

Supporting data

DNA barcoding and phylogeny of Acari species based on ITS and COI markers

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This file contains all supporting information described in the main manuscript. The references indicated at each Table or Figure legend are at the end of the document.

Due to the length of Tables S5 and S6, interspecific distances are provided in additional excel files.

Table S1. List of all sequences used in this work, nos: non-overlapping sequence, * identical sequence within marker and species, § sequences obtained in this work.

Superorder			COI	ITS	
Order	Species	Locality		ITS1	ITS2
Suborder (number of sequences in GenBank)		Haplotype			
Aranea					
	<i>Enoplognatha ovata</i>	Scotland (UK)			AF084942
	<i>Latrodectus katipo</i>	New Zealand			EU309679
	<i>Lycosa coelestis</i>	Japan	AB564730		
	<i>Pardosa tristis</i>	USA			JF791412
Acariformes					
Sarcoptiformes (18,758)					
Astigmata (9,280)					
	<i>Avenzoaria totani</i>	Poland			AY684432
	<i>Otodectes cynotis</i>	China			KP676677
	<i>Proctophyllodes ateri</i>	Poland			AY705374
	<i>Rhizoglyphus echinopus</i>	The Netherlands			EF362629
	<i>Rhizoglyphus setosus</i>	Taiwan			DQ372569
Oribatidae (8,817)					
	<i>Platynothrus peltifer</i>	Poland			AY707282
	<i>Scutovertex arenocolus</i>	Austria	GU208579		
	<i>Scutovertex sculptus</i>	Austria	GQ890429		
	<i>Steganacarus magnus</i>	Germany	EU935607		
Trombidiformes (48,661)					
Prostigmata (48,143)					
	<i>Amphitetranychus viennensis</i>	Tokyo (Japan)	AB981239		
		Taiwan			FJ969820
	<i>Aplonobia histricina</i>	Montcada (Spain)	GU565318§	GU565291§	GU565304§
	<i>Bryobia kissophila</i>	The Netherlands	EU487069		
	<i>Bryobia praetiosa</i>	Israel			DQ656439
	<i>Cecidophyopsis psilaspis</i>	United Kingdom		AJ297577	
	<i>Cecidophyopsis ribis</i>	United Kingdom		AJ297574	
	<i>Eotetranychus carpini</i>	Italy			GU130303
	<i>Eutetranychus banksi</i>	Huelva (Spain)	GU565319§	GU565292§	KP642050§
	<i>Eutetranychus orientalis</i>	Israel	DQ656481		
		Málaga (Spain)		KP642049§	KP642048§
	<i>Oligonychus camelliae</i>	Japan	AB683663		
	<i>Oligonychus gotohi</i>	Japan			AB757828
	<i>Oligonychus hondoensis</i>	Aomori (Japan)	AB683658		
	<i>Oligonychus karamatus</i>	Hokkaido (Japan)	AB683656		
	<i>Oligonychus perseae</i>	Israel	DQ656485		
		Málaga (Spain)		GU565293§	GU565305§
	<i>Panonychus citri</i>	Betxí (Spain)	GU565321*§		AM408034*
		Castelló (Spain)	GU565321*§		AM408034*
		Montcada (Spain)	GU565321*§		AM408034*
		Mallorca (Spain)	GU565321*§		KP642051§
		Picassent (Spain)	GU565321*§		AM408034*
		Xeraco (Spain)	GU565321*§		AM408034*
		Canet (Spain)	GU565321*§		AM408034*
		Moncofa (Spain)			AM408039

Superorder			COI	ITS	
Order	Species	Locality		ITS1	ITS2
Suborder (number of sequences in GenBank)		Haplotype			
	<i>Petrobia harti</i>	Jiangsu (China)	GQ141920		
	<i>Tetranychus evansi</i>	Brazil	GU565322 [§]	GU565294 [§]	GU565306 [§]
		Castelló (Spain)		AM408033	
		Huelva (Spain)		GU565295 [§]	GU565307 [§]
		Kenia			AJ419833
		Tokyo (Japan)		AB735996	
		Madeira (Portugal)		AM408036	AM408047
		Murcia (Spain)	GU565325 [§]	GU565296 [§]	GU565308 [§]
		Italy (Sicily)		GU565297 [§]	GU565309 [§]
		Valencia (Spain)	KP642060 [§]	GU565298 [§]	GU565310 [§]
	<i>Tetranychus ezoensis</i>	Iwate (Japan)		AB735998	
	<i>Tetranychus kanzawai</i>	China	KJ729017		
		Japan			AB736006
	<i>Tetranychus lambi</i>	Japan			AB738743
	<i>Tetranychus ludeni</i>	Castelló (Spain)		AM408037	AM408040
		China	KJ729018	KP744529	
		Kishigawa (Japan)		AB076371	
	<i>Tetranychus malaysiensis</i>	China	KJ729019		
		Yokohama (Japan)			AB738756
	<i>Tetranychus merganser</i>	Yokohama (Japan)			AB738753
	<i>Tetranychus neocaledonicus</i>	Yokohama (Japan)			AB738752
	<i>Tetranychus okinawanus</i>	Tampa (Florida)		KP642047 [§]	GU565311 [§]
		Okinawa (Japan)	AB736059	AB257743	
		Okinawa (Japan)	AB736058		
	<i>Tetranychus pacificus</i>	Yokohama (Japan)		AB738744	
	<i>Tetranychus parakanzawai</i>	Ibaraki (Japan)		AB257745	
	<i>Tetranychus phaselus</i>	China	KJ729020		
		Okinawa (Japan)			AB736024
	<i>Tetranychus piercei</i>	Ibaraki (Japan)		AB257748	
	<i>Tetranychus pueraricola</i>	China	KJ729021		
		Japan		KP744528	
	<i>Tetranychus takafujii</i>	Tokyo (Japan)		AB257747	
	<i>Tetranychus turkestanii</i>	Castelló (Spain)	GU565323 [§]	AM408038	AM408041
		France		AM408032	
		Japan		AB738745	
	<i>Tetranychus truncatus</i>	Shanghai (China)		AB738749	
	<i>Tetranychus urticae</i> strain red	China	KJ729023		
	<i>Tetranychus urticae</i> strain green	China	KJ729022		
	<i>Tetranychus urticae</i>	Amposta (Spain)	KP642065 [§]	GU565303 [§]	AM408042
		Betxí (Spain)	KP642064 [§]	GU565299 [§]	AM408043
		Callosa (Spain)	KP642066 [§]	KP642054 [§]	AM408044
		Castelló (Spain)	GU565324* [§]	AM408030	
		France		AM408031	
		Gainesville (Florida)		AM408035	
		Llíria (Spain)	GU565324* [§]	GU565300 [§]	GU565313 [§]
		Mallorca (Spain)	GU565324* [§]		KP642053 [§]
		Málaga (Spain)	GU565324* [§]	GU565301 [§]	GU565314 [§]

Superorder			COI	ITS	
Order		Species	Locality Haplotype	ITS1	ITS2
Suborder (number of sequences in GenBank)					
			Moncofa (Spain)		AM408045
			Onda (Spain)	GU565324*§	AM408046
			Tampa (Florida)	KP642052§	GU565312§
			Ibaraki (Japan)		AB257738
Parasitiformes					
Ixodida (935,706)					
	<i>Boophilus microplus</i>	Australia			U97713
	<i>Ixodes hexagonus</i>	Karlsruhe (Germany)			GQ924083
	<i>Ixodes ovatus</i>	Nepal			AB103043
	<i>Ixodes pavlovskyi</i>	Tomsk (Russia)			KP242014
	<i>Ixodes scapularis</i>	Pennsylvania (USA)	KJ721452		
	<i>Ixodes uriae</i>	Bird Island (South Georgia)			D88307
	<i>Rhipicephalus annulatus</i>	Guilan (Iran)	KM888754		
		Romania			KC503267
	<i>Rhipicephalus microplus</i>	India			JX974346
Mesostigmata (120,246)					
	<i>Amblyseius alpinus</i>	The Netherlands			FJ515685
	<i>Amblyseius (Neoseiulus)</i> <i>andersoni</i>	Biobest			GU565288§
		Syngenta	KU342792		KP642041§
		Lleida (Spain)			KP642040*§
		Girona (Spain)			KP642040*§
		France			HQ404823
		The Netherlands			EU310504
		France			HQ404822
	<i>Amblyseius deleoni</i>	China			GU128958
	<i>Amblyseius eharai</i>	Shanghai (China)			HQ290321
	<i>Amblyseius orientalis</i>	Xingan (China)			HQ290322
	<i>Amblyseius tsugawai</i>	Ibaraki (Japan)			AB618063
		China			GU244502
	<i>Amblyseius</i> <i>(Typhlodromips)</i> <i>montdorensis</i>	Syngenta Bioline			HQ404824
	<i>Arrenoseius urquharti</i>	Guadeloupe (France)			HQ404819
	<i>Dermanyssus gallinae</i>	Italy			JN212137
	<i>Euseius environmental</i> sample	China			KM108755
	<i>Euseius finlandicus</i>	France	FJ404593		
		Tammela (Finland)			AF209437
	<i>Euseius nicholsi</i>	China	KF308635		
		China	KF308681		GU244501
		China	KF308643		
	<i>Euseius ovalis</i>	The Netherlands			FJ515687
	<i>Euseius scutalis</i>	Málaga (Spain)	KP642056§		KP642044§
	<i>Euseius sojaensis</i>	Ibaraki (Japan)			AB618064
		Nagasaki (Japan)			AB618065
	<i>Euseius stipulatus</i>	Montcada (Spain)	GU565320§		GU565290
		Málaga (Spain)	KP642057§		KP642043§
	<i>Iphiseius degenerans</i>	Sicily (Italy)			HQ404800

Superorder			COI	ITS
Order	Species	Locality Haplotype		ITS1 ITS2
Suborder (number of sequences in GenBank)				
		Gainesville (Florida)		AY121984
	<i>Kampimodromus aberrans</i>	France	EF372606	HQ404798
		France	EF372605	
		Italy		GU591683
	<i>Kampimodromus corylosus</i>	France	EF372604	HQ404799
	<i>Kampimodromus ericinus</i>	France	EF372607	
	<i>Metaseiulus occidentalis</i>	Gainesville (Florida)	NC009093	
	<i>Neoseiulus agrestis</i>	France		HQ404814
	<i>Neoseiulus baraki</i>	Brazil	JQ609092	
	<i>Neoseiulus barkeri</i>	Castelló (Spain)		KP642055
		Syngenta Bioline	KU342794 [§]	KP642042 [§]
		Tunisia		HQ404813
		China		FJ392365
		The Netherlands		FJ515686
	<i>Neoseiulus californicus</i>	Koppert	KP642059	
		Koppert		HQ404806
		Koppert		HQ404804
		Koppert		HQ404807
		Chiba (Japan)		AB618055
		Italy		GU591680
		France		Y18269
	<i>Neoseiulus cucumeris</i>	(Baillargues)		
		Koppert	KU342793 [§]	
		Gainesville (Florida)		AY121985
	<i>Neoseiulus idaeus</i>	Piracicaba (Brazil)		JF776278
	<i>Neoseiulus picanus</i>	Chile		HQ404811
		Argentina		JF279120
	<i>Neoseiulus reductus</i>	The Netherlands		GU966582
	<i>Neoseiulus</i> (<i>Typhlodromips</i>) <i>swirskii</i>	Koppert	GU565317 [§]	GU565289
		The Netherlands		EU310505
		Israel		HQ404821
	<i>Neoseiulus tunus</i>	Brazil		HQ404812
	<i>Neoseiulus womersleyi</i>	Nara (Japan)		AB618061
		Okinawa (Japan)		AB618060
		Japan		HQ404820
	<i>Neoseiulella aceri</i>	Kiev (Ukraine)		GU938179
	<i>Neoseiulella litoralis</i>	France		GU938187
		France		GU938186
	<i>Neoseiulella tiliarum</i>	France		GU938146
	<i>Phytoseiulus fragariae</i>	Argentina	nos	GU591665
		Argentina	nos	GU591666
	<i>Phytoseiulus longipes</i>	Argentina	nos	HQ404815
		South Africa	nos	GU591679
		Argentina	nos	HQ404816
	<i>Phytoseiulus macropilis</i>	Argentina	nos	GU591659
	<i>Phytoseiulus persimilis</i>	Koppert	KP642058	
		Cavaillon (France)	nos	Y18268
		France	nos	HQ404818
		Spain		GU591670

Superorder			COI	ITS
Order	Species	Locality Haplotype		ITS1 ITS2
Suborder (number of sequences in GenBank)				
		France	nos	HQ404817
		France	nos	GU591668
	<i>Ptilonyssus sairae</i>	California (USA)	nos	EU190986
	<i>Tropilaelaps clareae</i>	Thailand	nos	AF544013
	<i>Tropilaelaps koenigerum</i>	Thailand	nos	AF544014
	<i>Typhlodromalus limonicus</i>	The Netherlands	nos	HM189291
	<i>Tropilaelaps mercedesae</i>	Thailand	nos	HM748316
	<i>Typhlodromus phialatus</i>	Montcada (Spain)	KP642063	GU565315
		Girona (Spain)	KP642061 [§]	KP642045 [§]
		Lleida (Spain)	KP642062 [§]	KP642046 [§]
		France	nos	JN793515
		France	nos	JF279155
	<i>Typhlodromus rhenanoides</i>	Montcada (Spain)	nos	KU342786 [§]
	<i>Typhlodromus vulgaris</i>	Nagasaki (Japan)	nos	AB862881
	<i>Scapulaseius okinawanus</i>	Nagasaki (Japan)	nos	AB862880
	<i>Varroa jacobsoni</i>	Australia	nos	EF025470

Authorities for each species are indicated in the main text.

Table S2. List of primers used to generate the Acari COI fragment covering the 3' end of *coi* gene, ITS1, ITS2 or whole ITS fragments from either Phytoseiidae or Tetranychidae used in this work.

Region / Primer type	Primer name	Sequence (5'→ 3')	Source
COI			
Forward primers	COIF	TGATTTTTTGGTCACCCAGAAG	Navajas <i>et al.</i> (1996)
	ASCOIF	TTTTGGTCACCCAGAAG	This work
	EOCOIF	CGGGGTTTGGTATAATTTCTC	This work
	RHCO2198	TGATTTTTTGGTCACCCTGAAGTTTA	This work
Reverse primers	COIR	TACAGCTCCTATAGATAAAAC	Navajas <i>et al.</i> (1996)
	ASCOIR	ATAAAACATAATGAAAATGAGC	This work
ITS			
Forward primers	18S	AGAGGAAGTAAAAGTCGTAACAAG	Ali <i>et al.</i> (2000)
	5.8S	ATCTTCAAGCGGTGGATCAC	Hurtado <i>et al.</i> (2008)
	LC1	GGCAAAGATACATCTTCAAGC	This work
	LC2	TACCAATCGATGAAGAACGTAGC	This work
	TC1	AAGGTTTCCGTAGGTGAACC	This work
Reverse primers	28S	ATATGCTTAAATTCAGGGGG	Ali <i>et al.</i> (2000)
	28S uni	TTCTTTTCCTCCGCTTAGTGATATGCTTAA	Ji <i>et al.</i> (2003)
	5.8S rev	GTGATCCACCGCTTGAAGAT	This work
	TC2	ACTTTTAATAAGTATCCTAA	This work

Table S3. Acari mitochondrial COI sequences obtained in this work. With indication of sample origin, host plant, accession number, total length, primers used, and annealing temperature.

Species	Origin	Host plant	Accession number	Total length (bp)	Primer direct	Primer reverse	Annealing Temperature (°C)
Suborder Mesostigmata							
<i>Amblyseius andersoni</i>	Syngenta Agro	Commercial mass rearing	KU342792	435	EOCOIF	COIR	47
<i>Euseius scutalis</i>	Spain (Málaga)	<i>Persea americana</i>	KP642056	453	COIF	COIR	47
<i>Euseius stipulatus</i>	Spain (Málaga)	<i>Persea americana</i>	KP642057	454	COIF	COIR	47
<i>Euseius stipulatus</i>	Spain (Moncada, Valencia)	<i>Citrus clementina</i>	GU565320	453	COIF	COIR	47
<i>Neoseiulus barkeri</i>	Syngenta Agro	Commercial mass rearing	KU342794	434	COIF	ASCOIR	47
<i>Neoseiulus cucumeris</i>	Koppert Biological Systems	Commercial mass rearing	KU342793	423	RHCO2198	COIR	45
<i>Typhlodromus phialatus</i>	Spain (Girona)	<i>Malus domestica</i>	KP642061	413	EOCOIF	COIR	47
<i>Typhlodromus phialatus</i>	Spain (Lleida)	<i>Malus domestica</i>	KP642062	404	EOCOIF	COIR	47
<i>Typhlodromus phialatus</i>	Spain (Lleida)	<i>Malus domestica</i>	KU242791	404	EOCOIF	COIR	47
<i>Typhlodromus phialatus</i>	Spain (Montcada)	<i>Citrus clementina</i>	KP642063	404	EOCOIF	COIR	47
Suborder Prostigmata							
<i>Aplonobia histricina</i>	Spain (Montcada, Valencia)	<i>Oxalis pes-caprae</i>	GU565318	453	COIF	COIR	47
<i>Eutetranychus banksi</i>	Spain (Málaga)	<i>Citrus clementina</i>	GU565319	405	COIF	COIR	47
<i>Panonychus citri</i>	Spain (Betxí, Castelló)	<i>Citrus reticulata</i>	KU342795	453	COIF	COIR	47
<i>Panonychus citri</i>	Spain (Canet d'en Berenguer, Valencia)	<i>Citrus reticulata</i>	KU342796	453	COIF	COIR	47
<i>Panonychus citri</i>	Spain (Castelló)	<i>Citrus reticulata</i>	GU565321	453	COIF	COIR	47
<i>Panonychus citri</i>	Spain (Mallorca)	<i>Citrus sinensis</i>	KU342797	453	COIF	COIR	47
<i>Panonychus citri</i>	Spain (Moncofa)	<i>Citrus sinensis</i>	KU342799	453	COIF	COIR	47
<i>Panonychus citri</i>	Spain (Montcada, Valencia)	<i>Citrus reticulata</i>	KU342798	453	COIF	COIR	47
<i>Panonychus citri</i>	Spain (Picassent, Valencia)	<i>Citrus reticulata</i>	KU342800	453	COIF	COIR	47
<i>Panonychus citri</i>	Spain (Xeraco, Valencia)	<i>Citrus reticulata</i>	KU342801	453	COIF	COIR	47
<i>Tetranychus evansi</i>	Brazil	<i>Solanum lycopersicum</i>	GU565322	413	EOCOIF	COIR	47
<i>Tetranychus evansi</i>	Spain (Murcia)	<i>Solanum nigrum</i>	GU565325	413	EOCOIF	COIR	47
<i>Tetranychus evansi</i>	Spain (Valencia)	<i>Solanum lycopersicum</i>	KP642060	453	COIF	COIR	47
<i>Tetranychus turkestani</i>	Spain (Castelló)	<i>Convolvulus arvensis</i>	GU565323	403	COIF	COIR	47
<i>Tetranychus urticae</i>	Spain (Amposta, Tarragona)	<i>Citrus clementina</i>	KP642065	458	COIF	COIR	47
<i>Tetranychus urticae</i>	Spain (Betxí, Castelló)	<i>Citrus clementina</i>	KP642064	453	COIF	COIR	47
<i>Tetranychus urticae</i>	Spain (Callosa d'en Sarrià, Alicante)	<i>Citrus clementina</i>	KP642066	453	COIF	COIR	47
<i>Tetranychus urticae</i>	Spain (Castelló)	<i>Citrus clementina</i>	GU565324	455	COIF	COIR	47
<i>Tetranychus urticae</i>	Spain (Mallorca)	<i>Citrus clementina</i>	KU342805	452	COIF	COIR	47

Table S4. Acari ITS sequences obtained in this work, with description of geographical origin and host-plant, fragment amplified (full ITS indicated as ITS1 and ITS2 with the same accession number), accession number obtained, length of amplified fragment, and primer pair used to amplify each fragment. In this case, annealing temperature was 50°C.

Species	Origin (Country (Locality, County))	Host plant	ITS1	ITS2	Accession number	Total length (bp)	Primer direct	Primer reverse
Suborder Mesostigmata								
<i>Amblyseius andersoni</i>	Spain (Girona)	<i>Malus domestica</i>	x	x	KP642040	619	18S	28S
<i>Amblyseius andersoni</i>	Spain (Lleida)	<i>Malus domestica</i>	x	x	KP642040	619	18S	28S
<i>Amblyseius andersoni</i>	Biobest Biological Systems	Commercial mass rearing	x	x	GU565288	654	18S	28Suni
<i>Amblyseius andersoni</i>	Syngenta Agro	Commercial mass rearing	x	x	KP642041	597	18S	28S
<i>Anthoseius rhenanoides</i>	Spain (Montcada, Valencia)	<i>Citrus limon</i>	x	x	KU342786	750	18S	28Suni
<i>Euseius scutalis</i>	Spain (Málaga)	<i>Persea americana</i>	x	x	KP642044	602	18S	28S
<i>Euseius stipulatus</i>	Spain (Málaga)	<i>Persea americana</i>	x	x	KP642043	653	18S	28S
<i>Neoseiulus barkeri</i>	Syngenta Agro	Commercial mass rearing	x	x	KP642042	603	18S	28S
<i>Typhlodromus phialatus</i>	Spain (Girona)	<i>Malus domestica</i>	x	x	KP642045	751	18S	28S
<i>Typhlodromus phialatus</i>	Spain (Lleida)	<i>Malus domestica</i>	x	x	KP642046	599	18S	28S
Suborder Mesostigmata								
<i>Aplonobia histricina</i>	Spain (Montcada, Valencia)	<i>Oxalis pes-caprae</i>	x		GU565291	558	18S	5,8Srev
		<i>Oxalis pes-caprae</i>		x	GU565304	679	5.8S	28Suni
<i>Eutetranychus orientalis</i>	Spain (Málaga)	<i>Citrus limon</i>	x		KP642049	606	18S	5.8Srev
				x	KP642048	554	5.8S	28Suni
<i>Eutetranychus banksi</i>	Spain (Huelva)	<i>Citrus clementina</i>	x		GU565292	483	18S	5.8Srev
				x	KP642050	656	5.8S	28Suni
<i>Oligonychus perseae</i>	Spain (Málaga)	<i>Persea americana</i>	x		GU565293	415	18S	5.8Srev
		<i>Persea americana</i>		x	GU565305	429	LC1	28S
<i>Panonychus citri</i>	Spain (Mallorca)	<i>Citrus sinensis</i>		x	KP642051	483	LC1	28Suni
<i>Tetranychus evansi</i>	Brasil	<i>Solanum lycopersicum</i>	x		GU565294	512	18S	5.8Srev
		<i>Solanum lycopersicum</i>		x	GU565306	708	5.8S	28Suni
<i>Tetranychus evansi</i>	Italy (Sicily)	<i>Solanum nigrum</i>	x		GU565297	474	TC1	TC2
				x	GU565309	713	5.8S	28Suni
<i>Tetranychus evansi</i>	Spain (Huelva)	<i>Solanum nigrum</i>	x		GU565295	467	TC1	5.8Srev
				x	GU565307	705	18S	28Suni
<i>Tetranychus evansi</i>	Spain (Murcia)	<i>Solanum nigrum</i>	x		GU565296	518	TC1	5.8Srev
				x	GU565308	668	LC1	28Suni
<i>Tetranychus evansi</i>	Spain (Valencia)	<i>Solanum lycopersicum</i>	x		GU565298	434	18S	5.8Srev
				x	GU565310	589	LC1	28S
<i>Tetranychus okinawanus</i>	Florida (Tampa)	<i>Lilium</i> sp.	x		KP642047	620	18S	5.8Srev
				x	GU565311	683	LC1	28Suni
<i>Tetranychus urticae</i>	Spain (Amposta, Tarragona)	<i>Citrus clementina</i>	x		GU565303	543	18S	5,8Srev
<i>Tetranychus urticae</i>	Spain (Betxí, Castelló)	<i>Citrus clementina</i>	x		GU565299	493	18S	5.8Srev
<i>Tetranychus urticae</i>	Spain (Callosa d'en Sarrià, Alicante)	<i>Citrus clementina</i>	x		KP642054	566	18S	5.8Srev

Species	Origin (Country (Locality, County))	Host plant	ITS1	ITS2	Accession number	Total length (bp)	Primer direct	Primer reverse
<i>Tetranychus urticae</i>	Spain (Málaga)	<i>Phaseolus vulgaris</i>	x		GU565301	520	18S	5.8Srev
		<i>Phaseolus vulgaris</i>		x	GU565314	686	LC1	28Suni
<i>Tetranychus urticae</i>	Spain (Mallorca)	<i>Citrus clementina</i>		x	KP642053	701	LC1	28Suni
<i>Tetranychus urticae</i>	Spain (Onda, Castelló)	<i>Citrus clementina</i>	x		GU565302	513	18S	5.8Srev
<i>Tetranychus urticae</i>	Spain (Valencia, Llíria)	<i>Citrus clementina</i>	x		GU565300	531	18S	5.8Srev
				x	GU565313	640	LC1	28S
<i>Tetranychus urticae</i>	Florida (Tampa)	<i>Musa</i> spp.	x		KP642052	512	18S	5.8Srev
				x	GU565312	662	LC1	28Suni

Figure S1

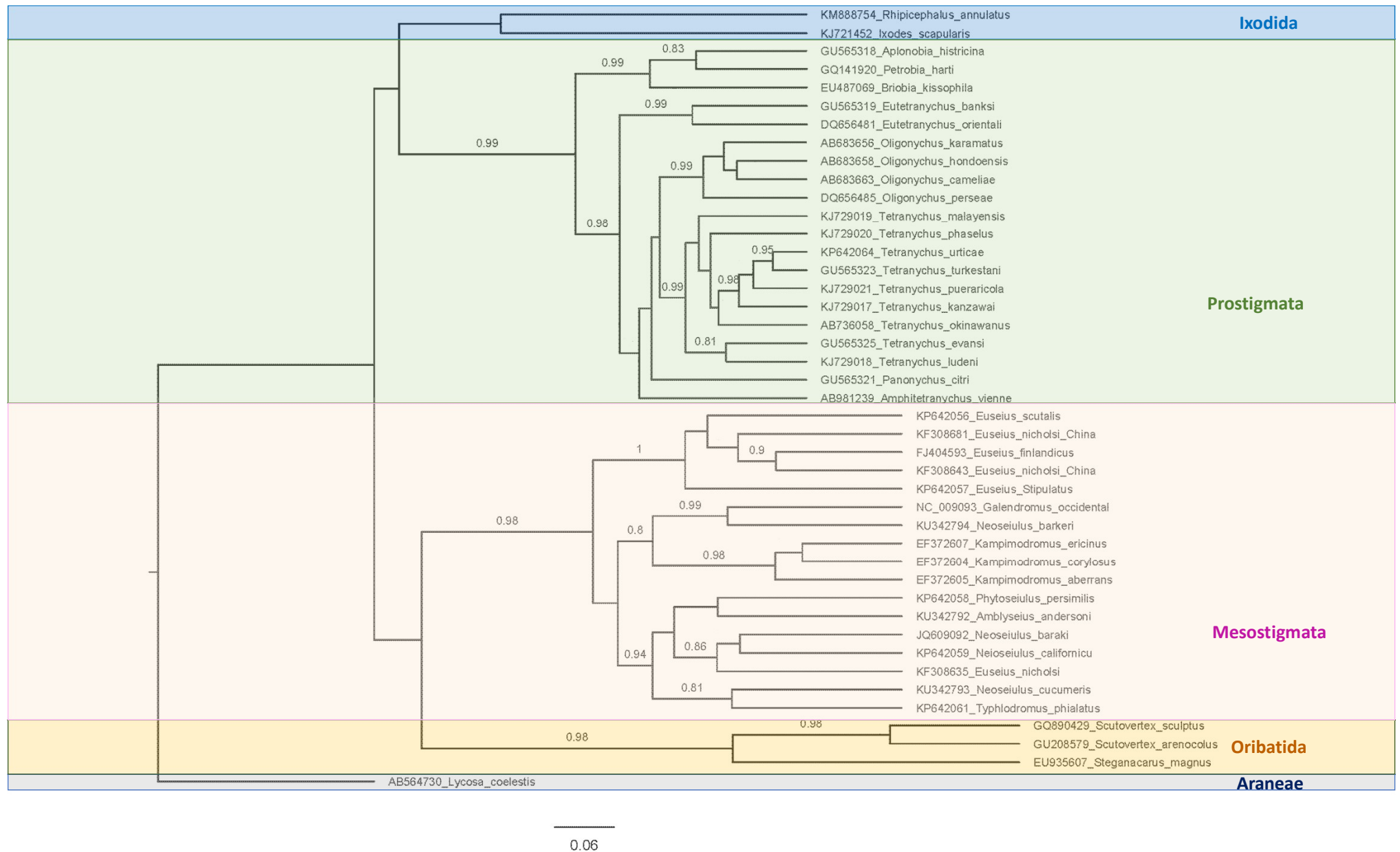


Figure S1 (previous page). Evolutionary relationships of Acari taxa based on Cytochrome C oxidase I (COI) sequences alignment. Phylogeny inference was performed using Bayesian analysis (in BEAST) of 43 nucleotide sequences, including three different sequences from *Euseius nicholsi*, under GTR + I + G model for DNA substitution, and under Yule speciation process. Ambiguous positions with less than 50% site coverage were eliminated, rendering only 499 positions in the final dataset. Sequences position of *E. nicholsi* in the phylogenetic tree may indicate their belonging to a cryptic species complex. Acari are shown to be a monophyletic group, with all species belonging to Ixodida (in blue), Oribatida (in yellow), Prostigmata (in green) and Mesostigmata (in orange).

Figure S2

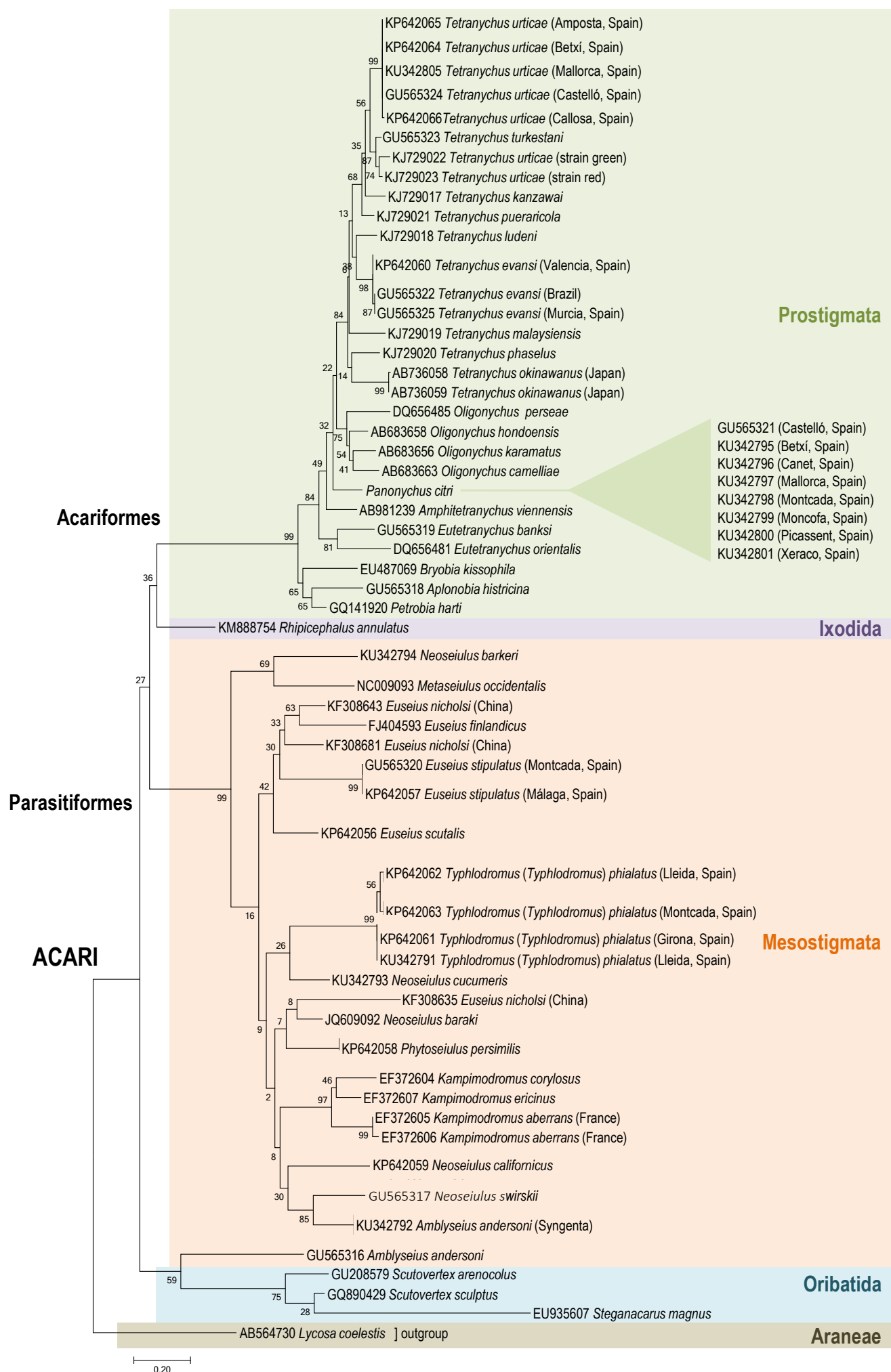


Figure S2 (previous page). Evolutionary relationships of taxa based on Acari Cytochrome C oxidase I (COI) sequences alignment. Phylogenetic inference (ML) performed with MEGA X (Kumar *et al.*, 2018) involved 61 nucleotide sequences, with only 453 positions in the final dataset. The optimal tree had a sum of branch length=11.003, bootstrap values over 60% are shown. The tree is drawn to scale in the same units as distance.

Figure S3

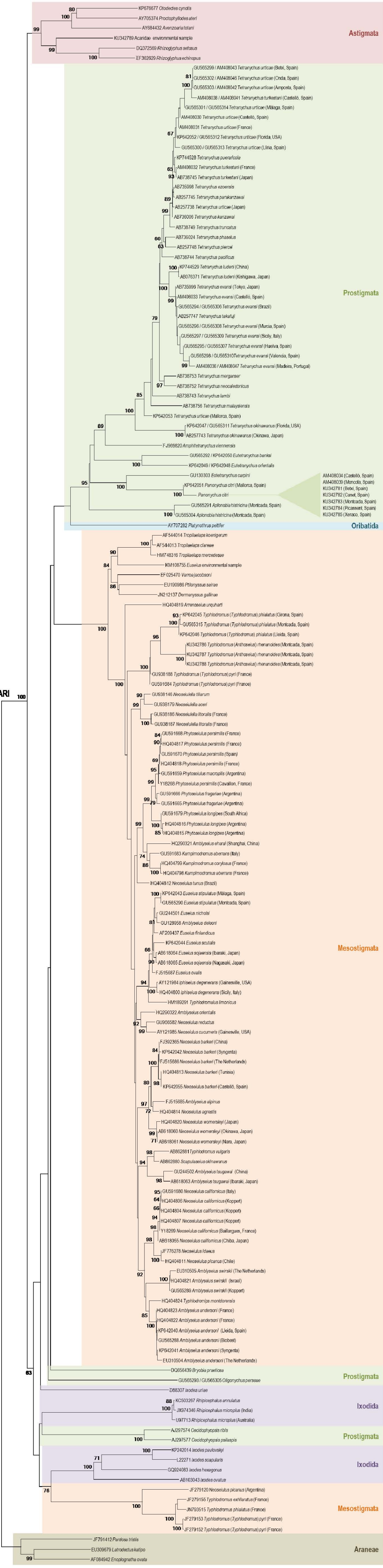


Figure S3 (previous page). Evolutionary relationships of taxa based on Internal Transcribed Spacer (ITS) sequences alignment. Phylogenetic inference (ML) performed with MEGA X (Kumar *et al.*, 2018) involved 157 nucleotide sequences. The optimal tree had a sum of branch length=10.2365581, bootstrap values over 60% are shown. The tree is drawn to scale in the same units as distance. Three Aranea species were used as an outgroup, indicated in the tree. Acari are shown to be a monophyletic group with paraphyletic aggregation. Traditional Acariforme and Parasitiforme division is not supported due to long-branch attraction of several individuals.

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