

Supplementary Material

Geographic drivers of diversification in loliginid squids with an emphasis on the western Atlantic species

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Table S1. GenBank accession numbers, sampling location (*i.e.* locality) and geographic region/s (as defined for the Ancestral Areas Reconstruction analysis) of the sequences used in the phylogenetic analyses.

Genus	Species	Locality	Geographic Region/AAR	References	COI	16S	Rhodopsin
Ommastrephes	Ommastrephes bartramii	Unknown	Unknown/ ABCDEFG	Strugnell et al., 2005*; Carlini and Graves, 1999***; Takumiya et al.***	AF000057**	AB191132***	AY616915*
Sthenoteuthis	Sthenoteuthis oualaniensis	Unknown	Unknown/ HGF	Bonnaud et al., 1994*; Carlini and Graves, 1999***; Strugnell et al., 2004***	AF000069**	X79582*	AY545185***
Afrololigo	Afrololigo mercatoris	South Africa	Benguela Current/C	Anderson, 2000	AF075390	AF110085	
Afrololigo	Afrololigo mercatoris	South Africa	Benguela Current/C	Anderson, 2000a	AF075390	AF110085	
Afrololigo	Afrololigo mercatoris	South Africa	Benguela Current/C	Anderson et al., 2008	EU668101		EU668060
Alloteuthis	Afrololigo mercatoris	South Africa	Benguela Current/C	Anderson, 2000*; Anderson et al., 2008**	AF075390*	AF110085*	EU668060**
Alloteuthis	Alloteuthis africana	Angola	Benguela Current/C	Anderson et al., 2008	EU668061	EU668102	EU668026
Alloteuthis	Alloteuthis africana	Angola	Benguela Current/C	Anderson et al., 2008	EU668070	EU668111	EU668032
Alloteuthis	Alloteuthis africana	Angola	Benguela Current/C	Anderson et al., 2008	EU668069	EU668110	EU668033
Alloteuthis	Alloteuthis media	Mola di Bali, Italy	Mediterranean Sea/A	Anderson et al., 2008	EU668088	EU668129	EU668048
Alloteuthis	Alloteuthis media	Galicia, España	Iberian Coastal/A	Anderson et al., 2008	EU668083	EU668124	EU668043

Alloteuthis	Alloteuthis media	France: Bay of Seine (English Channel, eastern Atlantic Ocean)	Celtic Biscay Shelf/A	Anderson et al., 2008	EU668097	EU668138	EU668056
Alloteuthis	Alloteuthis media	France: Banyuls-sur-Mer (western Mediterranean)	Mediterranean Sea/A	Anderson et al., 2008	EU668096	EU668137	EU668055
Alloteuthis	Alloteuthis media	France: Banyuls-sur-Mer (western Mediterranean)	Mediterranean Sea/A	Anderson et al., 2008	EU668095	EU668136	EU668054
Alloteuthis	Alloteuthis media	Italy: Mola di Bari (Adriatic Sea)	Mediterranean Sea/A	Anderson et al., 2008	EU668094	EU668135	EU668053
Alloteuthis	Alloteuthis media	Italy: Mola di Bari (Adriatic Sea)	Mediterranean Sea/A	Anderson et al., 2008	EU668093	EU668134	EU668052
Alloteuthis	Alloteuthis media	Italy: Mola di Bari (Adriatic Sea)	Mediterranean Sea/A	Anderson et al., 2008	EU668092	EU668133	EU668051
Alloteuthis	Alloteuthis media	Italy: Mola di Bari (Adriatic Sea)	Mediterranean Sea/A	Anderson et al., 2008	EU668091	EU668132	
Alloteuthis	Alloteuthis media	Italy: Mola di Bari (Adriatic Sea)	Mediterranean Sea/A	Anderson et al., 2008	EU668090	EU668131	EU668050
Alloteuthis	Alloteuthis media	Italy: Mola di Bari (Adriatic Sea)	Mediterranean Sea/A	Anderson et al., 2008	EU668089	EU668130	EU668049
Alloteuthis	Alloteuthis media	Spain: Galicia	Iberian Coastal/A	Anderson et al., 2008	EU668088	EU668129	EU668048
Alloteuthis	Alloteuthis media	Spain: Galicia	Iberian Coastal/A	Anderson et al., 2008	EU668087	EU668128	EU668047

Alloteuthis	Alloteuthis media	Spain: Galicia	Iberian Coastal/A	Anderson et al., 2008	EU668086	EU668127	EU668046
Alloteuthis	Alloteuthis media	Spain: Galicia	Iberian Coastal/A	Anderson et al., 2008	EU668085	EU668126	EU668045
Alloteuthis	Alloteuthis subulata	Mola di Bali, Italy	Mediterranean Sea/A	Anderson et al., 2008	EU668098	EU668139	EU668057
Alloteuthis	Alloteuthis subulata	Italy: Mola di Bari (Adriatic Sea)	Mediterranean Sea/A	Anderson et al., 2008	EU668100	EU668141	EU668059
Alloteuthis	Alloteuthis subulata	Italy: Mola di Bari (Adriatic Sea)	Mediterranean Sea/A	Anderson et al., 2008	EU668099	EU668140	EU668058
Alloteuthis	Alloteuthis subulata	Italy: Mola di Bari (Adriatic Sea)	Mediterranean Sea/A	Anderson et al., 2008	EU668098	EU668139	EU668057
Doryteuthis	Doryteuthis gahi	Falkland Islands	Patagonian Shelf/D	Anderson, 2000	AF075399	AF110076	
Doryteuthis	Doryteuthis gahi	Falkland Islands	Patagonian Shelf/D	Sales et al., 2013	KF854068	KF854030	KF854106
Doryteuthis	Doryteuthis gahi	Falkland Islands	Patagonian Shelf/D	Sales et al., 2013	KF854067	KF854029	KF854105
Doryteuthis	Doryteuthis gahi	Falkland Islands	Patagonian Shelf/D	Sales et al., 2013	KF854066	KF854028	KF854104
Doryteuthis	Doryteuthis opalescens	Monterey, CA, USA	California Current/F	Anderson, 2000	AF075395	AF110077	
Doryteuthis	Doryteuthis opalescens	California, USA	California Current/F	Sales et al., 2013	KF854070	KF854032	KF854108
Doryteuthis	Doryteuthis opalescens	California, USA	California Current/F	Sales et al., 2013	KF854069	KF854031	KF854107
Doryteuthis	Doryteuthis pealei	Maine	Northeast US Continental Shelf/B	Anderson, 2000	AF075408		

Doryteuthis	Doryteuthis pealei	Gulf de Mexico	Gulf de Mexico/E	Herke and Foltz, 2002	AF207916		
Doryteuthis	Doryteuthis pealei	North Western Atlantic, USA	North America/B	Herke and Foltz, 2002	AF207924		
Doryteuthis	Doryteuthis pealei	Rhode Island, USA	Northeast US Continental Shelf/B	Anderson, 2000	AF075391	AF110079	
Doryteuthis	Doryteuthis pealei	Gulf de Mexico	Gulf de Mexico/E	Herke and Foltz, 2002	AF207926		
Doryteuthis	Doryteuthis pealei	North Western Atlantic, USA	North America/B	Herke and Foltz, 2002	AF207925		
Doryteuthis	Doryteuthis pealei	Gulf de Mexico	Gulf de Mexico/E	Herke and Foltz, 2002	AF207923		
Doryteuthis	Doryteuthis pealei	Gulf de Mexico	Gulf de Mexico/E	Herke and Foltz, 2002	AF207922		
Doryteuthis	Doryteuthis pealei	Gulf de Mexico	Gulf de Mexico/E	Herke and Foltz, 2002	AF207921		
Doryteuthis	Doryteuthis pealei	North Western Atlantic, USA	North America/B	Herke and Foltz, 2002	AF207920		
Doryteuthis	Doryteuthis pealei	North Western Atlantic, USA	North America/B	Herke and Foltz, 2002	AF207919		
Doryteuthis	Doryteuthis pealei	Gulf de Mexico	Gulf de Mexico/E	Herke and Foltz, 2002	AF207918		
Doryteuthis	Doryteuthis pealei	North Western Atlantic, USA	North America/B	Herke and Foltz, 2002	AF207917		
Doryteuthis	Doryteuthis pealei	North Western Atlantic, USA	North America/B	Herke and Foltz, 2002	AF207915		
Doryteuthis	Doryteuthis pealei	Gulf de Mexico	Gulf de Mexico/E	Herke and Foltz, 2002	AF207914		
Doryteuthis	Doryteuthis pealei	North Western Atlantic, USA	North America/B	Herke and Foltz, 2002	AF207913		
Doryteuthis	Doryteuthis pealei	Gulf de Mexico	Gulf de Mexico/E	Herke and Foltz, 2002	AF207912		

Doryteuthis	Doryteuthis pealei	North Western Atlantic, USA	North America/B	Herke and Foltz, 2002	AF207911		
Doryteuthis	Doryteuthis pealei	Gulf de Mexico	Gulf de Mexico/E	Herke and Foltz, 2002	AF207910		
Doryteuthis	Doryteuthis pealei	North Western Atlantic, USA	North America/B	Herke and Foltz, 2002	AF207909		
Doryteuthis	Doryteuthis pealei	Rhode Island, USA	Northeast US Continental Shelf/B	Sales et al., 2013	KF854064	KF854027	KF854103
Doryteuthis	Doryteuthis pealei	Rhode Island, USA	Northeast US Continental Shelf/B	Sales et al., 2013	KF854065	KF854026	KF854102
Doryteuthis	Doryteuthis pealei	Bragança, Pará State	Brazil/D	Sales et al., 2013	KF854055	KF854017	KF854093
Doryteuthis	Doryteuthis pealei	Bragança, Pará State	Brazil/D	Sales et al., 2013	KF854054	KF854016	KF854092
Doryteuthis	Doryteuthis pealei	Bragança, Pará State	Brazil/D	Sales et al., 2013	KF854053	KF854015	KF854091
Doryteuthis	Doryteuthis pleii	Unknown	Unknown	Anderson, 2000	AF075404	AF110080	
Doryteuthis	Doryteuthis pleii	Gulf de Mexico	Gulf de Mexico/E	Herke and Foltz, 2002	AF207947		
Doryteuthis	Doryteuthis pleii	North Western Atlantic, USA	North America/B	Herke and Foltz, 2002	AF207946		
Doryteuthis	Doryteuthis pleii	Gulf de Mexico	Gulf de Mexico/E	Herke and Foltz, 2002	AF207945		
Doryteuthis	Doryteuthis pleii	North Western Atlantic, USA	North America/B	Herke and Foltz, 2002	AF207944		
Doryteuthis	Doryteuthis pleii	Gulf de Mexico	Gulf de Mexico/E	Herke and Foltz, 2002	AF207943		
Doryteuthis	Doryteuthis pleii	North Western Atlantic, USA	North America/B	Herke and Foltz, 2002	AF207942		
Doryteuthis	Doryteuthis pleii	Gulf de Mexico	Gulf de Mexico/E	Herke and Foltz, 2002	AF207941		

Doryteuthis	Doryteuthis pleii	Gulf de Mexico	Gulf de Mexico/E	Herke and Foltz, 2002	AF207940		
Doryteuthis	Doryteuthis pleii	North Western Atlantic, USA	North America/B	Herke and Foltz, 2002	AF207939		
Doryteuthis	Doryteuthis pleii	Gulf de Mexico	Gulf de Mexico/E	Herke and Foltz, 2002	AF207938		
Doryteuthis	Doryteuthis pleii	Gulf de Mexico	Gulf de Mexico/E	Herke and Foltz, 2002	AF207937		
Doryteuthis	Doryteuthis pleii	North Western Atlantic, USA	North America/B	Herke and Foltz, 2002	AF207936		
Doryteuthis	Doryteuthis pleii	Gulf de Mexico	Gulf de Mexico/E	Herke and Foltz, 2002	AF207935		
Doryteuthis	Doryteuthis pleii	North Western Atlantic, USA	North America/B	Herke and Foltz, 2002	AF207934		
Doryteuthis	Doryteuthis pleii	North Western Atlantic, USA	North America/B	Herke and Foltz, 2002	AF207933		
Doryteuthis	Doryteuthis pleii	Gulf de Mexico	Gulf de Mexico/E	Herke and Foltz, 2002	AF207932		
Doryteuthis	Doryteuthis pleii	North Western Atlantic, USA	North America/B	Herke and Foltz, 2002	AF207931		
Doryteuthis	Doryteuthis pleii	North Western Atlantic, USA	North America/B	Herke and Foltz, 2002	AF207930		
Doryteuthis	Doryteuthis pleii	North Western Atlantic, USA	North America/B	Herke and Foltz, 2002	AF207929		
Doryteuthis	Doryteuthis pleii	Gulf de Mexico	Gulf de Mexico/E	Herke and Foltz, 2002	AF207928		
Doryteuthis	Doryteuthis pleii	North Western Atlantic, USA	North America/B	Herke and Foltz, 2002	AF207927		
Doryteuthis	Doryteuthis pleii	Salinas, Para State	Brazil/D	Sales et al., 2013	KF854050	KF854012	KF854088
Doryteuthis	Doryteuthis pleii	Baia Da Traição, Paraíba State	Brazil/D	Sales et al., 2013	KF854051	KF854013	KF854089

Doryteuthis	Doryteuthis pleii	Iracema, Santa Catarina State	Brazil/D	Sales et al., 2013	KF854052	KF854014	KF854090
Doryteuthis	Doryteuthis pleii	Gulf de Mexico	Gulf de Mexico/E	Sales et al., 2013	KF854063	KF854025	KF8540101
Doryteuthis	Doryteuthis pleii	Gulf de Mexico	Gulf de Mexico/E	Sales et al., 2013	KF854062	KF854024	KF8540100
Doryteuthis	Doryteuthis pleii	Gulf de Mexico	Gulf de Mexico/E	Sales et al., 2013	KF854061	KF854023	KF8540099
Doryteuthis	Doryteuthis sanpaulensis	Rio Grande, Rio Grande Do Sul State	Brazil/D	Sales et al., 2013	KF854060	KF854022	KF854098
Doryteuthis	Doryteuthis sanpaulensis	Rio Grande, Rio Grande Do Sul State	Brazil/D	Sales et al., 2013	KF854059	KF854021	KF854097
Doryteuthis	Doryteuthis surinamensis	Cabo Norte, Amapá State	Brazil/D	Sales et al., 2013	KF854058	KF854020	KF854096
Doryteuthis	Doryteuthis surinamensis	Cabo Norte, Amapá State	Brazil/D	Sales et al., 2013	KF854057	KF854019	KF854095
Doryteuthis	Doryteuthis surinamensis	Cabo Norte, Amapá State	Brazil/D	Sales et al., 2013	KF854056	KF854018	KF854094
Heterololigo	Heterololigo bleekeri	Aomori, Honshu, Japan	Oyashio Current/G	Anderson, 2000a	AF075388	AF110074	
Heterololigo	Heterololigo bleekeri	Kingo Ito, Japan	Japan/G	Sales et al., 2013	KF854072	KF854034	KF854110
Heterololigo	Heterololigo bleekeri	Kingo Ito, Japan	Japan/G	Sales et al., 2013	KF854071	KF854033	KF854109
Loligo	Loligo forbesii	Plymouth, UK; * unknown	Celtic Biscay Shelf/A	Anderson, 2000a*; Strugnell et al. 2004**	AF075402	AF110075	AY545184
Loligo	Loligo forbesii	West Coast of Scotland	Celtic Biscay Shelf/A	Sales et al., 2013	KF854077	KF854039	KF854115

Loligo	Loligo forbesii	West Coast of Scotland	Celtic Biscay Shelf/A	Sales et al., 2013	KF854078	KF854040	KF854116
Loligo	Loligo reynaudii	South Africa	Benguela Current/C	Anderson, 2000	AF075406	AF110081	
Loligo	Loligo reynaudii	Tsirsirkana, South Africa	South Africa/C	Sales et al., 2013	KF854073	KF854035	KF854111
Loligo	Loligo reynaudii	Tsirsirkana, South Africa	South Africa/C	Sales et al., 2013	KF854074	KF854036	KF854112
Loligo	Loligo vulgaris	Plymouth, U.K.	Celtic Biscay Shelf/A	Anderson, 2000	AF075397	AF110082	
Loligo	Loligo vulgaris	Plymouth, U.K.	Celtic Biscay Shelf/A	Anderson, 2000a	AF075397	AF110082	
Loligo	Loligo vulgaris	Lisbon, Portugal	Iberian Coastal/A	Sales et al., 2013	KF854075	KF854037	KF854113
Loligo	Loligo vulgaris	Lisbon, Portugal	Iberian Coastal/A	Sales et al., 2013	KF854076	KF854038	KF854114
Lolliguncula	Lolliguncula brevis	Galveston, Texas, USA, Gulf de Mexico	Gulf de Mexico/E	Anderson, 2000a*; Strugnell et al., 2005**	AF075396	AF110084*	AY616916**
Lolliguncula	Lolliguncula brevis	Pena Island near Salinas, Pará state, Brazil	North Brazil Shelf/D	Sales et al., 2014	KF266740	KF266728	KF266752
Lolliguncula	Lolliguncula brevis	Pena Island near Salinas, Pará state, Brazil	North Brazil Shelf/D	Sales et al., 2014	KF266741	KF266729	KF266753
Lolliguncula	Lolliguncula brevis	Pena Island near Salinas, Pará state, Brazil	North Brazil Shelf/D	Sales et al., 2014	KF266742	KF266730	KF266754
Lolliguncula	Lolliguncula brevis	Pena Island near Salinas, Pará state, Brazil	North Brazil Shelf/D	Sales et al., 2014	KF273944	KF273939	KF273953

Lolliguncula	Lolliguncula brevis	Pena Island near Salinas, Pará state, Brazil	North Brazil Shelf/D	Sales et al., 2014	KF273945	KF273938	KF273954
Lolliguncula	Lolliguncula brevis	Pena Island near Salinas, Pará state, Brazil	North Brazil Shelf/D	Sales et al., 2014	KF273946	KF273935	KF273955
Lolliguncula	Lolliguncula brevis	Pena Island near Salinas, Pará state, Brazil	North Brazil Shelf/D	Sales et al., 2014	KF273947	KF273940	KF273956
Lolliguncula	Lolliguncula brevis	Pena Island near Salinas, Pará state, Brazil	North Brazil Shelf/D	Sales et al., 2014	KF273948	KF273937	KF273957
Lolliguncula	Lolliguncula brevis	Pena Island near Salinas, Pará state, Brazil	North Brazil Shelf/D	Sales et al., 2014	KF273949	KF273936	KF273958
Lolliguncula	Lolliguncula brevis	Pena Island near Salinas, Pará state, Brazil	North Brazil Shelf/D	Sales et al., 2014	KF273950	KF273934	KF273959
Lolliguncula	Lolliguncula brevis	Baia da Traição, Paraíba state, Brazil	East Brazil Shelf/D	Sales et al., 2014	KF266737	KF266725	KF266749
Lolliguncula	Lolliguncula brevis	Baia da Traição, Paraíba state, Brazil	East Brazil Shelf/D	Sales et al., 2014	KF266738	KF266726	KF266750
Lolliguncula	Lolliguncula brevis	Baia da Traição, Paraíba state, Brazil	East Brazil Shelf/D	Sales et al., 2014	KF266739	KF266727	KF266751
Lolliguncula	Lolliguncula brevis	Jequié, Bahia state, Brazil	East Brazil Shelf/D	Sales et al., 2014	KF266736	KF266724	KF266748
Lolliguncula	Lolliguncula brevis	Jequié, Bahia state, Brazil	East Brazil Shelf/D	Sales et al., 2014	KF273943	KF273933	KF273952
Lolliguncula	Lolliguncula brevis	Guaiabim Beach near Valença, Bahia state, Brazil	East Brazil Shelf/D	Sales et al., 2014	KF266743	KF266731	KF266755

Lolliguncula	Lolliguncula brevis	Grauçá Beach near Caravelas, Bahia state, Brazil	East Brazil Shelf/D	Sales et al., 2014	KF273942	KF273941	KF273951
Lolliguncula	Lolliguncula brevis	Grauçá Beach near Caravelas, Bahia state, Brazil	East Brazil Shelf/D	Sales et al., 2014	KF266735	KF266723	KF266747
Lolliguncula	Lolliguncula brevis	Ciudad del Carmen,Southern Gulf de Mexico	Gulf de Mexico/E	Sales et al., 2014	KF854136	KF854126	KF854145
Lolliguncula	Lolliguncula brevis	Ciudad del Carmen,Southern Gulf de Mexico	Gulf de Mexico/E	Sales et al., 2014	KF854137	KF854127	
Lolliguncula	Lolliguncula brevis	Ciudad del Carmen,Southern Gulf de Mexico	Gulf de Mexico/E	Sales et al., 2014		KF854128	
Lolliguncula	Lolliguncula brevis	Ciudad del Carmen,Southern Gulf de Mexico	Gulf de Mexico/E	Sales et al., 2014	KF854138	KF854129	KF854146
Lolliguncula	Lolliguncula brevis	Ciudad del Carmen,Southern Gulf de Mexico	Gulf de Mexico/E	Sales et al., 2014	KF854139	KF854130	KF854147
Lolliguncula	Lolliguncula brevis	Ciudad del Carmen,Southern Gulf de Mexico	Gulf de Mexico/E	Sales et al., 2014	KF854140	KF854131	KF854148
Lolliguncula	Lolliguncula brevis	Ciudad del Carmen,Southern Gulf de Mexico	Gulf de Mexico/E	Sales et al., 2014	KF854141	KF854132	KF854149

Lolliguncula	Lolliguncula brevis	Ciudad del Carmen, Southern Gulf de Mexico	Gulf de Mexico/E	Sales et al., 2014	KF854142	KF854133	
Lolliguncula	Lolliguncula brevis	Ciudad del Carmen, Southern Gulf de Mexico	Gulf de Mexico/E	Sales et al., 2014	KF854143	KF854134	KF854150
Lolliguncula	Lolliguncula brevis	Ciudad del Carmen, Southern Gulf de Mexico	Gulf de Mexico/E	Sales et al., 2014	KF854144	KF854135	KF854151
Lolliguncula	Lolliguncula diomedae	East Tropical Pacific, México	Pacific Central American Coastal/F	Lindgren, 2010	EU735357	EU735243	
Lolliguncula	Lolliguncula panamensis	Bahia Las Animas, Gulf of California, México	Gulf de Mexico/E	Sales et al., 2014	KF266744	KF266732	KF266756
Lolliguncula	Lolliguncula panamensis	Bahia Las Animas, Gulf of California, México	Gulf de Mexico/E	Sales et al., 2014	KF266745	KF266733	KF266757
Lolliguncula	Lolliguncula panamensis	Bahia Las Animas, Gulf of California, México	Gulf de Mexico/E	Sales et al., 2014	KF266746	KF266734	KF266758
Sepioteuthis	Sepioteuthis australis	South Australia	Australia/H	Anderson, 2000	AF075401	AF110087	
Sepioteuthis	Sepioteuthis australis	Otago, New Zealand	New Zealand Shelf/H	Anderson, 2000	AF075386	AF110086	
Sepioteuthis	Sepioteuthis australis	Australia	Australia/H	Carline and Graves, 1999; Strugnell et al., 2005*	AF000065		AY616917*

Sepioteuthis	Sepioteuthis lessoniana	Sulawesi, Indonesia	Indonesian Sea/H	Anderson, 2000	AF075405	AF110088	
Sepioteuthis	Sepioteuthis lessoniana	Green Island, Moreton Bay, Australia	East Centrtal Australian Shelf/H	Anderson, 2000	AF075393		
Sepioteuthis	Sepioteuthis lessoniana	Unknown	Unknown/HG	Shiao et al.	AY131050	AY131020	
Sepioteuthis	Sepioteuthis lessoniana	Unknown	Unknown/HG	Shiao et al.	AY131055	AY131021	
Sepioteuthis	Sepioteuthis lessoniana	Unknown	Unknown/HG	Shiao et al.	AY131056	AY131023	
Sepioteuthis	Sepioteuthis lessoniana	Unknown	Unknown/HG	Shiao et al.	AY131064	AY131027	
Sepioteuthis	Sepioteuthis lessoniana	Unknown	Unknown/HG	Shiao et al.	AY131065	AY131028	
Sepioteuthis	Sepioteuthis lessoniana	Sulawesi, Indonesia	Indonesian Sea/H	Anderson, 2000a	AF075405	AF110089	
Sepioteuthis	Sepioteuthis lessoniana	Unknown	Unknown/HG	Liu et al.*; Shiao et al.**; Strugnell et al., 2005***	AY131036**	AJ001649*	AY616918***
Sepioteuthis	Sepioteuthis lessoniana	Durban, South Africa	South Africa/H	Sales et al., 2013	KF854086	KF854048	KF854124
Sepioteuthis	Sepioteuthis lessoniana	Durban, South Africa	South Africa/H	Sales et al., 2013	KF854087	KF854049	KF854125
Sepioteuthis	Sepioteuthis sepioidea	Bahamas	Caribbean island/E	Anderson, 2000	AF075392	AF110090	
Sepioteuthis	Sepioteuthis sepioidea	Bahamas	Caribbean island/E	Anderson, 2000a	AF075392	AF110090	
Sepioteuthis	Sepioteuthis sepioidea	Barra Grande, Bahia State	Brazil/D	Sales et al., 2013	KF854085	KF854047	KF854123
Uroteuthis	Uroteuthis chinensis	Gulf of Thailand	Gulf of Thailand/H	Anderson, 2000	AF075394	AF110091	
Uroteuthis	Uroteuthis chinensis	Unknown	Unknown	Liu et al.		AJ000105	

Uroteuthis	Uroteuthis chinensis	Xiamen, China	South China Sea/G	Sin et al., 2009	EU349439	EU349478	
Uroteuthis	Uroteuthis chinensis	Terengganu, Malaysia	Malaysia/H	Sales et al., 2013	KF854079	KF854041	KF854117
Uroteuthis	Uroteuthis duvauceli	Andaman Sea	Bay of Bengal/H	Anderson, 2000	AF075400	AF110092	
Uroteuthis	Uroteuthis duvauceli	Gulf of Thailand	Gulf of Thailand/H	Anderson, 2000a	EU349465	EU349492	
Uroteuthis	Uroteuthis duvauceli	Hong Kong, China	South China Sea/G	Sin et al., 2009	EU349463	EU349490	
Uroteuthis	Uroteuthis duvauceli	Yamaguchi, Japón	East Sea of Japan/H	Anderson, 2000a	AF075400	AF110092	
Uroteuthis	Uroteuthis duvauceli	Terengganu, Malaysia	Malaysia/H	Sales et al., 2013	KF854084	KF854046	KF854122
Uroteuthis	Uroteuthis duvauceli	Terengganu, Malaysia	Malaysia/H	Sales et al., 2013	KF854083	KF854045	KF854121
Uroteuthis	Uroteuthis duvauceli	Terengganu, Malaysia	Malaysia/H	Sales et al., 2013	KF854082	KF854044	KF854120
Uroteuthis	Uroteuthis edulis	Shangai, China	East China Sea/G	Sin et al., 2009	EU349462	EU349488	
Uroteuthis	Uroteuthis edulis	Shangai, China	East China Sea/G	Sin et al., 2009	EU349456	EU349485	
Uroteuthis	Uroteuthis etheridgei	Moreton Bay, Australia	East Central Australian Shelf/H	Anderson, 2000	AF075389	AF110094	
Uroteuthis	Uroteuthis etheridgei	Moreton Bay, Australia	East Central Australian Shelf/H	Anderson, 2000a	AF075389	AF110094	
Uroteuthis	Uroteuthis noctiluca	Australia	Australia/H	Anderson, 2000	AF075403	AF110095	
Uroteuthis	Uroteuthis noctiluca	Australia	Australia/H	Anderson, 2000a	AF075403	AF110095	

Uroteuthis	Uroteuthis sibogae	Terengganu, Malaysia	Malaysia/H	Sales et al., 2013	KF854081	KF854043	KF854119
Uroteuthis	Uroteuthis sibogae	Terengganu, Malaysia	Malaysia/H	Sales et al., 2013	KF854080	KF854042	KF854118
Uroteuthis	Uroteuthis sp.	Melbourne, Australia	Southeast Australian Shelf/H	Strugnell et al., 2005	AY616889	AY616881	AY616919

Table S2. Overlapping of climatic niche among the north and south populations of *Lolliguncula brevis* and *Doryteuthis pleii*. As higher are the D values, higher is the overlapping. The equivalency test evaluates if the climatic space of the two populations are identical, whereas the similarity test evaluates if the climatic space of the two populations are more or less similar (according to D value) than expect by chance. Because all p-values are higher than 0.05, we did not find evidence about the climatic space occupied by the populations be more or less similar than expected only by chance.

Population 1	Population 2	Overlap (D)	Equivalency test (p-value)	Similarity test (p-value)
<i>L. brevis</i> - North	<i>L. brevis</i> - South	0.112012166	1	0.495049505
<i>L. brevis</i> - North	<i>D. pleii</i> - North	0.052062744	1	0.465346535
<i>L. brevis</i> - South	<i>D. pleii</i> - North	0.284161683	1	0.108910891
<i>L. brevis</i> - North	<i>D. pleii</i> - South	0.038875399	1	0.524752475
<i>L. brevis</i> - South	<i>D. pleii</i> - South	0.335345722	0.909090909	0.128712871
<i>D. pleii</i> - North	<i>D. pleii</i> - South	0.512622431	0.909090909	0.099009901

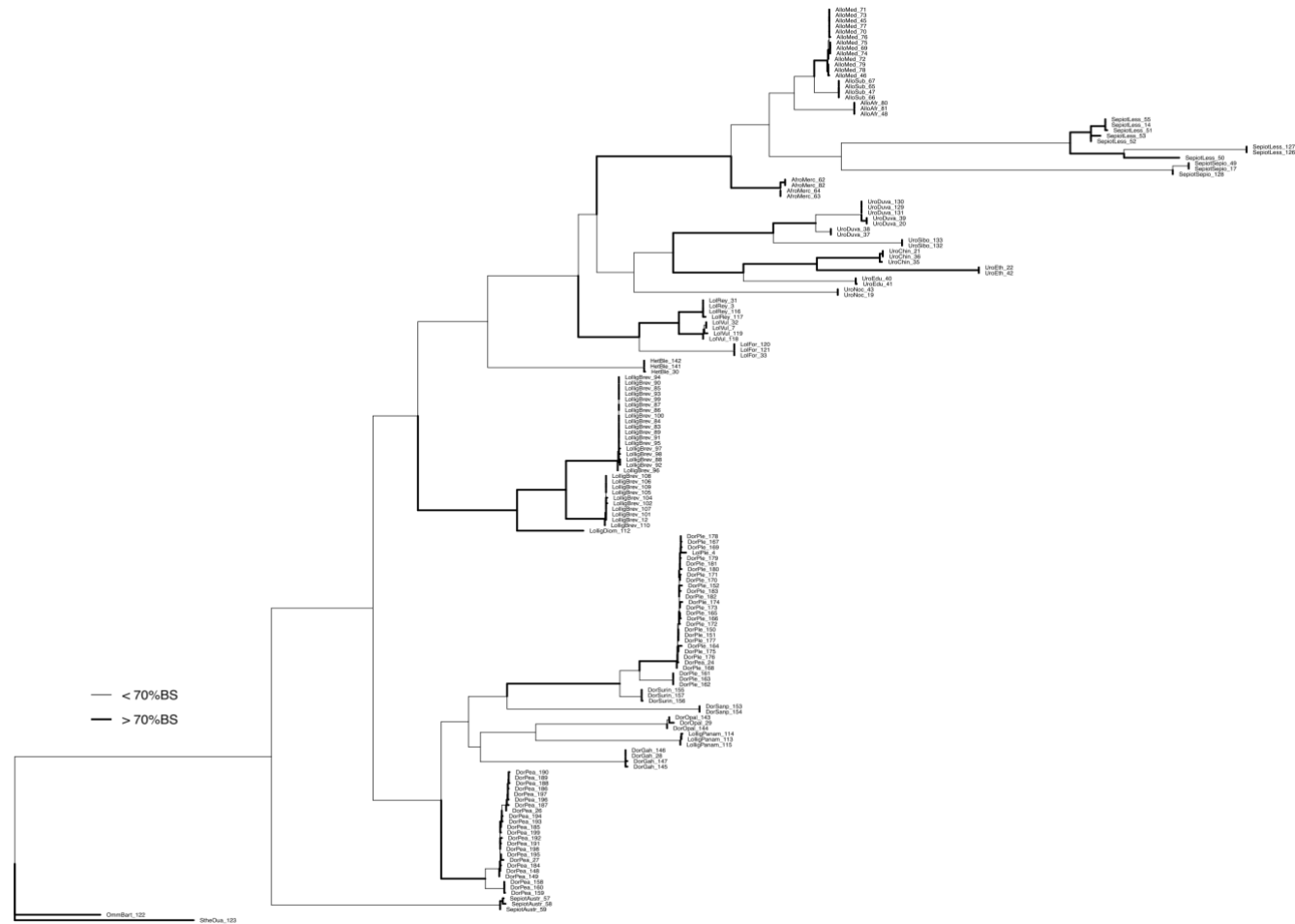


Fig S1. *Cytochrome c oxidase subunit I (COI) Maximum Likelihood tree.* Thicker branches represent bootstrap supports over the 70% threshold. Tree file is also available in the Dryad repository ([link](#)).

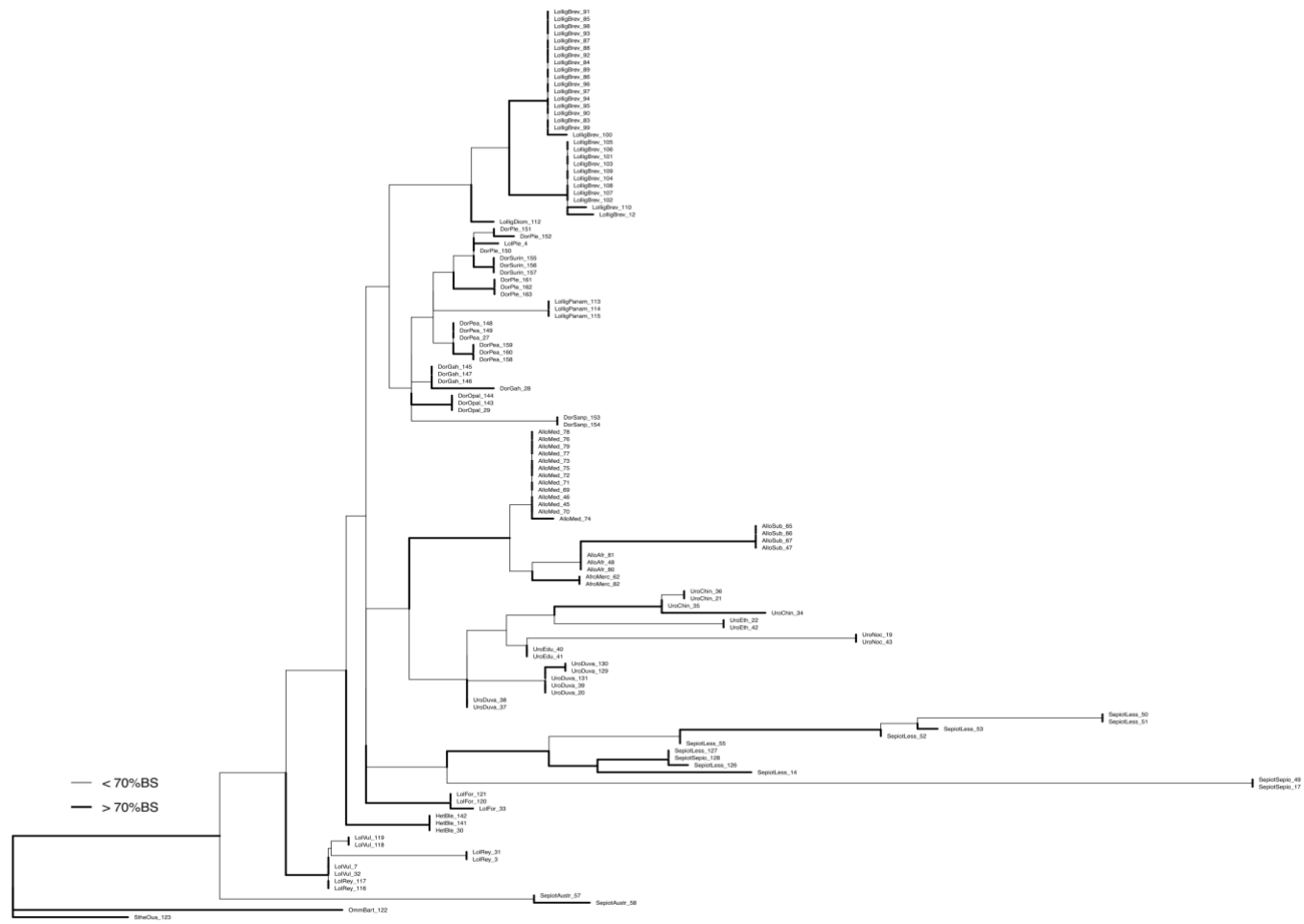


Fig S2. 16S Maximum Likelihood tree. Thicker branches represent bootstrap supports over the 70% threshold. Tree file is also available in the Dryad repository (link).

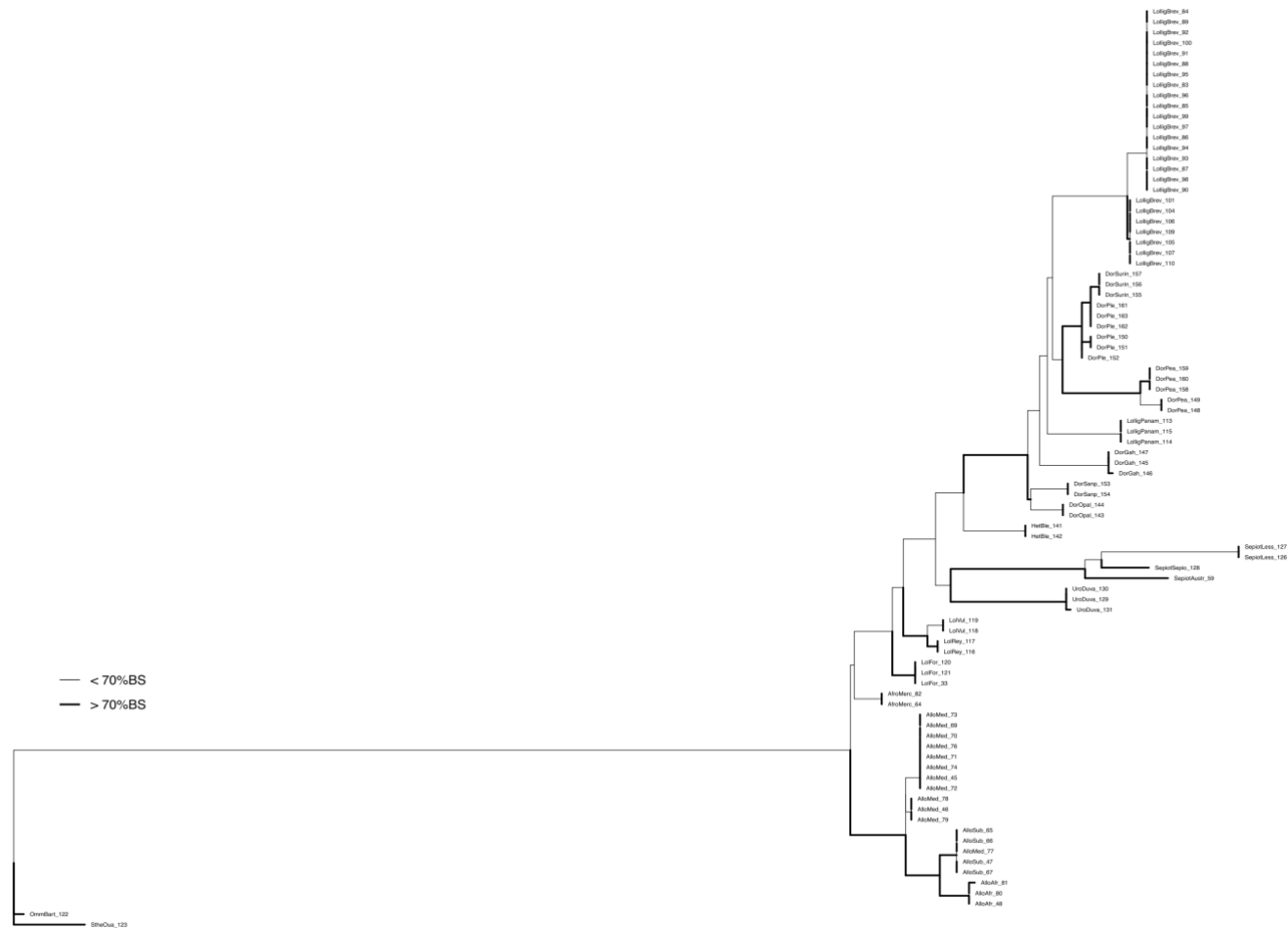


Fig S3. *Rhodopsin* (Rho) Maximum Likelihood tree. Thicker branches represent bootstrap supports over the 70% threshold. Tree file is also available in the Dryad repository ([link](#)).

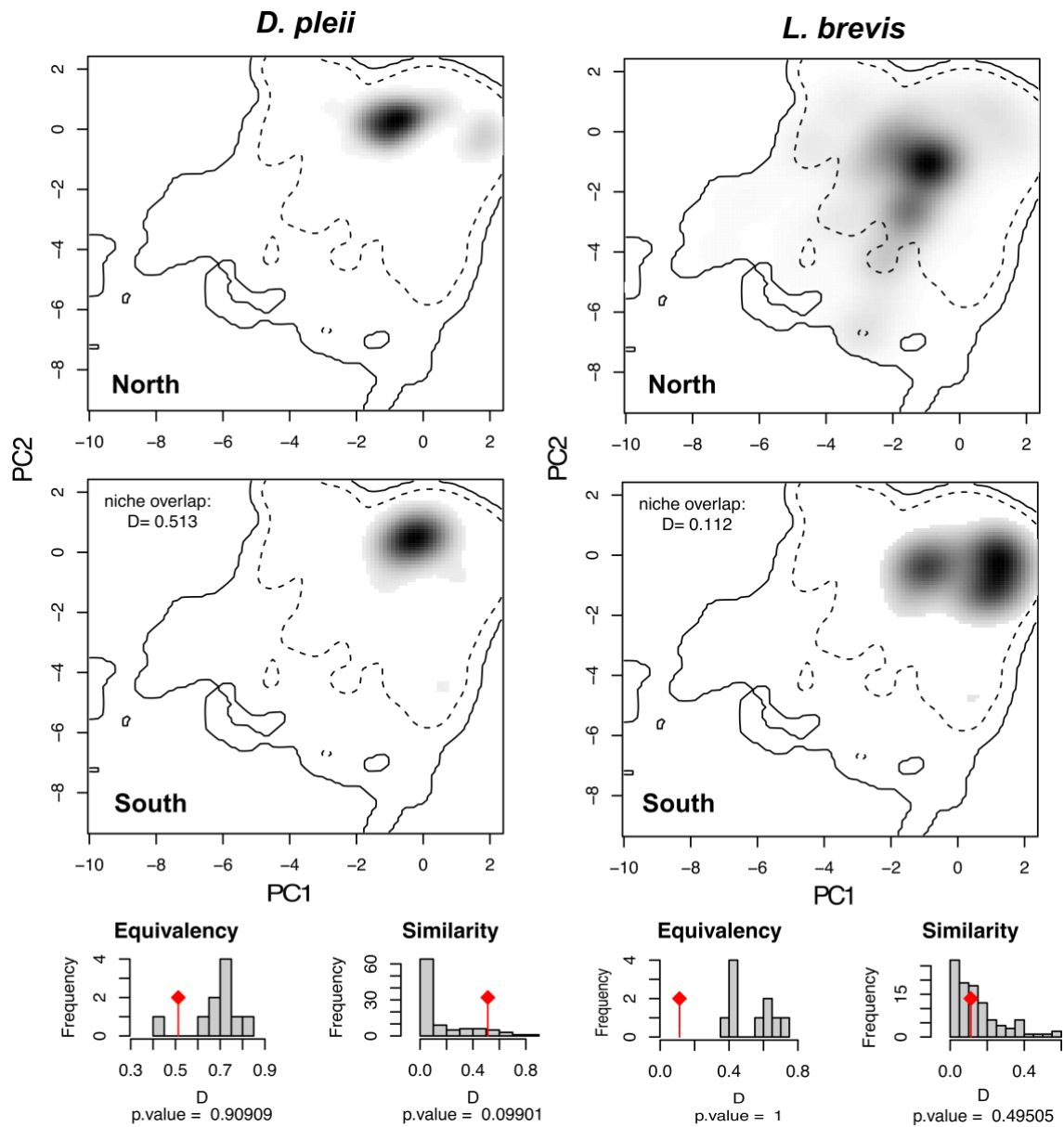


Fig S4. Climatic space occupied by the north and south populations from *Doryteuthis pleii* (left panel) and, north and south populations from *Lolliguncula brevis* (right panel). The solid and dashed lines indicate the 100% and 95% of the available space respectively, along the two first axes of the PCA of the environmental variables. The black pixels show the space occupied by each population, with darker pixels indicating a higher density of occurrences. In the lower panel is show the null model to estimate the significance of the equivalency and similarity tests, with the red rhombus specifying observed D values.

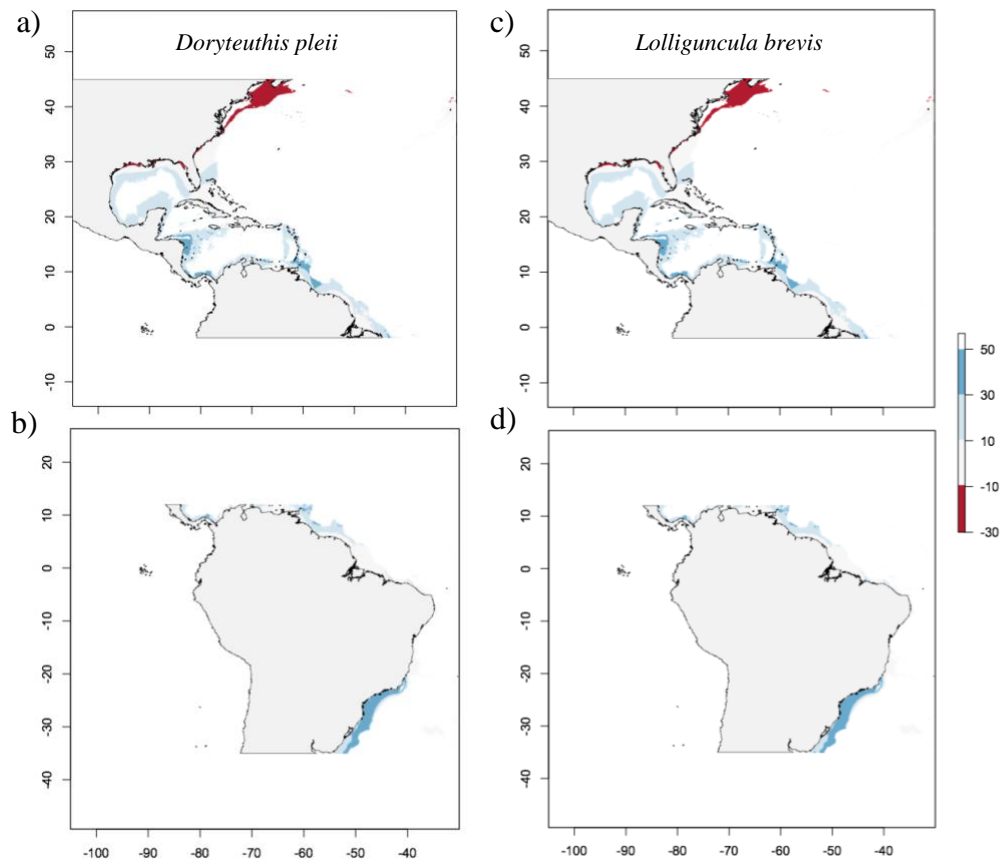


Fig S5. Results of MESS analyses, showing the similarity of environmental conditions between the regions where the models were generated and the region where the models were projected: (a) and (c) North America in regard to South America; (b) and (d) South America in regard to North America. The colors scale indicates the similarity, from blue (high similarity) to red (low similarity), being the latter, the areas with highest uncertainty.