

Table S1 List of sequences used in the phylogenetic trees for the ITS-5.8S rDNA regions reporting species names, strains or isolates, sampling locations, clades, and GenBank accession numbers. In bold the sequences obtained in the present study.

Species	Strain	Sampling Location	Clade	Accession Number
<i>A. affine</i>	IEO-PA4V	Spain: Ria de Vigo, Galicia		AJ632094
<i>A. affine</i>	IEO-PA8V	Spain: La Linea, Gibraltar		AJ632095
<i>A. affine</i>	H1	Japan: Harima Nada		AB006995
<i>A. lusitanicum</i>	GT-PORT	Portugal: Lagoa de Obidos	Global clade	EU707539
<i>A. lusitanicum</i>	AL2V	Spain: Ria de Vigo, Galicia	Global clade	EU707499
<i>A. minutum</i>	UNISS3	Italy: Olbia, Tyrrhenian Sea, Mediterranean Sea, Sardinia	Global clade	MF540537
<i>A. minutum</i>	UNISS4	Italy: Olbia, Tyrrhenian Sea, Mediterranean Sea, Sardinia	Global clade	MF540538
<i>A. minutum</i>	CBA28	Italy: Olbia, Tyrrhenian Sea, Mediterranean Sea, Sardinia	Global clade	FR668134
<i>A. minutum</i>	CNR-AMIA4OL	Italy: Olbia, Tyrrhenian Sea, Mediterranean Sea, Sardinia	Global clade	AJ514921
<i>A. minutum</i>	SAAM12	South Africa: Cape Town	Global clade	EU707547
<i>A. minutum</i>	IEO-AL8C	Spain: Arenys, Catalan Sea, Mediterranean Sea	Global clade	AJ532914
<i>A. minutum</i>	SZN030	Italy: Gulf of Naples, Tyrrhenian Sea, Mediterranean Sea	Global clade	EU707549
<i>A. minutum</i>	AMFL	England: Fleet Lagoon	Global clade	EU707521
<i>A. minutum</i>	AM1	South Africa: Cape Town	Global clade	EU707511
<i>A. minutum</i>	AL5T	Italy: Gulf of Trieste, Adriatic Sea, Mediterranean Sea	Global clade	EU707505
<i>A. minutum</i>	AMIR-1	Ireland: Cork Harbor	Global clade	EU707523
<i>A. minutum</i>	CNR-AMIA1	Italy: Siracusa, Ionian Sea, Mediterranean Sea, Sicilia	Global clade	AJ621734
<i>A. minutum</i>	CNR-AMIA4PT	Italy: Porto Torres, Mediterranean Sea, Sardinia	Global clade	AJ514920
<i>A. minutum</i>	CNR-AMIA2OL	Italy: Olbia, Tyrrhenian Sea, Mediterranean Sea, Sardinia	Global clade	AJ532908
<i>A. minutum</i>	CNR-AMIA2PT	Italy: Porto Torres, Mediterranean Sea, Sardinia	Global clade	AJ532909
<i>A. minutum</i>	VGO663	Italy: Olbia, Tyrrhenian Sea, Mediterranean Sea, Sardinia	Global clade	AM238453
<i>A. minutum</i>	LAC27	Italy: Gulf of Trieste, Adriatic Sea, Mediterranean Sea	Global clade	AJ005050
<i>A. catenella</i>	ACC01	Chile	Group I, (NA)	AJ272120
<i>A. fundyense</i>	GtCA29A	USA: Cape Ann, North Atlantic	Group I, (NA)	NR
<i>A. tamarense</i>	04-197-A1	United Kingdom: Scotland, Stonehaven	Group I, (NA)	FJ042687
<i>A. tamarense</i>	04-197-30	United Kingdom: Scotland, Stonehaven	Group I, (NA)	FJ042686
<i>A. tamarense</i>	FK-788A/B	Japan: Funka Bay	Group I, (NA)	AB006994; AB006993
<i>A. tamarense</i>	MDQ1096	Argentina: Mar de la Plata, West Pacific	Group I, (NA)	AM292306
<i>A. tamarense</i>	PW06	USA: Port Benny, North Pacific	Group I, (NA)	NR
<i>A. tamarense</i>	OK875-1A/B	Japan: Okirai Bay, East Pacific	Group I, (NA)	NR
<i>A. tamarense</i>	AT4A/B	Japan: Harima Nada, East Pacific	Group I, (NA)	NR
<i>A. tamarense</i>	OFX191-1A/B	Japan: Ofunato Bay, East Pacific	Group I, (NA)	NR
<i>A. tamarense</i>	At503A-A/B	Japan: Mikawa Bay, East Pacific	Group I, (NA)	NR
<i>A. tamarense</i>	OFX151A	Japan: Ofunato Bay, East Pacific	Group I, (NA)	NR
<i>A. tamarense</i>	CNR-ATAA1	Italy: Taranto, Ionian Sea, Mediterranean Sea, Puglia	Group II, (ME)	AJ491152
<i>A. tamarense</i>	CNR-ATAA3	Italy: Taranto, Ionian Sea, Mediterranean Sea, Puglia	Group II, (ME)	AM292308
<i>A. tamarense</i>	IEO-VGO654	Spain: Maiorca, Balearic Sea coast	Group II, (ME)	AM238650
<i>A. tamarense</i>	IEO-VGO553	Greece: Kavala, Aegean Sea coast	Group II, (ME)	AM238651
<i>A. tamarense</i>	SZN-01	Italy: Gulf of Naples, Tyrrhenian Sea, Mediterranean Sea	Group II, (ME)	AM238652
<i>A. tamarense</i>	CNR-OR3	Italy: Oristano, Mediterranean Sea, Sardinia	Group II, (ME)	AM292307

<i>A. fundyense</i>	CCMP1719	USA	Group III, (WE)	DQ444290
<i>A. tamarense</i>	CCMP115	United Kingdom: England, Plymouth	Group III, (WE)	JF521640
<i>A. tamarense</i>	S06-010-01	United Kingdom: Scotland, Weisdale, Shetland	Group III, (WE)	FJ042685
<i>A. tamarense</i>	TL-A3200907F5	France: Thau Lagoon, Mediterranean Sea	Group III, (WE)	FR686537
<i>A. tamarense</i>	CNR-ATA4PT	Italy: Porto Torres, Mediterranean Sea, Sardinia	Group III, (WE)	AJ514906
<i>A. tamarense</i>	CNR-ATA6PT	Italy: Porto Torres, Mediterranean Sea, Sardinia	Group III, (WE)	AJ514907
<i>A. tamarense</i>	CCMP 116	Spain: Ria de Vigo, Galicia	Group III, (WE)	AJ005047
<i>A. tamarense</i>	WKS-1	Japan: Kushimoto, East Pacific	Group III, (WE)	AB006991
<i>A. tamarense</i>	UNISS5	Italy: Gulf of Alghero, Mediterranean Sea, Sardinia	Group III, (WE)	MF540539
<i>A. tamarense</i>	AT-6	China	Group III, (WE)	DQ176666
<i>A. catenella</i>	OFX102	Japan: Ofunato Bay, East Pacific	Group IV, (TA)	NR
<i>A. catenella</i>	OFY101	Japan: Ofunato Bay, East Pacific	Group IV, (TA)	NR
<i>A. catenella</i>	TNY11	Japan: Tanabe Bay, East Pacific	Group IV, (TA)	NR
<i>A. catenella</i>	TNX22	Japan: Tanabe Bay, East Pacific	Group IV, (TA)	NR
<i>A. catenella</i>	Y-2	Japan: Yamakawa, East Pacific	Group IV, (TA)	NR
<i>A. catenella</i>	K0-3	Japan: Uranouchi Inlet, East Pacific	Group IV, (TA)	NR
<i>A. catenella</i>	IEO-709	Spain: Tarragona, Catalan Sea, Mediterranean Sea	Group IV, (TA)	AJ968683
<i>A. catenella</i>	IEO-715	Spain: Tarragona, Catalan Sea, Mediterranean Sea	Group IV, (TA)	AJ968681
<i>A. catenella</i>	IEO-816	France: Thau Lagoon, Mediterranean Sea	Group IV, (TA)	AJ968680
<i>A. catenella</i>	IEO-AC2C	Spain: Barcelona, Catalan Sea, Mediterranean Sea	Group IV, (TA)	AJ532912
<i>A. catenella</i>	CNR-ACATA4	Italy: Olbia, Tyrrhenian Sea, Mediterranean Sea, Sardinia	Group IV, (TA)	AJ532910
<i>A. catenella</i>	ATTTL02	France: Thau Lagoon, Mediterranean Sea	Group IV, (TA)	AJ608264
<i>A. catenella</i>	ATTTL01	France: Thau Lagoon, Mediterranean Sea	Group IV, (TA)	AJ608263
<i>A. catenella</i>	CSIC-5T	Spain: Tarragona, Catalan Sea, Mediterranean Sea	Group IV, (TA)	AJ580325
<i>A. catenella</i>	CNR-ACATS3	Italy: Olbia, Tyrrhenian Sea, Mediterranean Sea, Sardinia	Group IV, (TA)	AJ580320
<i>A. catenella</i>	CNR-ACATS1	Italy: Olbia, Tyrrhenian Sea, Mediterranean Sea, Sardinia	Group IV, (TA)	AJ580319
<i>A. catenella</i>	CNR-ACATS2	Italy: Olbia, Tyrrhenian Sea, Mediterranean Sea, Sardinia	Group IV, (TA)	AJ580318
<i>A. catenella</i>	CNR-ACATC2	Italy: Olbia, Tyrrhenian Sea, Mediterranean Sea, Sardinia	Group IV, (TA)	AJ580317
<i>A. catenella</i>	ACTEM17	France: Thau Lagoon, Mediterranean Sea	Group IV, (TA)	FM211470
<i>A. catenella</i>	AC0409-13	Japan: Akasaki Seaport	Group IV, (TA)	FM211466
<i>A. catenella</i>	AC0310-06	Japan: Kita Nada, Kagawa	Group IV, (TA)	FM211462
<i>A. catenella</i>	AC0206-18	Japan: Ago Bay, Mie	Group IV, (TA)	FM211460
<i>A. catenella</i>	AC0202-15	Japan: Uchino-Umi, Tokushima	Group IV, (TA)	FM211457
<i>A. catenella</i>	ACDH	China	Group IV, (TA)	DQ176658
<i>A. catenella</i>	MI7	Japan: Harima Nada	Group IV, (TA)	AB006990
<i>A. catenella</i>	TL-C3111007G3	France: Thau Lagoon, Mediterranean Sea	Group IV, (TA)	FR686536
<i>A. tamarense</i>	AT5-1	China	Group IV, (TA)	DQ176662
<i>A. catenella</i>	UNISS6	Italy: Santa Giusta Lagoon, Mediterranean Sea, Sardinia	Group IV, (TA)	MF574310
<i>G. spinifera</i>	CCMP 409	USA: West Boothbay Harbor, MA		EU532487

Note: The following acronyms, abbreviations and symbols indicate respectively:

NA = North American clade, ME = Mediterranean clade, WE = Western European clade, TA = Temperate Asian clade

NR = GenBank sequence not reported

Table S2 List of sequences used in the phylogenetic trees for the LSU rDNA region reporting species names, strains or isolates, sampling locations, clades, and GenBank accession numbers. In bold the sequences obtained in the present study.

Species	Strain	Sampling Location	Clade	Accession Number
<i>A. affine</i>	AABCV-1	Mexico: Gulf of California, North Pacific Ocean		AY152706
<i>A. affine</i>	PA5V	Spain: Ria de Vigo, Galicia		NR
<i>A. affine</i>	CU-1	Thailand: Pacific Ocean		U44935
<i>A. lusitanicum</i>	18-1T	Portugal: Lagoa de Obidos	Global clade	EU707456
<i>A. lusitanicum</i>	18-1NT	Portugal: Lagoa de Obidos	Global clade	EU707455
<i>A. lusitanicum</i>	AL2V	Spain: Ria de Vigo, Galicia	Global clade	EU707460, AY962837
<i>A. lusitanicum</i>	AL-1	Portugal	Global clade	JF906999
<i>A. minutum</i>	UNISS3	Italy: Olbia, Tyrrhenian Sea, Mediterranean Sea, Sardinia	Global clade	MF540550
<i>A. minutum</i>	UNISS4	Italy: Olbia, Tyrrhenian Sea, Mediterranean Sea, Sardinia	Global clade	MF540551
<i>A. minutum</i>	AMAD16	Australia: Adelaide	Global clade	JF521633
<i>A. minutum</i>	AMIR-1	Ireland: Cork Harbor	Global clade	EU707473, AY962848
<i>A. minutum</i>	AMFL	England: Fleet Lagoon	Global clade	EU707471
<i>A. minutum</i>	AM1	France: Morlaix Bay	Global clade	EU707466 ; AY962843
<i>A. minutum</i>	AMAD06	Australia: Port River	Global clade	U44936
<i>A. minutum</i>	CCMP113	Spain: Ria de Vigo, Galicia	Global clade	JF521634
<i>A. minutum</i>	LAC27	Italy: Gulf of Trieste, Adriatic Sea, Mediterranean Sea	Global clade	AY962842
<i>A. minutum</i>	AMNZ02	New Zealand: Anakoha Bay	Pacific Clade	EU707477
<i>A. minutum</i>	AMNZ01	New Zealand: Croisilles Harbor	Pacific Clade	EU707476
<i>A. minutum</i>	AMBOPO06	New Zealand: Tauranga Harbor	Pacific Clade	EU707468, AY962846
<i>A. minutum</i>	AMBOPO14	New Zealand	Pacific Clade	EU707469, AY962847
<i>A. catenella</i>	ACC01	Chile	Group I, (NA)	AY268597
<i>A. fundyense</i>	GtCA29	USA: Cape Ann, North Atlantic	Group I, (NA)	NR
<i>A. tamarensis</i>	PW06	USA: Port Benny, North Pacific	Group I, (NA)	U44927
<i>A. tamarensis</i>	04-197-A1	Scotland	Group I, (NA)	FJ042682
<i>A. tamarensis</i>	04-197-30	Scotland	Group I, (NA)	FJ042681
<i>A. tamarensis</i>	Alex61-1	Scotland: Firth of Forth	Group I, (NA)	AJ303445
<i>A. tamarensis</i>	Alex61-2	Scotland: Firth of Forth	Group I, (NA)	AJ303446
<i>A. tamarensis</i>	SZN01	Italy: Gulf of Naples, Tyrrhenian Sea, Mediterranean Sea	Group II, (ME)	AJ535368
<i>A. tamarensis</i>	SZN08	Italy: Gulf of Naples, Tyrrhenian Sea, Mediterranean Sea	Group II, (ME)	AJ535369
<i>A. tamarensis</i>	SZN19	Italy: Gulf of Naples, Tyrrhenian Sea, Mediterranean Sea	Group II, (ME)	AJ535370
<i>A. tamarensis</i>	SZN21	Italy: Gulf of Naples, Tyrrhenian Sea, Mediterranean Sea	Group II, (ME)	AJ535374
<i>A. tamarensis</i>	CCMP115	England: Plymouth	Group III, (WE)	JF521640

<i>A. tamarense</i>	Pgt183	England: Plymouth	Group III, (WE)	U44930
<i>A. tamarense</i>	S06-010-01	Scotland: Shetland, Weisdale	Group III, (WE)	FJ042673
<i>A. tamarense</i>	Alex31.6	Ireland: Cork Harbour	Group III, (WE)	AJ303433
<i>A. tamarense</i>	WKS-1	Japan: Kushimoto, East Pacific	Group III, (WE)	NR
<i>A. tamarense</i>	S07-035-01	Scotland: Laxfirth, Shetland	Group III, (WE)	FJ042680
<i>A. tamarense</i>	Ply 173	England: Plymouth	Group III, (WE)	AJ308587
<i>A. tamarense</i>	TL-A3200907F5	France: Thau Lagoon	Group III, (WE)	FR686537
<i>A. tamarense</i>	UNISS5	Italy: Gulf of Alghero, Mediterranean Sea, Sardinia	Group III, (WE)	MF540552
<i>A. catenella</i>	DPC95b	South Korea: Dadaepo	Group IV, (TA)	AY082051
<i>A. catenella</i>	OF101	North Japan: Ofunato Bay	Group IV, (TA)	U44931
<i>A. catenella</i>	ACT1	France: Thau Lagoon, Mediterranean Sea	Group IV, (TA)	FM211468
<i>A. catenella</i>	ATT98	France: Thau Lagoon, Mediterranean Sea	Group IV, (TA)	AF318220
<i>A. catenella</i>	ACTRA02	Australia: Triabunna, Tasmania	Group IV, (TA)	AY338754
<i>A. catenella</i>	AC0206-18	Japan: Ago Bay, Mie	Group IV, (TA)	FM211460
<i>A. catenella</i>	AC0409-13	Japan: Akasaki Seaport	Group IV, (TA)	FM211466
<i>A. catenella</i>	AC0409-08	Japan: Akasaki Seaport	Group IV, (TA)	FM211465
<i>A. catenella</i>	AC0310-06	Japan: Kita Nada, Kagawa	Group IV, (TA)	FM211462
<i>A. catenella</i>	AC0310-01	Japan: Kita Nada, Kagawa	Group IV, (TA)	FM211461
<i>A. catenella</i>	ACTEM17	France: Thau Lagoon, Mediterranean Sea	Group IV, (TA)	FM211470
<i>A. catenella</i>	ACTEM9	France: Thau Lagoon, Mediterranean Sea	Group IV, (TA)	FM211469
<i>A. catenella</i>	AC0202-15	Japan: Uchino-Umi, Tokushima	Group IV, (TA)	FM211457
<i>A. catenella</i>	TL-C3111007G3	France: Thau Lagoon, Mediterranean Sea	Group IV, (TA)	FR686536
<i>A. catenella</i>	UNISS6	Italy: Oristano, Mediterranean Sea, Sardinia	Group IV, (TA)	MF574309
<i>A. catenella</i>	LAC35	Australia: Port Phillip Bay	Group IV, (TA)	AY268610
<i>A. tamarense</i>	ATCI01-1	China: Dai Ya Bay	Group IV, (TA)	AY268612
<i>A. tamarense</i>	AT5-3	South China	Group IV, (TA)	JF906993
<i>A. tamarense</i>	ATBB01	Australia: Bell Bay, Tasmania	Group V, (TASM)	U44933
<i>G. spinifera</i>	GSA0602	Italy: Cesenatico, Adriatic Sea, Mediterranean Sea		EU805591

Note: The following acronyms, abbreviations and symbols indicate respectively:

NA = North American clade, ME = Mediterranean clade, WE = Western European clade, TA = Temperate Asian clade, TASM = Tasmanian clade

NR = GenBank sequence not reported