

Supplementary Material

Table S1. The overall prevalence of tick-borne pathogens in *I. ricinus* ticks collected from humans.

Pathogen	Prevalence % (+/n; 95% CI)			
	Larvae	Nymphs	Female	Total
<i>A. phagocytophilum</i>	4.76 (1/21; 0.12–23.82)	5.04 (21/417; 3.22–7.7)	8.33 (7/84; 3.42–16.42)	5.56 (29/522; 3.90–7.86)
<i>B. microti</i>	0 (0/21)	2.40 (10/417; 1.31–4.36)	1.19 (1/84; 0.03–6.46)	2.11 (11/522; 1.18–3.73)
<i>B. venatorum</i>	0 (0/21)	0.96 (4/417; 0.37–2.44)	0 (0/84)	0.77 (4/522; 0.30–1.95)
<i>B. afzelii</i>	4.76 (1/21; 0.12–23.82)	5.28 (22/417; 3.51–7.86)	7.14 (6/84; 2.67–14.90)	5.56 (29/522; 3.90–7.86)
<i>B. garinii</i>	0 (0/21)	2.88 (12/417; 1.65–4.96)	3.57 (3/84; 0.74–10.08)	2.87 (15/522; 1.75–4.69)
<i>B. lusitaniae</i>	0 (0/21)	2.40 (10/417; 1.31–4.36)	3.57 (3/84; 0.74–10.08)	2.49 (13/522; 1.46–4.21)
<i>B. miyamotoi</i>	4.76 (1/21; 0.12–23.82)	1.20 (5/417; 0.51–2.78)	2.38 (2/84; 0.29–8.34)	1.53 (8/522; 0.78–2.99)
<i>B. valaisiana</i>	0 (0/21)	1.68 (7/417; 0.82–3.42)	2.38 (2/84; 0.29–8.34)	1.72 (9/522; 0.91–3.24)
<i>N. mikurensis</i>	0 (0/21)	6.71 (28/417; 4.69–9.53)	3.57 (3/84; 0.74–10.08)	5.94 (31/522; 4.21–8.31)
<i>R. helvetica</i>	0 (0/21)	4.56 (19/417; 2.8–7.15)	7.14 (6/84; 2.67–14.9)	4.79 (25/522; 3.2–7.1)
<i>R. monacensis</i>	0 (0/21)	1.68 (7/417; 0.74–3.58)	1.19 (1/84; 0.03–6.46)	1.53 (8/522; 0.78–2.99)
TOTAL	14.29 (3/21; 3.05–36.34)	30.46 (127/417; 26.23–35.03)	34.52 (29/84; 24.48–45.69)	30.46 (159/522; 26.67–34.54)

–: not collected; +/n: number of positive samples/total number of samples.

Table S2. Co-infections with different tick-borne pathogens in *I. ricinus* ticks collected from humans in Romania.

Pathogens	Prevalence % (+/n; 95% CI)			Total
	2013	2014	2015	
<i>A. phagocytophilum</i> + <i>R. helvetica</i>	-	3.51 (2/57; 0.43–12.11)	1.54 (1/65; 0.04–8.28)	1.89 (3/159; 0.39–5.41)
<i>A. phagocytophilum</i> + <i>R. monacensis</i>	-	-	1.54 (1/65; 0.04–8.28)	0.63 (1/159; 0.02–3.45)
<i>A. phagocytophilum</i> + <i>B. afzelii</i>	-	1.75 (1/57; 0.04–9.39)	-	0.63 (1/159; 0.02–3.45)
<i>A. phagocytophilum</i> + <i>B. garinii</i>	2.7 (1/37; 0.07–14.16)	-	-	0.63 (1/159; 0.02–3.45)
<i>A. phagocytophilum</i> + <i>B. microti</i>	-	-	1.54 (1/65; 0.04–8.28)	0.63 (1/159; 0.02–3.45)
<i>B. afzelii</i> + <i>B. microti</i>	2.7 (1/37; 0.07–14.16)	-	-	0.63 (1/159; 0.02–3.45)
<i>B. afzelii</i> + <i>N. mikurensis</i>	-	-	1.54 (1/65; 0.04–8.28)	0.63 (1/159; 0.02–3.45)
<i>B. afzelii</i> + <i>R. helvetica</i>	-	-	1.54 (1/65; 0.04–8.28)	0.63 (1/159; 0.02–3.45)
<i>B. garinii</i> + <i>N. mikurensis</i>	-	3.51 (2/57; 0.43–12.11)	-	1.26 (2/159; 0.15–4.47)
<i>B. garinii</i> + <i>R. monacensis</i>	-	1.75 (1/57; 0.04–9.39)	-	0.63 (1/159; 0.02–3.45)
<i>B. lusitaniae</i> + <i>N. mikurensis</i>	-	1.75 (1/57; 0.04–9.39)	-	0.63 (1/159; 0.02–3.45)
<i>B. valaisiana</i> + <i>B. venatorum</i> + <i>N. mikurensis</i>	-	-	1.54 (1/65; 0.04–8.28)	0.63 (1/159; 0.02–3.45)
<i>B. valaisiana</i> + <i>N. mikurensis</i>	-	-	1.54 (1/65; 0.04–8.28)	0.63 (1/159; 0.02–3.45)
<i>N. mikurensis</i> + <i>B. microti</i>	-	-	1.54 (1/65; 0.04–8.28)	0.63 (1/159; 0.02–3.45)
<i>N. mikurensis</i> + <i>B. venatorum</i>	-	1.75 (1/57; 0.04–9.39)	-	0.63 (1/159; 0.02–3.45)
<i>R. helvetica</i> + <i>B. microti</i>	-	1.75 (1/57; 0.04–9.39)	-	0.63 (1/159; 0.02–3.45)
<i>R. helvetica</i> + <i>B. venatorum</i>	-	-	1.54 (1/65; 0.04–8.28)	0.63 (1/159; 0.02–3.45)
<i>R. helvetica</i> + <i>N. mikurensis</i>	-	-	4.62 (3/65; 0.96–12.9)	1.89 (3/159; 0.39–5.41)
TOTAL	5.41 (2/37; 0.66–18.19)	15.79 (9/57; 7.48–27.87)	18.46 (12/65; 9.92–30.03)	14.47 (23/159; 9.40–20.91)

–: not detected; +/n: number of co-infected samples/total number of positive samples with at least one pathogen.