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Supplementary Material

On the composition of *Antechinomys* (Marsupialia: Dasyuridae): how many species?

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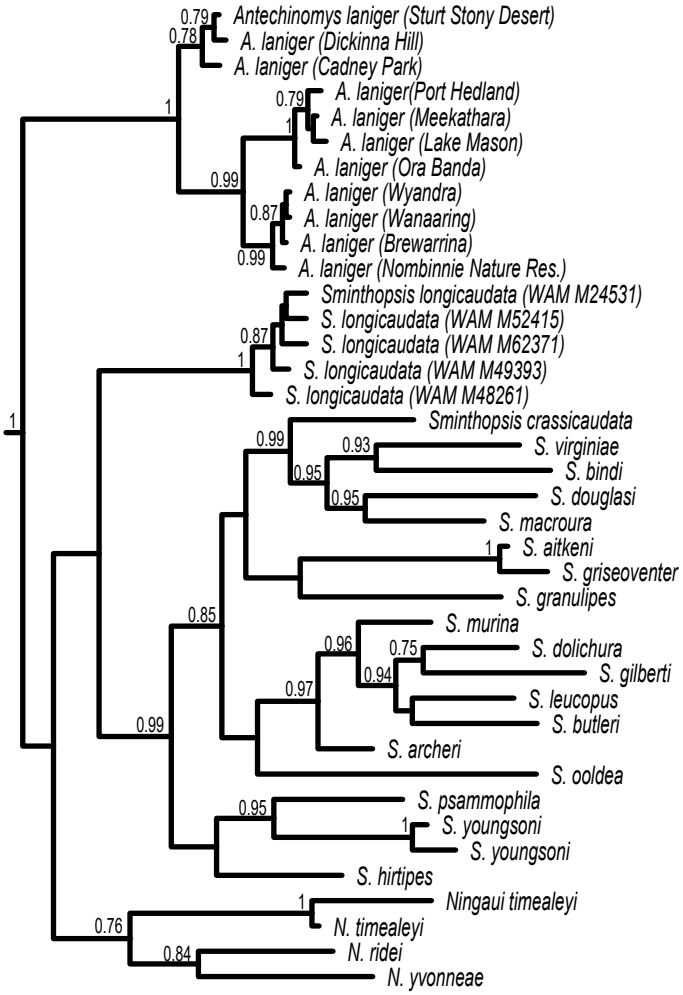
Supplementary Materials

Supplementary Figures S1-S4. Single gene trees for mitochondrial (CR, cytb, 12S and 16S rRNA Supplementary Figure S1), nuclear genes (IRBP, bFIB7, Protamine P1, e-globin, omega globin and vWF, Supplementary Figures S2 and S3) and concatenated mitochondrial and nuclear loci (Supplementary Figure S4). Support values given only at nodes showing support >70%. *denotes only partial sequences (<40%) available for these specimens.

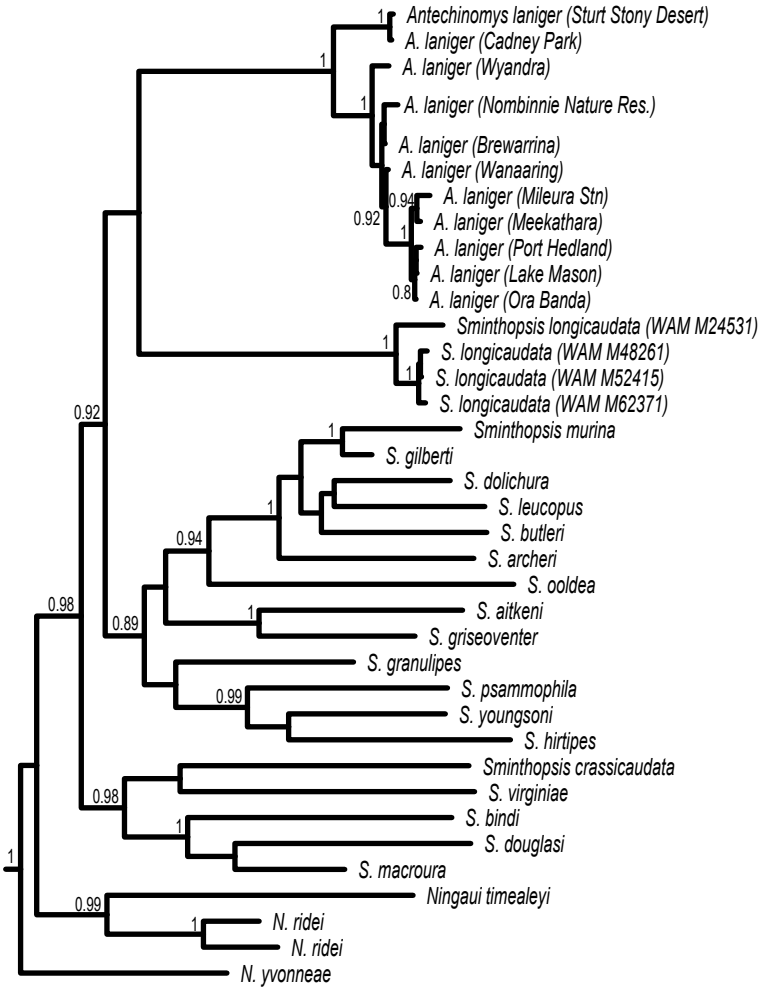
Supplementary Figure S5. TCS haplotype networks of individual mitochondrial genes sequences: cytb (n = 11, *L* = 738 bp), CR (n = 11, *L* = 384 bp) and 12S (n = 12, *L* = 803). The size of circles indicates the number of individuals with each unique haplotype, black circles are nodes and hatch marks indicate the number of nucleotide differences between each haplotype. The geographic location of each haplotype is indicated in the key.

Supplementary Table S1. Details of specimens of *Antechinomys*, *Ningaui* and *Sminthopsis* used in this study along with GenBank numbers for each gene sequenced.

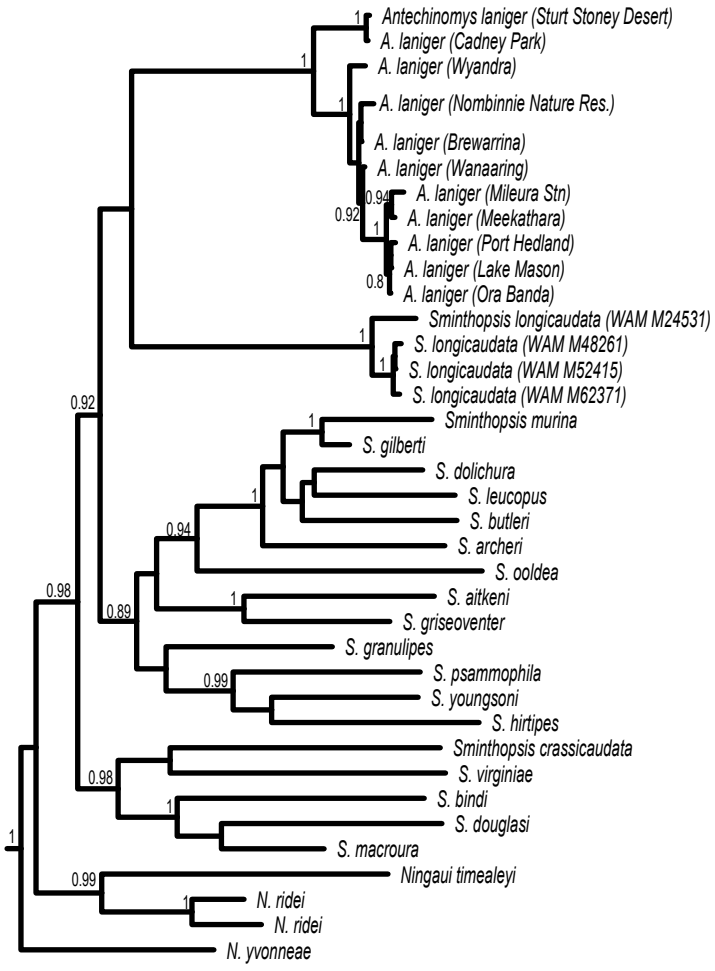
Supplementary Table S2. Models of sequence evolution obtained for the Bayesian analyses of the kultarr sequence data.



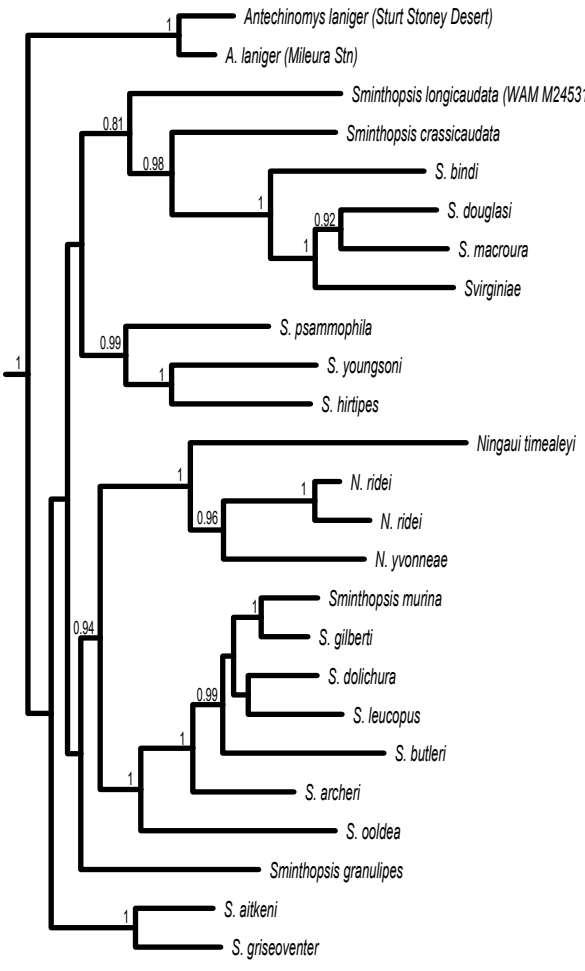
a) d-loop



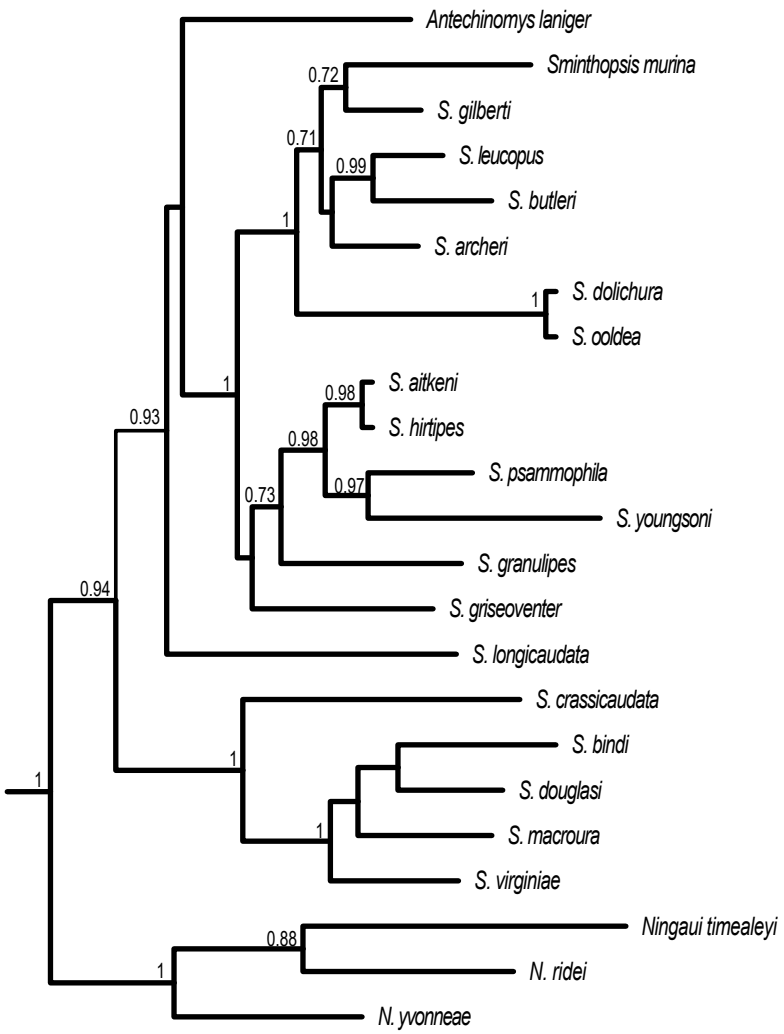
b) cyt b



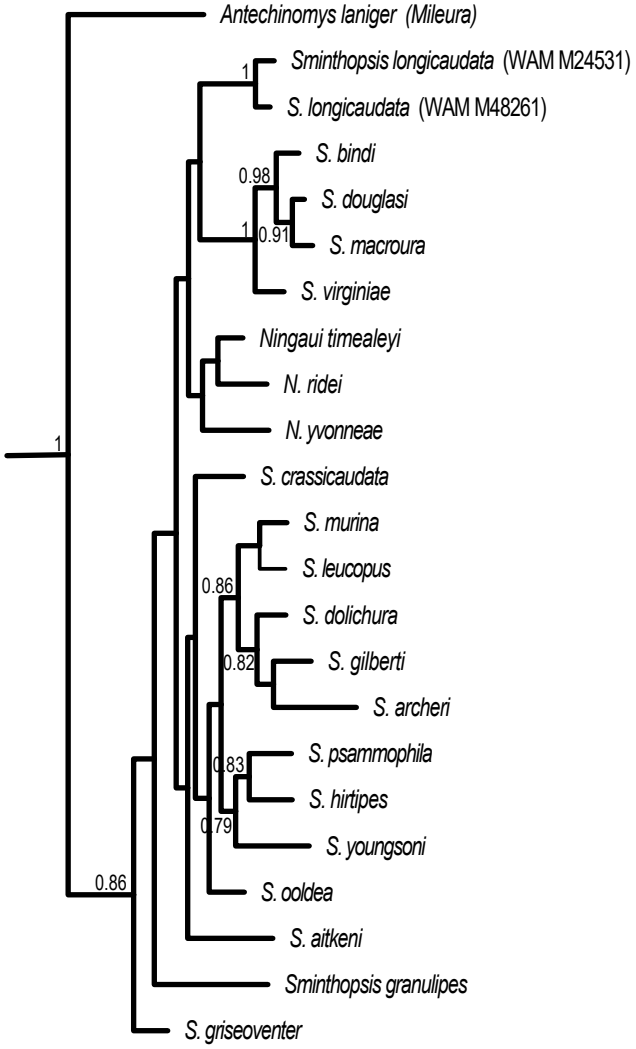
c) 12S rRNA



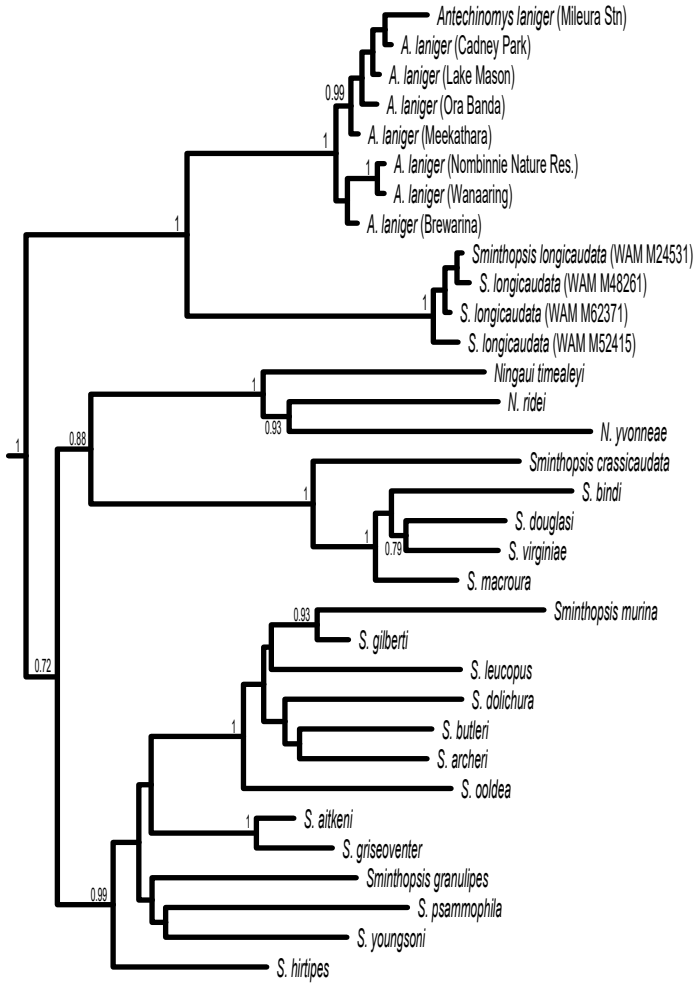
d) 16S rRNA



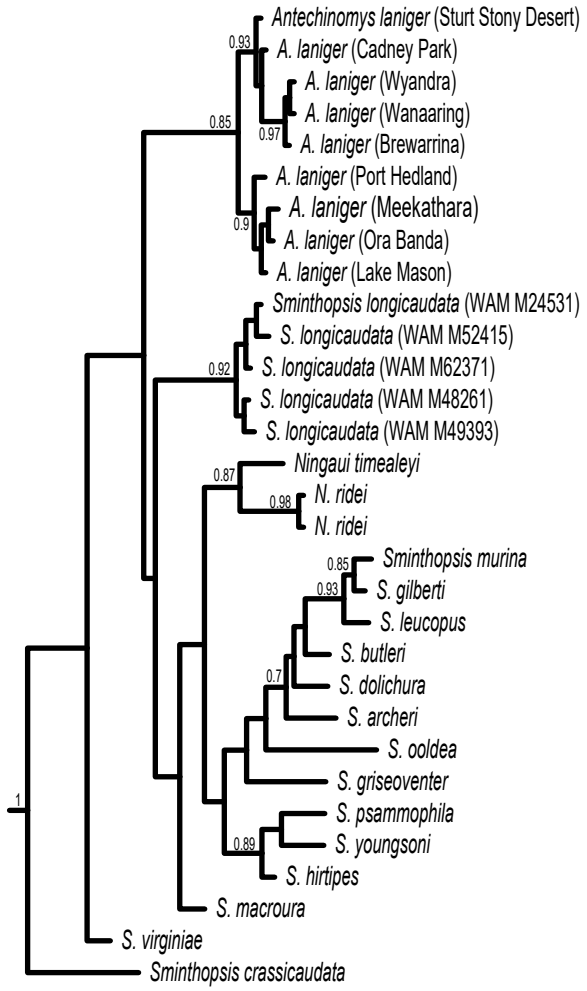
a) IRBP



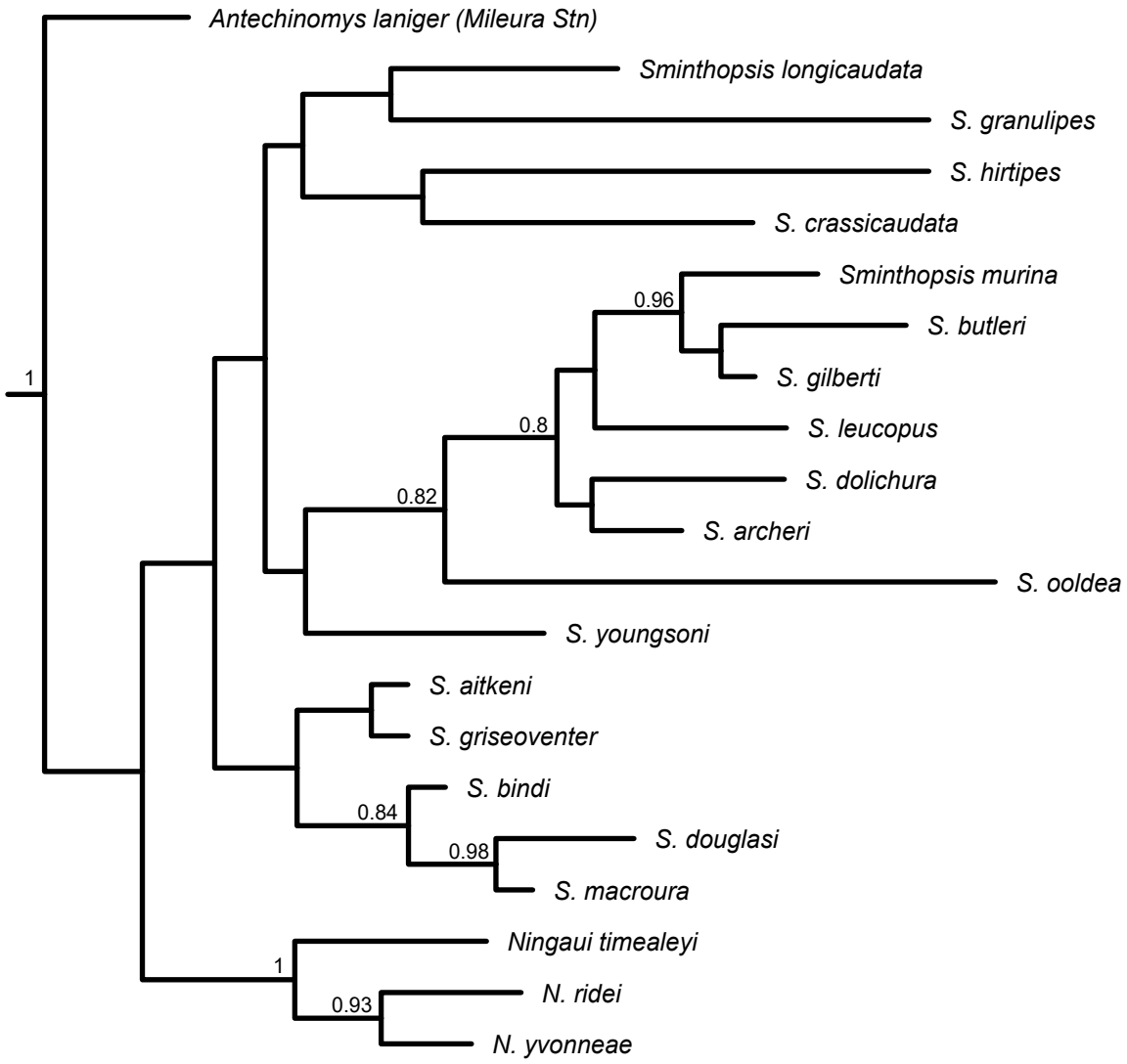
b) Prot P1



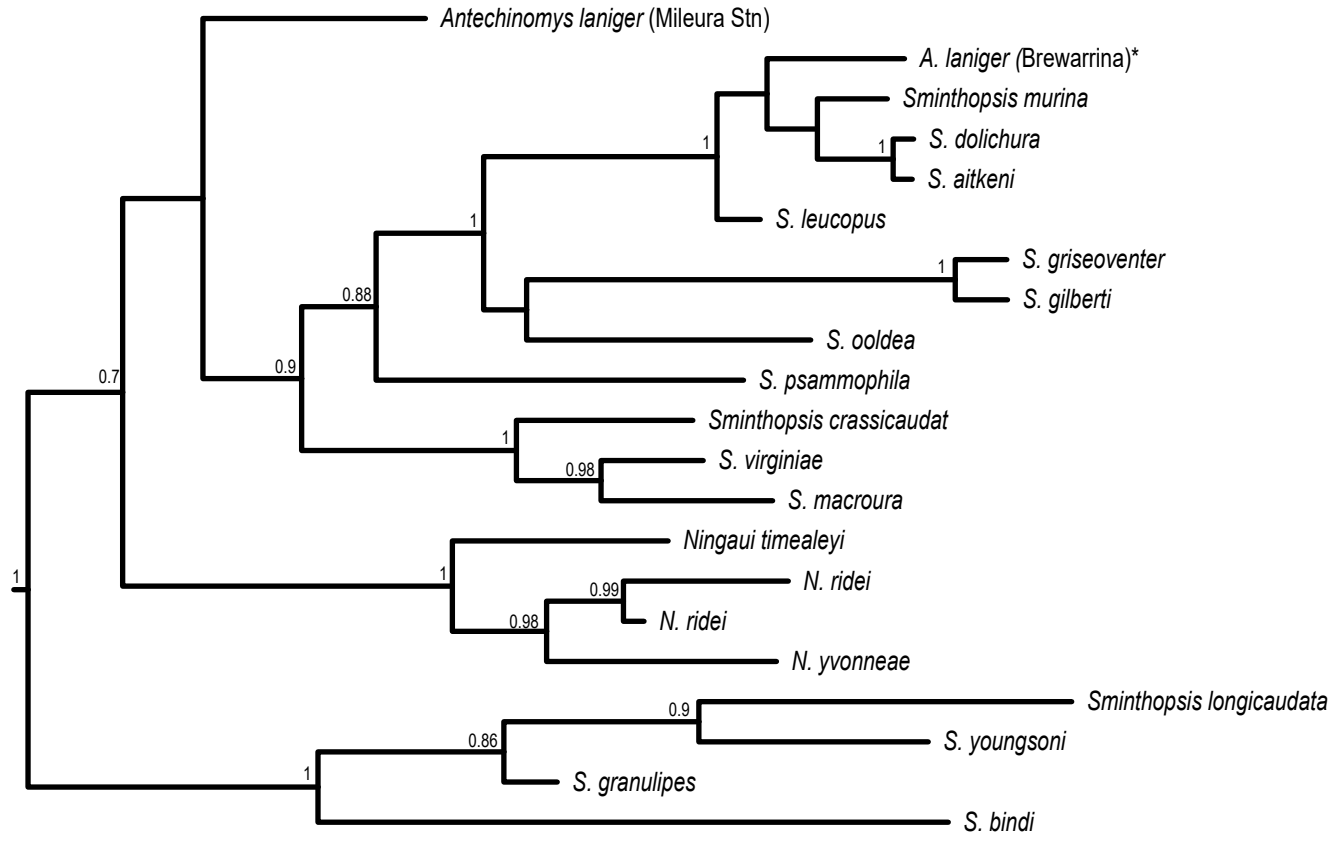
c) bFIB7



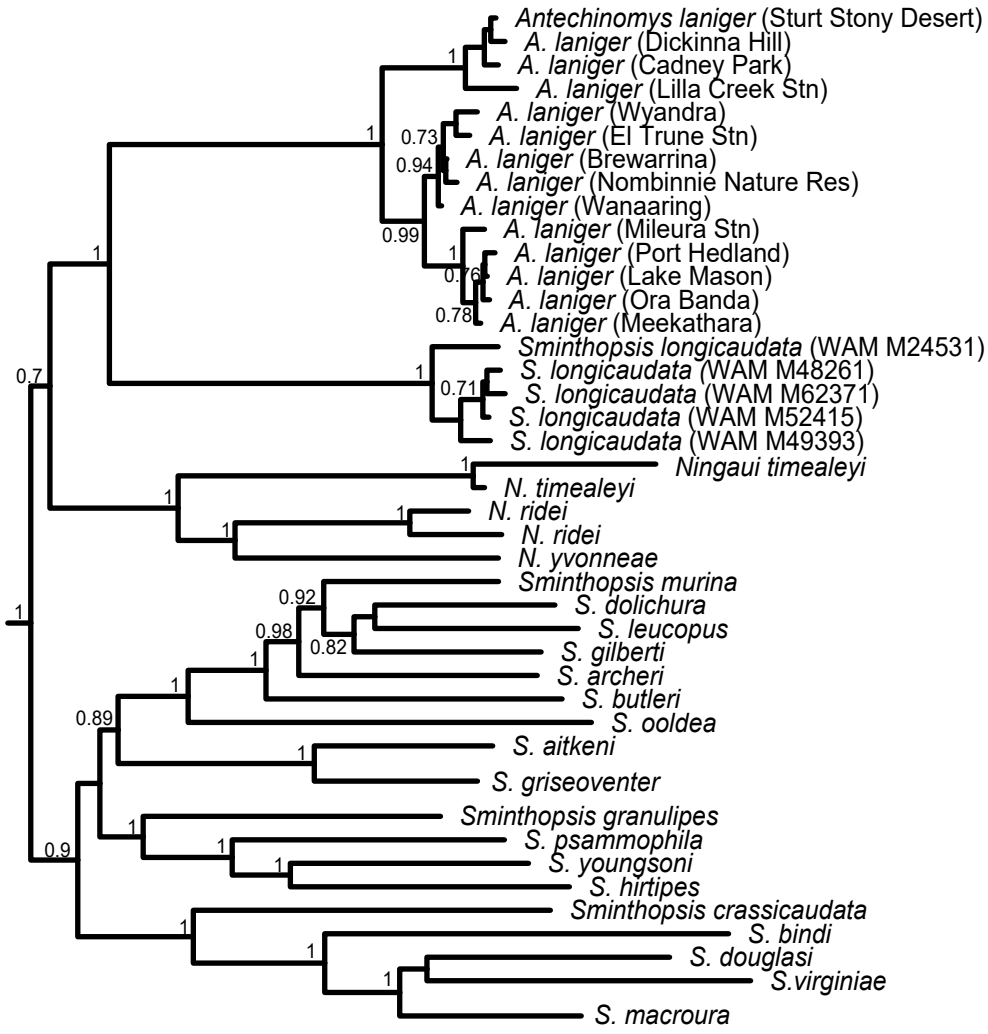
d) omega globin



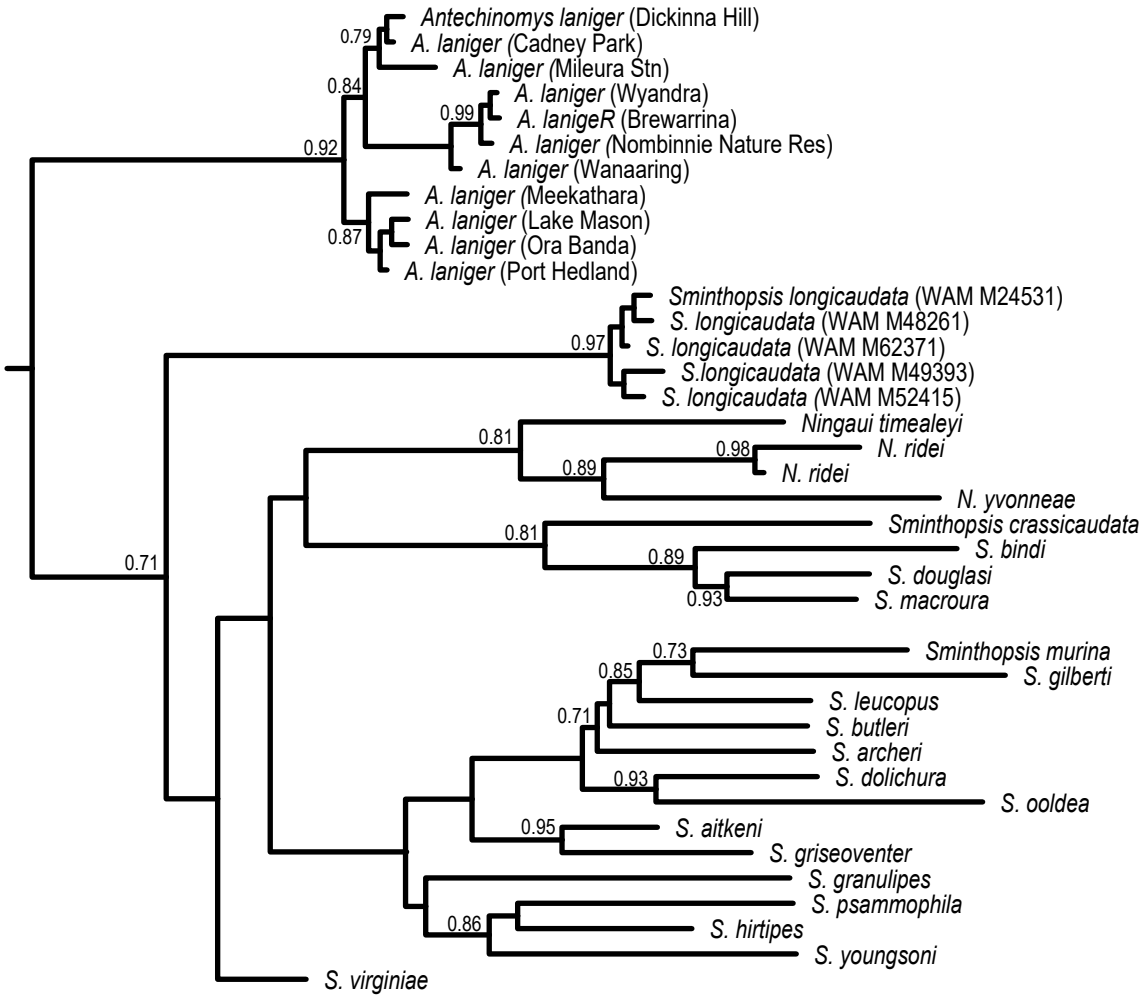
e) e-globin



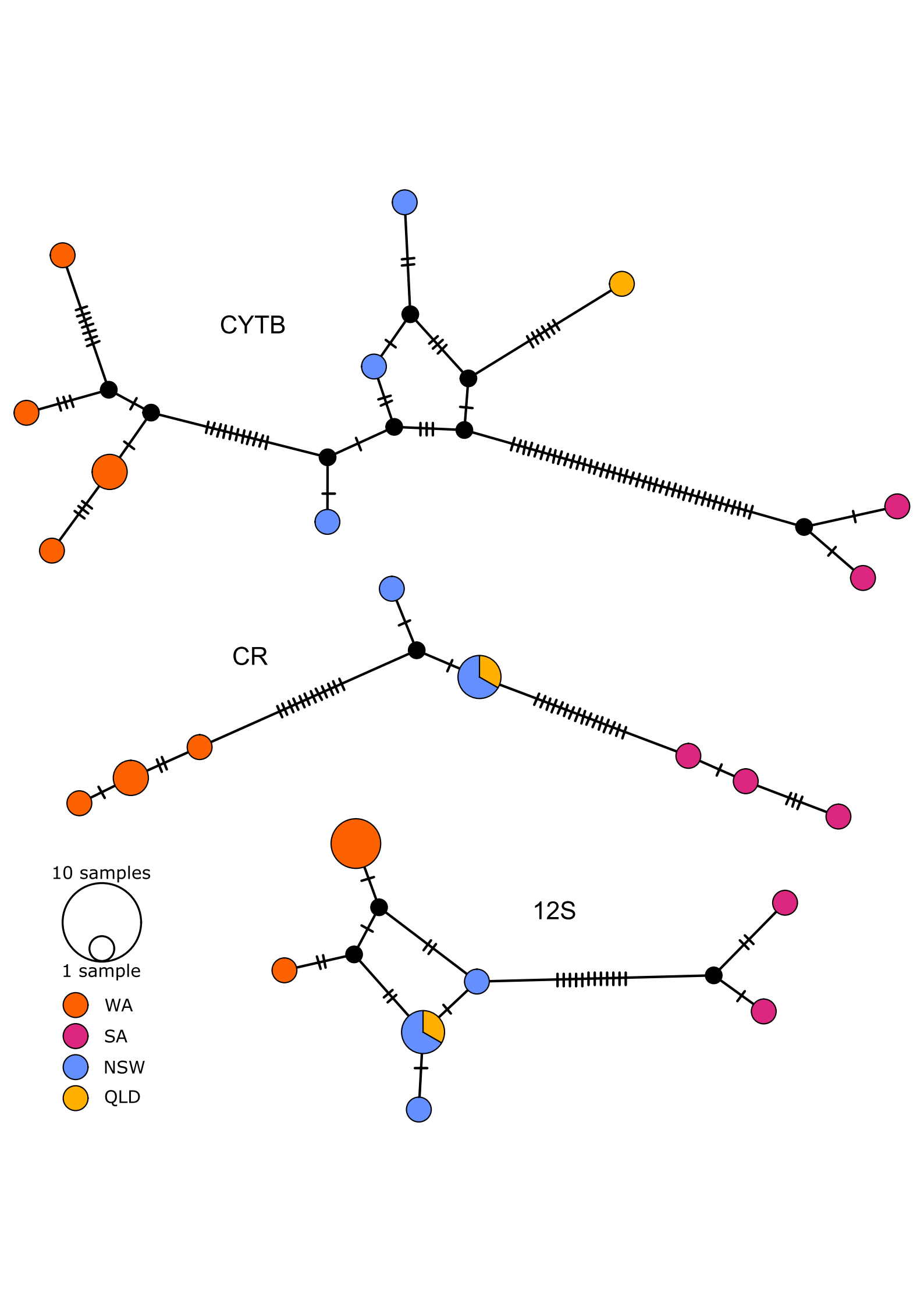
f) vWF



a) Mitochondrial loci only



b) Nuclear loci only


CYTB
CR
12S
10 samples
1 sample
WA
SA
NSW
QLD

Supplementary Table S1. Details of specimens of *Antechinomys*, *Ningaui* and *Sminthopsis* used in this study along with GenBank numbers for each gene sequenced.

Specimen	Locality	Latitude	Longitude	CR	Cytb	12S rRNA	16S rRNA	bfib7	Omega globin	Protamine P1	IRBP	e-globin
Antechinomys												
WAM M48522	Meekathara, WA	25° 06’ 28"S	118°00’28"E	OP800459	OP800470	OP805921		OP800483	OP800489			
WAM M56495	Lake Mason WA	27° 41' 51"S	119°16’48"E	OP800461	OP800471	OP805922		OP800477	OP800490			
WAM M62152	Ora Banda WA	30° 22' 48"S	121°3'36"E	OP800460	OP800473	OP805925		OP800478	OP800491			
LTUF46	Mileura Stn. WA	26° 22'S	117°20'E	-	AF001583	AF001936	JQ413947	JQ599227	JQ413927	AF001587	JQ687036	
WAM M60766	Port Hedland, WA	20° 23' 53"S	118°32'03"E	OP800458	OP800472	OP805924		-	OP800492			
QMJ M19810	Wyandra, Qld.	27° 14' 47"S	145°58'42"E	OP800465	OP800469	OP805918		OP800482	OP800488			
AM M37162	Wanaaring, NSW	29° 15'S	144°15'E	OP800462	OP800466	OP805916		OP800479	OP800486			
AM M38544	Brewarrina, NSW	31° 9' 0"S	146°32'24"E	OP800463	OP800468	OP805917		OP800481	OP800487			
SAMA M26612	Dickinna Well, SA.	26° 42' 32"S	139°53'12"E	AF088936	-	-		-	-			
SAMA M18206	Sturt Stony Desert	26° 7' 26"S	135°39'47"E	OP800456	KJ868097	KJ868097	KJ868097	OP800475	OP800484			
MVZ 133202	El Trune Stn, NSW	37° 4' 12"S	146°13'12"E	-	-	OP805920	-	-	-			
SAMA M25574	Cadney Park, SA	27° 55' 22"S	134°5'54"E	OP800457	OP800474	OP808186		OP800476	OP800485			
WAM TM1133	Nombinnie NR, NSW	33° 01’ S	145°43’ E	OP800464	OP800467	OP805919		OP800480				
NTMU2004	Lilla Creek Stn., NT	25° 34’ S	134°04’ E			OP805903						
Ningaui												
N. timealeyi				AF088957	AF001584	AF001939	JQ413969	JQ599248		AF001590	JQ687057	KF018153
N. ridei				AF088956	U07586	AF001937	JQ413968	JQ599247	MT454751	AF001588	JQ687056	KF018152
N. yvonneae				AF088958	U07587	AF001938	JQ413967	JQ599246		AF001589	JQ687055	KF018155
Sminthopsis												
S. longicaudata												
WAM M24531	Young Range, WA	25° 02' 29"S	121°59'30"E	MT413875	MT413891	AF088972	JQ413958	JQ599237	MT441010	AF089881	JQ687046	
WAM M48261	Kennedy Range, WA	24° 31' 22"S	114°57'56"E	MT366548	MT413930			MT454774	MT441002	MT454738		
WAM M62371	Waldburg, WA	24° 43' 33"S	117°25'13"E	MT366536	MT413903			MT454770	MT441014	-		
WAM M52415	Brockman Mine, WA	22° 17' 22"S	117°16' 0"E	MT366539	MT413931			MT454769	MT441026	-		

WAM M49393	Lorna Glen, WA	26° 11' 59"S	121°15'58"E	MT366534	MT413928			MT454768	MT441004	-		
WAM M61176	Gutha WA	28° 48' 0"S	116° 24' 0"E	MT366526	MT413929			MT454776	MT441045	-		
WAM M44983	Little Sandy Desert, WA	23° 48' 0"S	120° 30' 0"E	MT366546	MT413923			MT454766	MT441028			
WAM M49438	Lorna Glen, WA	26° 0' 0"S	121° 36' 0"E	MT366525	MT413902			MT454775	MT441037			
WAM M56543	Roy Hill, WA	22° 54' 0"S	120° 30' 0"E	MT366547	MT413932			MT454772	MT441011			
WAM M61285	Lorna Glen, WA	26° 12' 0"S	121° 36' 0"E	MT366549	MT413926			MT454771	MT440999			
S. crassicaudata				NC007631	NC007631	NC007631	NC007631	EF025056	AY014770	L32743	EF028748	Z48632
S. douglasi				AF088941	AF088923	AF088965	JQ413953	JQ599232	-	AF089875	JQ687041	KF018170
S. bindi				AF088938	AF088921	AF088962	JQ413952	JQ599231	-	AF089873	-	KF018166
S. virginiae				AF088952	AF088933	AF088975	JQ413950	JQ599229	-	AF089884	JQ687038	-
S. macroura				AF288582	AF001582	AF339115	JQ413951	JQ599230	DQ157412	AF001586	JQ687039.	KF018157
S. aitkeni				JN714266	AF088919	AF088960	JQ413960	JQ599239	-	AF089871	JQ687048	KF018159
S. dolichura				AF059270	AF088922	AF088964	JQ413961	JQ599240	DQ157407	AF089874	JQ687049	KF018158
S. granulipes				AF088943	AF088925	AF088967	JQ413959	JQ599238	-	AF089877	JQ687047	KF018160
S. griseoventer				JN714263	AF088926	AF088968	JQ413964	JQ599243	DQ157413	AF089878	JQ687052	KF018161
S. leucopus				DQ157397	AF088929	AF088971	JQ413955	DQ157405	DQ157406	AF089880	JQ687043	KF018162
S. psammophila				AF088951	AF088932	AF088974	JQ413954	JQ599233	-	AF089883	JQ687042	-
S. archeri				AF088937	AF088920	AF088961	JQ413962	JQ599241	DQ157410	AF089872	JQ687050	KF018171
S. butleri				DQ157399	KF294263	DQ157392	JQ413966	JQ599245	DQ157411	-	JQ687054	KF018163
S. ooldea				AF088950	AF088931	AF088973	JQ413957	JQ599236	MT441122	AF089882	JQ687045	KF018165
S. hirtipes				AF088944	AF088927	AF088969	JQ413965	JQ599244	MT454750	AF089879	JQ687053	KF018169
S. murina				AF088949	U07594	AF001934	JQ413949	JQ599228	DQ157402	AF001585	JQ687037	KF018156
S. gilberti				AF088942	AF088924	AF088966	JQ413963	JQ599242	DQ157408	AF089876	JQ687051	KF018164
S. youngsoni				AF088955	MT440300	AF088978	JQ413956	JQ599235	MT441179	AF089885	JQ687044	KF018167

Supplementary Table S2. Models of sequence evolution obtained for the Bayesian analyses of the kultarr sequence data.

Gene partitions	**Model chosen**	**Gamma value**	**p invar**
by gene			
IRBP	GTR+I+G	0.7390	0.3990
bFIB7	TVM+G	1.6638	
ProtP1	GTR+I+G	0.5740	0.2130
ε-globin	GTR+G	0.1290	
ω-globin	GTR+I+G	0.9878	0.2399
vWF	GTR+I+G	0.7630	0.5237
CR	TVM+I+G	0.8186	0.2953
cytB	GTR+I+G	0.7639	0.4814
12SrRNA	GTR+I+G	0.5493	0.6227
16SrRNA	GTR+I+G	0.2360	0.1970
Concatenated			
Nuclear	GTR+I+G	0.4414	0.8894
Mitochondrial	GTR+I+G	0..7066	0.5281
by codon			
1^{st} + 2^{nd} pos only	GTR+I+G	0.5769	0.6974
3^{rd} pos RY	GTR+G	0.1430	
introns	TIM2+G	0.0708	
ProtP1 3’ and 5’URL	GTR+G	0.4350	
CR	TVM+I+G	0.4630	0.0
Stems only (12S+16S)	TIM2+I+G	0.4710	0.6740
Loops only (12S+16S)	TIM2+G	0.2300	