LIVER AMPK REGULATES TOTAL BODY LIPID ACCUMULATION ON A LCHF DIET BUT IS DISPENSABLE FOR INSULIN RESISTANCE

Katherine E. Kistler, Cody M. Cousineau, JeAnna R. Redd, Claire D. Gleason, Noura El Habbal, Molly ? Mulcahy, Detrick Snyder, Dave Bridges

Abstract

Introduction

Methods

* Generating liver-specific AMPKalpha1/2 knockout mice
  + Black 6 mice that harbored homozygous, floxed alleles for both AMPK a1 and a2 were obtained from (\_\_??\_). To produce liver-specific AMPKalpha1/2 knockout mice, at 70 days old these mice were injected through the tail vein with adeno-associated virus (AAV2/8?) expressing either GFP (control) or Cre (treatment) recombinase from a liver-specific TBG promoter (AAV-TBG-GFP or AAV-TBG-CRE).
* Confirming Knockout using Western blotting
* Body composition measurements using MRI
* Retro-orbital bleeding
* Ketone body analysis
* Insulin tolerance tests
* Sacrifice mice

Results

* Experimental Design
  + Mice were raised on a normal chow diet (Lab Diet; 2.91 kcal/g; 5% fat, 24% protein, 2.7% sucrose, 32% starch). At 70 days old, mice were injected with either AAV-TBG-GFP or AAV-TBG-CRE to produce liver-specific knockouts and controls. The mice continued to consume normal chow for two weeks post injection at which point they were placed on either a ketogenic (KD) (6.4 kcal/g; 85% fat, 15% protein, 0% sucrose, 0% starch) or matched control diet (CD) (3.8 kcal/g; 10% fat, 15 protein, 0% sucrose, 75% starch). One week later, blood samples were taken using retro-orbital bleeding and ketone bodies were analyzed (do I include that here?). Another week later insulin tolerance tests was performed. Two weeks later mice were sacrificed, tissues were collected and ketone bodies were analyzed. Body composition (weight, fat mass and lean mass) and food intake was measured weekly from the start of injections until sacrifice.

Discussion

Author Contributions

Acknowledgements

References

Figure/Table Legends