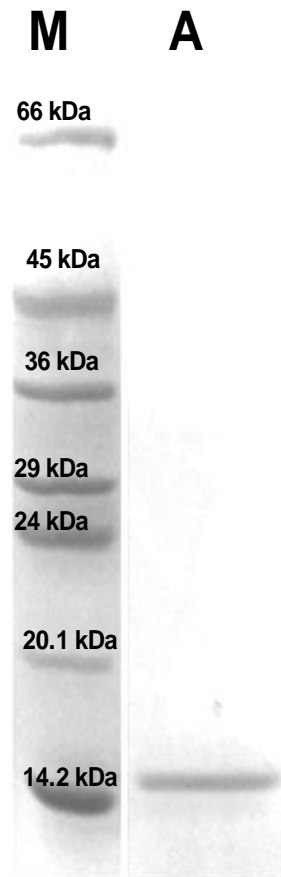
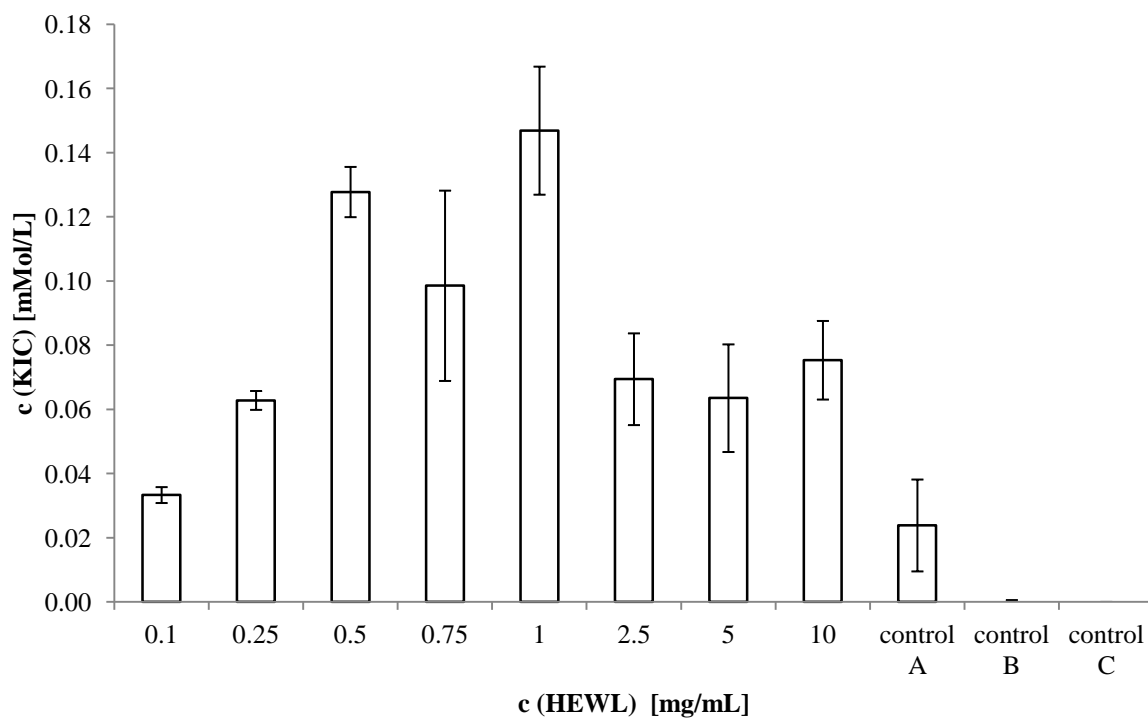


## **Supplementary data**

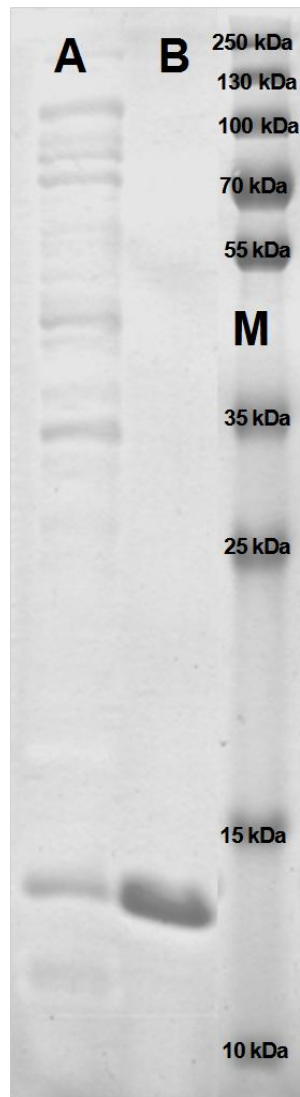
**Figures S1 to S6**



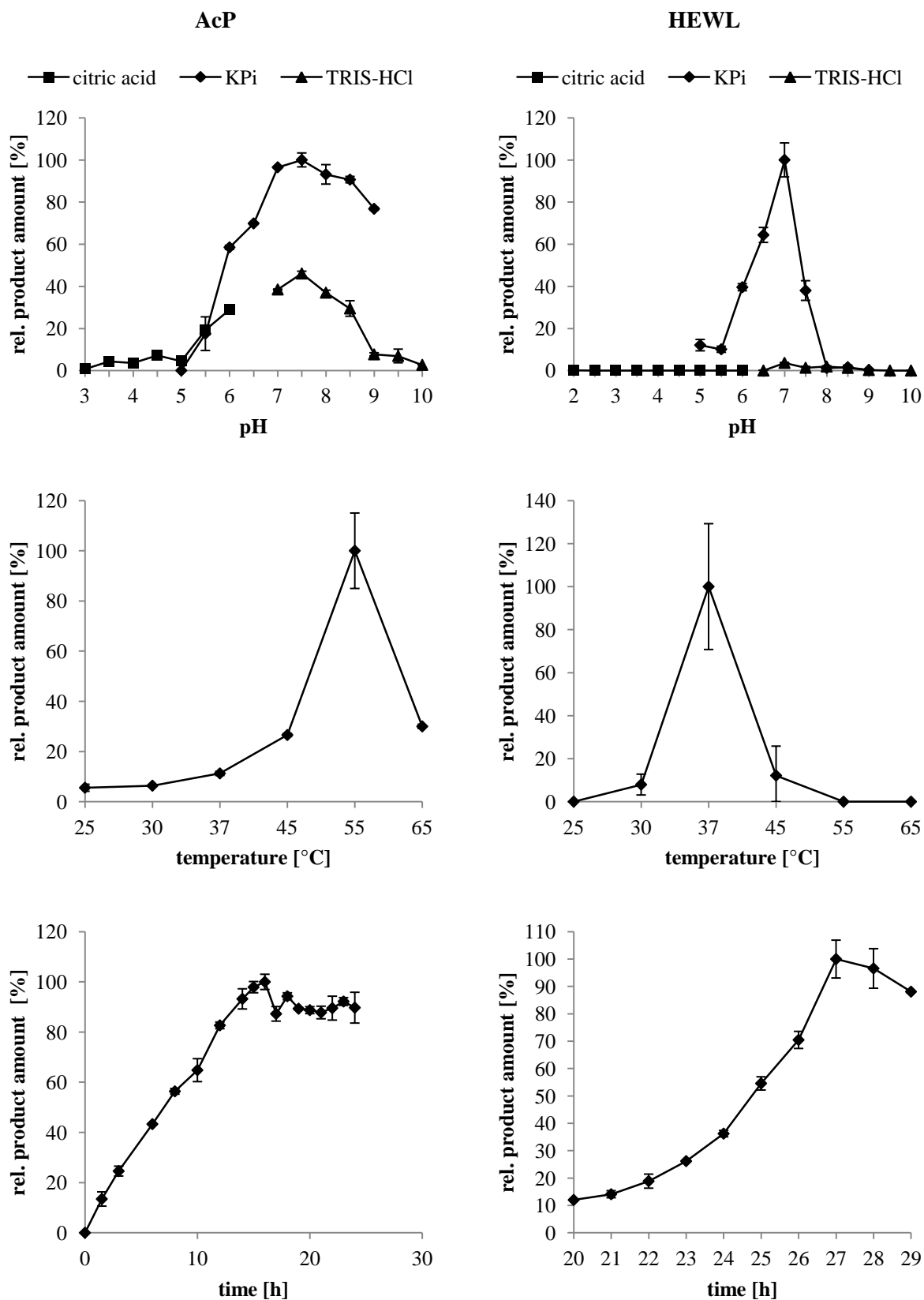
**Figure S1** SDS-PAGE analysis of an active fraction from the purification of an enzyme with transamination activity from *L. sakei* TMW 1.1322. Cells were broken down by HEWL and ultrasonification. Lanes: (M) molecular weight marker; (A) active fraction after anion exchange chromatography and gel filtration. Protein bands were visualized by Coomassie staining. The catalytically active protein in lane (A) was identified as HEWL by LC-MS.



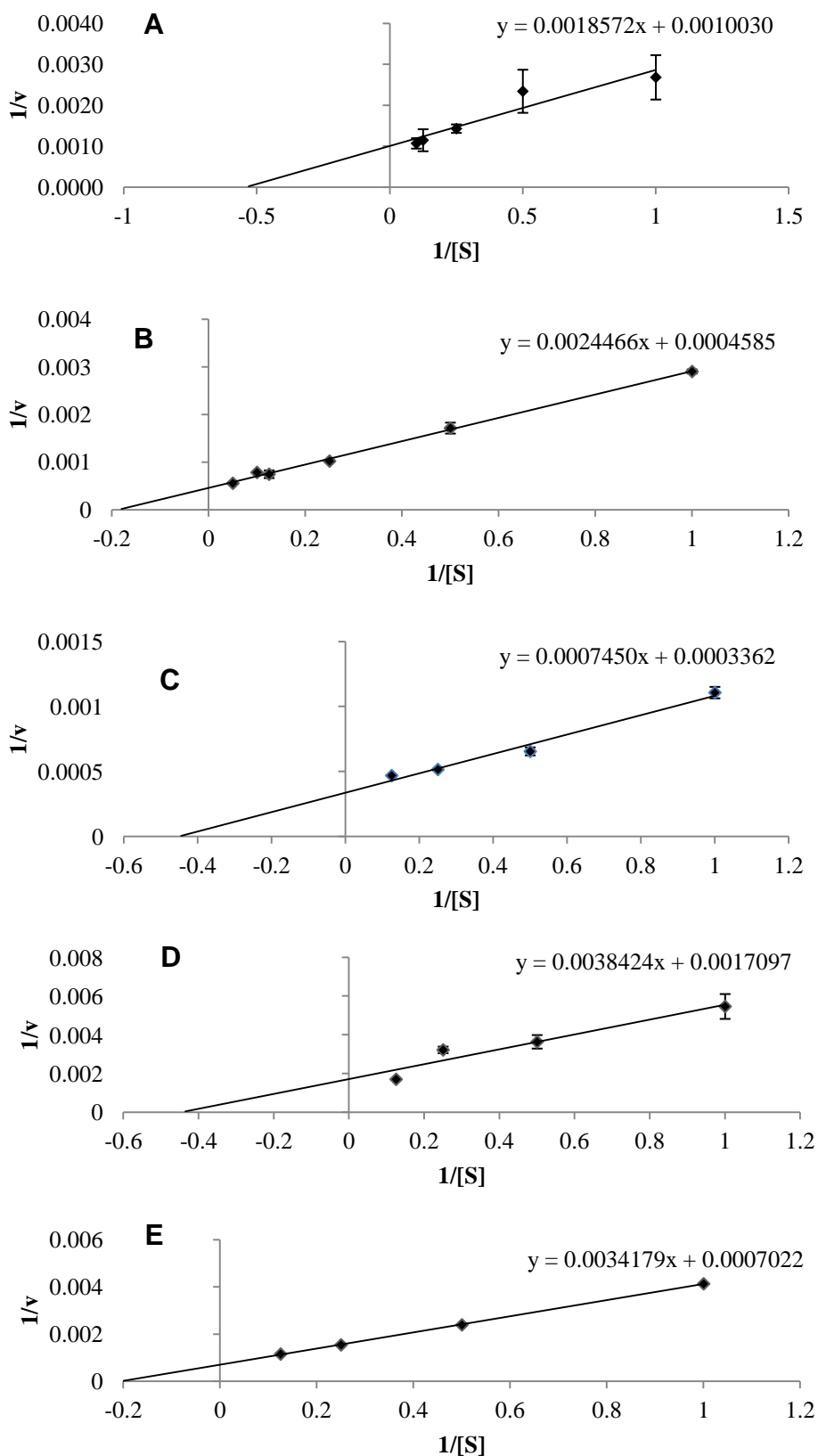
**Figure S2** Transamination side-activity of HEWL. The amount of  $\alpha$ -ketoisocaproic acid (KIC) formed from different concentrations of L-leucine within 22 hours at 37 °C is shown. Control A = without addition of HEWL; control B = without addition of substrate (HEWL 1 mg/mL); control C = addition of inactivated HEWL (99 °C for 15 min, 1 mg/mL).



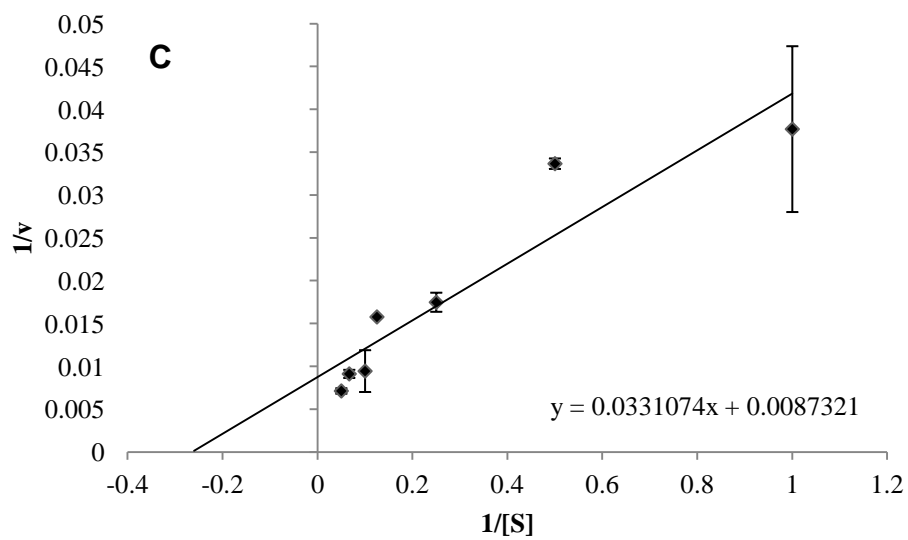
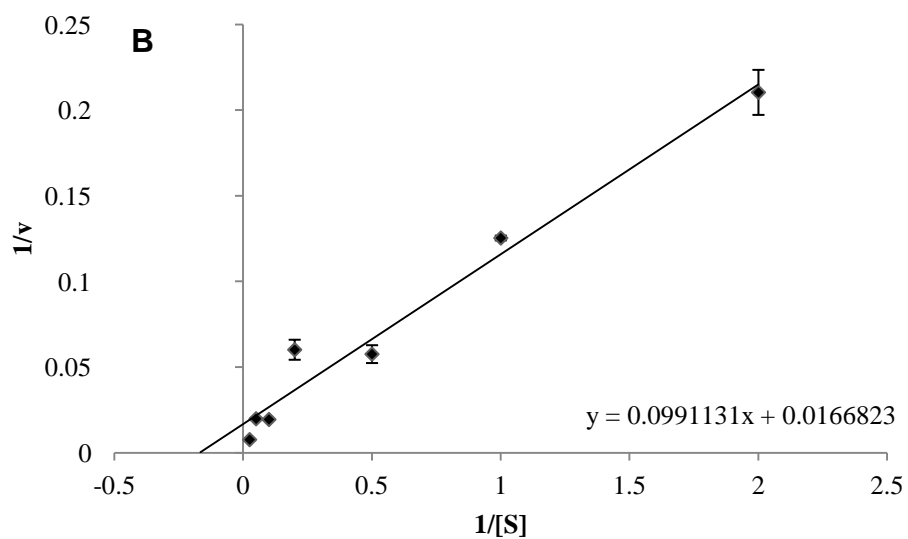
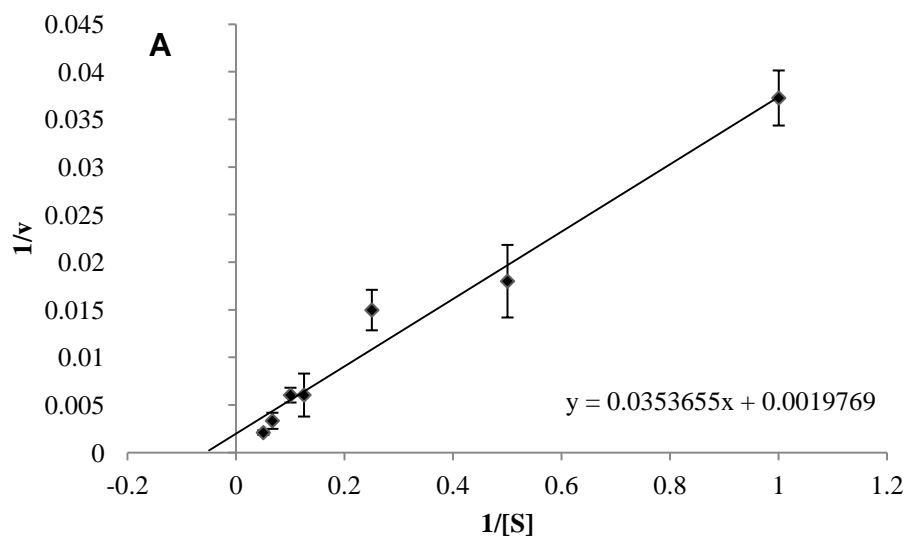
**Figure S3** SDS-PAGE analysis of heterologously expressed and purified AcP from *L. sakei* TMW 1.1322 in *E. coli* TOP 10. Lanes: (A) crude CFE from *E. coli* TOP 10; (B) AcP after HisTrap purification; (M) molecular weight marker. Protein bands were visualized by Coomassie staining.



**Figure S4** Dependence of AcP on pH, temperature and time (left panel) and HEWL (right panel) on transamination activity against L-leucine (5 mM). The relative product amount is expressed as a percentage of maximum amount, which was given a value of 100 %.



**Figure S5** Lineweaver-Burk plots for the determination of kinetic data of AcP.  $1/v = 1/\text{specific activity [pkat/mg]}$ ;  $1/[S] = 1/\text{substrate concentration [mM]}$ . A = L-leucine; B = L-phenylalanine; C = L-isoleucine; D = L-methionine; E = L-valine



**Figure S6** Lineweaver-Burk plots for the determination of kinetic data of HEWL.  $1/v = 1/\text{specific activity [pkat/mg]}$ ;  $1/[S] = 1/\text{substrate concentration [mM]}$ .  
 A = L-leucine; B = L-phenylalanine; C = L-isoleucine;