Supplementary materials

Improvement in Thermostability of an *Achaetomium* sp. Xz8 Endopolygalacturonase via the Optimization of Charge–Charge Interactions

Tao Tu,[a] Huiying Luo,[a] Kun Meng,[a] Yanli Cheng,[a] Rui Ma,[a] Pengjun Shi,[a] Huoqing Huang,[a] Yingguo Bai,[a] Yaru Wang,[a] Lujia Zhang,[b*] Bin Yao[a*]

Key Laboratory for Feed Biotechnology of the Ministry of Agriculture, Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing 100081, P. R. China[a]; State Key Laboratory of Bioreactor Engineering, East China University of Science and Technology, Shanghai 200237, P. R. China[b]

Running title: Engineering Endo-polygalacturonase for Improved Thermostability

* Address correspondence to Bin Yao, Key Laboratory for Feed Biotechnology of the Ministry of Agriculture, Feed Research Institute, Chinese Academy of Agricultural Sciences, No. 12 Zhongguancun South Street, Beijing 100081, P. R. China. Tel.: +86 10 82106053; fax: +86 10 82106054, binyao@caas.cn, or Lujia Zhang, State Key Laboratory of Bioreactor Engineering, East China University of Science and Technology, Shanghai 200237, P. R. China. Tel.: +86 21 64252981; fax: +86 21 64250068, ljzhang@ecust.edu.cn.

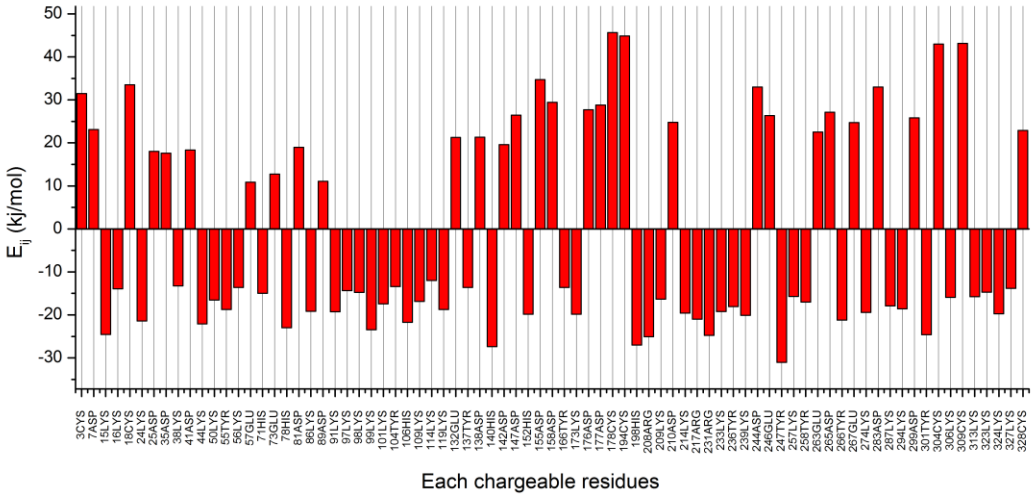

FIG S1 Total interaction energies of PG8fn determined by ETSS.

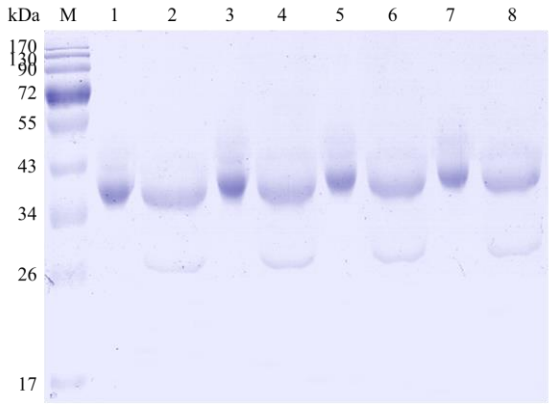

FIG S2 SDS-PAGE analysis of purified recombinant PG8fn and its mutants. Lane M, the standard protein molecular weight markers; lanes 1, 3, 5, and 7, the purified wild type PG8fn and mutants D244A, D299R and D244A/D299R, respectively; lanes 2, 4, 6 and 8: the deglycosylated wild type PG8fn and mutants D244A, D299R and D244A/D299R, respectively.

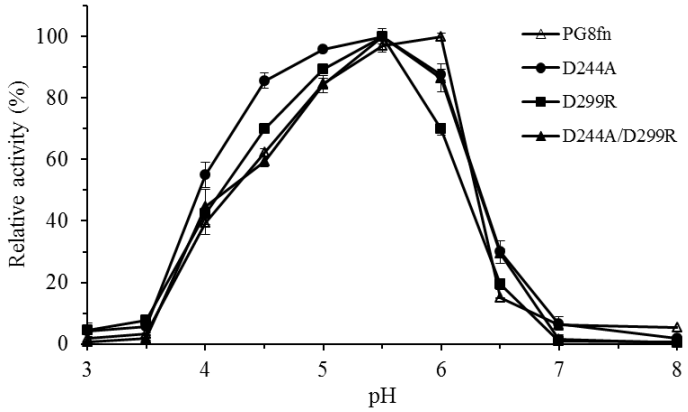

FIG S3 pH-dependent activity profiles of wild type PG8fn and its mutants.