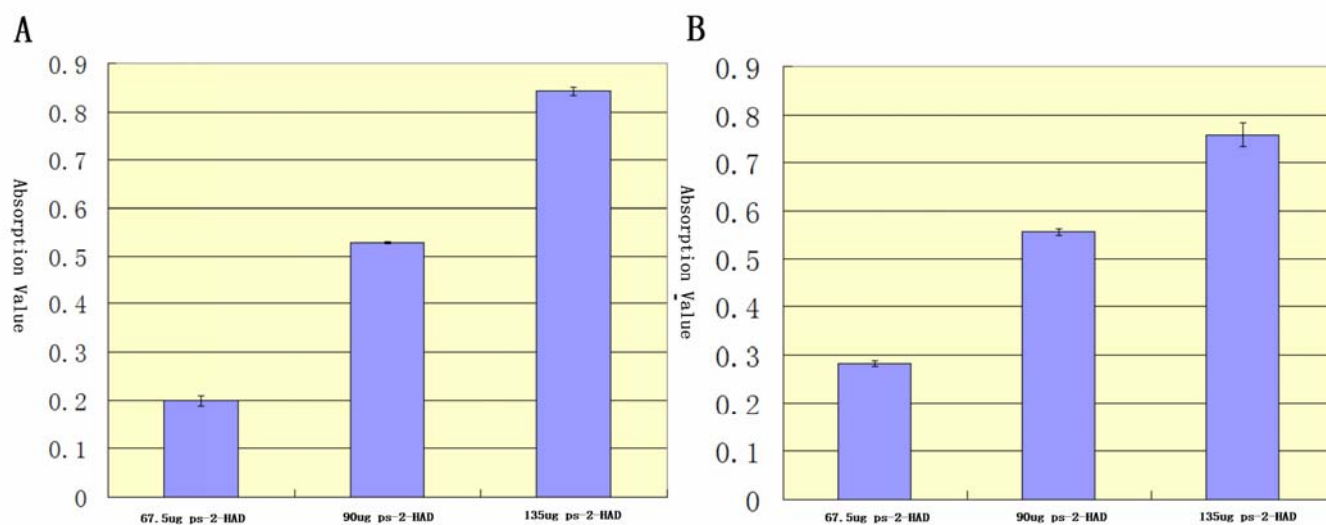
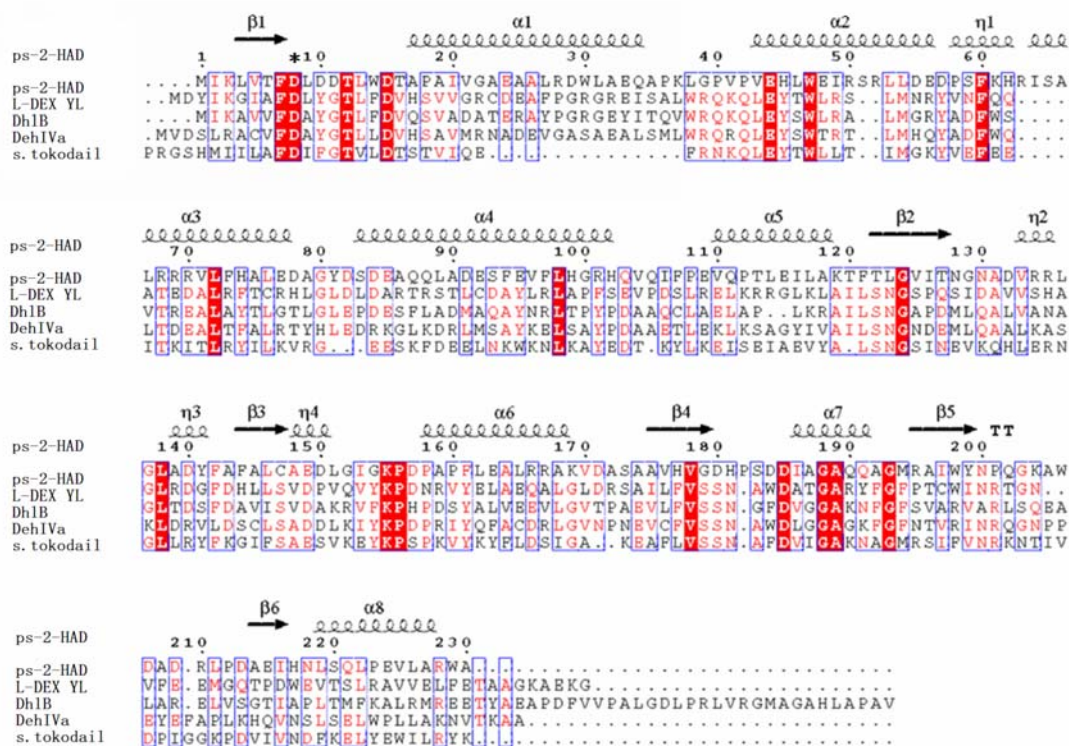
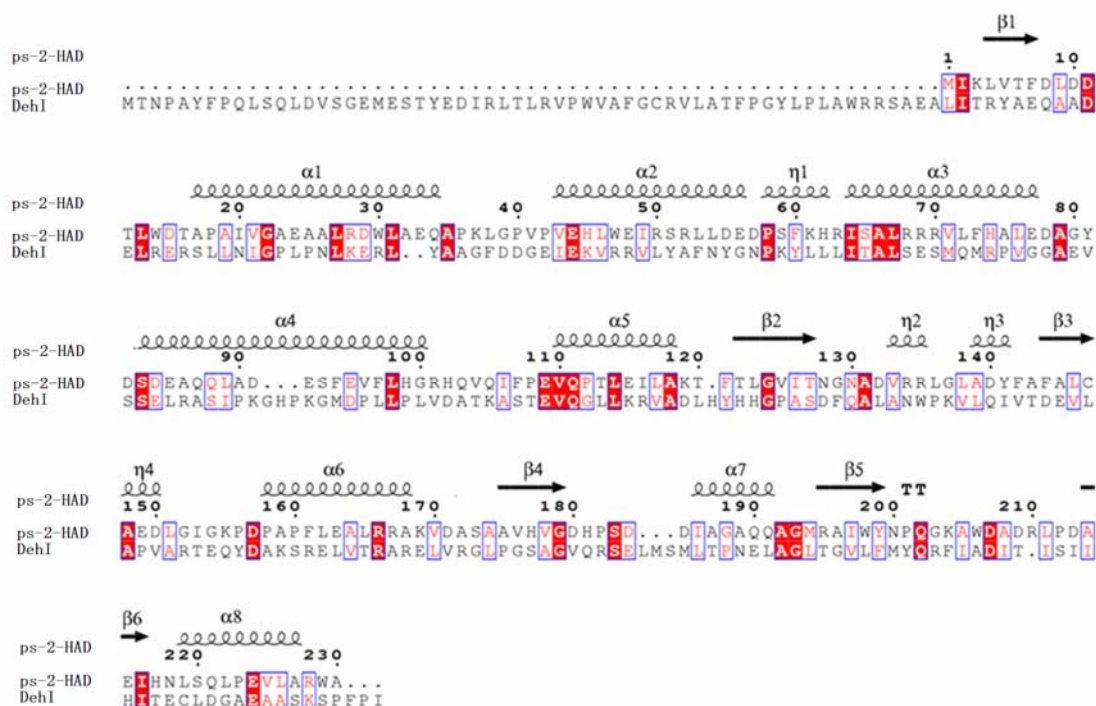


## Supplementary data



**Figure S1. Enzymatic activity analysis of ps-2-HAD using mercuric thiocyanate.**

(A) ps-2-HAD enzyme titration assay against substrate L-CPA (n=3). (B) ps-2-HAD enzyme titration assay against substrate D-CPA (n=3).



**Figure S2. Sequence alignments of ps-2-HAD with other 2-HADs with known structures** (A) Sequence alignment of ps-2-HAD with D-2-HAD (DehI, PDB ID: 3BJX). (B) Sequence alignment of ps-2-HAD with four L-2-HADs. The PDB ID are as follows: L-DEX YL, PDB ID: 1JUD; DhlB, PDB ID: 1AQ6; DehIVa, PDB ID:

2NO4; s.tokodail, PDB ID: 2W11. Conserved amino acid residues are highlighted by red, with the conserved Asp residue in L-2-HAD marked with asterisk (\*). The sequence alignment was carried out with Multalign program [1] and represented by Esript [2].

## **References**

- [1] F. Corpet, Multiple Sequence Alignment with Hierarchical-Clustering, *Nucleic Acids Research* 16 (1988) 10881-10890.
- [2] P. Gouet, E. Courcelle, D.I. Stuart, F. Metoz, ESript: analysis of multiple sequence alignments in PostScript, *Bioinformatics* 15 (1999) 305-308.