

Table 1. List of selected Ceratobasidiaceae species for genome and transcriptome sequencing.

Sample	Accession Number /Source	Nutritional Mode	AG group	isolate	Substrate /host	Country
<i>Thanatephorus sp. nov.</i>	TFC 202108	Saprotroph	N/A	—	wood	Russia
<i>Ceratobasidium anceps</i>	TFC 1994-174	Pathogen	N/A	—	<i>Pteris latiuscula</i>	Canada
Ceratobasidiaceae sp.	T. Yagame	Saprotroph	N/A	—	<i>Chamaechaetochytrium sikokiana</i>	Japan
Ceratobasidiaceae sp.	T. Yagame	Ectomycorrhiza	N/A	—	<i>Taeniophyllum glandulosum</i>	Japan
<i>C. sp.</i>	A. Ogoshi	Saprotroph	AG-A	C-662	Soil	Japan
<i>C. sp.</i>	A. Ogoshi	Saprotroph	AG-A	C-517	Soil	Japan
<i>C. sp.</i>	A. Ogoshi	Saprotroph	AG-A	C-512	Soil	Japan
<i>C. oryzae-sativae</i>	A. Ogoshi	Pathogen	AG-Bb	C-511	<i>Oryza sativum</i>	Japan
<i>C. oryzae-sativae</i>	P. Gunnell	Pathogen	AG-Bb	PG1	<i>Oryza sativum</i>	USA
<i>C. sp.</i>	A. Ogoshi	Saprotroph	AG-C	A001C	Soil	Japan
<i>C. sp.</i>	A. Ogoshi	Saprotroph	AG-C	70B	Soil	Japan
<i>C. cereale</i>	K. Yokoyama	Unknown	AG-D	C-626	N/A	Japan
<i>C. cereale</i>	T. Toda	Pathogen	AG-DI	BrG WP2	<i>Zoysia sp.</i>	Japan
<i>C. cereale</i>	T. Toda	Unknown	AG-DIII	KOU04 1FW	Unknown	Japan
<i>C. sp.</i>	A. Ogoshi	Pathogen	AG-F	SIR-I	<i>Ipomea batata</i>	Japan
<i>C. sp.</i>	Unknown	Unknown	AG-F	AH-6	N/A	Unknown
<i>C. sp.</i>	T. Frisina-Law	Pathogen	AG-G	232-CG	<i>Rhododendron sp.</i>	USA
<i>C. sp.</i>	A. Ogoshi	Unknown	AG-G	C-653	N/A	Japan
<i>C. cereale</i>	L.L. Burpee	Pathogen	CAG-1	RH-1	<i>Agrostis sp.</i>	USA
<i>C. sp.</i>	L.L. Burpee	Pathogen	CAG-5	BN37	<i>Cucumis sativum</i>	USA
<i>C. sp.</i>	D.M. Benson	Pathogen	CAG-7	RH-7	<i>Pittosporium sp.</i>	USA
<i>C. sp.</i>	A. Ogoshi	Saprotroph	AG-Q	C-620	Soil	Japan
<i>C. sp.</i>	A. Ogoshi	Saprotroph	AG-L	FK02-2	Soil	Japan
<i>C. sp.</i>	W. Copes	Pathogen	AG-U	Rh4	<i>Rhododendron sp.</i>	USA
<i>Rhizoctonia endophytica</i>	L.O. Vaartaja / DAOM138188	Pathogen	N/A	Re-1	<i>Pinus banksiana</i>	Canada
<i>R. solani (T. cucumeris)</i>	T.C. Paulitz	Pathogen	AG-2-1	Rh08	<i>Brassica napus</i>	USA
<i>R. solani (T. cucumeris)</i>	D.E. Carling / ATCC62865	Pathogen	AG-2-1	56-Rs	<i>Solanum tuberosum</i>	USA
<i>R. solani (T. praticola)</i>	T.B. Brenneman	Pathogen	AG-4 HG-I	Rs359	<i>Arachis hypogaea</i>	USA
<i>R. solani (T. praticola)</i>	H.S. Whitney / ATCC48802	Pathogen	AG-4 HG-II	Rs29	<i>Picea glauca</i>	Canada
<i>R. solani (T. praticola)</i>	M.A. Cubeta	Unknown	AG-4 HG-II	Rs29.3	N/A	Unknown
<i>R. solani (T. praticola)</i>	G.C. Papavizas / ATCC14007	Pathogen	AG-4 HG-II	Rs44	<i>Beta vulgaris</i>	Unknown
<i>R. solani (T. praticola)</i>	J.E. Kotila / CMI3486	Pathogen	AG-4 HG-III	B-195	<i>Phaseolus vulgaris</i>	Unknown
<i>R. solani (T. cucumeris)</i>	S.M. Tavantzis	Pathogen	AG-5	10-Rs	<i>Solanum tuberosum</i>	USA

<i>R. solani</i> (<i>T. cucumeris</i>)	Unkown	Saprotroph	AG-6 HG-I	Rs BWB	Soil	Unknow n
<i>R. solani</i> (<i>T. cucumeris</i>)	Unkown	Saprotroph	AG-6 HG-V	Rs IO- EEA	Soil	Unknow n
<i>R. solani</i> (<i>T. cucumeris</i>)	T.C. Paulitz	Pathogen	AG-8 ZG-1	C-1	<i>Triticum aestivum</i>	USA
<i>R. solani</i> (<i>T. cucumeris</i>)	R.J. Cook	Pathogen	AG-10	Lq9 97507	<i>Triticum aestivum</i>	USA
<i>R. calle</i>	L.O. Vaartaja	Pathogen	N/A	Rc-1	<i>Pinus silvestris</i>	Canada
<i>R. solani</i> (<i>C. filamentosum</i>)	H.K. Saksena	Unknown	N/A	B-107- 2(1N)	N/A	Unknow n
<i>R. solani</i> (<i>T. praticola</i>)	H.K. Saksena	Unknown	AG-4	B-108- 1(1N)	N/A	Unknow n
<i>R. solani</i> (<i>T. praticola</i>)	H.K. Saksena	Unknown	AG-4	B-142- 9(1N)	N/A	Unknow n
<i>C. sp.</i>	T. Bose	Orchid- mycorrhiza	N/A	N/A	<i>Habenaria barbertonii</i>	South Africa
<i>R. solani</i>	CBS 970.96	Pathogen	AG-9	N/A	Potato stem	Alaska
<i>C. cornigerum</i>	CBS 139.82	Pathogen	AG-R, CAG-7	N/A	<i>Pittosporu m sp.</i>	USA
<i>R. solani</i>	CBS 523.96	Pathogen	AG1-IC	N/A	Pine seedling	Canada
<i>R. solani</i>	CBS 341.84	Pathogen	AG-E	N/A	<i>Fragaria sp.</i>	Netherl ands
<i>R. carotae</i> (holotype)	CBS 464.48	N/A	N/A	N/A	<i>Daucus carota</i>	USA
<i>R. solani</i>	CBS 210.84	Pathogen	AG-2-2	N/A	Sugar beet	Japan
<i>C. globisporum</i> (holotype)	CBS 569.83	Orchid- mycorrhiza	AG-Bb	N/A	<i>Trichoglotti s australiensi s</i>	Australi a
<i>Waitea Circinata</i> (type)	CBS 261.60	N/A	N/A	N/A	<i>Pinus banksiana</i>	Canada
<i>R. endophytica</i> var. <i>endophytica</i>	CBS 257.60	N/A	N/A	N/A	<i>Pinus banksiana</i>	Canada
<i>R. solani</i> (holotype)	CBS 260.60	N/A	N/A	N/A	<i>Picea pungens</i>	Canada
<i>R. rubi</i> (Type)	CBS 382.59	N/A	N/A	N/A	<i>Rubus sp.</i>	Canada
<i>C. bulbifaciens</i>	CBS 129339	lichenicolou s	N/A	N/A	<i>Acer platanoides</i>	German y
<i>C. bicornis</i>	A. Hietala	Pathogen	N/A	1988- 424	<i>Picea glauca</i>	Norway
<i>R. butinii</i>	Barbara Piškur	Pathogen	N/A	ZLVG- 432	<i>Picea glauca</i>	Sloveni a

iv. Relevance of the project to the [DOE mission](#)

The proposed genome sequencing project will advance DOE Missions in the areas of Bioenergy and Carbon Cycle. Many members of the proposed fungal group are saprobes and can degrade lignin, hemicellulose, and cellulose in plant cell walls. Previous genomic studies in this family were mostly focused on multinucleate *Rhizoctonia* species (AG 1–13; teleomorph known as *Thanatephorus cucumeris*) due to their importance as plant pathogens. In contrast, in the planned project different isolates of the widely studied anastomosis group will be sequenced, including sequences from binucleate *Rhizoctonia* species (AG A–U; teleomorph=*Ceratobasidium* sp.) from various nutritional modes, which can serve as a basis for future biotechnological research in Ceratobasidiaceae.