

Characterization of DhHal3p: A moderately thermostable FMN-Binding Flavoprotein with biomedical potential from halotolerant yeast, *D. hansenii* using partial structure prediction

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Supplementary Data

Table S1 — Summary of 157 Hal3 proteins from different fungal species and their accession number

S. No	Gene ID	Species	Length (number of amino acids)	Accession number
1	DEHA2D16082g	<i>Debaryomyces hansenii</i>	559	XP_459184
2	FSPOR_4278	<i>Fusarium sporotrichioides</i>	222	RGP69988
3	FRX48_05964	<i>Lasallia pustulata</i>	248	KAA6410542
4	Rt10032_c07g3335	<i>Rhodotorula toruloides</i>	227	GEM09318
5	PHISP_03347	<i>Aspergillus sp.</i>	239	RMJ25788
6	T440DRAFT_400261	<i>Plenodomus tracheiphilus</i>	268	KAF2848935
7	DDE83_001925	<i>Stemphylium lycopersici</i>	267	RAR14702
8	EJ06DRAFT_528217	<i>Trichodelitschia bisporella</i>	235	KAF2403279
9	C1646_629293	<i>Rhizophagus sp.</i>	190	RGB28830
10	G6M90_00g079620	<i>Metarhizium brunneum</i>	242	QLI70814
11	PTMSG1_07543	<i>Pyrenophora teres</i>	263	CAA9964184
12	BCR43DRAFT_52431	<i>Syncephalastrum racemosum</i>	200	ORZ03486
13	P153DRAFT_295426	<i>Dothidotthia symphoricarpi</i>	265	XP_033521681
14	TASIC1_0007057600	<i>Trichoderma asperellum</i>	243	GFP57084
15	AOQ84DRAFT_356828	<i>Glomium stellatum</i>	273	OCL03605
16	RHTO_07357	<i>Rhodotorula toruloides</i>	250	XP_016274742
17	GGTG_02672	<i>Gaeumannomyces tritici</i>	302	XP_009218711
18	LCOR_07474.1	<i>Lichtheimia corymbifera</i>	245	CDH56423
19	RMCBS344292_02567	<i>Rhizopus microspores</i>	169	CEI88168
20	VDAG_02577	<i>Verticillium dahlia</i>	236	XP_009651525
21	BDY17DRAFT_318493	<i>Neo hortaeeacidiphila</i>	247	XP_033586409
22	MSYG_3170	<i>Malassezia sympodialis</i>	236	SHO78822
23	THAR02_09903	<i>Trichoderma harzianum</i>	212	KKO97987
24	CI238_00022	<i>Colletotrichum incanum</i>	229	KZL68523
25	FGSG_04568	<i>Fusarium graminearum</i>	159	XP_011321017
26	CJF30_00007883	<i>Rutstroemia sp.</i>	273	PQE27554
27	BBO_00960	<i>Beauveria brongniartii</i>	223	OAA51013
28	TMEN_6650	<i>Trichophyton mentagrophytes</i>	232	GBF63982
29	BDY21DRAFT_383603	<i>Lineolata rhizophorae</i>	259	KAF2461681

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Table S1 — Summary of 157 Hal3 proteins from different fungal species and their accession number (Contd.)

S. No	Gene ID	Species	Length (number of amino acids)	Accession number
30	OnM2_023049	<i>Oidium neolycopersici</i>	242	RKF63773
31	PHISCL_04585	<i>Aspergillus sclerotialis</i>	226	RJE23095
32	FLONG3_8652	<i>Fusarium longipes</i>	222	RGP66994
33	BCR34DRAFT_569182	<i>Clohesyomyces aquaticus</i>	257	ORY08912
34	GQ607_010237	<i>Colletotrichum asianum</i>	220	KAF0322574
35	DDE82_000486	<i>Stemphylium lycopersici</i>	267	RAR11541
36	AAP_00592	<i>Ascospaera apis</i>	243	KZZ96949
37	BP5796_02386	<i>Coleophoma crateriformis</i>	249	RDW91221
38	GMOD_00005257	<i>Pyrenophora seminiperda</i>	263	RMZ66180
39	BU26DRAFT_536709	<i>Trematosphaeria pertusa</i>	262	XP_033691646
40	MGYG_01903	<i>Nannizzia gypsea</i>	232	XP_003177841
41	GE09DRAFT_19454	<i>Coniochaeta sp.</i>	244	KAB5585249
42	EURHEDRAFT_460544	<i>Aspergillus ruber</i>	228	XP_040637034
43	PISL3812_01156	<i>Talaromyces islandicus</i>	233	CRG83800
44	TW65_00751	<i>Stemphylium lycopersici</i>	267	KNG52280
45	MMYC01_202233	<i>Madurella mycetomatis</i>	243	KXX80556
46	EN45_061170	<i>Penicillium chrysogenum</i>	238	KZN87556
47	SLM40629	<i>Lasallia pustulata</i>	248	SLM40629
48	A1O5_05449	<i>Cladophialophora psammophila</i>	240	XP_007744240
49	PAAG_06442	<i>Paracoccidioides lutzii</i>	233	XP_002791703
50	FLAG1_06247	<i>Fusarium langsethiae</i>	238	KPA40899
51	FGRA07_03600	<i>Fusarium graminearum</i>	222	PCD28461
52	HMPREF1120_03809	<i>Exophiala dermatitidis</i>	232	EHY55684
53	A1O7_06073	<i>Cladophialophora yegresii</i>	239	XP_007758268
54	CIRG_08187	<i>Coccidioides immitis</i>	234	KMP08506
55	A1O1_08095	<i>Capronia coronate</i>	244	XP_007727148
56	TEQG_07856	<i>Trichophyton equinum</i>	232	EGE08855
57	MCYG_01358	<i>Microsporium canis</i>	291	XP_002851254
58	PROQFM164_S02g001806	<i>Penicillium roqueforti</i>	256	CDM31655
59	UREG_05657	<i>Uncinocar pus reesii</i>	234	EEP80815
60	A1O9_12775	<i>Exophiala aquamarine</i>	240	XP_013253751
61	X797_011595	<i>Metarhizium robertsii</i>	242	EXU95312
62	LSUB1_G005702	<i>Lachnellula subtilis sima</i>	196	TVY37395
63	FPRO05_09122	<i>Fusarium proliferatum</i>	222	RBA19822
64	BU16DRAFT_144564	<i>Lophium mytilinum</i>	240	KAF2491144
65	PSACC_03592	<i>Paramicrosporidium saccamoebae</i>	217	PJF16581
66	MGG_09544	<i>Pyricularia oryzae</i>	253	XP_003712197
67	K432DRAFT_387480	<i>Lepidopterella palustris</i>	230	OCK73268
68	BM221_002134	<i>Beauveria bassiana</i>	223	PMB72034
69	P280DRAFT_473398	<i>Massarina eburnean</i>	258	KAF2635979
70	L228DRAFT_244539	<i>Xylona heveae</i>	250	XP_018191207
71	PENSUB_8766	<i>Penicillium subrubescens</i>	248	OKO98849
72	VDBG_02112	<i>Verticillium alfalfa</i>	199	XP_003007924
73	LEL_05373	<i>Akanthomyces lecanii</i>	223	OAA78550
74	MBM_05039	<i>Marssonina brunnea</i>	255	XP_007292928
75	SPSK_07862	<i>Sporothrix schenckii</i>	260	XP_016590418
76	SPBR_03139	<i>Sporothrix brasiliensis</i>	262	XP_040620107
77	BUE80_DR003964	<i>Diplocarpon rosae</i>	254	PBP25079
78	BBA_03439	<i>Beauveria bassiana</i>	223	EJP67659
79	ATEG_06930	<i>Aspergillus terreus</i>	254	EAU32314

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Table S1 — Summary of 157 Hal3 proteins from different fungal species and their accession number (*Contd.*)

S. No	Gene ID	Species	Length (number of amino acids)	Accession number
80	CJF30_00007397	<i>Rutstroemia sp.</i>	589	PQE07633
81	MRET_0843	<i>Malassezia restricta</i>	227	XP_027483819
82	C1645_811848	<i>Glomus cerebriforme</i>	191	RIA99107
83	RhiirA1_375201	<i>Rhizophagus irregularis</i>	190	PKC72332
84	FOXG_13662	<i>Fusarium oxysporum</i>	238	XP_018252959
85	AG1IA_09154	<i>Rhizoctonia solani</i>	373	ELU36816
86	HMPREF1544_05992	<i>Mucor circinelloides</i>	195	EPB87167
87	FCULG_00007143	<i>Fusarium culmorum</i>	442	PTD08180
88	K504DRAFT_472147	<i>Pleomassaria siparia</i>	283	PTD08180
89	FIE12Z_4969	<i>Fusarium flagelliforme</i>	238	RFN50731
90	EMCG_00196	<i>Emmonsia crescens</i>	233	KKZ66633
91	GX50_06252	<i>Emmonsia crescens</i>	233	PGH30979
92	FOIG_11369	<i>Fusarium odoratissimum</i>	238	XP_031058504
93	EMPG_10434	<i>Blastomyces silvaeae</i>	233	KLJ06141
94	BKCO1_6900027	<i>Diplodia corticola</i>	273	XP_020126205
95	M437DRAFT_48393	<i>Aureobasidium melanogenum</i>	247	XP_040879884
96	BDCG_08832	<i>Blastomyces dermatitidis</i>	231	XP_045273289
97	M436DRAFT_63734	<i>Aureobasidium namibiae</i>	246	XP_013427645
98	BDBG_07327	<i>Blastomyces gilchristii</i>	233	XP_031580117
99	HCBG_08151	<i>Histoplasma capsulatum</i>	233	XP_045284506
100	BDDG_05404	<i>Blastomyces dermatitidis</i>	231	EGE82460
101	C369_00303	<i>Cryptococcus neoformans</i>	325	OXH19375
102	RSOL_115580	<i>Rhizoctonia solani</i>	471	EUC55428
103	CJF32_00010619	<i>Rutstroemia sp.</i>	411	PQE13282
104	METSCH_B09600	<i>Metschnikowiaaaff pulcherrima</i>	666	QBM87749
105	BDV23DRAFT_157556	<i>Aspergillus alliaceus</i>	625	KAE8389249
106	PTTW11_10237	<i>Pyrenophora teres</i>	581	CAE7211972
107	FVEG_11098	<i>Fusarium verticillioides</i>	239	XP_018758510
108	V565_083950	<i>Rhizoctonia solani</i>	471	KEP50229
109	CCM_02182	<i>Cordyceps militaris</i>	304	EGX93912
110	CJF31_00003599	<i>Rutstroemia sp.</i>	626	PQE26885
111	CC1G_14945	<i>Coprinopsis cinerea</i>	282	XP_002910614
112	QG37_01685	<i>Candida auris</i>	714	KNE00821
113	ISF_03087	<i>Cordyceps fumosorosea</i>	223	XP_018706421
114	K444DRAFT_608175	<i>Hyaloscypha bicolor</i>	632	XP_024742501
115	ATEIFO6365_0005058400	<i>Aspergillus terreus</i>	254	GFF16394
116	SEPMUDRAFT_22774	<i>Sphaerulina musiva</i>	230	XP_016756647
117	PICST_62046	<i>Scheffersomyces stipites</i>	536	XP_001385876
118	MMYC01_208377	<i>Madurella mycetomatis</i>	599	KXX77275
119	GX51_03776	<i>Blastomyces parvus</i>	233	PGH03940
120	DHEL01_v206693	<i>Diaporthe helianthin</i>	281	POS74915
121	GI526_G0003698	<i>Saccharomyces cerevisiae</i>	558	KAF1901978
122	L203_02869	<i>Cryptococcus depauperatus</i>	311	ODN88260
123	YOR054C	<i>Saccharomyces cerevisiae</i>	674	NP_014697
124	YKL088W	<i>Saccharomyces cerevisiae</i>	571	NP_012835
125	IF2G_06440	<i>Cordyceps javanica</i>	224	TQW06157
126	SODALDRAFT_281915	<i>Sodiomyces alkalinus</i>	603	XP_028464284
127	BO83DRAFT_405496	<i>Aspergillus eucalypticola</i>	611	XP_025392283
128	VFPBJ_04861	<i>Purpureocillium lilacinum</i>	590	OAQ82277
129	B2J93_9494	<i>Marssonina coronariae</i>	633	OWP02185

(Contd.)

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S. No	Gene ID	Species	Length (number of amino acids)	Accession number
130	CJF31_00003747	<i>Rutstroemia</i> sp.	617	PQE27003
131	MGO_05408	<i>Candida albicans</i>	725	KHC29478
132	CSPA12_03925	<i>Colletotrichum incanum</i>	599	OHW97351
133	VFPPC_09279	<i>Pochonia chlamydosporia</i>	572	XP_018139140
134	Cob_09953	<i>Colletotrichum orbiculare</i>	794	NA
135	ABL_05128	<i>Aspergillus niger</i>	634	GAQ42467
136	VDBG_07872	<i>Verticillium alfalfa</i>	606	XP_003001613
137	I310_05987	<i>Cryptococcus gattii</i>	359	KIR70357
138	C368_03270	<i>Cryptococcus neoformans</i>	367	OWZ54629
139	A9K55_006724	<i>Cordyceps militaris</i>	335	ATY61206
140	L486_00290	<i>Kwoniella mangroviensis</i>	354	OCF60654
141	IF2G_03762	<i>Cordyceps javanica</i>	590	TQW09331
142	I302_05081	<i>Kwoniella bestiolae</i>	370	XP_019046337
143	I317_05884	<i>Kwoniella heveanensis</i>	396	OCF40317
144	L198_05127	<i>Cryptococcus wingfieldii</i>	324	XP_019030802
145	AWRI3578_g4015	<i>Hanseniaspora opuntiae</i>	699	OEJ81507
146	CB0940_01756	<i>Cercospora beticola</i>	578	XP_023459292
147	AWRI1499_4206	<i>Brettanomyces bruxellensis</i>	738	EIF45926
148	LHYA1_G008307	<i>Lachnellula hyaline</i>	634	XP_031001750
149	BO66DRAFT_424110	<i>Aspergillus aculeatinus</i>	644	XP_025498351
150	LSUB1_G003023	<i>Lachnellula subtilissima</i>	601	TVY40730
151	MGG_00645	<i>Magnaporthe oryzae</i>	624	XP_003718372
152	CA14_008950	<i>Aspergillus flavus</i>	627	RMZ43573
153	F503_02856	<i>Ophiostoma piceae</i>	756	EPE06027
154	ATEIFO6365_0008041400	<i>Aspergillus terreus</i>	1160	GFF18470
155	GMOD_00002559	<i>Pyrenophora seminiperda</i>	736	RMZ68739
156	TW65_01771	<i>Stemphylium lycopersici</i>	693	KNG50793
157	MAPG_08991	<i>Magnaporthe poae</i>	283	KLU90024