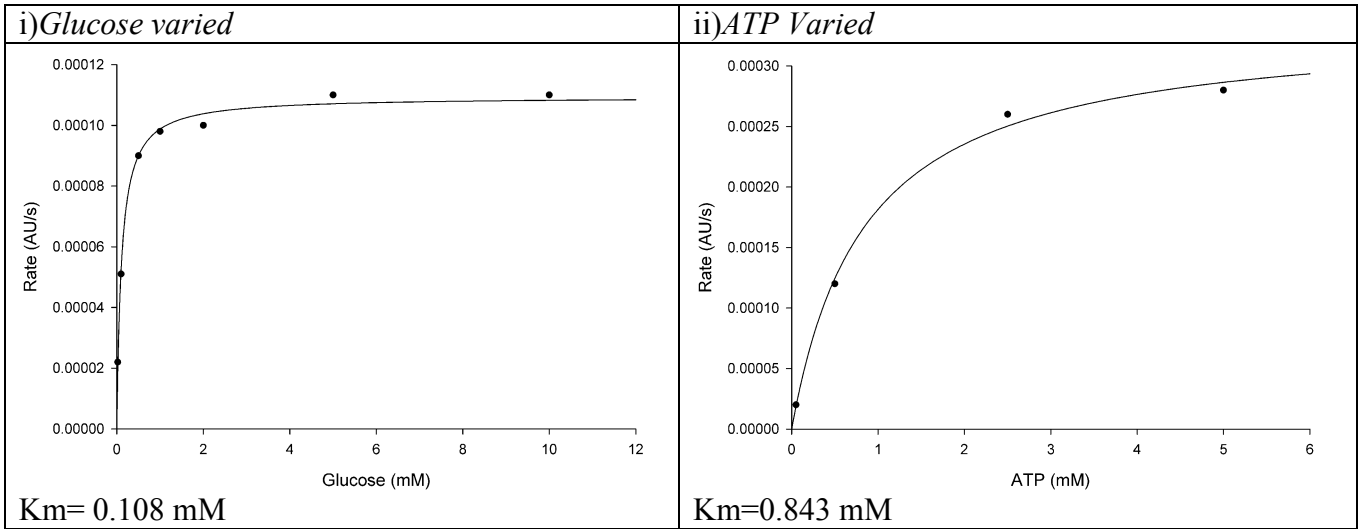
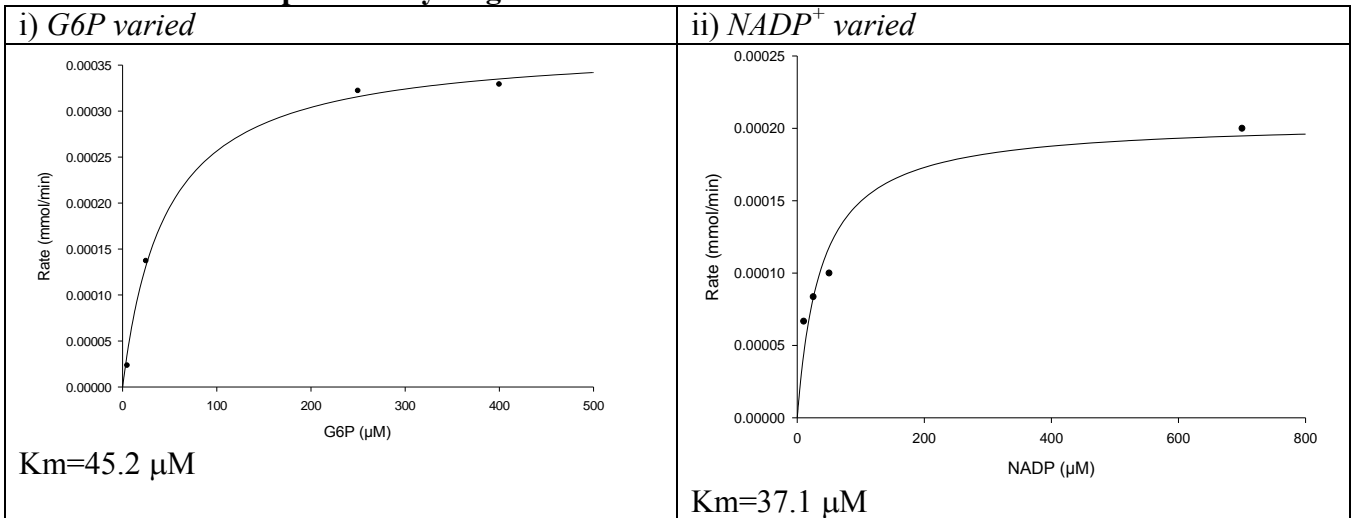


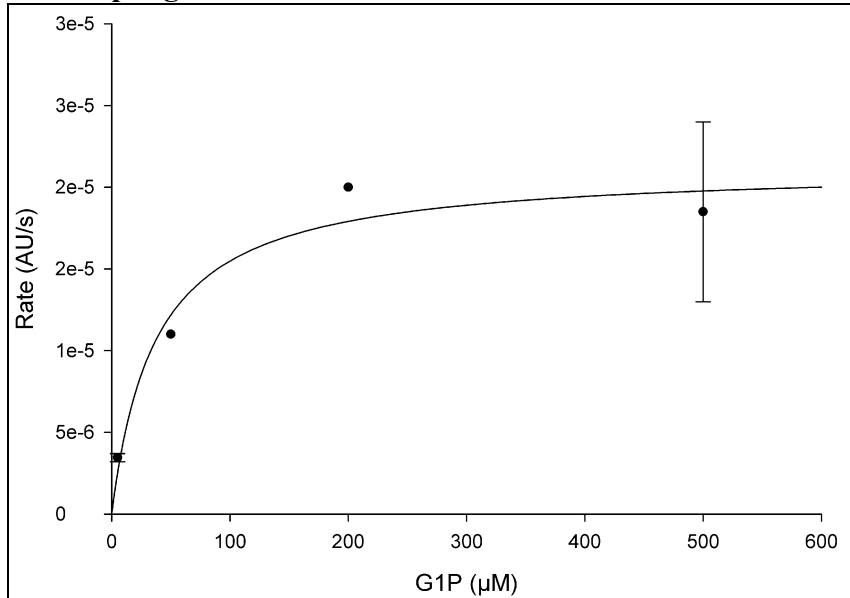
**Supplemental Figure 1**  
**A. Hexokinase**



**B. Glucose-6-Phosphate Dehydrogenase**

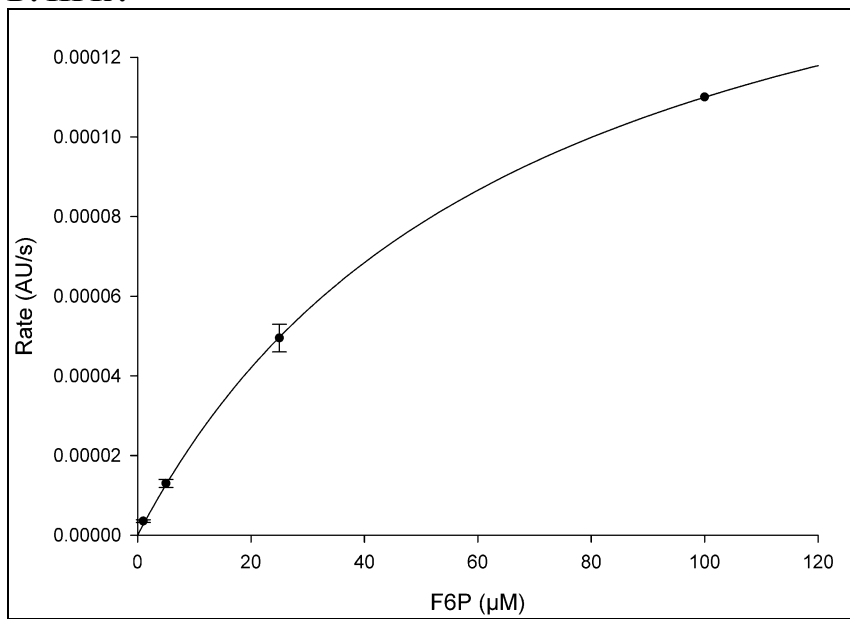


### C. Phosphoglucomutase



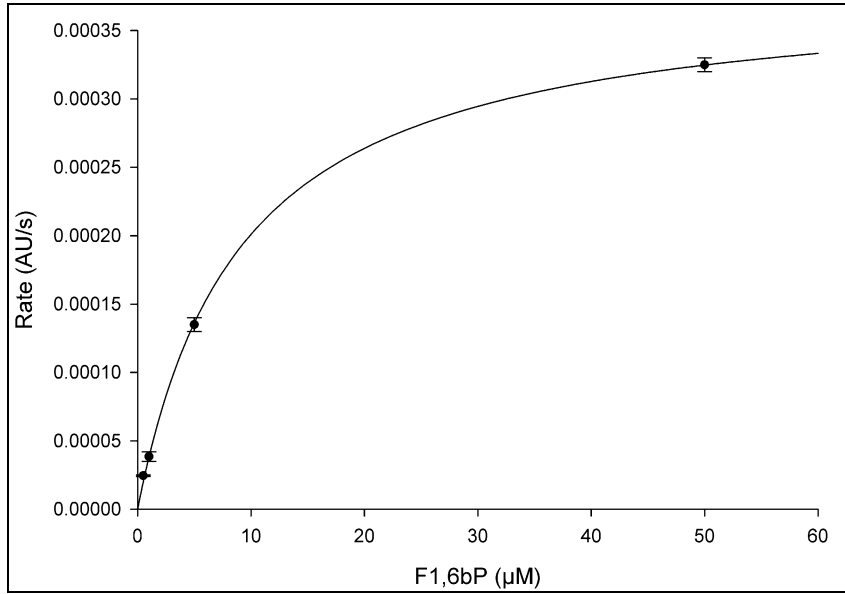
$K_m = 37.2 \mu\text{M}$

### D. HPIr:



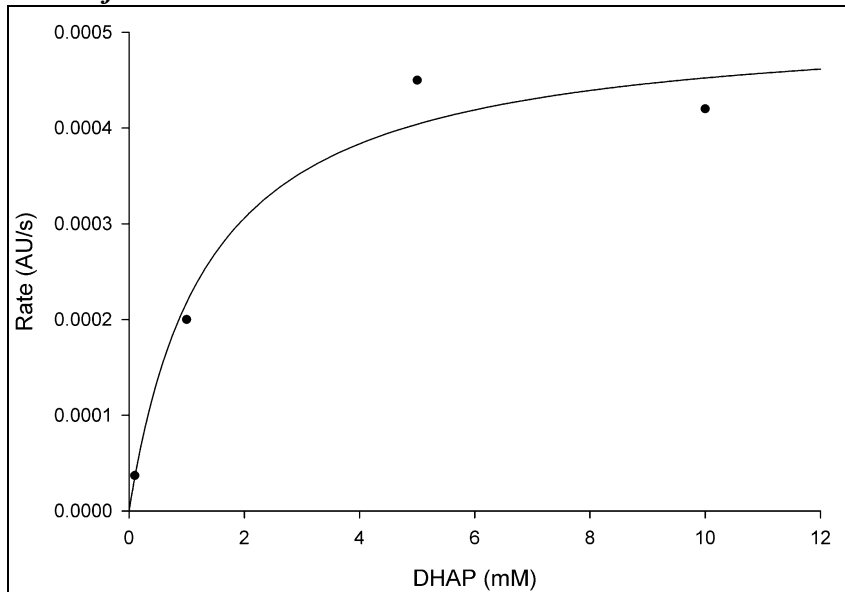
$K_m = 67.8 \mu\text{M}$

### E. Aldolase



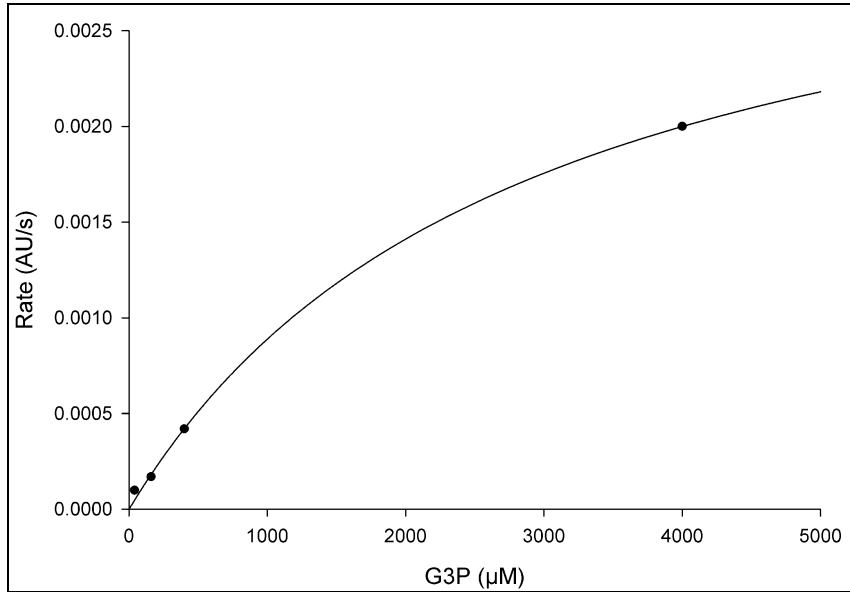
$K_m = 9.1 \mu\text{M}$

### F. TIMf



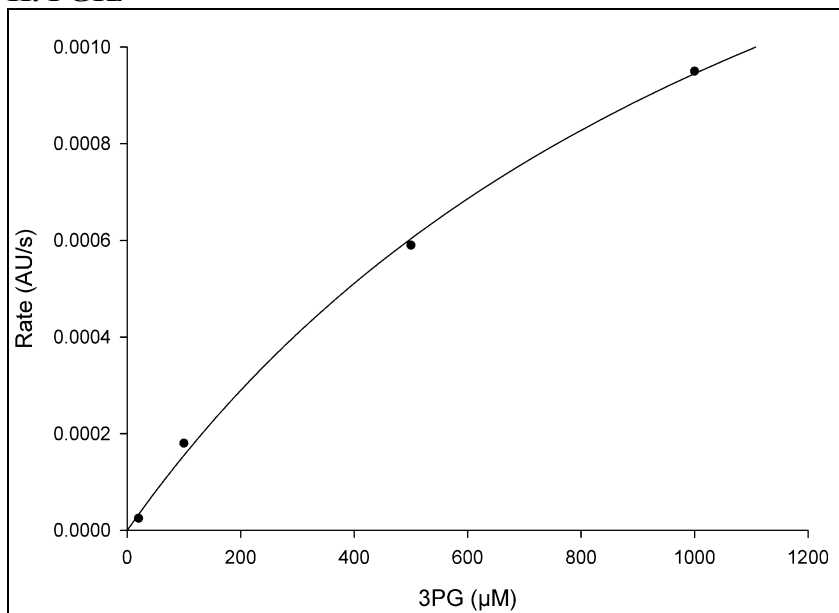
$K_m = 1.4 \text{ mM}$

**G. TIMr**



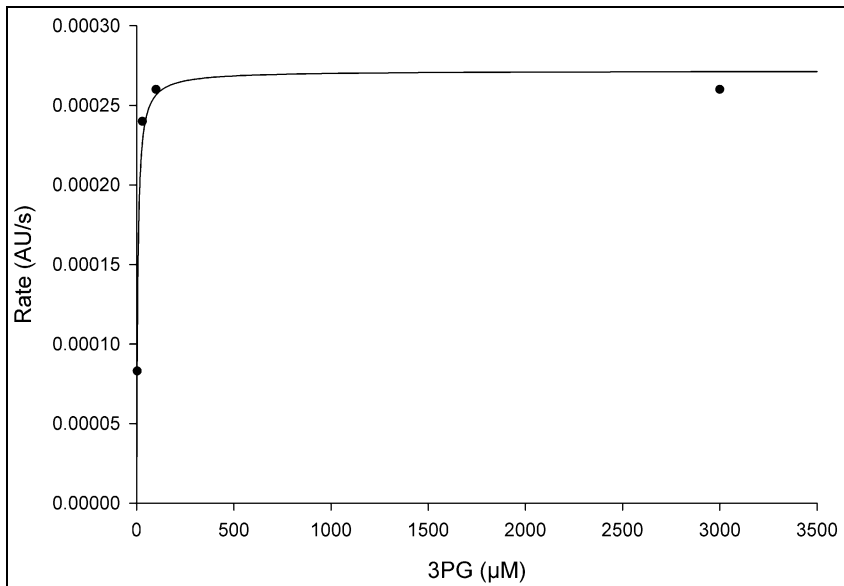
$K_m=2853 \mu\text{M}$

**H. PGKr**



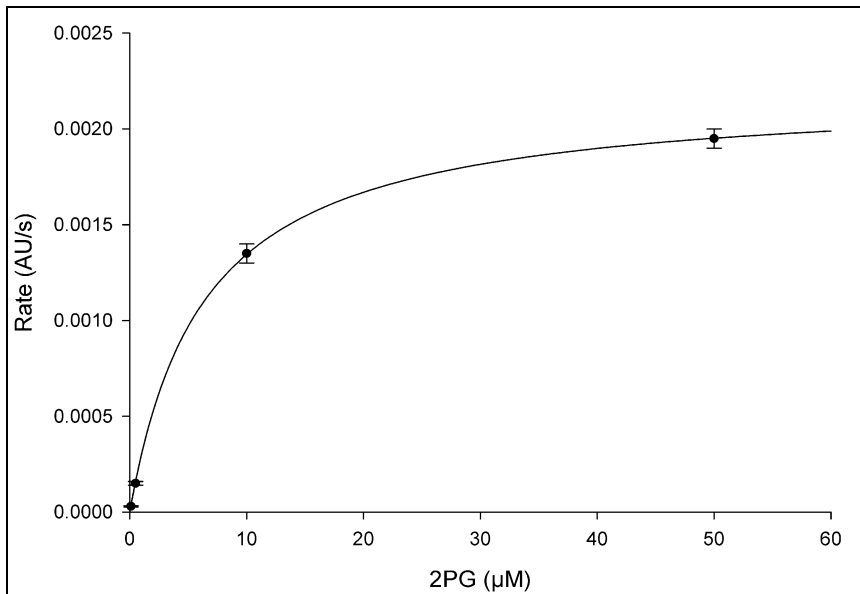
$K_m=1580 \mu\text{M}$

### I. PhosphoglycerateMutase (PGaM)



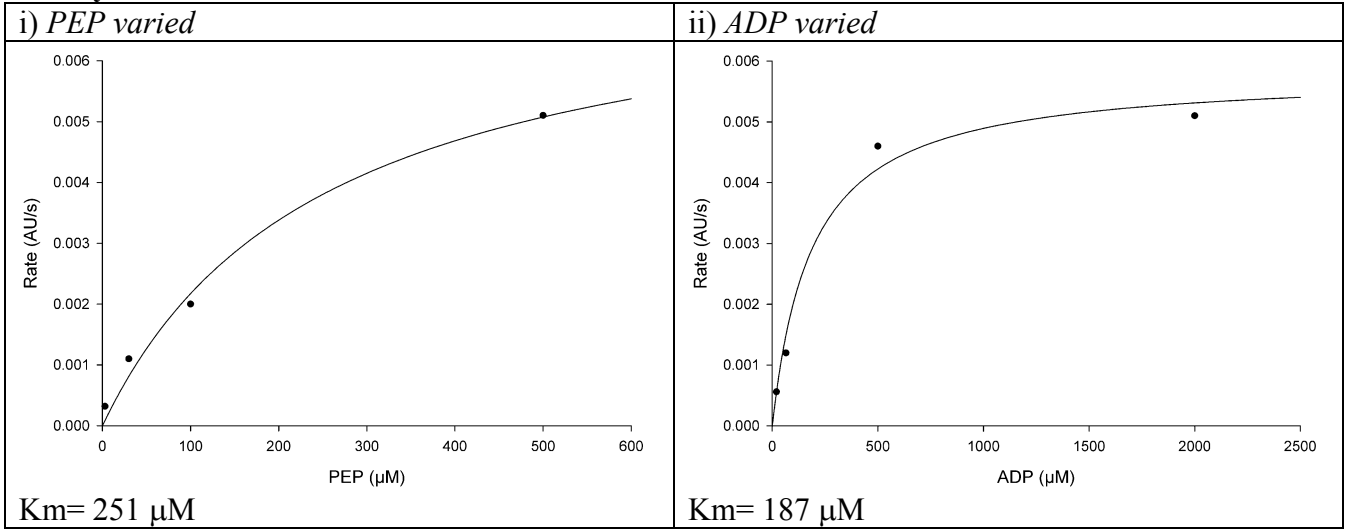
$K_m = 5.9 \mu\text{M}$

### J. Enolase

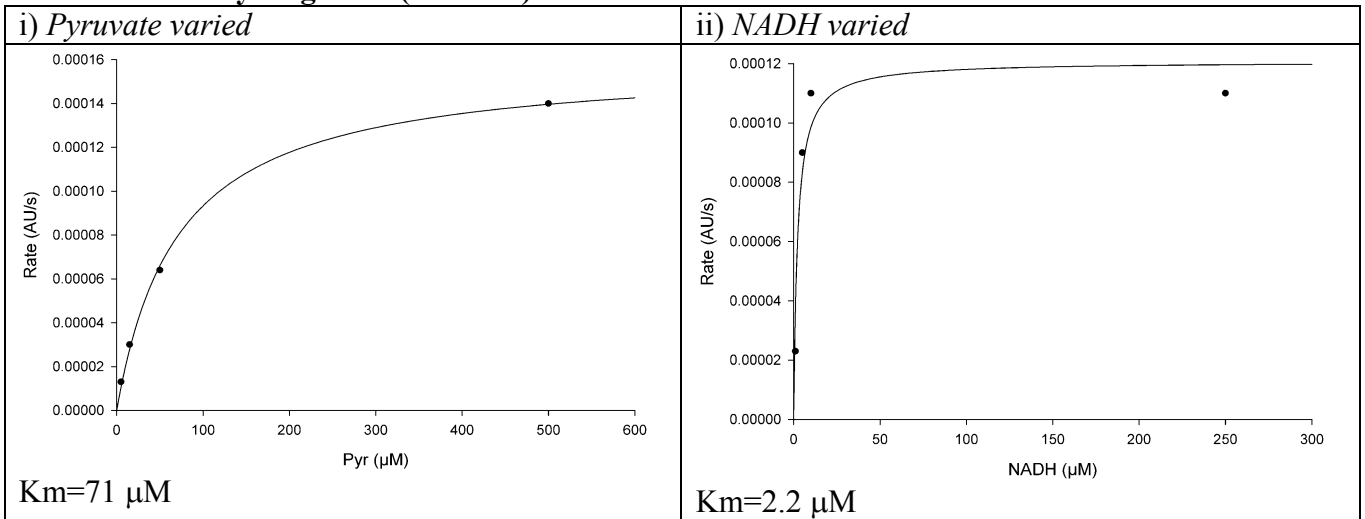


$K_m = 6.3 \mu\text{M}$

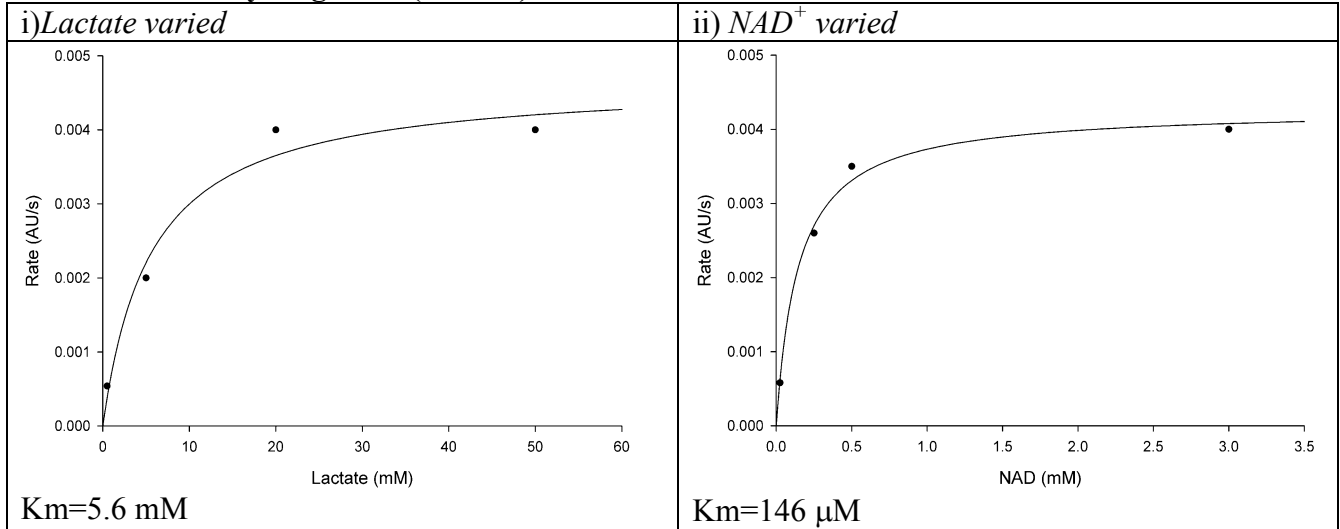
### K. Pyruvate Kinase



### L. Lactate Dehydrogenase (forward)

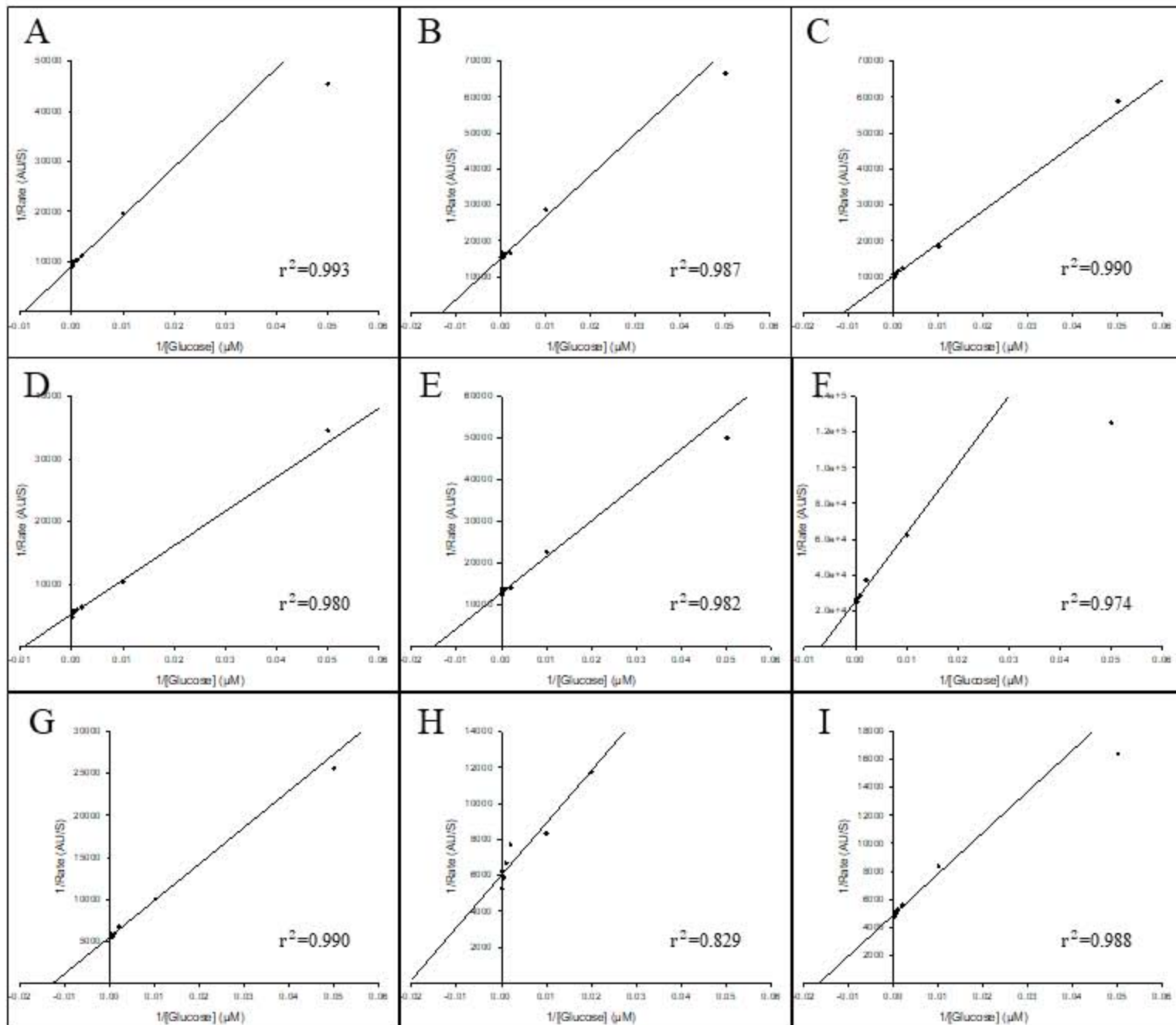


### M. Lactate Dehydrogenase (reverse)



**Supplemental Figure 1:** Representative Michaelis-Menten curve fits for each enzyme with single measurements for each point unless otherwise noted: A. Hexokinase (HK), i) glucose varied at 10 mM ATP and ii) ATP varied at 3 mM Glucose; B. Glucose-6-Phosphate dehydrogenase (G6PDH), i) G6P varied at 700  $\mu$ M NADP<sup>+</sup> and ii) NADP<sup>+</sup> varied at 400  $\mu$ M G6P; C. Phosphoglucomutase (PGM); D. Hexose Phosphate isomerase (reverse) (HPIr); E. Aldolase (forward) mean  $\pm$ SD in duplicate; F. Triose phosphate isomerase (TIMf) G. Triose phosphate isomerase reverse (TIMr); H. Phosphoglycerate kinase reverse (PGKr); I. Phosphoglycerate Mutase (PGaM); J. Enolase, mean  $\pm$  SD in duplicate; K. Pyruvate Kinase (PYK) i. PEP varied at 1 mM ADP ii. ADP varied at 0.6 mM PEP; L. Lactate dehydrogenase forward (LDHf) i. pyruvate varied at 150  $\mu$ M NADH ii. NADH varied at 300  $\mu$ M pyruvate M. Lactate dehydrogenase reverse (LDHr) i) lactate varied at mM NAD<sup>+</sup> ii) NAD<sup>+</sup> varied at mM lactate;





**Supplemental Figure 2: HK Lineweaver-Burk plots.** Three independent assays for control (A-C), 10  $\mu\text{M}$   $\text{P}_4$  (D-F), and 10 nM  $\text{E}_2$  (G-I). Initial rates measured in GMMc cytosolic enzyme extract (n=1, 5 mM Glucose).