

No.	Taxonomy ^a	Species name	GH11	GH5	GH45	CE1	PL1	GH7	GH61	Source
1	Alveolata	<i>Karenia brevis</i>			+					GB
2	Alveolata	<i>Lingulodinium polyedrum</i>						+		GB
3	Alveolata	<i>Pyrocystis lunata</i>						+		GB
4	Amoebozoa	<i>Dictyostellium discoideum</i>						+		GB
5	Amoebozoa	<i>Polyspondylium pallidum</i>						+		GB
6	Bacteria	<i>Amycolatopsis mediterranei</i>	+							GB
7	Bacteria	<i>Bacillus clausii</i>						+		GB
8	Bacteria	<i>Bacillus licheniformis</i>		+				+		GB
9	Bacteria	<i>Bacillus pumilus</i>		+						GB
10	Bacteria	<i>Cellulomonas flavigena</i>	+							GB
11	Bacteria	<i>Dyctyoglomus thermophylum</i>						+		GB
12	Bacteria	<i>Kitasatospora setae</i>	+							GB
13	Bacteria	<i>Nesterenkonia xinjiangensis</i>	+							GB
14	Bacteria	<i>Paenibacillus curdlanolyticus</i>	+							GB
15	Bacteria	<i>Streptomyces bingchenggensis</i>						+		GB
16	Bacteria	<i>Streptomyces griseoflavus</i>	+							GB
17	Bacteria	<i>Streptomyces scabiei</i>						+		GB
18	Bacteria	<i>Streptomyces sp</i>						+		GB
19	Bacteria	<i>Streptomyces sp e14</i>	+							GB
20	Bacteria	<i>Streptomyces sp2</i>	+							GB
21	Bacteria	<i>Thermobispora bispora</i>	+							GB
22	Bacteria	<i>Thermonospora curvata</i>						+		GB
23	Bacteria	<i>Thermotoga maritima</i>		+						GB
24	Bacteria	<i>Xylanimicrobium pachnodae</i>	+							GB
25	Bacteria	<i>Xylanimonas cellulosilytica</i>	+							GB
26	Choanoflagellida	<i>Salpingoeca rosetta</i>	0	+	0	+	0	0	0	BI
27	Fungi/As/Pez	<i>Alternaria brassicicola</i>	+	+	0	+	+	+	+	Jgi
28	Fungi/As/Pez	<i>Alternaria sp.HB186</i>	+							GB
29	Fungi/As/Pez	<i>Aspergillus aculeatus</i>			+					GB
30	Fungi/As/Pez	<i>Aspergillus clavatus</i>	+							GB
31	Fungi/As/Pez	<i>Aspergillus flavus</i>	+							GB
32	Fungi/As/Pez	<i>Aspergillus fumigatus</i>				+				GB
33	Fungi/As/Pez	<i>Aspergillus nidulans</i>	+			+				GB
34	Fungi/As/Pez	<i>Aspergillus oryzae</i>	+							GB
35	Fungi/As/Pez	<i>Bispora sp</i>	+							GB
36	Fungi/As/Pez	<i>Botryotinia fuckeliana</i>	+							GB
37	Fungi/As/Pez	<i>Chaetomium globosum</i>	+	+	0	+	+	+	+	Jgi
38	Fungi/As/Pez	<i>Cochliobolus heterostrophus</i>	+	+	0	+	+	+	+	Jgi
39	Fungi/As/Pez	<i>Cryphonectria parasitica</i>	+	+	+	+	+	+	+	Jgi
40	Fungi/As/Pez	<i>Dothistroma septosporum</i>	+	+	0	+	0	+	+	Jgi
41	Fungi/As/Pez	<i>Fusarium oxysporum f sp. Lycopersici</i>	+							GB
42	Fungi/As/Pez	<i>Gibberella zeae</i>						+		GB
43	Fungi/As/Pez	<i>Glomerella graminicola</i>	+					+		GB

44	Fungi/As/Pez	<i>Grosmannia clavigera</i>		+					GB
45	Fungi/As/Pez	<i>Hypocrea jecorina</i>		+	+				GB
46	Fungi/As/Pez	<i>Magnaporthe oryzae</i>	+						GB
47	Fungi/As/Pez	<i>Marssonina brunnea</i>				+			GB
48	Fungi/As/Pez	<i>Mycosphaerella fijiensis</i>	?	+	0	+	+	+	Jgi
49	Fungi/As/Pez	<i>Nectria haematococca</i>	+	+	0	+	+	+	Jgi
50	Fungi/As/Pez	<i>Neosartorya fischeri</i>	+						GB
51	Fungi/As/Pez	<i>Neurospora crassa</i>	+	+	0	+	+	+	Jgi
52	Fungi/As/Pez	<i>Penicillium decumbens</i>			+				GB
53	Fungi/As/Pez	<i>Penicillium marneffei</i>	+		+				GB
54	Fungi/As/Pez	<i>Phaeosphaeria nodorum</i>	+						GB
55	Fungi/As/Pez	<i>Phialophora sp</i>			+				GB
56	Fungi/As/Pez	<i>Pyrenophora teres</i>	+						GB
57	Fungi/As/Pez	<i>Pyrenophora tritici-repentis</i>	+						GB
58	Fungi/As/Pez	<i>Sclerotinia sclerotiorum</i>	+						GB
59	Fungi/As/Pez	<i>Sordaria macrospora</i>	+						GB
60	Fungi/As/Pez	<i>Sporotrichum termophile</i>	+	+	0	+	+	+	Jgi
61	Fungi/As/Pez	<i>Talaromyces stipitatus</i>	+		+				GB
62	Fungi/As/Pez	<i>Thielavia terrestris</i>	+	+	0	+	0	+	Jgi
63	Fungi/As/Pez	<i>Trichoderma atroviride</i>	+	+	+	+	0	+	Jgi
64	Fungi/As/Pez	<i>Trichoderma longibraciatum</i>							GB
65	Fungi/As/Pez	<i>Trichoderma viride</i>			+				GB
66	Fungi/As/Pez	<i>Tuber melanosporum</i>	0	0	0	+	+	0	MW
67	Fungi/As/Pez	<i>Verticillium albo-atrum</i>		+			+		GB
68	Fungi/As/Pez	<i>Verticillium dahliae</i>	+						GB
69	Fungi/As/Sac	<i>Debaryomyces hansenii</i>	0	0	0	+	0	0	GL
70	Fungi/As/Sac	<i>Kluyveromyces lactis</i>	0	0	0	+	0	0	GL
71	Fungi/As/Sac	<i>Pichia stipitis</i>	0	0	0	+	0	0	Jgi
72	Fungi/As/Sac	<i>Saccharomyces cerevisiae</i>	0	0	0	+	0	0	GL
73	Fungi/As/Sac	<i>Yarrowia lipolytica</i>	0	0	0	+	0	0	GL
74	Fungi/As/Sac	<i>Zygosaccharomyces rouxii</i>	0	0	0	+	0	0	GL
75	Fungi/As/Tap	<i>Schizosaccharomyces pombe</i>	0	0	0	0	0	0	BI
76	Fungi/Ba	<i>Agaricus bisporus</i>	+	+	0	+	+	+	Jgi
77	Fungi/Ba	<i>Ceriporiopsis subvermispora</i>	+	+	0	+	0	0	Jgi
78	Fungi/Ba	<i>Coniophora puteana</i>	0	+	0	+	0	+	Jgi
79	Fungi/Ba	<i>Coprinopsis cinerea</i>	+	+	0	+	+	+	Jgi
80	Fungi/Ba	<i>Cryptococcus neoformans</i>	0	0	0	+	0	0	Jgi
81	Fungi/Ba	<i>Flammulina velutipes</i>						+	GB
82	Fungi/Ba	<i>Fomitiporia mediterranea</i>	0	+	0	+	+	+	Jgi
83	Fungi/Ba	<i>Fomitopsis pinicola</i>	0	+	0	+	0	0	Jgi
84	Fungi/Ba	<i>Gloeophyllum trabeum</i>	0	+	0	+	0	0	Jgi
85	Fungi/Ba	<i>Heterobasidion annosum</i>	0	+	0	+	+	+	Jgi
86	Fungi/Ba	<i>Irpex lacteus</i>						+	GB
87	Fungi/Ba	<i>Laccaria bicolor</i>	0	+	0	+	0	0	Jgi
88	Fungi/Ba	<i>Leucoagaricus gongylophorus</i>					+		GB
89	Fungi/Ba	<i>Melampsora larici populina</i>					+	0	Jgi

90	Fungi/Ba	<i>Melassezia globosa</i>	0	0	0	+	0	0	0	Jgi
91	Fungi/Ba	<i>Phanerochaete chrysosporium</i>	?	+	0	+	0	+	+	Jgi
92	Fungi/Ba	<i>Pleurotus florida</i>						+		GB
93	Fungi/Ba	<i>Pleurotus ostreatus</i>	+	+	0	+	+	+	+	Jgi
94	Fungi/Ba	<i>Polyporus arcularius</i>						+		GB
95	Fungi/Ba	<i>Postia placenta</i>	0	+	0	+	0	0	+	Jgi
96	Fungi/Ba	<i>Puccinia graminis</i>	0	+	0	0	0	+	0	Jgi
97	Fungi/Ba	<i>Puccinia graminis tritici</i>						+	0	BI
98	Fungi/Ba	<i>Punctularia strigosozonata</i>	+	+	0	+	+	+	+	Jgi
99	Fungi/Ba	<i>Rhodotorula graminis</i>	0	0	0	+	+	0	+	Jgi
100	Fungi/Ba	<i>Schizophyllum commune</i>	+	+	0	+	+	+	+	Jgi
101	Fungi/Ba	<i>Serpula lacrymans</i>	0	+	0	+	0	0	+	Jgi
102	Fungi/Ba	<i>Sporobolomyces roseus</i>	0	+	0	+	0	0	0	Jgi
103	Fungi/Ba	<i>Stereum hirsutum</i>	+	+	0	+	+	+	+	Jgi
104	Fungi/Ba	<i>Trametes versicolor</i>	+	+	0	+	0	+	+	Jgi
105	Fungi/Ba	<i>Tremella mesenterica</i>	0	0	0	+	0	0	0	Jgi
106	Fungi/Ba	<i>Ustilago maydis</i>	+	0	0	+	0	0	0	Jgi
107	Fungi/Ba	<i>Wallemia sebi</i>	0	0	0	+	0	0	+	Jgi
108	Fungi/Ba	<i>Wolfiporia cocos</i>	0	+	0	+	0	0	+	Jgi
109	Fungi/Blasto	<i>Allomyces macrogynus</i>	+	0	0	+	+	0	0	BI
110	Fungi/Chyt	<i>Batrachochytrium dendrobatidi</i>	0	?	0	+	0	0	0	Jgi
111	Fungi/Chyt	<i>Spizellomyces punctatus</i>	0	+	0	+	0	0	0	BI
112	Fungi/Mucorales	<i>Mucor circinelloides</i>	0	+	0	+	0	0	0	Jgi
113	Fungi/Mucorales	<i>Phycomyces blakesleanus</i>	0	0	0	+	0	0	0	Jgi
114	Fungi/Mucorales	<i>Rhizopus oryzae</i>	0	+	0	0	0	0	0	BI
115	Metazoa/Crustacea	<i>Daphnia pulex</i>						+		Jgi
116	Metazoa/Crustacea	<i>Limnoria quadripunctata</i>						+		GB
117	Metazoa/Mollusca	<i>Ampularia crossean</i>				+				GB
118	Metazoa/Mollusca	<i>Biomphalaria glabrata</i>				+				GB
119	Metazoa/Mollusca	<i>Corbicula japonica</i>				+				GB
120	Metazoa/Mollusca	<i>Haliotis discus</i>				+				GB
121	Metazoa/Mollusca	<i>Lottia gigantea</i>				+				Jgi
122	Metazoa/Mollusca	<i>Lymnaea stagnalis</i>				+				GB
123	Metazoa/Mollusca	<i>Mytilus edulis</i>				+				GB
124	Oxymonadina	<i>Pseudotrichonympha grassii</i>						+		GB
125	Oxymonadina	Symb protist of <i>Hodotermopsis sjoesedti</i>						+		GB
126	Oxymonadina	Symb protist of <i>Reticulitermes speratus</i>						+		GB
127	Oxymonadina	Symb protist of <i>Cryptocercus punctulatus</i>						+		GB
128	Plantae	<i>Arabidopsis lyrata</i>			+					GB
129	Plantae	<i>Carica papaya</i>					+			GB
130	Plantae	<i>Cupressus sempervirens</i>					+			GB
131	Plantae	<i>Lilium longiflorum</i>					+			GB
132	Plantae	<i>Oryza sativa japonica group</i>					+			GB
133	Plantae	<i>Picea sitchensis</i>					+			GB
134	Plantae	<i>Populus tremulaXtremuloides</i>					+			GB
135	Plantae	<i>Vitis vinifera</i>				+				GB

136	Stamenopiles/Oom	<i>Phytophthora infestans</i>	+	+	Jgi
137	Stamenopiles/Oom	<i>Phytophthora ramorum</i>	+		Jgi

Table S5: Origin of the CAZyme sequences used in the phylogenetic analyses (Fig. 2 and Fig. S4). Species No. are the No. used in the phylogenetic trees to identify the origin of the genes. Species in bold face characters are those for which the genomes were systematically searched for the presence of the different CAZyme categories. Sources of the data are as follow: GB, GenBank, (<http://www.ncbi.nlm.nih.gov/genbank/>); jgi, Joint Genome Institute (<http://genome.jgi-psf.org/>); BI, Broad Institute (<http://www.broadinstitute.org/scientific-community/data?>); Genolevure, GL (<http://www.genolevures.org/>); Mycorweb, MW (<http://mycor.nancy.inra.fr/>).

^a As/Pez, Ascomycota/Pezizomycotina ; As/Sac, Ascomycota/Saccharomycotina ; As/Tap, Ascomycota/Taphrinomycotina; Ba, Basidiomycota; Chyt, Chytridiomycota; Oom, Oomycetes.