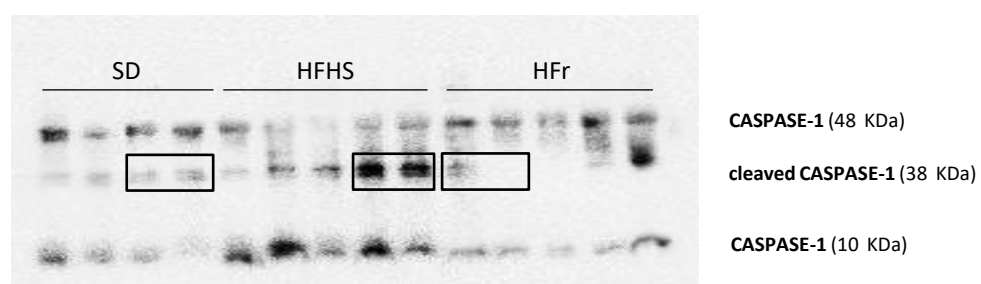
The bands enclosed in the boxes are reported in Figure 5 (B).



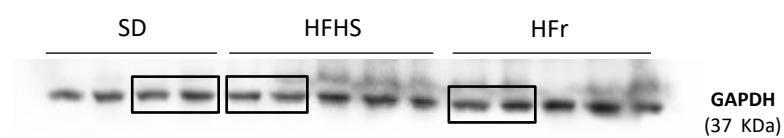
Supplementary Figure S1h. Representative western blotting for NADPH Ox in mouse heart.
Representative whole blots of NADPH Ox protein used in manuscript.
SD (Standard Diet, controls), HFHS (High-Fat High-Sucrose) and HFr (High-Fructose).
The bands enclosed in the boxes are reported in Figure 3 (C).



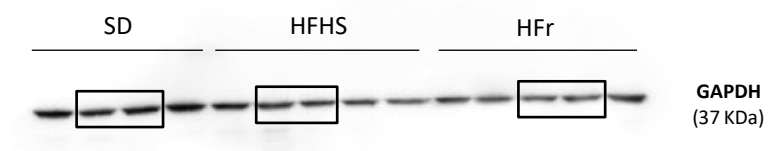
Supplementary Figure S1i. Representative western blotting for NLRP3 in mouse heart.
Representative whole blots of NLRP3 protein used in manuscript.
SD (Standard Diet, controls), HFHS (High-Fat High-Sucrose) and HFr (High-Fructose).
The bands enclosed in the boxes are reported in Figure 3 (A).



Supplementary Figure S1j. Representative western blotting for CASPASE-1 in mouse heart.
 Representative whole blots of cleaved CASPASE-1 protein used in manuscript.
 SD (Standard Diet, controls), HFHS (High-Fat High-Sucrose) and HFr (High-Fructose).
 The bands enclosed in the boxes are reported in Figure 3 (B).

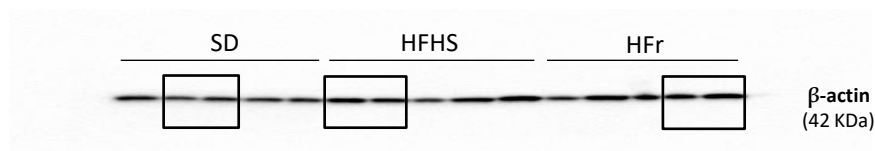


Supplementary Figure S1k. Representative western blotting for GAPDH in mouse heart.
Representative whole blots of GAPDH protein used in manuscript.
SD (Standard Diet, controls), HFHS (High-Fat High-Sucrose) and HFr (High-Fructose).
The bands enclosed in the boxes are reported in Figure 3 (A) and 3 (C).



Supplementary Figure S1l. Representative western blotting for GAPDH in mouse heart.
Representative whole blots of GAPDH protein used in manuscript.
SD (Standard Diet, controls), HFHS (High-Fat High-Sucrose) and HFr (High-Fructose).
The bands enclosed in the boxes are reported in Figure 3 (B).

Supplementary Figures file S2:
Tibialis anterior
skeletal muscle

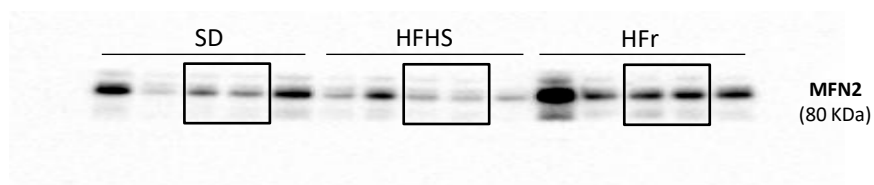


Supplementary Figure S2a. Representative western blotting for β-actin in mouse Tibialis Anterior skeletal muscle.

Representative whole blots of β-actin protein used in manuscript.

SD (Standard Diet, controls), HFHS (High-Fat High-Sucrose) and HFr (High-Fructose).

The bands enclosed in the boxes are reported in Figure 5.

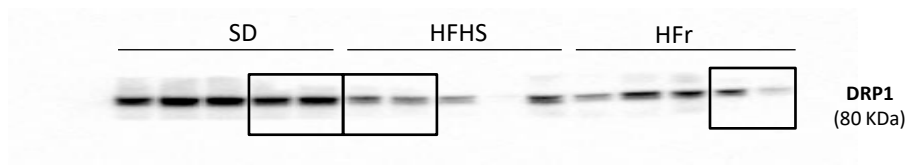


Supplementary Figure S2b. Representative western blotting for MFN2 in mouse Tibialis Anterior skeletal muscle.

Representative whole blots of MFN2 protein used in manuscript.

SD (Standard Diet, controls), HFHS (High-Fat High-Sucrose) and HFr (High-Fructose).

The bands enclosed in the boxes are reported in Figure 8 (A).

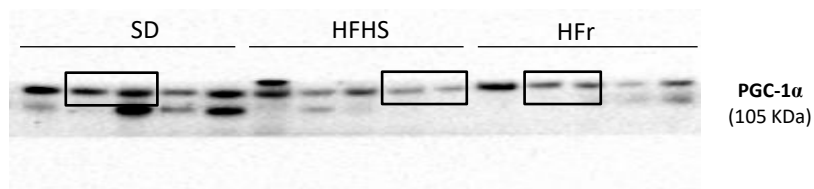


Supplementary Figure S2c. Representative western blotting for DRP1 in mouse Tibialis Anterior skeletal muscle.

Representative whole blots of DRP1 protein used in manuscript.

SD (Standard Diet, controls), HFHS (High-Fat High-Sucrose) and HFr (High-Fructose).

The bands enclosed in the boxes are reported in Figure 8 (B).

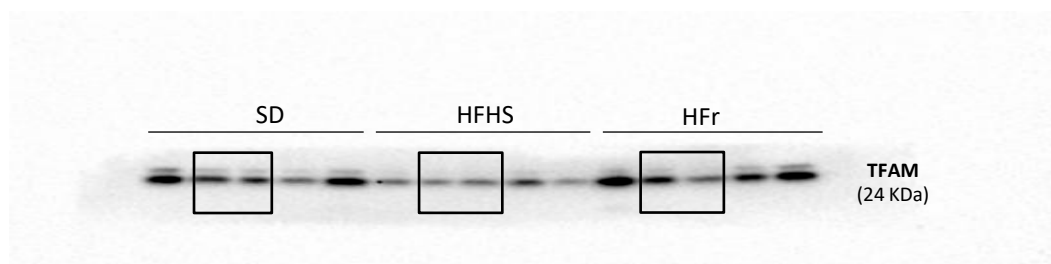


Supplementary Figure S2d. Representative western blotting for PGC-1 α in mouse Tibialis Anterior muscle.

Representative whole blots of PGC-1 α protein used in manuscript.

SD (Standard Diet, controls), HFHS (High-Fat High-Sucrose) and HFr (High-Fructose).

The bands enclosed in the boxes are reported in Figure 7 (A).

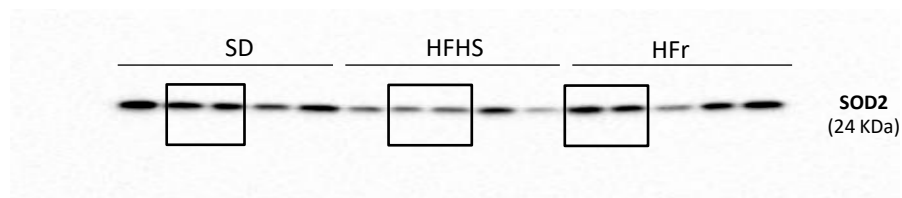


Supplementary Figure S2e. Representative western blotting for TFAM in mouse Tibialis Anterior skeletal muscle.

Representative whole blots of TFAM protein used in manuscript.

SD (Standard Diet, controls), HFHS (High-Fat High-Sucrose) and HFr (High-Fructose).

The bands enclosed in the boxes are reported in Figure 7 (B).

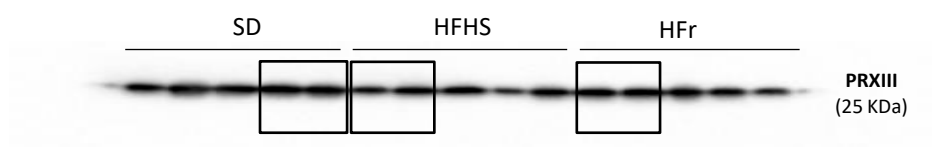


Supplementary Figure S2f. Representative western blotting for SOD2 in mouse Tibialis Anterior skeletal muscle.

Representative whole blots of SOD2 protein used in manuscript.

SD (Standard Diet, controls), HFHS (High-Fat High-Sucrose) and HFr (High-Fructose).

The bands enclosed in the boxes are reported in Figure 5 (A).

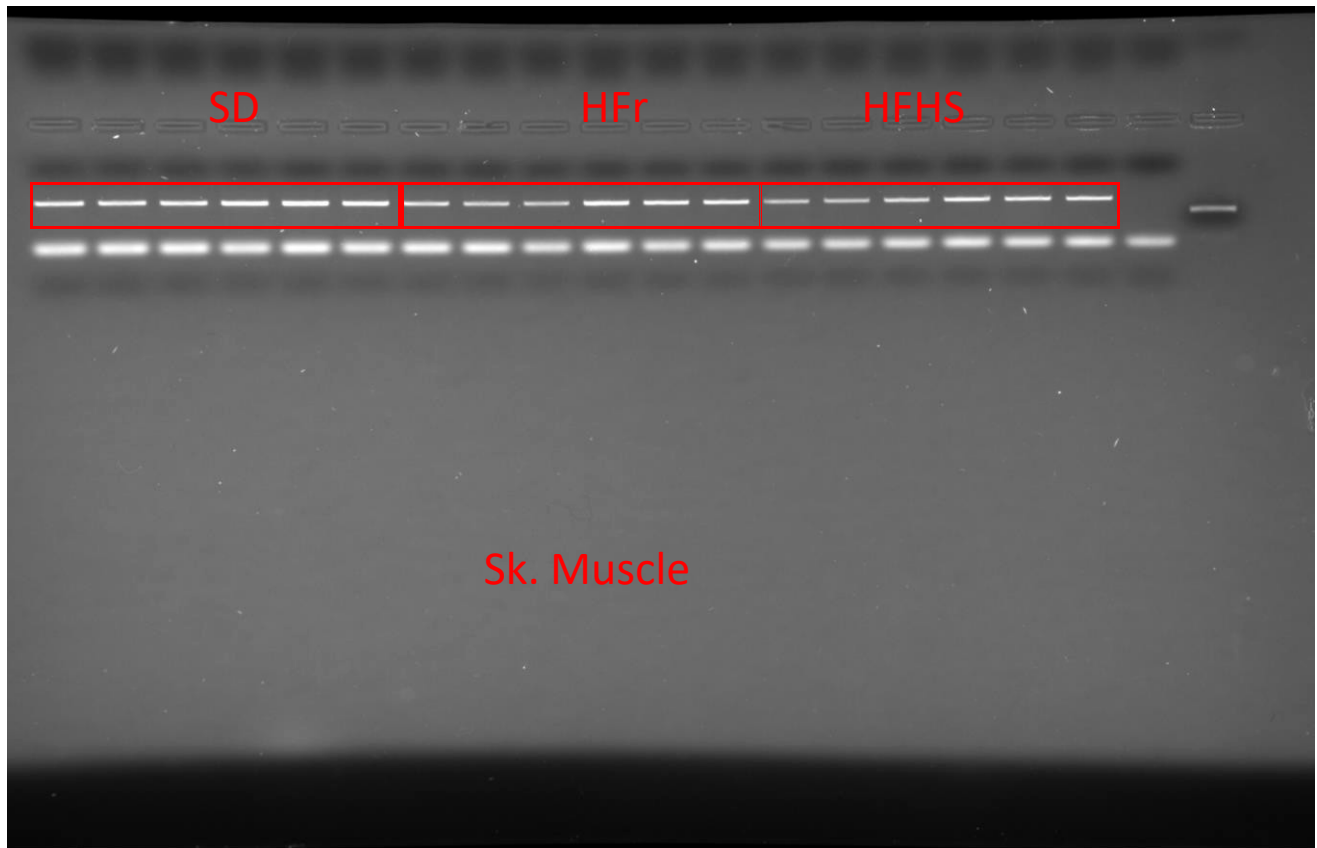


Supplementary Figure S2g. Representative western blotting for PRXIII in mouse Tibialis Anterior skeletal muscle.

Representative whole blots of PRXIII protein used in manuscript.

SD (Standard Diet, controls), HFHS (High-Fat High-Sucrose) and HFr (High-Fructose).

The bands enclosed in the boxes are reported in Figure 5 (B).



Supplementary Figure S2h. Representative agarose gel for amplicons in mouse TibialisAnterior skeletal muscle.

Representative agarose gel showing amplicons obtained from Fpg-treated and untreated total DNA. SD (Standard Diet, controls), HFHS (High-Fat High-Sucrose) and HFr (High-Fructose). The bands enclosed in the boxes are reported in Figure 6 (C).

List of Abbreviations

AGEs	Advanced Glycation End products
AUC	Area Under Curve
CML	N ϵ -(carboxymethyl)-lysine
CVD	Cardiovascular Diseases
DNL	De novo Lipogenesis
DRP1	Dynamin Related Protein 1
ECL	Enhanced Chemiluminescence
ELISA	Enzyme-Linked Immunosorbent Assay
F.I.	Fusion Index
FPG	Formamidopyrimidine/8-oxoguanine DNA N-glycosylase
GAPDH	Glyceraldehyde-3-phosphate Dehydrogenase
GOLD	6-{1-[(5S)-5-ammonio-6-oxido-6-oxohexyl]imidazolium-3-yl}-L-norleucine/glyoxylderived Lysine Dimer
HbA1c	Hemoglobin A1c
HF	High Fat
HFHS	High Fat High Sucrose diet
HFr	High Fructose diet
HRP	Horseradish Peroxidase
IL-1β	Interleukin-1 β
IL-6	Interleukin-6
IL-18	Interleukin-18
ITT	Insulin Tolerance Test
LDH	Lactate Dehydrogenase
MQC	Mitochondrial Quality Control
MFN2	Mitofusin 2
MOLD	6-{1-[(5S)-5-ammonio-6-oxido-6-oxohexyl]-4-methyl-imidazoli/methylglyoxal-Lysine Dimer
MS	Metabolic Syndrome
mtDNA	Mitochondrial DNA
NADPHox	Nicotinamide Adenine Dinucleotide Phosphate Hydrogen oxidase
NAFLD	Non-alcoholic Fatty Liver Disease
NLRP3	Nucleotide-binding domain, Leucine-Rich-containing family, Pyrin domain-containing-3
OGTT	Oral Glucose Tolerance Test
OH8dG	8-hydroxydeoxyguanosine
OXPHOS	Oxidative Phosphorylation
PGC-1α	Peroxisome proliferator-activated receptor-Gamma Coactivator 1alpha
PRXIII	Peroxiredoxin 3
PVDF	Polyvinylidene Difluoride
qRT-PCR	Quantitative Real-Time Polymerase Chain Reaction
RAGE	Receptor for Advance Glycation End-products
ROS	Reactive Oxygen Species
SD	Standard Diet
SDS-PAGE	Sodium Dodecyl Sulphate - Polyacrylamide Gel Electrophoresis
SEM	Standard Error of Mean
SOD2	Superoxide Dismutase 2
T2D	Type 2 Diabetes
TA	Tibialis Anterioris
TFAM	Transcription Factor A, mitochondrial
UHPLC	Ultra-High-Performance Liquid Chromatography
WT	Wild Type