

Appendix 1

Characteristics of glutamate dehydrogenases used in this study. EC number, length and accession number of the 116 GDH sequences used in this work and names of the 83 organisms to which they belong.				
subset	Organism	EC number	Amino acids	GenBank accession no.
Ref	<i>Chlorella sorokiniana</i> (E ^a)	1.4.1.4	523	<i>CAA41635</i>
			523	<i>CAA41636</i>
A	<i>Asparagus officinalis</i> (E)	1.4.1.2	411	<i>CAA09478</i>
			411	<i>AAL36888</i>
	412		<i>AAB39508</i>	
	411		<i>CAD12373</i>	
	<i>Nicotiana tabacum</i> (E)		411	<i>T16981</i>
	<i>Nicotiana plumbaginifolia</i> (E)		411	<i>CAB94837</i>
	<i>Vitis vinifera</i> (E)		411	<i>CAC18730</i>
	<i>Zea mays</i> (E)		411	<i>T04342</i>
B	<i>Clostridium difficile</i> (B)	1.4.1.2	421	<i>S28829</i>
			421	<i>NP_781924</i>
			425	<i>EAA23508</i>
			439	<i>NP_603385</i>
			441	<i>CAC43018</i>
			426	<i>BAC13766</i>
			421	<i>A38168</i>
C	<i>Brucella melitensis</i> (B)	1.4.1.2	1600	<i>AAL51413</i>
D	<i>Vitis vinifera</i> (E)	1.4.1.3	411	<i>S54797</i>
E	<i>Pyrococcus furiosus</i> (A)	1.4.1.3	420	<i>NP_579331</i>
			420	<i>NP_343440</i>
			434	<i>NP_343336</i>
			420	<i>NP_343309</i>
			419	<i>NP_342894</i>
<i>Thermotoga maritima</i> (B)	416	<i>CAA71058</i>		
F	<i>Chaenocephalus aceratus</i> (B)	1.4.1.3	504	<i>P82264</i>
			549	<i>S42919</i>
			503	<i>P00368</i>
			558	<i>CAA46995</i>
			558	<i>NP_032159</i>
			544	<i>CAD58716</i>
539	<i>CAD58714</i>			
G	<i>Agaricus bisporus</i> (E)	1.4.1.4	457	<i>S63608</i>
			458	<i>NP_242967</i>
			460	<i>AAC69873</i>
			447	<i>NP_601279</i>
			447	<i>NP_754056</i>
			447	<i>DEECEN</i>
			449	<i>A42489</i>
			449	<i>A64053</i>
			450	<i>P54388</i>
			461	<i>AAF00006</i>
			447	<i>AAL20224</i>
			448	<i>NP_358774</i>

G	<i>Trypanosoma cruzi</i> (E)		446	AAC14692
		1.4.1.4	446	AAC14691
	<i>Tuber borchii</i> (E)		457	AAG28788
H	<i>Arabidopsis thaliana</i> (E)		411	NP_196361
	<i>Brassica napus</i> (E)		411	BAB62170
	<i>Nicotiana plumbaginifolia</i> (E)	NC	411	TI6982
	<i>Oryza sativa</i> (E)		411	AAO37984
	<i>Ulva pertusa</i> (E)		421	BAB62312
			447	BAB62311
I1	<i>Bacillus halodurans</i> (B)		430	NP_243584
	<i>Bacillus halodurans</i> (B)		420	NP_244810
	<i>Bacillus halodurans</i> (B)		421	NP_242488
	<i>Chlorobium tepidum</i> (B)		418	NP_662898
	<i>Pyrococcus abyssi</i> (A)		420	NP_126260
	<i>Pyrococcus endeavori</i> (A)	NC	420	AAA64795
			420	A47410
	<i>Staphylococcus aureus</i> (B)		414	NP_374080
	<i>Staphylococcus epidermidis</i> (B)		414	NP_764209
	<i>Synechocystis</i> sp. PCC6803 (B)		428	NP_442685
	<i>Thermococcus waiotapuensis</i> (A)		419	AAK53112
	<i>Thermoplasma volcanium</i> (A)		416	BAB59913
			435	BAB59912
I2	<i>Bacteroides thetaiotaomicron</i> (B)		444	NP_810883
	<i>Bifidobacterium longum</i> (B)		448	NP_695816
	<i>Clostridium acetobutylicum</i> (B)		443	NP_347373
	<i>Corynebacterium efficiens</i> (B)		466	BAB86838
	<i>Deinococcus radiodurans</i> (B)		424	E75362
	<i>Entodinium caudatum</i> (E)		438	AAF15393
	<i>Escherichia coli</i> (B)		447	NP_288194
			447	AAA23868
	<i>Klebsiella aerogenes</i> (B)	NC	447	AAK17986
	<i>Plasmodium falciparum</i> (E)		470	NP_702052
			442	AAG12331
			442	AAD11789
	<i>Pseudomonas aeruginosa</i> (B)		445	NP_253278
	<i>Ruminococcus flavefaciens</i> (B)		455	AAN15204
	<i>Salmonella enterica</i> (B)		447	NP_804986
	<i>Streptococcus agalactiae</i> (B)		449	NP_688333
	<i>Streptococcus pneumoniae</i> (B)		448	NP_345769
<i>Streptococcus suis</i> (A)		448	AAK00759	
I3	<i>Bacteroides fragilis</i> (B)		445	AAC26399
	<i>Bacteroides thetaiotaomicron</i> (B)		445	NP_810886
	<i>Botryotinia fuckeliana</i> (E)		450	AAC95390
	<i>Debaryomyces hansenii</i> (E)		418	AAF98446
	<i>Gibberella fujikuroi</i> (E)		451	CAC45043
	<i>Helicobacter pylori</i> (B)		448	D64567
		NC	448	F71862
	<i>Neurospora crassa</i> (E)		454	EAA32325
			454	1003201A
	<i>Neurospora intermedia</i> (E)		454	AAG01158
	<i>Neurospora sitophila</i> (E)		454	AAG01159
			454	NP_015020
	<i>Saccharomyces cerevisiae</i> (E)		453	1111238A
		454	AAB03898	

J	<i>Bos taurus</i> (E)		520	AAN15276
	<i>Homo sapiens</i> (E)		558	CAA30521
	<i>Oncorhynchus mykiss</i> (E)	NC	539	AAM73777
			544	AAM73775
	<i>Rattus norvegicus</i> (E)		558	CAA32202
K	<i>Agaricus bisporus</i> (E)		1029	CAB40797
	<i>Gibberella fujikuroi</i> (E)		1059	CAC27837
	<i>Neurospora crassa</i> (E)	NC	1047	AAB28355
	<i>Saccharomyces cerevisiae</i> (E)		1092	NP_010066
	<i>Schizosaccharomyces pombe</i> (E)		1106	T40931
L	<i>Caulobacter crescentus</i> (B)		1607	NP_418907
	<i>Mycobacterium leprae</i> (B)		1622	NP_301902
	<i>Mycobacterium tuberculosis</i> (B)		1624	NP_337039
	<i>Pseudomonas aeruginosa</i> (B)	NC	1620	AAG53963
	<i>Streptomyces avermitilis</i> (B)		1645	BAC72787
	<i>Streptomyces clavuligerus</i> (B)		1651	AAG40620
	<i>Vibrio cholerae</i> (B)		1613	NP_231133
^a A, Archaea - B, Bacteria - E, Eukaryota.				