

Figure S1. (A) Major differences in *ama-1* gene and AMA-1 protein sequences. (B) Major differences in *rap-1* gene and RAP-1 protein sequences.

(A)

18 bp acid nucleic deletion

	553	570	
<i>B. divergens ama-1</i>	AACGCAAGGAATCGTGC	GGCGGCCGAGAAA	CTGAGATTATTCTATCGCCTGTGTCCGCA 600
<i>B. capreoli ama-1</i>	ACCGCAAGGAATCCTG	CGGCGGCCGAGAAA	CTGCGATTACTCTATCGCCTGTGTCCGCA 600
<i>Babesia</i> sp. FR1 <i>ama-1</i>	TACGCAAGGAATCCTG	CGGGGGCCATAAAA	CTGCGATTACTCTATCGCCTGTGTCCGCA 600
<i>Babesia</i> sp. AR1 <i>ama-1</i>	AACGCAAGGAAT-----	-----ACTGCGATTACTCTATCGCCTGTGTCCGCA 582	
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corresponding amino-acid sequence

<i>B. divergens</i> AMA-1	NARNRAAAEKTEIILSPVSA
<i>B. capreoli</i> AMA-1	TARNPAAAEKTAITLSPVSA
<i>Babesia</i> sp. FR1 AMA-1	YARNPAGAIKTAITLSPVSA
<i>Babesia</i> sp. AR1 AMA-1	NARN-----TAITLSPVSA
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36 bp acid nucleic duplication

		1496	1531
<i>B. divergens ama-1</i>	TACTACTATTGCTCAGAAGAGAAGCCTTCATCCTGG-----		GC
<i>B. capreoli ama-1</i>	TACTACTATTGCTCGCAAGAGAAACCTACATCATGG-----		GC
<i>Babesia</i> sp. FR1 <i>ama-1</i>	TACTACTATTGCTCGCAAGAGAAGCCTCCATCCTGG	TACTACTATCGCTCGCAAGAGAAGCCTCCATCCTGG	GC
<i>Babesia</i> sp. AR1 <i>ama-1</i>	TACTACTATTGCTCGCAAGAGAAGCCTCCATCCTGG-----		GC
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corresponding amino-acid sequence

<i>B. divergens</i> AMA-1	YYYCSEEKPSW-----A
<i>B. capreoli</i> AMA-1	YYYCSQEKPTW-----A
<i>Babesia</i> sp. FR1 AMA-1	YYYCSQEKPPSWYYYSQEKPPSW
<i>Babesia</i> sp. AR1 AMA-1	YYYCSQEKPPSW-----A
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(B)

3 bp and 33 bp acid nucleic deletions

		1012	1014
<i>B. divergens rap-1</i>	TTGTTTCAGCAAGCGTGCTCCATCYTCTTCTACTGAGGGGCCATGGCACAAGAAGGTTACT		
<i>Babesia</i> sp. FR1 <i>rap-1</i>	TTGTTTCAGCAAGCGCCCTTCATCTTCTTCTACTGAGGGGTTCTGGAAAAAGAAGGTTACT		
<i>Babesia</i> sp. AR1 <i>rap-1</i>	TTGTTTCAGCAAGCGCCCTTCATCTTCTTCTACTGAGGCATCCTGGAAAAAG--GTTACT		
<i>B. capreoli rap-1a1</i>	TTGTTTCAGCAAGCGCCCTTCATCTACTTCTACTGAGGACTCCGAGAAAAAGRATGTTACT		
<i>B. capreoli rap-1a2</i>	TTGTTTCARCAAGCGCCCTTCATCTACTTCTACTGAGGRSTTCTGGAAAAAGAAGGTTACT		
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	1030	1062
<i>B. divergens rap-1</i>	CACTCTGTG-----	AAGAAGATGTTAAACGAG
<i>Babesia</i> sp. FR1 <i>rap-1</i>	CAACCTGTGAAGGATTATTTAAACAAGAAGATGCATGCTACTAAGCAGTTGTTTCACGAG	
<i>Babesia</i> sp. AR1 <i>rap-1</i>	CAACCTGTGAAGGATTATTTAAACAAGAAGATGCATGCTACTAAGCAGTTGTTTCACGAG	
<i>B. capreoli rap-1a1</i>	CAACCTATGAAGGATTATTTAAACAAGAAGATGCATGCTACTAAGCAGTTGTTTCACGAG	
<i>B. capreoli rap-1a2</i>	CAACCTATG-----	AAGAAGTTGTTCCACGAG
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corresponding amino-acid sequence

<i>B. divergens</i> RAP-1	APSSSTEGPWHKKVTHSV-----KKMLNE
<i>Babesia</i> sp. FR1 RAP-1	PSSSSTEGFWKKKVTPVKDYLNKKMHATKQLFHE
<i>Babesia</i> sp. AR1 RAP-1	PSSSSTEASW-KKVTQPVKDYLNKKMHATKQLFHE
<i>B. capreoli</i> RAP-1a1	PSSTSTEDSEKKNVTQPMKDYLNKKMHATKQLFHE
<i>B. capreoli</i> RAP-1a2	PSSTSTEXFWKKKVTPQM-----KKLFHE