Supplementary Material

Figure. 1 Physical properties of At5g36160 effects of temperature and pH on enzyme activity. The transamination reaction was carried out using the forward assay using L-Tyrosine (10 mM) as the amino donor and 2-ketoglutarate (10 mM) as the amino acceptor by measuring the production of 4-hydroxyphenylpyruvate at 320 nm.

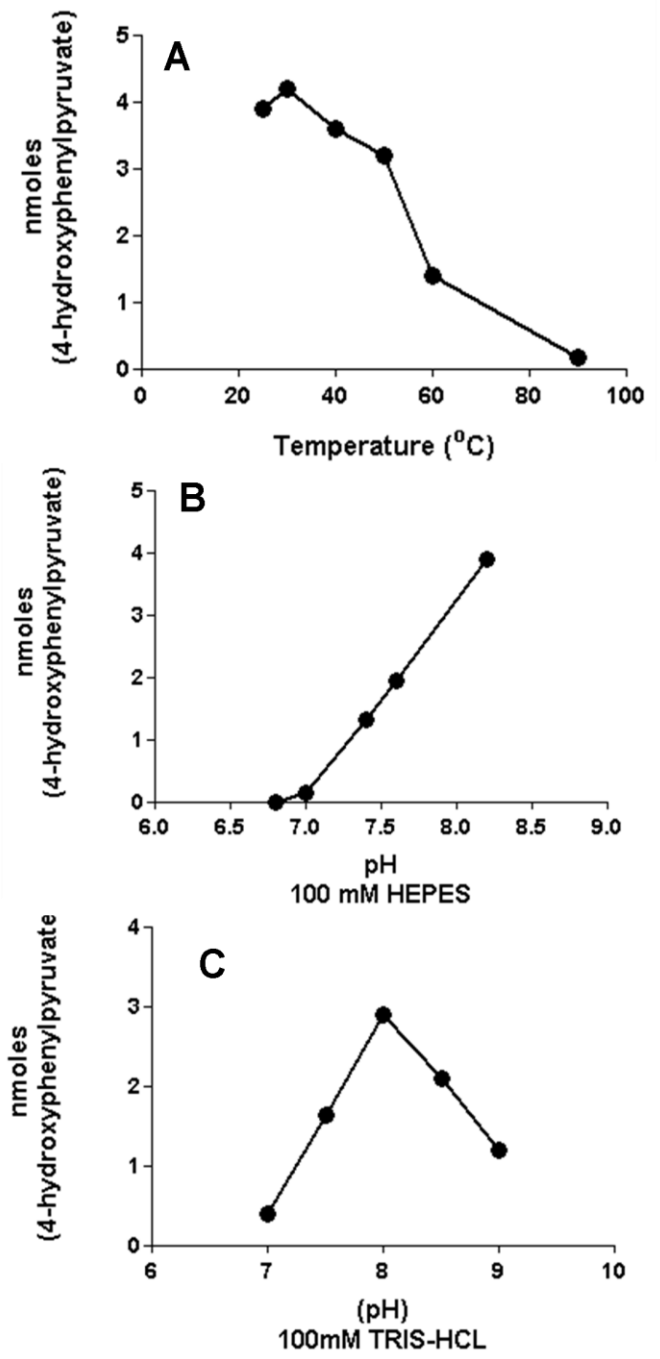
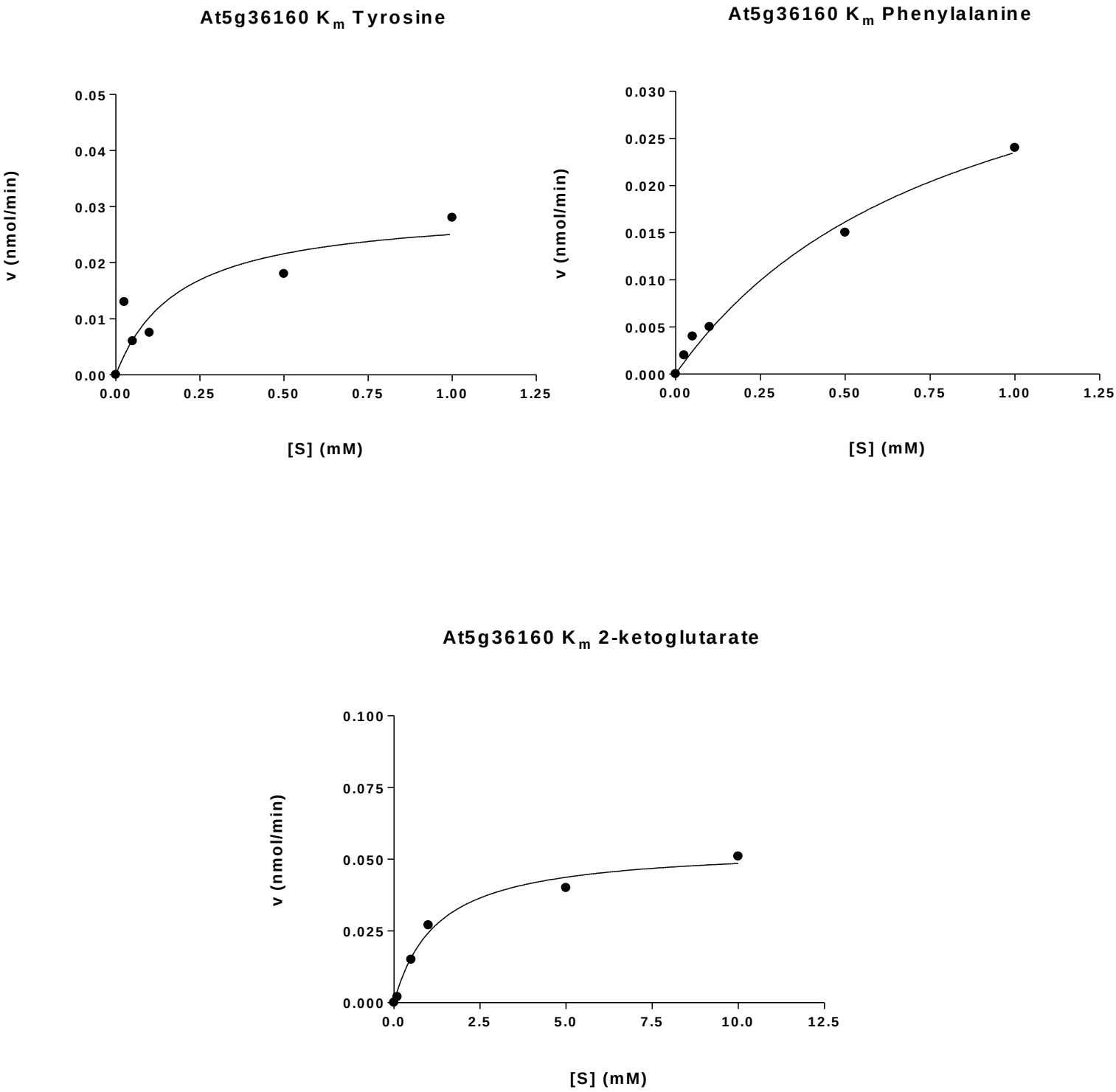
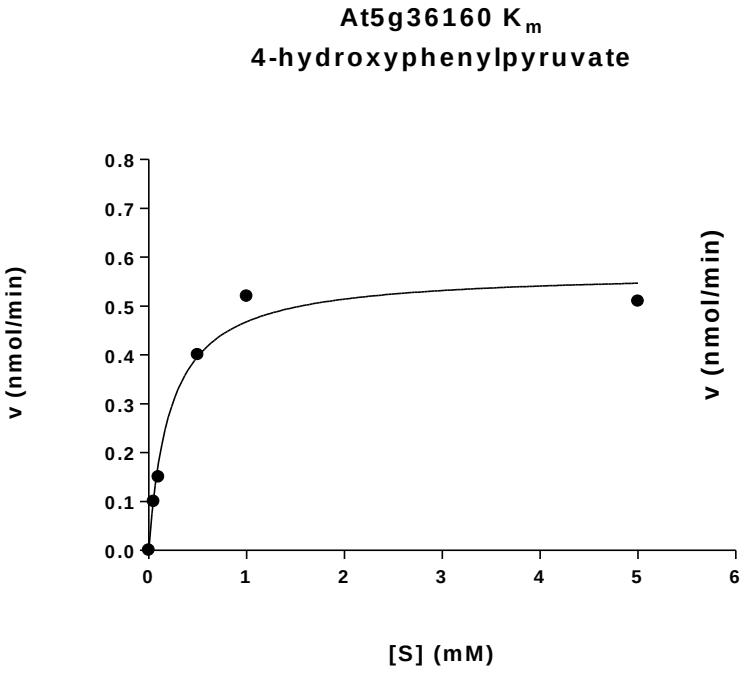
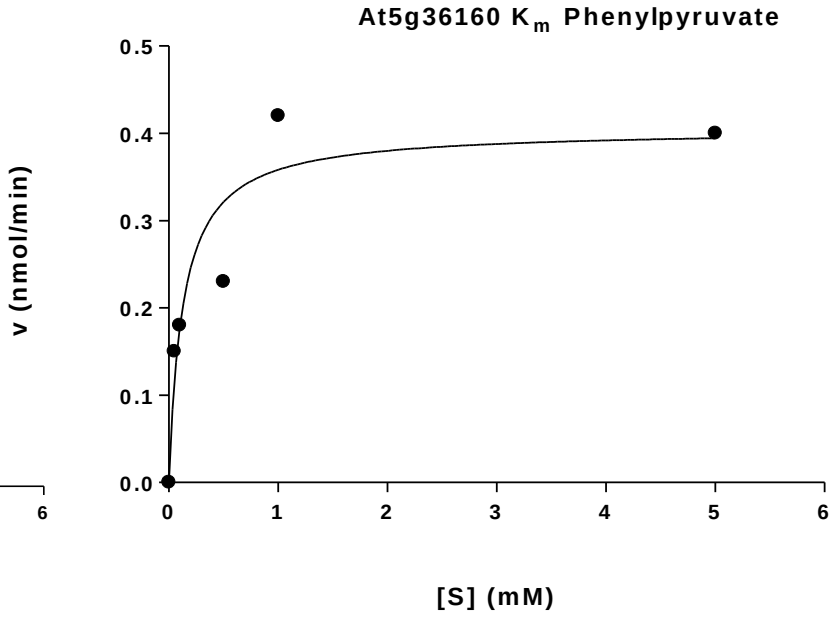
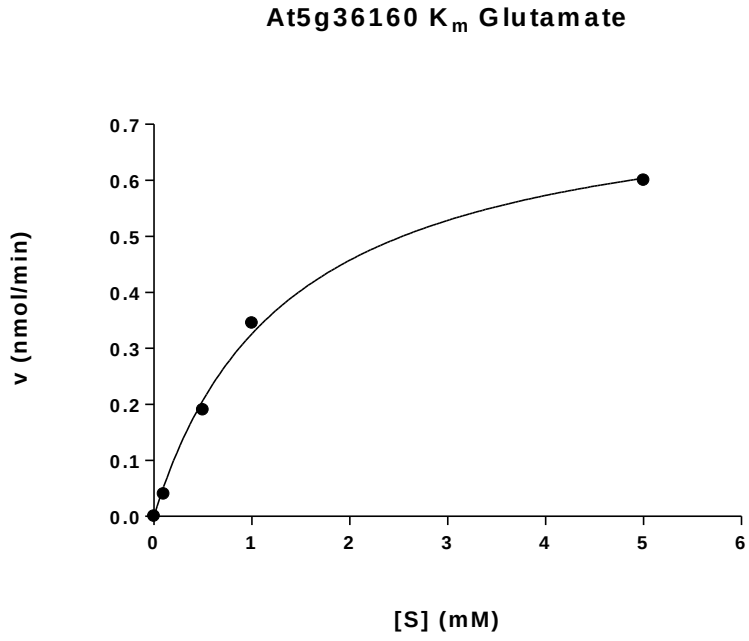


Figure. 2


At5g36160 K_m Tyrosine
v (nmol/min)
0.05
0.04
0.03
0.02
0.01
0.00
0.00
0.25
0.50
0.75
1.00
1.25
[S] (mM)
At5g36160 K_m Phenylalanine
v (nmol/min)
0.030
0.025
0.020
0.015
0.010
0.005
0.000
0.00
0.25
0.50
0.75
1.00
1.25
[S] (mM)
At5g36160 K_m 2-ketoglutarate
v (nmol/min)
0.100
0.075
0.050
0.025
0.000
0.0
2.5
5.0
7.5
10.0
12.5
[S] (mM)


At5g36160 K_m
4-hydroxyphenylpyruvate
v (nmol/min)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0
1
2
3
4
5
6
[S] (mM)


At5g36160 K_m Phenylpyruvate
v (nmol/min)
0.0
0.1
0.2
0.3
0.4
0.5
0
1
2
3
4
5
6
[S] (mM)


At5g36160 K_m Glutamate
v (nmol/min)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0
1
2
3
4
5
6
[S] (mM)

Michaelis-Menten plots of At5g36160. The enzyme assays used to draw the Michaelis-Menten plots are described in the "materials and methods" section. V_{max} is represented in nmoles/min , the K_m of the various substrates is represented in millimolar (mM). The measurements were made under optimal conditions with respect to pH, temperature and substrate concentrations. The kinetic constants were calculated by non-linear regression analysis using the GraphPad Prism Version 3.03 software.

2-ketoglutarate	10µg recombinant enzyme 5 mM L-Phenylalanine
L-Tyrosine	10µg recombinant enzyme 20mM 2-ketoglutarate
L-Phenylalanine	10µg recombinant enzyme 20mM 2-ketoglutarate
4-hydroxyphenylpyruvate	20µg recombinant enzyme 0.3mM thio-NAD 0.3mM Coenzyme A 5mM L-Glutamate 200µg recombinant 2-ketoglutarate dehydrogenase
Phenylpyruvate	20µg recombinant enzyme 0.3mM thio-NAD 0.3mM Coenzyme A 5mM L-Glutamate 200µg recombinant 2-ketoglutarate dehydrogenase
L-Glutamate	20µg recombinant enzyme 0.3mM thio-NAD 0.3mM Coenzyme A 5mM 4-hydroxyphenylpyruvate 200µg recombinant 2-ketoglutarate dehydrogenase

Note: the assays were in 500µl final volume using 100mM HEPES pH (8.2)