Title: The Low Protein Diet-induced Fetal Programming Leads to Mitochondrial Dysfunction and Metabolic Inflexibility in the Skeletal Muscle of Male Rats.

Vipin A. Vidyadharan[1], Ancizar Betancourt[1], Craig Smith[2], Chellakkan S. Blesson[3], and Chandra Yallampalli[1].

1 Basic Sciences Perinatology Research Laboratories, Department of Obstetrics and Gynecology, Baylor College of Medicine, Houston, Texas 77030, USA.

2. Agilent Technologies Inc., USA.

3. Reproductive Endocrinology and Infertility Division, Department of Obstetrics and Gynecology, Baylor College of Medicine and Family Fertility Center, Texas Children's Hospital, Houston 77030, Texas, USA.

Supplemental Information

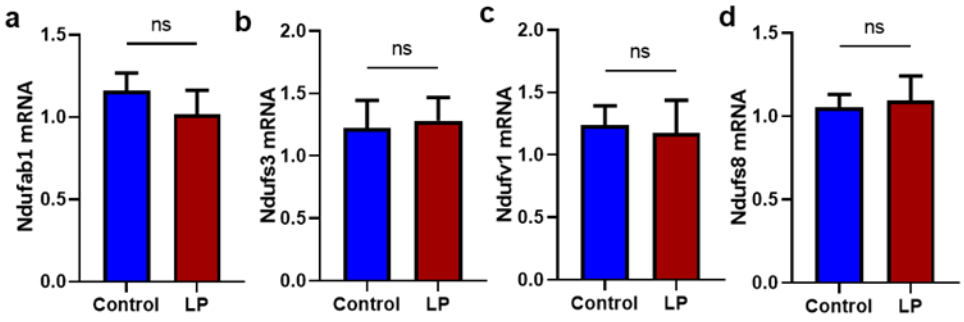


Figure S1. Effects of LP programming on the expression of key nuclear genes involved in the 499 complex-1 function in the GS muscle of control and LP rats. The mRNA levels of 500 mitochondrial dynamic genes: (a) Ndufab1(b) Ndufs3 (c) Ndufv1 (d) Ndufs8 were analyzed by qPCR. The mRNA expressions of each gene were normalized to the average of internal controls. Data represent mean ± SEM (* $p<0.05$, ** $p<0.01$); n = 5.

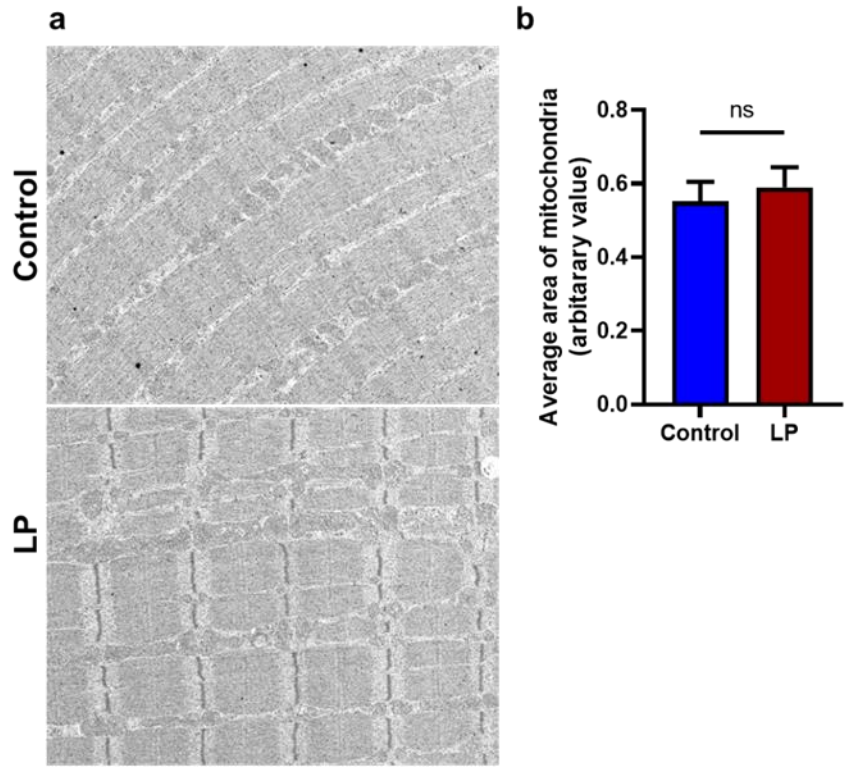


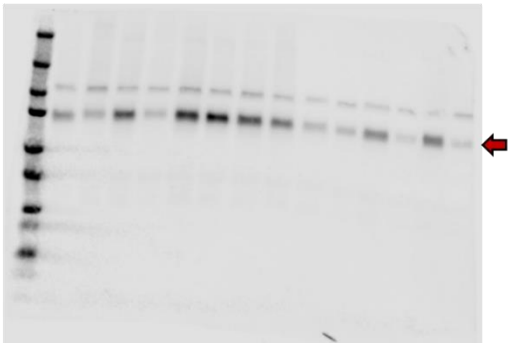
Figure S2. The LP diet altered the mitochondrial morphology in the GS muscle of the offspring. (a) Representative TEM images showing mitochondrial morphology (b) A graph showing the average area of mitochondria in the GS muscle.

Original Figures (Western blotting, Figure 2, 5, and 8)

Figure 2

Lane	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Sample order:	M	C	LP	C	LP	C	LP	C	LP	C	LP	C	LP	C	LP
Sample Name:		MC1	MLP1	MC2	MLP2	MC3	MLP3	MC4	MLP4	MC5	MLP5	MC6	MLP6	MC7	MLP7

MFN2: ~86 kDa



FIS1: ~17 kDa

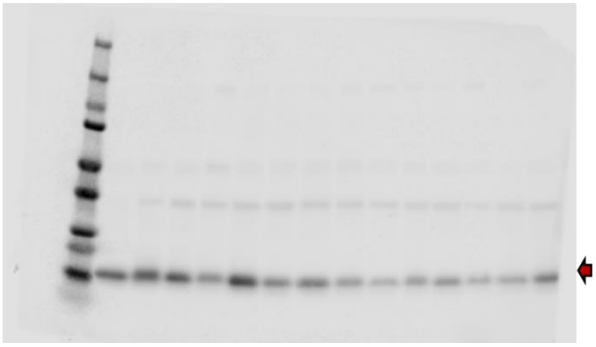
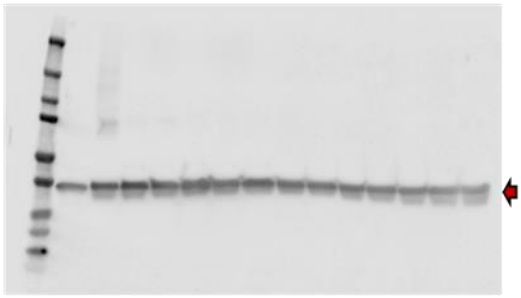
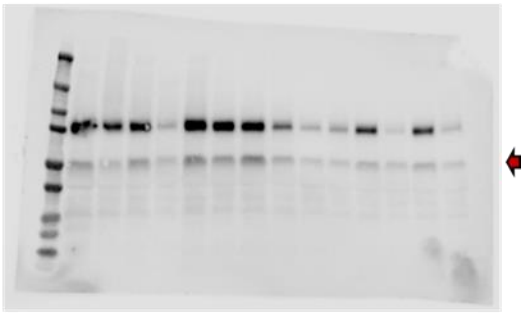


Figure 2

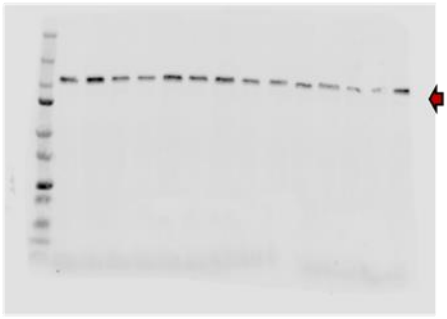
GAPDH: 36 kDa



ESSRA: 50 kDa



PGC1B: 113 kDa



MFN1~91kDa

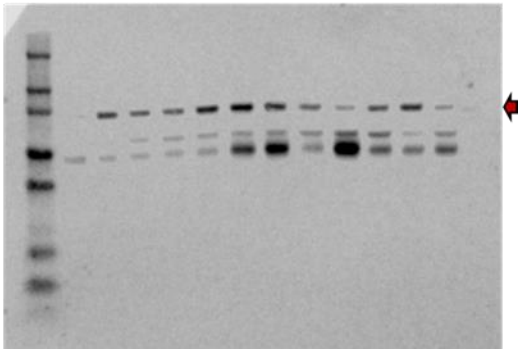
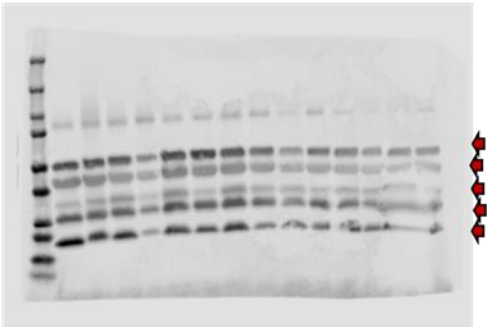


Figure 5

Lane	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Sample order:	M	C	LP	C	LP	C	LP	C	LP	C	LP	C	LP	C	LP
Sample Name:		MC1	MLP1	MC2	MLP2	MC3	MLP3	MC4	MLP4	MC5	MLP5	MC6	MLP6	MC7	MLP7

OXPHOS: CI subunit NDUFB8 (20 kDa), CII SDHB (30kDa), CIII-Core protein 2 (48 k Da), CIV subunit MTCO1 (40 kDa), and CV-ATP5A (55 kDa)



GAPDH: 36 kDa

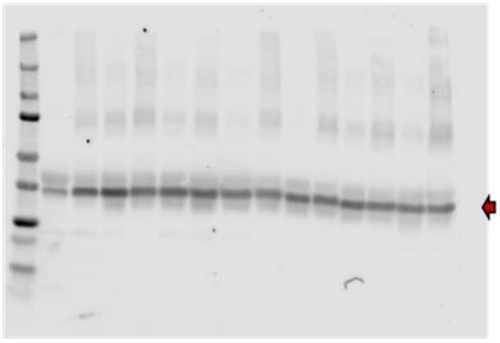
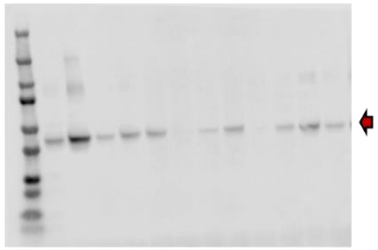


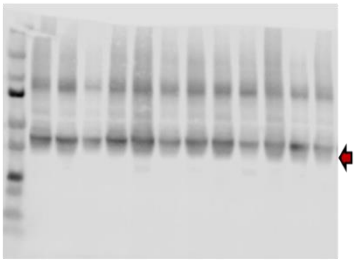
Figure 8

Lane	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Sample order:	M	C	LP	C	LP	C	LP	C	LP	C	LP	C	LP	-	-
Sample Name:		MC1	MLP1	MC2	MLP2	MC3	MLP3	MC4	MLP4	MC5	MLP5	MC6	MLP6	-	-

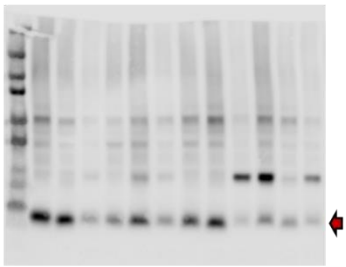
pPDHA1: 43 kDa

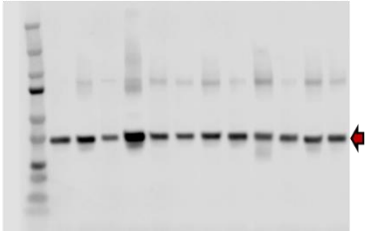


PDHA1:43 kDa



MPC1~12 kDa





GAPDH: 36 kDa