

Crystal Structure Analysis and Characterization of NADP-Dependent Glutamate Dehydrogenase

with Alcohols Activity from *Geotrichum candidum*

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Fig. S2 Mass spectrum obtained for tryptic peptides eluted from 1-D gel band (Fig. 2a). After a baseline correction, a background subtraction, and peak deisotoping, 17 ions were submitted to Mascot. Twenty one of the submitted ions were matched to theoretical tryptic peptides from glutamate dehydrogenase; the sequences of these peptides are shown next to the mass of the monoisotopic, singly charged ions. The full protein sequence and the sequenced peptides are in red color.

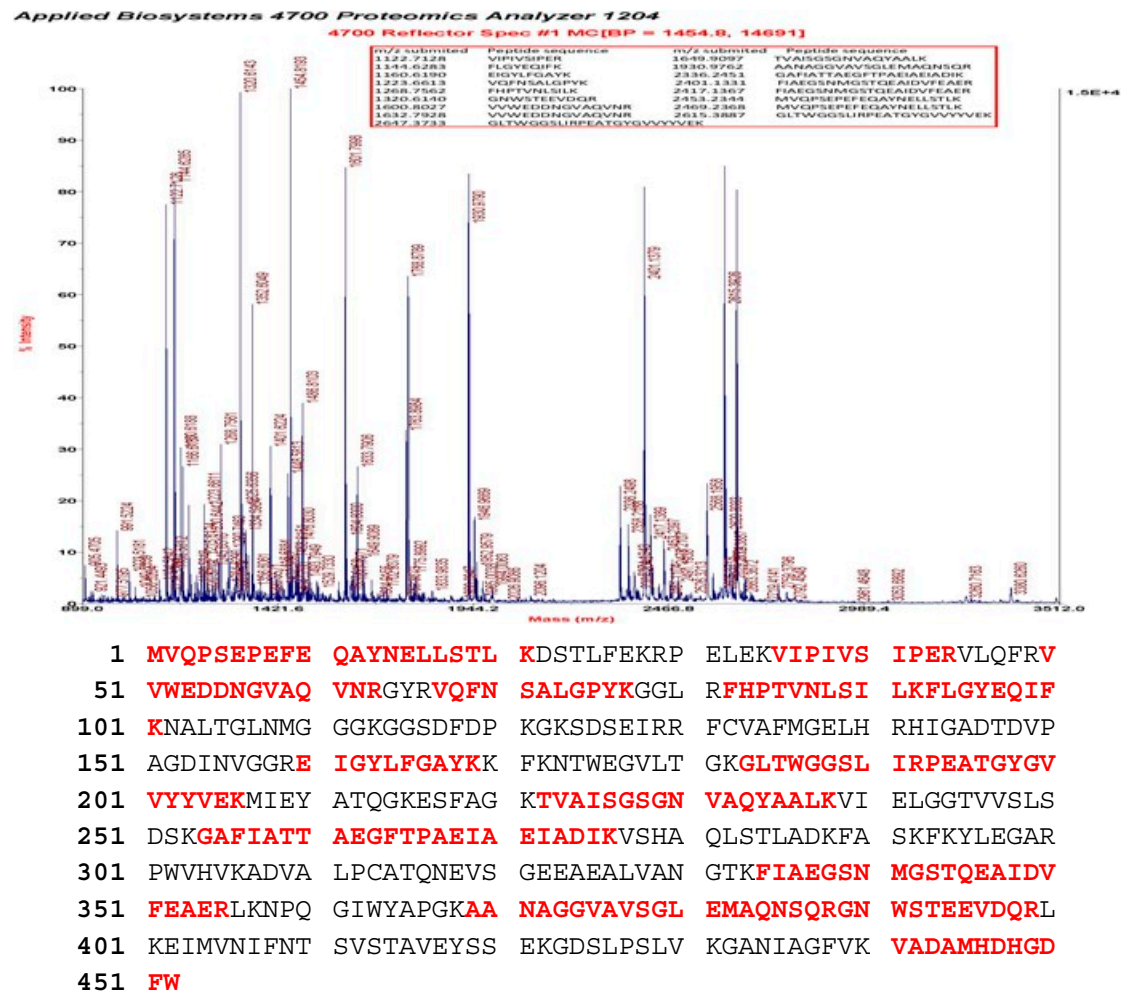


Fig. S3 It showed that the differences of GDHs were more notable when proteins were from different microorganism. All the sequence data were extracted from NCBI database.

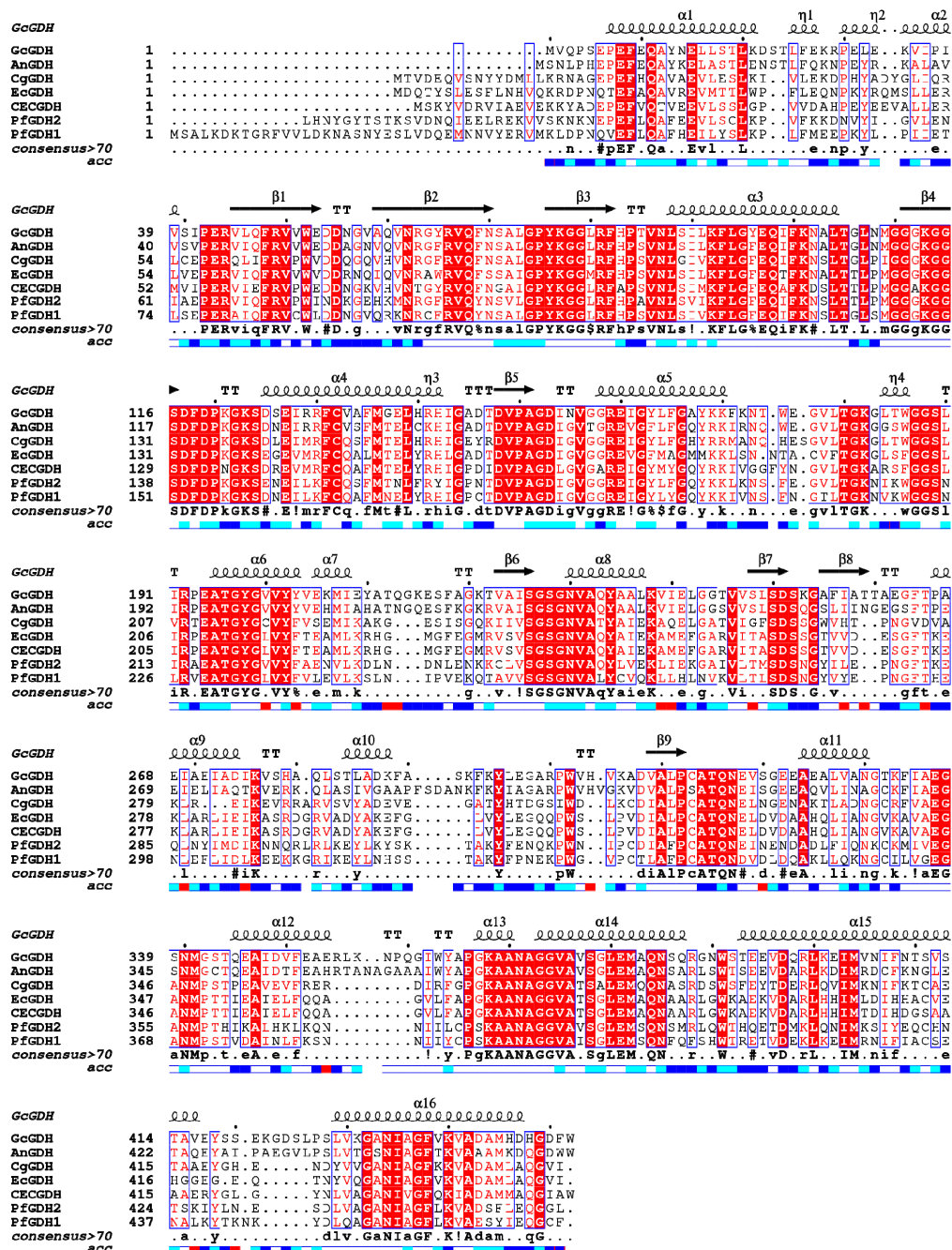
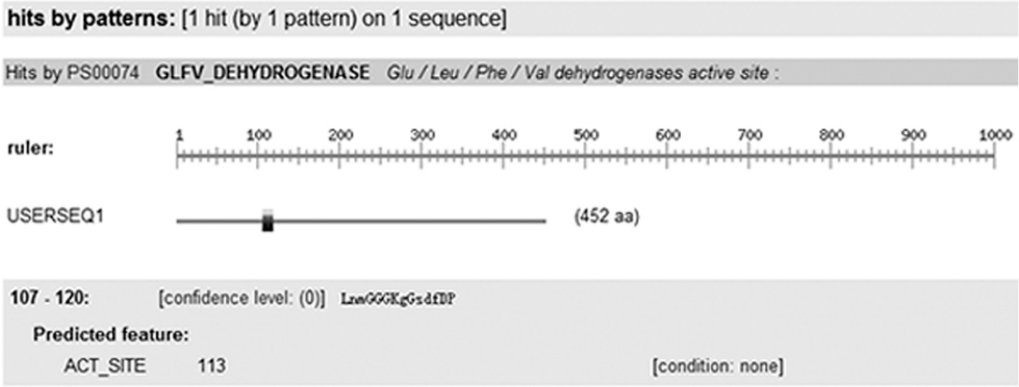


Fig. S4 The results of motif identification determined from the online tool Scanprosite (a) and SDS-PAGE of purified K113Ala (I) and K113Gly (II)(b). M: Protein molecular weight markers; 1, Crude GDH; 2, Flowed crude GDH from Ni column; 3-7, Purification processes (elution buffer containing 10-120 mM imidazole) 8, Purified pET-28as-GDH (elution buffer containing 200 mM imidazole); 5, Arrow mark indicates the target protein.

a



b

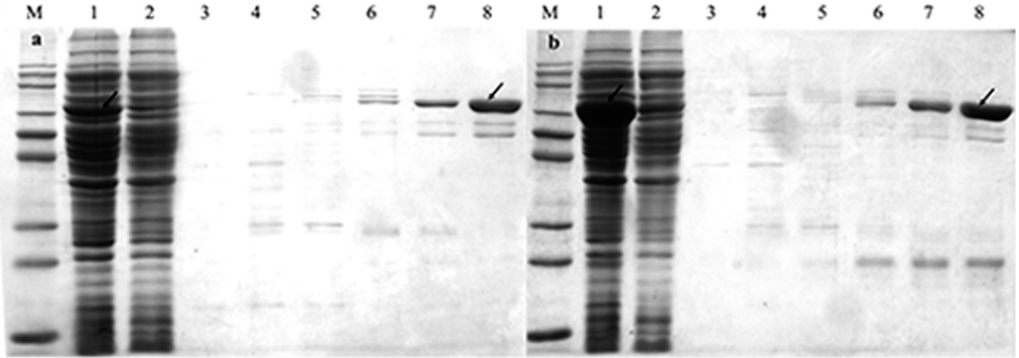


Fig. S5 GC-MS analysis. Total ion chromatograms of the products after GDH treatment using hexanol and isoamyl alcohol.

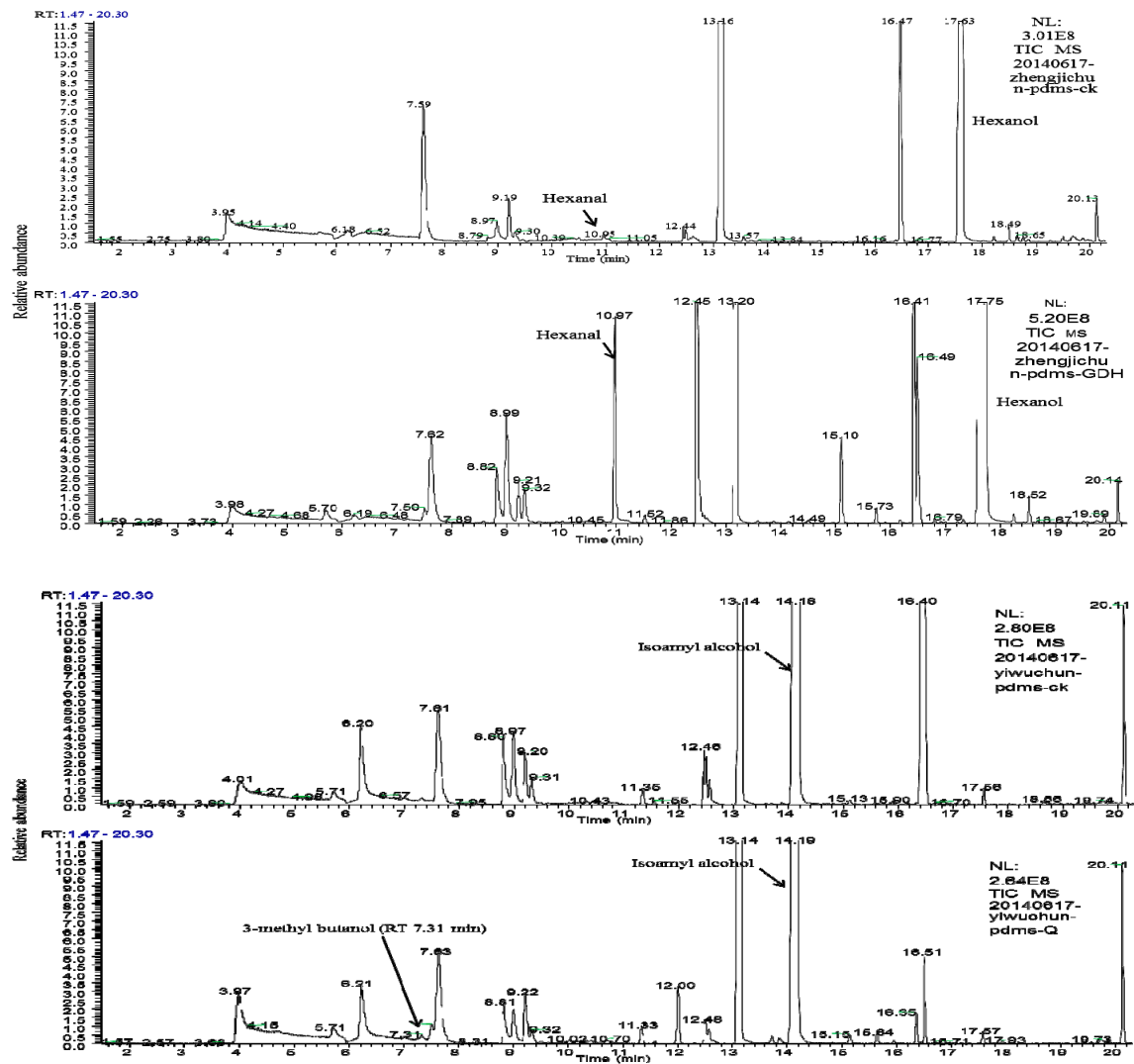


Table S1 List of primers used in the 5' Race. I : verify primers II :linker-adapter, III: 5'Race trans-specific primers.

Name	Sequence (5'-3')
RC75-F (I)	GTTGTCTCTCTTTCCGACTCCA
RC75-R (I)	ACGAAACCAGCAATGTTAGCA
5'adaptor (II)	GCTGTCAACGATACGCTACGTAACGGCATGACAGTGGGG
SG-outer (II)	GCTGTCAACGATACGCTACGTAAC
SG-inner (II)	GCTACGTAACGGCATGACAGTG
RC75-RT1 (III)	CAGAGACAGCGACACCACCAGCGTT
RC75-R1 (III)	GGAACCCATGTTAGAACCCTCGGCAAT
RC75-R2 (III)	AGCAACATCAGCCTTGACGTGGACCC
RC75-R3 (III)	CGACGGTCTTGCCAGCGAAGGACTC
RC75-R4 (III)	GGAACATCGGTATCAGCACCAATGTGTCT
RC75-Fi	TCAAAACATCAAAATGGTCCAG