Supporting information

Human Phosphoglycerate Dehydrogenase Produces the Oncometabolite D-2-Hydroxyglutarate

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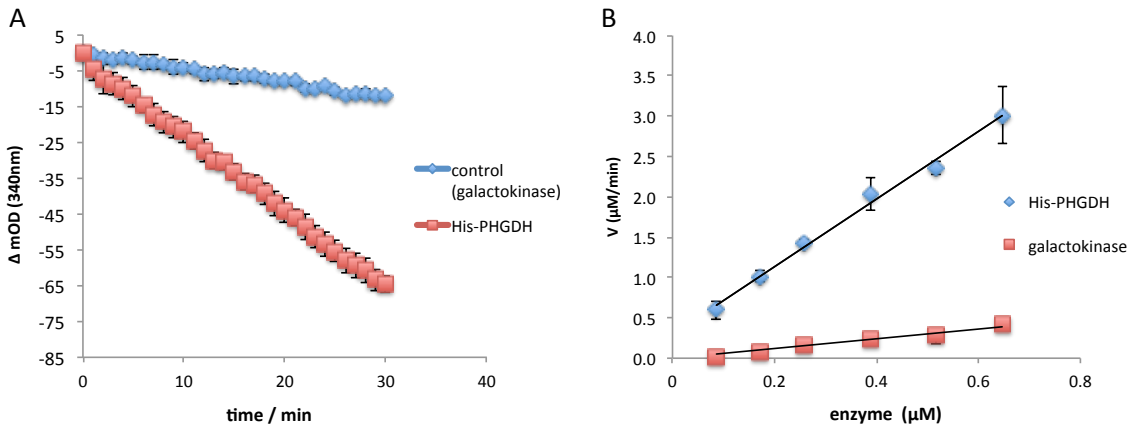
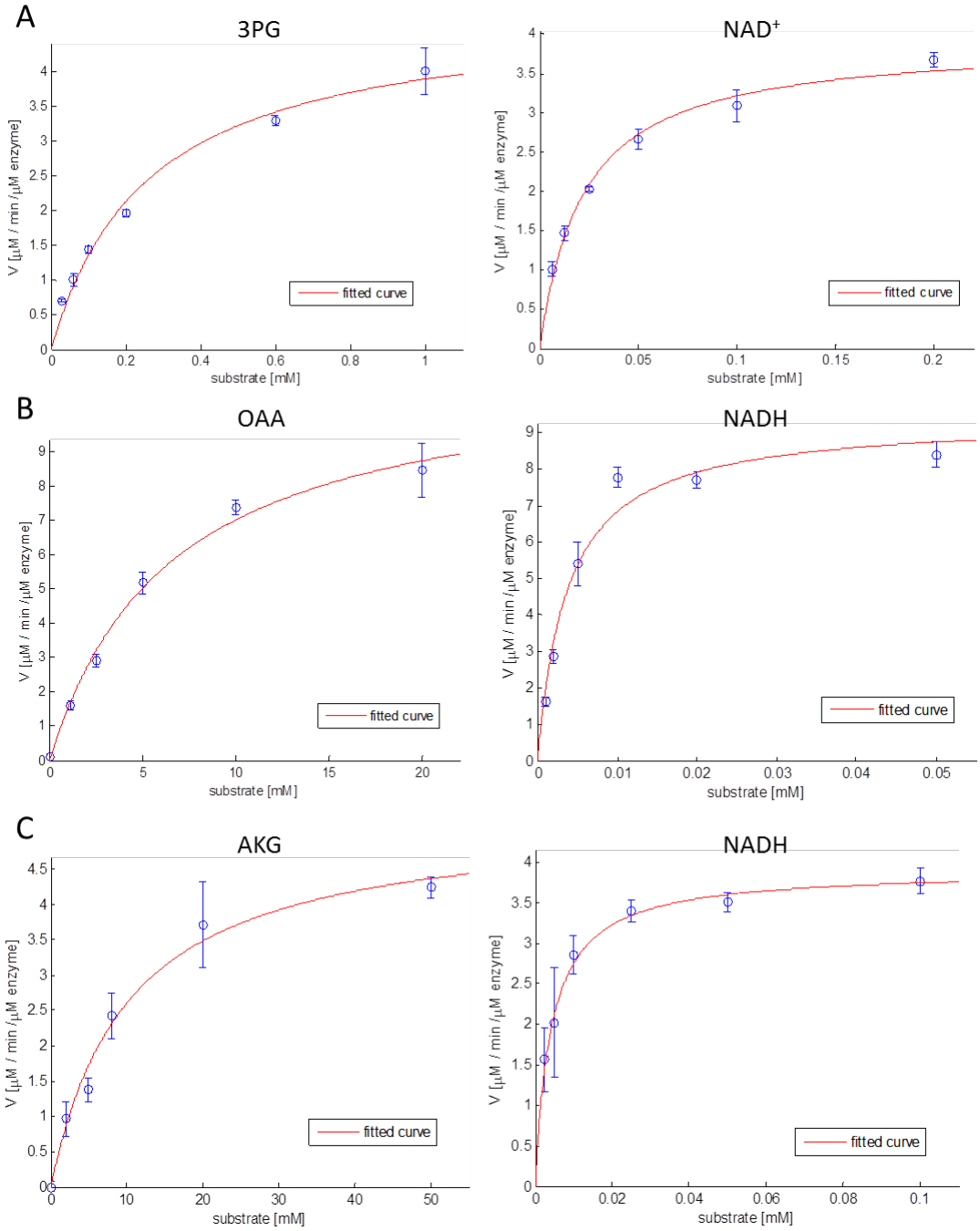


Supplementary Figure 1. PHGDH catalyzes AKG reduction. (A) NADH-dependent AKG reduction was tested using 5 mM AKG and 0.5 mM NADH. Reaction rate was measured by the NADH absorbance at 340nm. The rate of decrease in NADH absorbance catalyzed by His-PHGDH was compared against same reaction using same amount of His-galactokinase in place of His-PHGDH. (B) NADH oxidation rate in present of AKG and various amount of His-PHGDH or His- galactokinase.



Supplementary Figure 2. PHGDH reaction kinetics. Initial reaction rates with saturating concentration of one substrate and varying concentrations of the other substrate. Data were fitted to the Michaelis–Menten equation by non-linear least squares. Fitting result shown as red line. (A) NAD^+-dependent 3-phosphoglycerate oxidation. (B) NADH-dependent OAA reduction. (C) NADH-dependent AKG reduction.