Review of: "LKB1 acts as a critical brake for the glucagon-mediated fasting response"

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It has been found that both loss of LKB1 results in extreme weight loss due to fat and muscle wasting. In this study, the authors extended these findings to demonstrate the role of LKB1 in modulating the hepatic fasting response and overall impact on liver zonation. The study is very interesting to identify LKB1 in hepatocyte as a brake to the hepatic metabolic compartmentalization. The data are organized and presented very clear. However, the explanations for the phenotype are not strong enough. Several concerns should be verified.

1. Describe the LKB1 expression profile in liver of mice before and after fasting.

2. FigS1A AMPK expression and phosphorylation in liver tissues from WT and KO mice should not be detected separately.

3. The present data just indicate that LKB1 deletion induced fasting response and hepatic metabolic compartmentalization is related to glucagon signaling. However, the exact role of glucagon signaling in this process requires to be revealed.