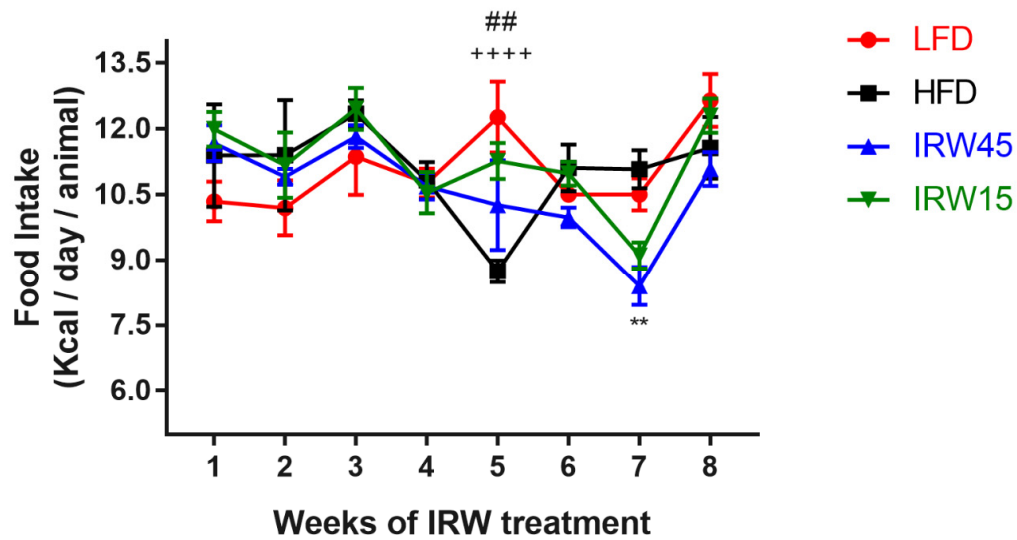
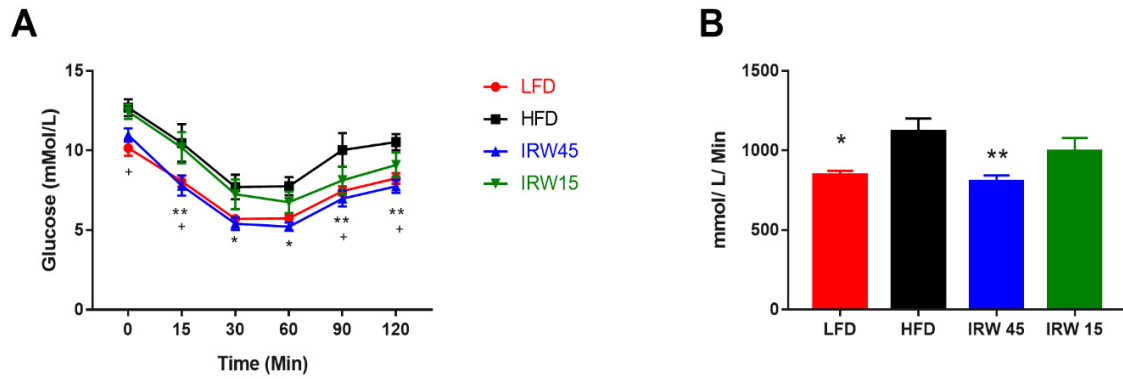


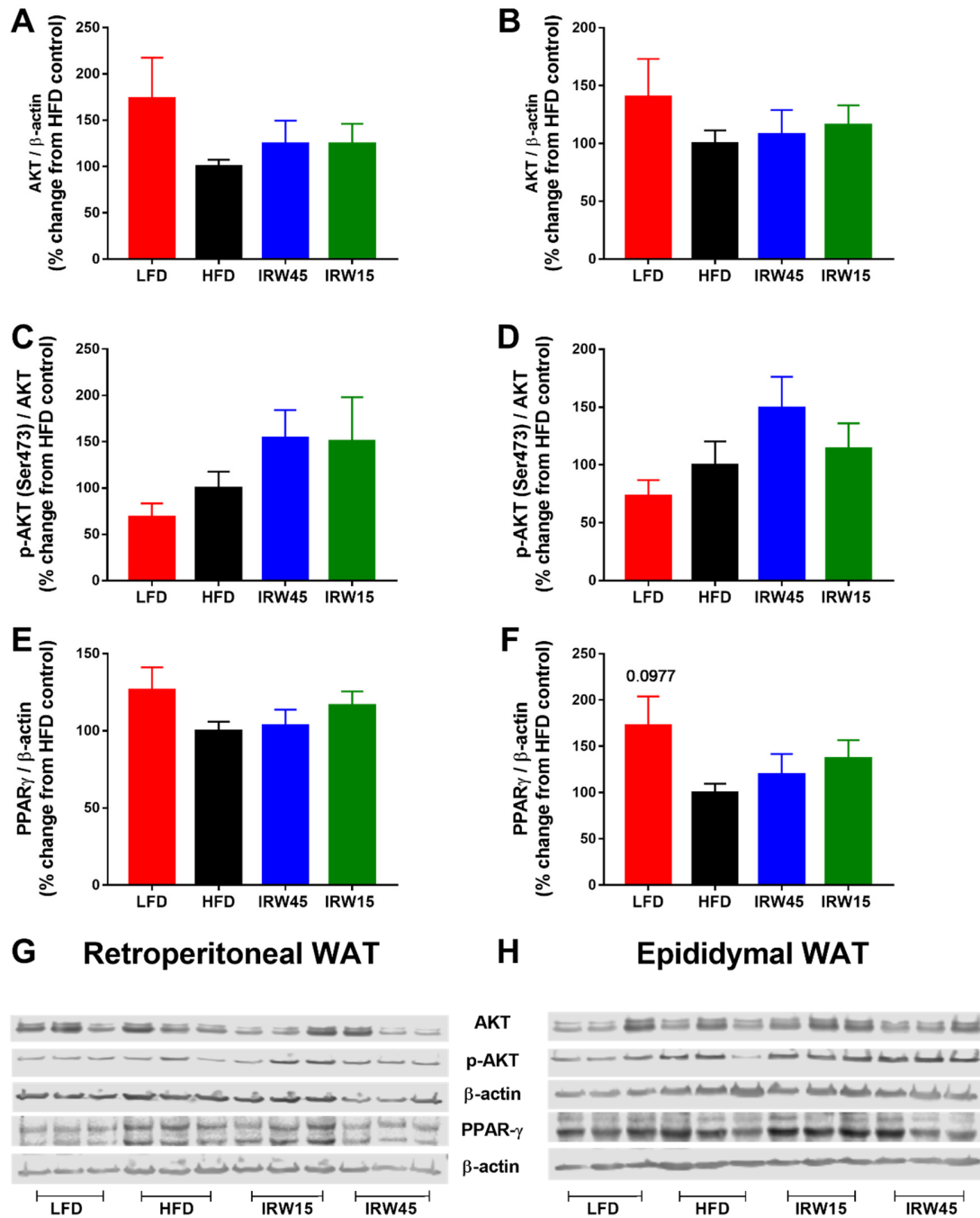
## Supplementary Material



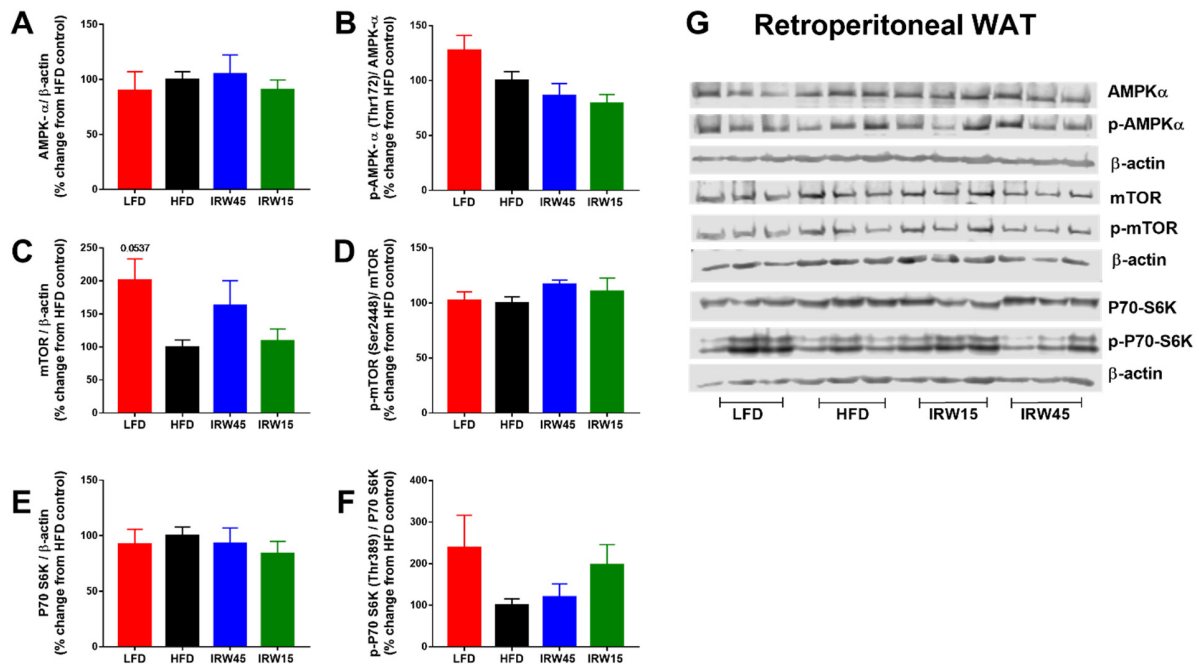
**Figure S1: Food intake measured as kcal intake per day per animal during 8 weeks of IRW treatment.** Data expressed as mean  $\pm$  SEM of n=8 mice. Analysis by two-way ANOVA followed by Bonferroni's post-hoc comparison test. \*\*  $p < 0.01$  between IRW45 and HFD. ##  $p < 0.01$  between IRW15 and HFD. +++++  $p < 0.0001$  between LFD and HFD.



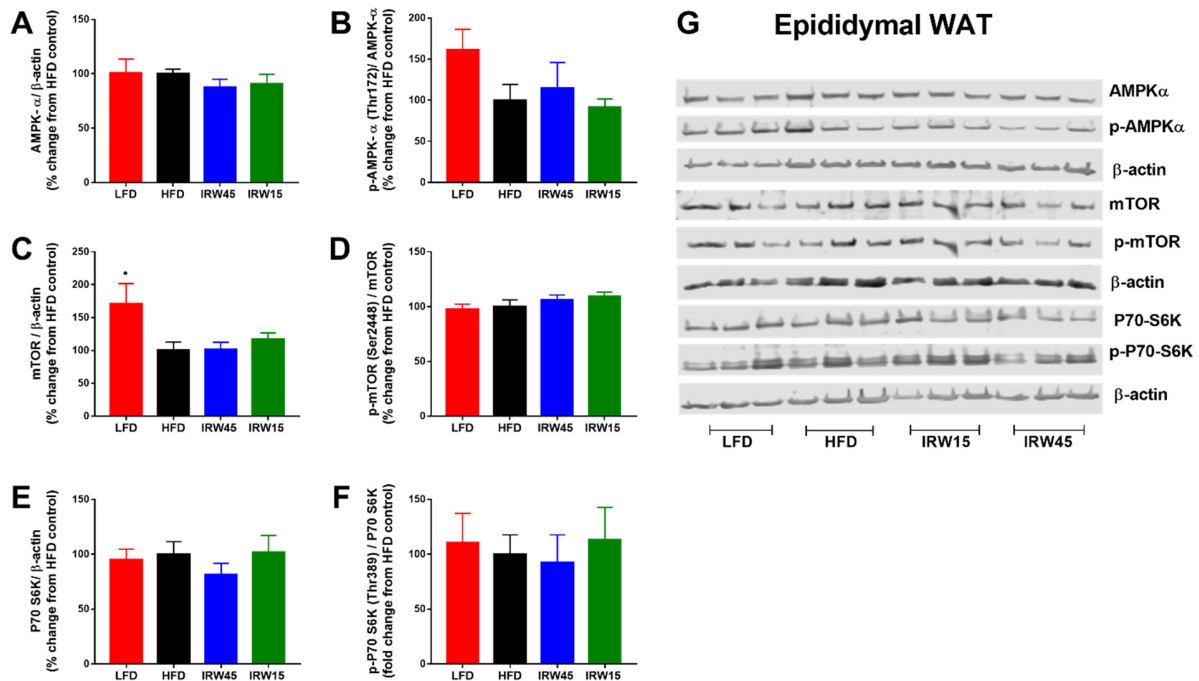
**Figure S2: (A)** Insulin Tolerance test (ITT) and **(B)** Area under the curve (AUC) for OGTT after 8 weeks of IRW supplementation (n= 8). Data expressed as mean  $\pm$  SEM and analyzed by two-way ANOVA (A) or one-way ANOVA (B) followed by Bonferroni's post-hoc comparison test. \* p<0.05 and \*\* p<0.01 between IRW45 and HFD. + p<0.05 between LFD and HFD.



**Figure S3: White adipose tissue (WAT) insulin signaling and PPAR $\gamma$  protein abundance.** Retroperitoneal WAT (A) AKT, (C) p-AKT (E) PPAR $\gamma$  and (G) representative blots. Epididymal WAT (B) AKT, (D) p-AKT, (F) PPAR $\gamma$  and (H) representative blots. p-AKT protein band was normalized to total AKT. PPAR $\gamma$  protein band was normalized to  $\beta$ -actin as the loading control. Data expressed as mean  $\pm$  SEM of  $n = 6$  mice. Analysis by one-way ANOVA followed by Bonferroni's post-hoc test; or Kruskal-Wallis test followed by Dunn's post hoc test when appropriate. AKT, protein kinase B; PPAR $\gamma$ , Peroxisome proliferator-activated receptor gamma.



**Figure S4: Retroperitoneal white adipose tissue (WAT) AMPK $\alpha$ , mTOR and P70 S6K protein abundance.** (A) AMPK $\alpha$ , (B) p-AMPK $\alpha$  (C) mTOR, (D) p-mTOR, (E) P70 S6K, (F) p-P70 S6K and (G) representative blots. Phospho proteins were normalized by their respective total protein. Total protein was normalized to  $\beta$ -actin as the loading control. Data expressed as mean  $\pm$  SEM of  $n=6$  mice. Analysis by one-way ANOVA followed by Bonferroni's post-hoc test; or Kruskal-Wallis test followed by Dunn's post hoc test when appropriate. AMP, AMP-activated protein kinase; mTOR, mammalian target of rapamycin; P70 S6K, Ribosomal protein S6 kinase beta-1.



**Figure S5: Epididymal white adipose tissue (WAT) AMPK $\alpha$ , mTOR and P70 S6K protein abundance.** (A) AMPK $\alpha$ , (B) p-AMPK $\alpha$  (C) mTOR, (D) p-mTOR, (E) P70 S6K, (F) p-P70 S6K and (G) representative blots. Phospho proteins were normalized by their respective total protein. Total protein was normalized to  $\beta$ -actin as the loading control. Data expressed as mean  $\pm$  SEM of n= 6 mice. Analysis by one-way ANOVA followed by Bonferroni's post-hoc test; or Kruskal-Wallis test followed by Dunn's post hoc test when appropriate. \* p<0.05 versus HFD. AMPK, 5' AMP-activated protein kinase; mTOR, mammalian target of rapamycin; P70 S6K, Ribosomal protein S6 kinase beta-1. \* p<0.05 versus HFD.

**Table S1. Body composition of C57BL/6 mice after 6 weeks of LFD or HFD feeding.**

	<b>LFD (n=7-8)</b>	<b>HFD (n=24)</b>
<b>BW gain (g)</b>	8.37±1.0 <sup>a</sup>	9.23±0.4 <sup>a</sup>
<b>Fat mass %</b>	22.25 ± 1.5 <sup>a</sup>	29.94 ± 0.7 <sup>b</sup>
<b>Lean mass %</b>	70.26 ± 1.5 <sup>a</sup>	63.14 ± 0.7 <sup>b</sup>

Abbreviations: LFD, low fat diet; HFD, high fat diet.

**Table S2. Primers sequences used for RT-PCR assays**

<b>Gene</b>	<b>Forward Primer</b>	<b>Reverse Primer</b>
<b>RBM5</b>	TTGTAATCTGAGTCCCGCCG	CATGGGTGGTATGTTTTAAGGGA
<b>MDM2</b>	CCACAGACTAACGACTCGACC	TTTTTGAGGCCCTACTGCGA
<b>DLG1</b>	AGATCGCATCATATCGGTGAA	TCAAAACGACTGTACTCTTCGG
<b>MYOM1</b>	CAGATGTGTGGCCTCAACTGA	TCGGATTGACTTTGCTCCT
<b>ASPN</b>	CTCCAATGTGTGGGTAGGGG	GCACCTGGATCCTAACCCTC
<b>PPARG</b>	GGGAAAGACCAGCAACAACC	GCAGTGGAAGAATCGGACCT
<b>PLIN2</b>	GAAGGACGTGCAAACAGAAAGG	CTGGGCTATCACGTGGCTCG
<b>LPL</b>	GGGAAAGGACTCAGCAGTGTT	TAGGTGGAGGCCACTTCAAGA
<b>CEBPA</b>	CCCTTGCTTTTTGCACCTCC	TGCCCCCATTCTCCATGAAC
<b>GAPDH</b>	TGAAATGTGCACGCACCAAG	GGGAAGCAGCATTCAGGTCT