

Supplementary Table 1. Collection data and accession numbers of specimens.														Google map GPS	
Tick species	Stage	Source of origin	Sample code	Collected by	Country of collection	Data collected: yy-mm-dd	Morphological investigation	Accession Number				mt-genome	Google map GPS		
								COI	16S	12S	12S				
<i>I.vespertilionis</i> -like	<i>Ixodes nipponrhinolophi</i>	Female (molted)	<i>Rhinolophus cornutus</i>	YB47	A. Takano	Japan (Yamaguchi)	2021.02.25	yes	ND	ND	ND	ND		34.251084, 131.243056	
	<i>Ixodes nipponrhinolophi</i>	Female	<i>Rhinolophus ferrumequinum</i>		K. Funakoshi	Japan (Kumamoto)	1973.12.24	yes	ND	ND	ND	ND		32.252183, 130.651239	
	<i>Ixodes nipponrhinolophi</i>	Female	<i>Rhinolophus ferrumequinum</i>		K. Funakoshi	Japan (Kumamoto)	1979.04.12	yes	ND	ND	ND	ND		32.252183, 130.651239	
	<i>Ixodes nipponrhinolophi</i>	Female	<i>Rhinolophus ferrumequinum</i>		K. Funakoshi	Japan (Kumamoto)	1979.05.10	yes	ND	ND	ND	ND		32.252183, 130.651239	
	<i>Ixodes nipponrhinolophi</i>	Female	<i>Rhinolophus ferrumequinum</i>		K. Funakoshi	Japan (Kumamoto)	1979.05.25	yes	ND	ND	ND	ND		32.252183, 130.651239	
	<i>Ixodes nipponrhinolophi</i>	Female	<i>Rhinolophus cornutus</i>	4673	M. Takahashi	Japan (Gunma)	2005.04.23	yes	ND	ND	ND	ND		36.086915, 138.721945	
	<i>Ixodes nipponrhinolophi</i>	Male	Cave wall		S. Ando	Japan (Shimane)	2020.06.04	ND	LC769952	LC769948	LC769945	ND			
	<i>Ixodes nipponrhinolophi</i>	Larva	<i>Rhinolophus ferrumequinum</i>	6157	M. Takahashi	Japan (Gunma)	2015.05.12	ND	LC769949	LC769946	LC769943	ND			
	<i>Ixodes nipponrhinolophi</i>	Larva	<i>Rhinolophus cornutus</i>	6169	M. Takahashi	Japan (Gunma)	2015.06.02	ND	LC769950	+	+	ND			
	<i>Ixodes nipponrhinolophi</i>	Larva	<i>Rhinolophus cornutus</i>	6175	M. Takahashi	Japan (Gunma)	2015.06.02	ND	LC769951	LC769947	LC769944	ND			
	<i>Ixodes nipponrhinolophi</i>	Larva	<i>Rhinolophus cornutus</i>	YB46-1	A. Takano	Japan (Yamaguchi)	2021.02.25	ND	LC769953	ND	ND	ND			
	<i>Ixodes nipponrhinolophi</i>	Larva	<i>Rhinolophus cornutus</i>	YB48	A. Takano	Japan (Yamaguchi)	2021.02.25	ND	-	-	-	LC769935			
	<i>Ixodes vespertilionis</i>	Female	Pálvölgyi Cave (wall)	KD36	D. Kováts	Hungary (Budapest)	2018.12.01	yes	ND	ND	ND	ND			
	<i>Ixodes vespertilionis</i>	Female	Leány Cave (wall)	CV1	D. Kováts	Hungary (Pilis Mountains)	2016.03.06	yes	ND	ND	ND	ND			
	<i>Ixodes vespertilionis</i>	Female	Leány Cave (wall)	CV142	D. Kováts	Hungary (Pilis Mountains)	2017.03.19	yes	ND	ND	ND	ND			
	<i>Ixodes vespertilionis</i>	Female	Leány Cave (wall)	CV143	D. Kováts	Hungary (Pilis Mountains)	2017.03.19	ND	LC769936	ND	ND	ND			
	<i>Ixodes collaris</i>	Female	<i>Hipposideros pomona</i>	VN14-0011	V. Tan Tu	Vietnam (Kon Tum)	2014.09.22	yes	ND	ND	ND	ND			
	<i>Ixodes collaris</i>	Nymph	<i>Rhinolophus affinis</i>	VN16-53	V. Tan Tu	Vietnam	2016.06.01	ND	LC769938	ND	ND	ND			
<i>I.simplex</i> -like	<i>Ixodes fuliginosus</i>	Female	<i>Myotis macrodactylus</i>	Kana2020	F. Sato	Japan (Kanagawa)	2022.09.30	yes	ND	LC769940	ND	ND		35.623170, 139.165542	
	<i>Ixodes fuliginosus</i>	Female	<i>Miniopterus fuliginosus</i>		K. Funakoshi	Japan (Kumamoto)	1979.04.12	yes	ND	ND	ND	ND		32.252183, 130.651239	
	<i>Ixodes fuliginosus</i>	Female	<i>Myotis macrodactylus</i>		K. Funakoshi	Japan (Oita)	1997.07.17	yes	ND	ND	ND	ND		33.228090, 130.981712	
	<i>Ixodes fuliginosus</i>	Female	<i>Myotis macrodactylus</i>	5997	M. Takahashi	Japan (Gunma)	2014.06.17	yes	ND	***	ND	ND		36.685602, 138.925637	
	<i>Ixodes fuliginosus</i>	Nymph	<i>Myotis macrodactylus</i>	5995	M. Takahashi	Japan (Gunma)	2014.06.17	ND	ND	LC769939	ND	ND			
	<i>Ixodes fuliginosus</i>	Nymph	<i>Miniopterus fuliginosus</i>	YB14	A. Takano	Japan (Yamaguchi)	2021.02.15	ND	LC769942	LC769941	ND	ND			
	<i>Ixodes fuliginosus</i>	Male	<i>Murina ussuriensis</i>	Is_2020	R. Kuwata	Japan (Kochi)	2020.09.15	ND	-	-	-	LC769933			
	<i>Ixodes simplex</i>	Female	<i>Miniopterus schreibersii</i>		A. D. Sándor	Romania (Báziás)	2022.09.20-23.	yes	ND	ND	ND	ND			
<i>I.ariadnae</i> -like	<i>Ixodes fujitai</i>	Female	unknown		H. Fujita	Japan (Shiga)	1990.12.09	yes	ND	ND	ND	ND		35.222448, 136.291747	
	<i>Ixodes fujitai</i>	Female	<i>Murina hilgendorfi</i>	lv_Oka2013	M. Yamada	Japan (Okayama)	2013.03.09	yes	-	-	-	LC769934		34.961817, 133.631483	
	<i>Ixodes fujitai</i>	Female	<i>Murina hilgendorfi</i>	Shiga2016	K. Okumura	Japan (Shiga)	2016.04.22	yes	LC769954	LC769955	LC769956	ND		35.222448, 136.291747	
	<i>Ixodes ariadnae</i>	Female	Legény Cave (wall)	CV86	D. Kováts	Hungary (Pilis Mountains)	2017.03.05	yes	LC769937	ND	ND	ND			
									ND = Not Done						
									*Sequence data 100% identical with that of 6157						
									**Sequence data 100% identical with that of 5995						