Reagents. U-^{13}C-glutamine (CLM-1822), U-^{13}C-Glucose (CLM-1396-5), U-^{13}C-Pyruvate (CLM-2440) and α-^{15}N-glutamine (NLM-1016) were from Cambridge Isotopes Laboratories; ^{13}C-bicarbonate (372382), L-aspartate (A8949) and Sodium Oxamate (O2751) and all remaining reagents were obtained from Sigma-Aldrich.

Statistical Analyses. Two-tailed Student's t were performed with Graph Pad Prism 5.01 software (GraphPad Software Inc). When unequal variances between experimental groups were computated, Welch's correction was applied. Raw data of independently repeated experiments are provided in Supplementary Table 3. Statistical analyses were performed using the number of wells as the sample size (n). Wells represent technical replicate samples set up and assessed in parallel within a single experiment using identical conditions. Details on the numbers of wells assessed and the number of times experiments were performed independently are provided in every figure legend. **Bioinformatic processing and statistical analysis of the untargeted metabolomic data.** Log transformed metabolic intensities were analysed in R using Limma package implementing moderated t-statistic with Empirical Bayes correction and Benjamini and Hochberg adjusted p-values. Three dominant principal components analysis[43], built on metabolites displaying a maximal coefficient of variance <0.1, depicts the effect of genotype and treatment in the data.

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