

**Supplemental Table S2. PCR primers used in this study.**

Names	Sequences (5'→3') <sup>a</sup>	Targets	References
SSU.f1	CCTACAGCTACCTTATTCGA	mtSSU	[35]
SSU.r1	ATGRAGTGGCTACAGACGTG	mtSSU	[35]
rns.f4	TTCAGCTACAGGTTCC	mtSSU	This study
rns.f6b	YRGCACGTCTGTAGCCCAC	mtSSU	This study
rns.f9	TTCCCCTACAGCTACCTTA	mtSSU	This study
rns.f8	GCGCTTGACGAGTAGTTAGT	mtSSU	This study
rn3.r3	ATCTGTGATGTACTAACTAC	mtSSU	This study
rns.r10	CAAAACATTAGACGGTCACAG	mtSSU	This study
rns.r13	AGATACCCTGTAGTTATGCTG	mtSSU	This study
rnl.r8	AGGAAAAGAAATCAACCGAGA	mtLSU	This study
LSU.f1	CTCATGTCAGCATTCTCTCTTA	mtLSU	This study
LSU.r1	TAGGATATAGCTGGTTCTGCGA	mtLSU	This study
rnl.f1c	CCCAACTCACGTAACCTTTA	mtLSU	This study
rnl.f3	TTTGCAGGTTCCCTT	mtLSU	This study
rnl.f10	AACGTTACTCATGTCAGCA	mtLSU	This study
rnl.f11	TACTAAATGTTCTGCTACC	mtLSU	This study
rnl.r4	GGTTACGTGAGTTGGGTT	mtLSU	This study
rnl.r12	ACCGTGAGGGAAAGTTGA	mtLSU	This study
Pu3Y.f <sup>b</sup>	TACAAATCGRACTAGGATAT	mtLSU	This study
Pu7rev	GATGGCTGTTCCAAG	mtLSU	[33]
pAZ102-E	GATGGCTGTTCCAAGGCCA	mtLSU	[34]
pAZ102-H	GTGTACGTTGCAAAGTACTC	mtLSU	[34]
nad5.r6	CCWAWWGMWACAAACATCATWCC	<i>nad5</i>	This study
nad5.f6	TGTCWCARTTRGGWATGATGTTGT	<i>nad5</i>	This study
cob.r8	GGATTAGCCATRATRTAATTATCRCTATG	<i>cob</i>	This study
cob.f8	CATAGYGATAATTAYATYATGGCTAATCC	<i>cob</i>	This study
rns.cox1.f5	GGWACTARCCAATTWCCAAATC	<i>cox1</i>	This study
cox1.r5	TDGGWGGATTGGWAATTGG	<i>cox1</i>	This study
mt.r103c	GCATCCWTCAAYGTGACAAATTGA	mtDNA non-coding region	This study
dhps.f7	GGTGTTCATTCATATGATT	<i>dhps</i>	This study
dhps.f6	CCRRTTTTRCCATTYT	<i>dhps</i>	This study
dhps.r6	CCTCTCATRTGCATTATACATATYGG	<i>dhps</i>	This study
dhps.r7	AYCCTGTAAAYCTTT	<i>dhps</i>	This study
dhps.r8	CCAGGRTCYAAAATAATRTTCCA	<i>dhps</i>	This study
dhps.r9	AATAWAHYYTTCCARATAGCATC	<i>dhps</i>	This study
PK.f1	CAARTTRTCAGAAGAAAAGATGGT	<i>pppk</i>	This study
PK.f2	TRAACACRTCTATGTTATGAATC	<i>pppk</i>	This study
PK160	GTAAATCCTGGTATTAAACCAGTTGCCATT	<i>pppk</i>	[32]
16S.f4	CGCTACTACCGATTGAATGGC	18S rRNA	This study
ITS1.F	TTRCTGGRAAGTTGATCAAAT	18S rRNA	This study

ITS1-1f	TCAAATTGGTCATTTAGAGG	18S rRNA	This study
26S.r1	TGCCACGTTCTTCATCGAC	5.8S rRNA	This study
Fun.ITS4	TCCTCCGCTTATTGATATGC	28S rRNA	[36]
26S.r8	GGCTTAATCTCAGCAGATC	28S rRNA	This study
16SrRNA.r1	CTGGCTTCACCCTATTCAAGG	28S rRNA	This study
PCP18S.f3	GAATGGCTCATTATATCAGTTATA	18S rRNA	This study
Nu26S.f9	CACGGACCAAGGAGTCTAATA	28S rRNA	This study
PCP28S.r1	CAARGGCTTAATCTCAGCAGA	28S rRNA	This study
CTB.f3	ATGACCAACATYCGYAAAAC	<i>cytb</i>	This study
CTB.r3	AATGATATTGBCCTCATGG	<i>cytb</i>	This study

<sup>a</sup>Non-standard nucleotides represent degenerate codes. All primers are for *Pneumocystis* except for the last two (CTB.f3 and CTB.r3) which are shared between the host hares and rabbits.

<sup>b</sup>Modified from Riedbold *et al.* [32] by incorporating a degenerate nucleotide R at the 10th position.

Abbreviations: mtSSU, mitochondrial small-subunit rRNA gene; mtLSU, mitochondrial large-subunit rRNA gene; *cob*, apocytochrome b; *nad5*, NADH dehydrogenase subunit 5; *cox1*, cytochrome oxidase subunit 1; *cytb*, cytochrome b gene (from mammals), mtDNA, mitochondrial genome DNA; *dhps*, dihydropteroate synthase gene; *pppk*, dihydro-6-hydroxymethylpterin pyrophosphokinase gene; ITS1-5.8S-ITS2, nuclear internal transcribed spacer 1, 5.8S rRNA and internal transcribed spacer 2.