

Supplementary Table S1. all primers, annealing temperatures and amplicon sizes of PCR amplification.

Gene	Primer sequences (5'-3')	AT(°C)	Size(bp)	Reference
<i>E. bienewisi</i> ITS1	F1: GATGGTCATAGGGATGAAGAGCTT	55	-392	[22]
	R1: AATACAGGATCACTTGGATCCGT			
	F2: AGGGATGAAGAGCTTCGGCTCTG			
	R2: AATATCCCTAATACAGGATCACT			
<i>Encephalitozoon</i> <i>n</i> spp. ITS	F1: TGAATG(G/T)GTCCCTGT	55	-300	[24]
	R1: TCACTCGCCGCTACT			
	F2: GGAATTACACCGCCCGTC(A/G)(C/T)TAT			
	R2: CCAAGCTTATGCTTAAGT(C/T)(A/C)AA(A/ G)G GGT			
MS1	F1: AAGTTGCAAGTTCAGTGTTTGAA	58	-676	[23]
	R1: GATGAATATGCATCCATTGATGTT			
	F2: TTGTAAATCGACCAAATGTGCTAT			
	R2: ACATAAACCCTAATTAATGTAAC			
MS3	F1: CAAGCACTGTGGTTACTGTT	55	-537	
	R1:AAGTTA GGGCATTTAATAAAATTA			
	F2: GTTCAAGTAATTGATACCAGTCT			
	R2: CTCATTGAATCTAAATGTGTATAA			
MS4	F1: GCATATCGTCTCATAGGAACA	55	-885	
	R1: GTTCATGGTTATTAATTCCAGAA			
	F2: CGA AGTGTACTACATGTCTCT			
	R2: GGACTTTAATAAGTTACCTATAGT			
MS7	F1: GTTGATCGTCCAGATGGAATT	55	-471	
	R1: GACTATCAGTATTACTGATTATAT			
	F2: CAATAGTAAAGGAAGATGGTCA			
	R2: CGTCGCTTTGTTTCATAATCTT			

Supplementary Figure S1. Sequence variation in the ITS region between the new SCR1 genotype and the known FJL genotype of *Enterocytozoon bienewisi*.

MK357781 Sika deer FJL	G C T C T G A A T A T C T A T G G C T A G A T A A A G T A C A A G T C G T A A C A A G G T T T C A G T T G G A G A A C C A G C T G A A G G A T C A T T T T C A G
MW880238 Red panda SCR1
MK357781 Sika deer FJL	T T T T T G G G G T G T G G G T A T C G G A A T G T G T G G T A G G T G A T G T G T G T G T A T G G G G G A T G C C G A G G G G A C C A G C T G T G C G G
MW880238 Red panda SCR1G.....
MK357781 Sika deer FJL	T G G T G T G T G T A G G C G T G A G A G T G T A T C T G T A A G G G T G A G G G A T G T G G G T G C A A C G A G T T A G A G G T G G T T T C A T G T G G A A T
MW880238 Red panda SCR1
MK357781 Sika deer FJL	A G T G G G A T T G G T A C G T G A T G G T T G G A T G G G G G A A T G A T G T G T G T A T G G G T G A G G A A A T C G G A G G T T G C G G T G C G A G C G G
MW880238 Red panda SCR1	A.....
MK357781 Sika deer FJL	C A G T A G G G T G C C A T C A A G A G G T G T A T
MW880238 Red panda SCR1