

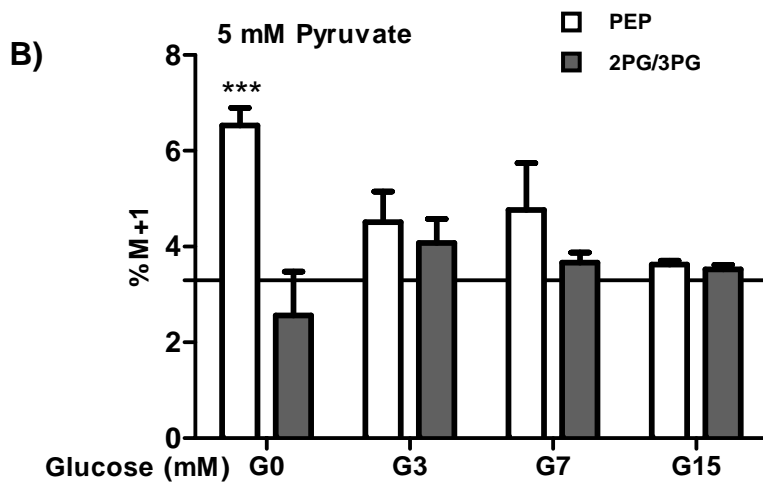
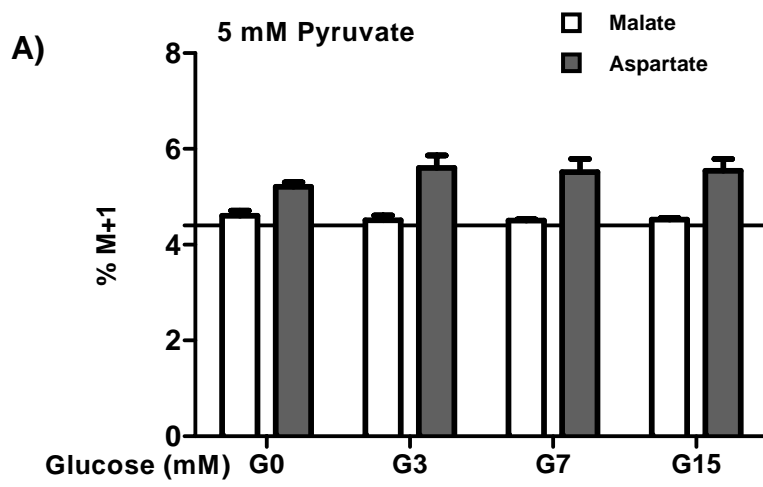
SUPPLEMENTAL FIGURE LEGENDS:

Supplemental Figure 1. Natural abundance measurement of aspartate, malate, PEP, and phosphoglycerates.

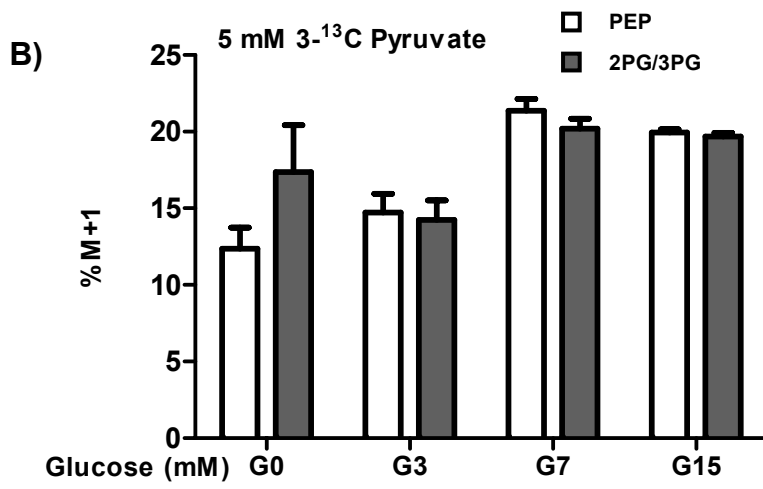
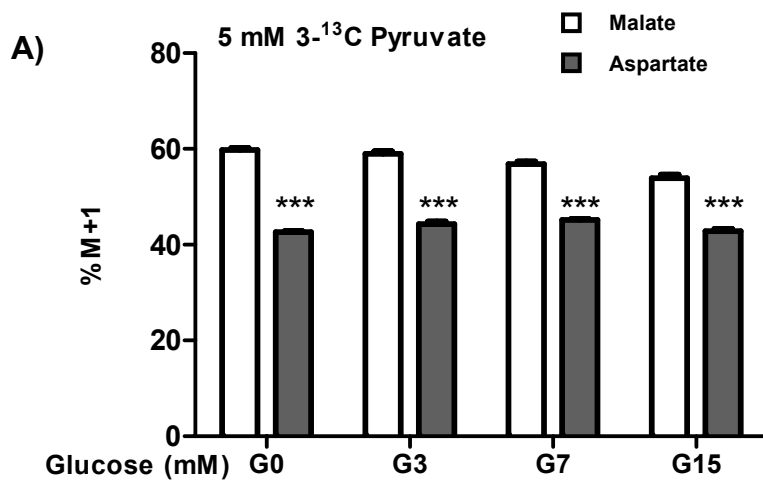
Parallel incubations of cells with unlabeled pyruvate were performed as described and shown in Fig. 3. **(A)** Natural abundance of 4 carbons compounds: malate and aspartate. Expected natural abundance indicated by the horizontal bar is 4.4%. **(B)** Natural abundance of 3 carbons compounds: PEP and phosphoglycerates (2-PG and 3-PG). Expected natural abundance indicated by the horizontal bar is 3.3%. (Error bars are S.E.M. and significance by ANOVA within each analyte; *** P <0.001)

Supplemental Figure 2. Percent M+1 isotopologues concentrations of aspartate, malate, PEP, and phosphoglycerates.

The % M+1 of aspartate, malate, PEP, and phosphoglycerates (2-PG/3-PG) from the experiment in Fig. 3. For comparison the % M+1 rather than APE were shown because of differences in natural abundance enrichments as shown in Fig. S1. **(A)** % M+1 malate compared to aspartate at different glucose concentrations. **(B)** % M+1 for PEP compared to 2PG/3PG at different glucose concentrations. (Error bars are S.E.M. and significance by t-test; *** P <0.001)



Supplemental Figure 1



Supplemental Figure 2