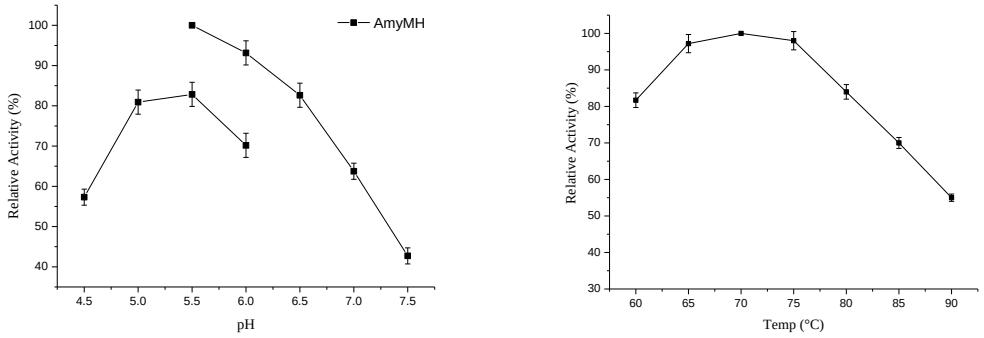

(a) (b)

Fig. S1 The effects of pH (a) and temperature (b) on AmyMH activity

The pH optimum of the recombinant enzyme was determined by measuring its activity across a pH range of 4.5 to 7.5, in 0.5 pH-unit increments, using citrate buffer (pH 4.5 to 6.0) and phosphate buffer (pH 6.0 to 7.5). The temperature dependence of recombinant enzyme activity was measured between 60 and 95 °C. At each temperature, the buffer and substrate were pre-incubated for 10 min before initiating the assay with enzyme. Each reaction was allowed to proceed for 5 min.

Table S1 Kinetic parameters and specific activities of AmyMH

Enzyme	Km (g/L)	kcat ($\times 10^2$ min^{-1})	kcat/Km ($\times 10^2$ $g \cdot L^{-1} \cdot min^{-1}$)	Specific activity ($\times 10^4$ $U \cdot mg^{-1}$)
AmyMH	3.7±0.2	14.0±0.3	3.8±0.2	5.8±0.2

The kinetic parameters (K_m, V_{max}, k_{cat} and k_{cat}/K_m) of AmyMH were determined in 50 mM sodium phosphate buffer (pH 6.0) at 70 °C. Assays performed with purified enzyme contained soluble starch at concentrations ranging from 1 to 20 $g \cdot L^{-1}$. V_{max} and K_m values were estimated by fitting the initial rate data to the Michaelis-Menten equation using nonlinear regression with GraphPad Prism software (GraphPad Software Inc., San Diego, CA).