

Table S1. Detection of single and co-infections with microorganisms in cattle ticks.

Microorganism species		N°	Tick species								
			<i>Rhipicephalus</i> spp.	<i>R.</i> <i>bursa</i>	<i>R.</i> <i>sanguineus</i>	<i>R.</i> <i>annulatus</i>	<i>Hyalomma</i> spp.	<i>H.</i> <i>detritum</i>	<i>H. marginatum</i>	<i>H.</i> <i>lusitanicum</i>	<i>I.</i> <i>ricinus</i>
Single infection	<i>Borrelia</i> sp.	2	1	1	0	0	0	0	0	0	0
	<i>A. marginale</i>	1	1	0	0	0	0	0	0	0	0
	<i>R. aeschlimannii</i>	6	1	5	0	0	0	0	0	0	0
	<i>R. massiliae</i>	1	1	0	0	0	0	0	0	0	0
	<i>Rickettsia</i> spp.	22	6	5	3	0	4	3	0	0	1
	<i>Bartonella</i> spp.	3	3	0	0	0	0	0	0	0	0
	<i>B. bigemina</i>	1	0	0	0	1	0	0	0	0	0
	<i>T. orientalis</i>	1	1	0	0	0	0	0	0	0	0
	<i>FLE</i>	10	4	3	0	0	1	1	1	0	0
Subtotal	47/235	18	14	3	1	5	4	1	0	1	
		20%									
Dual infection	<i>Borrelia</i> sp. + <i>R. massiliae</i>	1	0	0	1	0	0	0	0	0	0
	<i>Borrelia</i> sp.+ <i>Rickettsia</i> sp.	1	1	0	0	0	0	0	0	0	0
	<i>Anaplasma</i> sp. + <i>Rickettsia</i> sp.	1	1	0	0	0	0	0	0	0	0
	<i>Anaplasma</i> sp.+ <i>R. massiliae</i>	1	0	0	1	0	0	0	0	0	0
	<i>R. aeschlimannii</i> + <i>T. orientalis</i>	2	1	1	0	0	0	0	0	0	0

	<i>Rickettsia</i> sp. +T.	2	1	0	0	0	0	1	0	0	0
	<i>orientalis</i>										
	FLE + <i>Rickettsia</i> spp.	61	7	6	1	0	18	17	7	2	3
	FLE + <i>R. monacensis</i>	2	0	0	0	0	0	0	0	0	2
	FLE + <i>R. aeschlimannii</i>	8	1	1	0	0	3	1	1	1	0
	FLE + <i>R. massiliae</i>	5	0	0	0	0	3	2	0	0	0
	FLE + <i>R. helvetica</i>	1	0	0	0	0	0	0	0	0	1
	FLE + <i>T. orientalis</i>	1	0	0	0	0	0	1	0	0	0
	Subtotal	86/235	12	8	3	0	24	22	8	3	6
		36.6%									
Triple infection	<i>A. centrale</i> + <i>Rickettsia</i> sp. + <i>T. orientalis</i>	1	0	1	0	0	0	0	0	0	0
	<i>A. marginale</i> + <i>R. aeschlimannii</i> , <i>T. orientalis</i>	2	1	1	0	0	0	0	0	0	0
	FLE + <i>A. marginale</i> + <i>T. orientalis</i>	1	1	0	0	0	0	0	0	0	0
	FLE + <i>Borrelia</i> sp. + <i>R. massiliae</i>	1	0	0	0	0	1	0	0	0	0
	FLE + <i>Anaplasma</i> sp. + <i>T. orientalis</i>	1	0	0	0	0	1	0	0	0	0
	FLE + <i>Bartonella</i> sp. + <i>R. aeschlimannii</i>	2	0	0	0	0	2	0	0	0	0
	FLE + <i>Bartonella</i> spp. + <i>Rickettsia</i> spp.	4	0	0	0	0	0	3	0	1	0
	FLE + <i>Borrelia</i> spp. + <i>Rickettsia</i> spp.	4	0	0	0	0	2	2	0	0	0

	<i>FLE + Borrelia sp.+ R. aeschlimannii</i>	2	0	1	0	0	1	0	0	0	0
	<i>FLE + A. marginale + Rickettsia spp.</i>	8	2	0	0	0	2	1	0	0	3
	<i>FLE + Anaplasma spp.+ Rickettsia spp.</i>	5	1	2	0	0	0	1	1	0	0
	<i>FLE + R. aeschlimannii+ T. orientalis</i>	2	0	0	0	0	2	0	0	0	0
	<i>FLE + R. massiliae +T. orientalis</i>	2	1	0	0	0	0	1	0	0	0
	<i>FLE + Rickettsia spp. +T. orientalis</i>	14	1	2	0	0	8	1	1	0	1
	<i>FLE + R. massiliae+ B. bigemina</i>	1	0	0	1	0	0	0	0	0	0
	<i>FLE + R. helvetica +T. orientalis</i>	1	0	0	0	0	0	0	0	0	1
	Subtotal	51 /235	7	7	1	0	19	9	2	1	5
		21.7%									
Quadruple infection	<i>A. marginale + R. aeschlimannii + T. orientalis + Bartonella sp.</i>	1	1	0	0	0	0	0	0	0	0
	<i>FLE + Borrelia sp. + A. marginale + Rickettsia sp.</i>	1	0	0	0	0	1	0	0	0	0
	<i>FLE + Borrelia sp. + T. orientalis + Rickettsia sp.</i>	1	0	0	0	0	0	1	0	0	0

<i>FLE +Borrelia</i> sp. + <i>R.</i>	1	0	0	0	0	1	0	0	0	0
<i>Bartonella</i> sp. + <i>R.</i> <i>aeschlimannii</i>										
<i>FLE +Borrelia</i> sp. + <i>T.</i> <i>orientalis</i> + <i>R. helvetica</i>	1	0	0	0	0	0	0	0	0	1
Subtotal	5/235	1	0	0	0	2	1	0	0	1
	2.1%									
	189/235	38/235	29/235	7/235	1/235	50/235	36/235	11/235	4/235	13/235
	80.4%	16.2%	12.3%	3%	0.4%	21.2%	15.3%	4.6%	1.7%	5.5%
Total		75/109					101/113			13/13
		68.8%					89.3%			100%

N°: number of ticks

FLE: *Francisella*-like endosymbiont.