

Hygrophoraceae revision

Online Resource 2. Species of *Hygrophorus* detected on ECM roots using molecular methods (GenBank search 17 Feb 2010) and *Hygrocyboideae* (GenBank search Dec 2012).

Fungal Species	Method	Closest named BLAST	bp	% gaps	ECM Host plant	Location	GenBank #	Study
<i>Hygrophorus discoxanthus</i>	DNA sequencing	–	–	–	<i>Fagus sylvatica</i>	Germany	FJ403515	Pena et al. 2010
<i>Hygrophorus eburneus</i>	DNA sequencing	–	–	–	<i>Quercus wizliseni</i>	California, USA	EF411084	Morris et al. 2008
<i>Hygrophorus eburneus</i>	DNA sequencing	–	–	–	<i>Quercus douglasii</i>	California, USA	EF559291	Smith et al. 2007
<i>Hygrophorus</i> cf. <i>flavodiscus</i>	DNA sequencing	–	–	–	unknown Pinaceae	California, USA	AY702747	Izzo et al. 2005
<i>Hygrophorus gliocyclus</i>	RFLP match	–	–	–	<i>Pinus edulis</i>	Arizona, USA	–	Treseder et al. 2004
<i>Hygrophorus gliocyclus</i>	RFLP match	–	–	–	<i>Quercus garryana</i>	Oregon, USA	–	Valentine et al. 2004
<i>Hygrophorus</i> cf. <i>gliocyclus</i>	DNA sequencing	–	–	–	<i>Pinus sabiniana</i>	California, USA	DQ974728	Smith et al., 2009
<i>Hygrophorus hypothejus</i>	DNA sequencing	–	–	–	<i>Pinus densiflora</i>	Japan	AB251834	Lian et al. 2006
<i>Hygrophorus olivaceoalbus</i>	DNA sequencing	–	–	–	<i>Pinus sylvestris</i>	Sweden	FM992929	Kjøller & Clemmensen, 2009
<i>Hygrophorus olivaceoalbus</i>	DNA sequencing	–	–	–	<i>Picea abies</i>	Germany	AF430253	Haug 2002
<i>Hygrophorus olivaceoalbus</i>	RFLP match	–	–	–	<i>Picea abies</i>	Sweden	–	Dahlberg et al (1997)
<i>Hygrophorus</i> cf. <i>unicolor</i>	DNA sequencing	–	–	–	<i>Fagus sylvatica</i>	Germany	FJ403517	Pena et al. 2010
<i>Hygrophorus</i> cf. <i>quercetorum</i>	DNA sequencing	–	–	–	unknown host plant	Estonia	AJ893288	Tedersoo et al. 2006
<i>Hygrophorus</i> sp.	DNA sequencing	<i>Hygrophorus chrysodon</i>	84%	6%	unknown Pinaceae	California, USA	AY702722	Izzo et al. 2005
<i>Hygrophorus</i> sp.	DNA sequencing	<i>Hygrophorus roseobrunneus</i>	84%	8%	<i>Lithocarpus densiflora</i>	California, USA	DQ273389	Bergemann & Garbelotto 2006
<i>Hygrophorus</i> sp.	DNA sequencing	<i>Hygrophorus pudorinus</i>	89%	4%	<i>Tsuga heterophylla</i>	BC, Canada	DQ481982	Wright et al. 2009
<i>Hygrophorus</i> sp.	DNA sequencing	<i>Hygrophorus hypothejus</i>	95%	2%	<i>Pinus muricata</i>	California, USA	DQ822808	Peay et al. 2007

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Fungal Species	Method	Closest named BLAST	bp	%	gaps	ECM	Host plant	Location	GenBank #	Study
Hygrophorus sp.	DNA sequencing	Hygrophorus discoxanthus	87%	8%			Quercus wizliseni	California, USA	EF417821	Morris et al. 2008
Hygrophorus sp.	DNA sequencing	Hygrophorus olivaceoalbus		89%	7%			Quercus crassifolia		Guerrero, Mexico
Hygrophorus sp.	DNA sequencing	Hygrophorus eburneus	87%	7%			Quercus crassifolia	Guerrero, Mexico	FJ196924	Morris et al. 2009
Hygrophorus sp.	DNA sequencing	Hygrophorus roseobrunneus		84%	9%			Quercus rotundifolia		Portugal
Hygrophorus sp.	DNA sequencing	Hygrophorus pustulatus	92%	3%			Picea abies	Sweden	FM992930	Kjøller & Clemmensen, 2009
Hygrophorus sp.	RFLP match	–	–	–			Pinus contorta	Wyoming, USA	–	Cullings et al. 2000
Hygrophorus sp.	RFLP match	–	–	–			Picea engelmannii	Wyoming, USA	–	Cullings et al. 2000
Hygrophorus sp.	RFLP match	–	–	–			Pinus edulis	Arizona, USA	–	Gehring et al. 1998
Hygrophorus spp. (3 taxa)	RFLP match	–	–	–			Pinus contorta	Wyoming, USA	–	Douglas et al. 2005
Species of subf. <i>Hygrocyboideae</i> sequenced from plants										
–	ITS matching	Gloioxanthomyces vitellinus		80%			Bryophyta, unknown	Norway	AM999704	Kauserud et al., 2008
–	ITS matching	Gloioxanthomyces vitellinus		78%			Deschampsia flexuosa	Finland	FJ517591– FJ517602	Tejesvi et al., 2010
Species of <i>Hygrophorus</i> reported on ECM roots using traditional methods										
Hygrophorus purpurascens	synthesis in culture						Tsuga heterophylla	Oregon		Kropp & Trappe, 1982
Hygrophorus chrysodon	root tracing in pot culture						Tilia americana	Ontario, Canada		Parks & Moore 1971
Hygrophorus pustulatus	morphotyping						Picea abies			Gronbach 1989