**Supplemental Figure S1.** *Gdf3 null* allele. (left) The *Gdf3* gene contains two exons. A Pgk1-HPRT expression cassette was inserted in reverse orientation at the *Gdf3* locus, resulting in deletion of exon 2 and functional inactivation of the *Gdf3* gene. (right) Southern blot analysis of genomic tail DNA from mice that were either wild type (WT), heterozygous (+/-) or homozygous (-/-) for the null allele. The wild type (10 kb) and null (3.1 kb) alleles were distinguishable upon restriction endonuclease digestion with Sal I (S) and BamHI (B) followed by hybridization with a 5' probe.

**Supplemental Figure S2.** Histological comparisons of liver, skeletal muscle, and brown adipose from 12-week-old wild type and *Gdf3*<sup>-/-</sup> mice on high fat diet. Muscle samples are gastrocnemius/soleus, and brown adipose samples are from suprascapular fat pads. Hematoxylin and eosin staining, liver is shown under medium (approximately 100X) magnification, while brown adipose and muscle is under high (approximately 200X) magnification.







