

Supplementary Table. The results of individual cattle. Value of ELISA was measured by using commercial ELISA kit (ELISA Paratuberculosis; Insitutit Pourquier, Montpellier, France). Samples are considered positive if value of ELISA was over 60. Ileocal area and mesenteric lymph node were histopathologically classified, however; ileocal area was better suited to multinomial logistic regression model analysis. The histopathological classification was not correlated with value of ELISA.

Cattle No.	Breed	Age in month	Value of ELISA	Fecal MAP DNA (pg/well)	Clinical sign	Histopathological classification	
						Ileocecal area	Mesenteric lymph node
1	Holstein Friesian	55	188.967	3.81E-02		T/L	T/L
2	Holstein Friesian	47	232.545	8.34E+00		T/L	L
3	Holstein Friesian	31	211.864	3.27E-03		T/L	T/L
4	Japanese Black	80	0.907	1.68E-02		T	T/L
5	Japanese Black	118	0.716	1.23E-03		T	T
6	Japanese Black	83	0.924	4.64E+00		L	L
7	Japanese Black	97	1.081	3.65E-04		T	T
8	Japanese Black	123	0.829	4.82E-03		T	T
9	Japanese Black	121	0.843	5.02E-02		T	N
10	Japanese Black	86	0.491	7.06E-04		N	T
11	Japanese Black	109	0.430	3.06E-01		T	N
12	Holstein Friesian	114	1.023	1.97E+01	diarrhea	L	L
13	Holstein Friesian	83	191.369	2.30E-01		T/L	T/L
14	Holstein Friesian	73	190.577	2.12E-03		T	T
15	Holstein Friesian	73	154.928	3.16E-02		T	T
16	Holstein Friesian	73	200.583	4.15E-03		T/L	T
17	Holstein Friesian	71	105.229	4.02E-03		T	T
18	Holstein Friesian	71	171.368	4.45E-02		T	T
19	Holstein Friesian	70	155.606	6.86E-03		T	T/L
20	Holstein Friesian	66	182.693	2.63E-02		T/L	T/L
21	Holstein Friesian	63	241.500	7.68E-01		T/L	T/L
22	Holstein Friesian	59	115.038	5.55E-04		T	T
23	Holstein Friesian	48	179.271	1.05E-01		T/L	T
24	Holstein Friesian	36	215.892	7.74E-03		T/L	T
25	Holstein Friesian	34	118.112	7.74E-03		T	T

Cattle No.	Breed	Age in month	Value of ELISA	Fecal MAP DNA (pg/well)	Clinical sign	Histopathological classification	
						Ileocecal area	Mesenteric lymph node
26	Holstein Friesian	34	131.760	1.05E-01		T/L	T/L
27	Holstein Friesian	54	120.477	3.77E-03		T	T
28	Holstein Friesian	112	233.661	1.64E-03		T/L	T
29	Holstein Friesian	67	214.038	1.96E+00		T/L	T
30	Holstein Friesian	41	118.943	2.45E-03		T	T
31	Holstein Friesian	85	233.380	5.67E-01		T	T/L
32	Holstein Friesian	102	145.997	3.59E-01		T	T
33	Holstein Friesian	46	132.338	3.80E-01		T/L	T/L
34	Japanese Black	57	0.913	1.06E-02		T/L	T/L
35	Japanese Black	121	1.190	1.01E+01		T/L	T/L
36	Holstein Friesian	28	228.380	2.19E-02		T	T
37	Japanese Black	71	0.574	4.83E-03		T	T
38	Holstein Friesian	67	196.226	1.30E-02		T	T
39	Japanese Black	165	NT	3.27E+00		L	T/L
40	Holstein Friesian	78	195.649	8.39E+01		L	T/L
41	Holstein Friesian	49	105.729	1.80E-03		N	T
42	Japanese Black	70	NT	5.63E+02		L	L
43	Japanese Black	120	0.687	2.75E-02		T	T
44	Japanese Black	98	135.043	5.15E-03		N	N
45	Japanese Black	85	190.815	9.97E+00		T/L	N
46	Japanese Black	83	154.158	1.12E-03		N	N
47	Japanese Black	83	65.269	2.49E-03		N	N
48	Japanese Black	121	142.993	3.63E-02		T	T
49	Japanese Black	124	173.696	9.51E-02		T	T/L
50	Japanese Black	101	179.819	6.43E-01		T	T

Cattle No.	Breed	Age in month	Value of ELISA	Fecal MAP DNA (pg/well)	Clinical sign	Histopathological classification	
						Ileocecal area	Mesenteric lymph node
51	Japanese Black	97	113.670	1.67E-03		N	N
52	Japanese Black	199	91.143	9.09E-02		N	N
53	Japanese Black	188	220.185	1.00E-02		N	N
54	Japanese Black	119	176.649	2.32E+02		L	L
55	Holstein Friesian	55	125.966	1.52E-02		N	N
56	Holstein Friesian	123	144.752	5.06E-02		T	T
57	Holstein Friesian	93	154.272	1.42E-03		N	N
58	Holstein Friesian	39	214.435	5.42E-01		T/L	T/L
59	Holstein Friesian	92	67.598	3.90E-03		T/L	T
60	Holstein Friesian	89	133.365	1.56E+00		T/L	T
61	Holstein Friesian	89	149.730	2.88E+00		T/L	L
62	Holstein Friesian	53	155.214	1.40E-03		N	N
63	Holstein Friesian	55	210.140	3.83E-01		T/L	L
64	Holstein Friesian	38	175.892	1.99E+03		L	L
65	Holstein Friesian	53	203.772	5.05E+00		L	L
66	Holstein Friesian	93	102.314	3.50E-03		T	T
67	Holstein Friesian	33	257.213	1.89E+00		T/L	T/L
68	Holstein Friesian	41	201.451	2.05E-01		T/L	T/L
69	Holstein Friesian	75	64.297	3.25E-02		N	T
70	Holstein Friesian	102	221.266	3.37E+01		L	L
71	Holstein Friesian	41	112.942	1.20E-03		T	T
72	Japanese Black	90	0.999	2.85E+00		T/L	T/L
73	Holstein Friesian	58	113.915	1.66E-02		T	T
74	Holstein Friesian	64	190.254	4.00E+00	diarrhea	T/L	T/L
75	Japanese Black	149	0.795	2.90E-01		T/L	T/L

Cattle No.	Breed	Age in month	Value of ELISA	Fecal MAP DNA (pg/well)	Clinical sign	Histopathological classification	
						Ileocecal area	Mesenteric lymph node
76	Holstein Friesian	54	249.194	1.15E+01		T/L	T/L
77	Japanese Black	114	0.501	1.40E-02		N	T
78	Holstein Friesian	52	122.452	3.56E-02		T	T
79	Holstein Friesian	109	125.130	5.90E-03		N	N
80	Holstein Friesian	105	160.484	5.70E-02		T	N
81	Japanese Black	189	175.000	3.80E-02		N	N
82	Japanese Black	121	88.377	3.50E-02		N	N
83	Holstein Friesian	35	164.623	2.00E-02		T	T
84	Holstein Friesian	76	70.864	2.40E-02		N	T
85	Holstein Friesian	57	251.274	5.60E-01		T/L	T
86	Holstein Friesian	113	182.116	1.90E-02		N	N
87	Holstein Friesian	74	68.194	2.20E-02		T	N
88	Japanese Black	101	0.987	9.50E-03		N	N
89	Japanese Black	113	0.493	1.10E-02		N	N
90	Holstein Friesian	72	170.920	2.71E+01		L	L
91	Holstein Friesian	34	144.458	8.22E+01		T/L	L
92	Holstein Friesian	39	221.689	3.08E+00		T/L	T/L
93	Holstein Friesian	82	180.665	1.25E-01		T/L	T/L
94	Holstein Friesian	52	167.104	8.29E+00		L	L
95	Holstein Friesian	49	62.030	1.74E-03		T	T/L
96	Holstein Friesian	48	204.462	2.80E-02		T/L	T/L
97	Holstein Friesian	45	156.693	1.48E-03		N	T
98	Holstein Friesian	41	223.535	2.61E-01		T/L	T
99	Holstein Friesian	38	182.502	8.54E+02		L	L
100	Japanese Black	116	116.286	1.24E-03		N	N

Cattle No.	Breed	Age in month	Value of ELISA	Fecal MAP DNA (pg/well)	Clinical sign	Histopathological classification	
						Ileocecal area	Mesenteric lymph node
101	Japanese Black	59	173.725	6.92E+01		L	L
102	Holstein Friesian	67	NT	1.32E-03		N	N
103	Holstein Friesian	43	NT	4.28E-01		T	T/L
104	Holstein Friesian	59	NT	3.71E-02		N	T
105	Holstein Friesian	75	188.776	6.60E-02		N	T
106	Holstein Friesian	68	203.651	2.93E+00		T/L	T/L
107	Holstein Friesian	57	128.205	2.53E-03		T	N
108	Holstein Friesian	53	202.608	4.44E+00		T/L	T/L
109	Holstein Friesian	51	98.251	8.58E+01		L	L
110	Holstein Friesian	5	NT	1.68E-03		N	N
111	Holstein Friesian	5	NT	9.16E-03		N	N
112	Holstein Friesian	44	157.953	3.54E-02		N	N
113	Holstein Friesian	109	66.981	7.76E-03		N	N
114	Holstein Friesian	89	232.495	2.04E-02		T	N
115	Holstein Friesian	56	212.118	3.33E-01		T/L	T/L
116	Holstein Friesian	92	137.277	1.46E-01		T/L	T
117	Holstein Friesian	79	132.412	1.55E-01		T/L	T/L
118	Holstein Friesian	70	66.466	4.31E-03		N	N
119	Holstein Friesian	49	63.472	2.40E-03		N	N
120	Holstein Friesian	84	212.373	2.72E+00		L	L
121	Holstein Friesian	61	225.093	3.01E+00		L	T/L
122	Japanese Black	182	1.024	8.04E-02		N	N
123	Japanese Black	99	157.794	1.40E+01		L	L
124	Japanese Black	60	196.819	3.43E+02		L	L
125	Japanese Black	60	252.475	2.25E+01		L	L

Cattle No.	Breed	Age in month	Value of ELISA	Fecal MAP DNA (pg/well)	Clinical sign	Histopathological classification	
						Ileocecal area	Mesenteric lymph node
126	Japanese Black	133	114.631	2.54E+01		L	T/L
127	Holstein Friesian	27	164.630	3.61E-01		T	T
128	Holstein Friesian	65	243.133	1.22E+01		T/L	T
129	Holstein Friesian	49	93.951	1.01E-01		N	N
130	Holstein Friesian	61	236.651	2.89E-02		N	N
131	Holstein Friesian	54	172.783	3.26E-02		T	N
132	Holstein Friesian	49	154.433	6.74E-02		N	N
133	Japanese Black	137	186.796	1.14E-03		N	N
134	Japanese Black	136	203.998	4.86E+01		L	L
135	Japanese Black	136	64.930	1.03E-03		N	N
136	Japanese Black	128	130.709	1.57E-03		N	N
137	Japanese Black	29	98.486	4.97E-03		N	N
138	Japanese Black	75	199.484	2.74E-02		N	N
139	Japanese Black	121	85.991	9.17E+02		L	L
140	Holstein Friesian	72	NT	1.61E+01	diarrhea	L	L
141	Japanese Black	127	1.056	4.48E+01		L	L
142	Japanese Black	136	1.150	2.54E+01		T/L	T/L
143	Holstein Friesian	76	122.184	2.30E-03		N	N
144	Holstein Friesian	74	89.205	1.30E-01		T	T
145	Holstein Friesian	70	216.797	2.79E+02		L	L
146	Holstein Friesian	32	69.466	1.22E-03		N	N
147	Holstein Friesian	80	225.734	5.68E-03		T/L	NT
148	Holstein Friesian	25	155.463	7.67E+00		T/L	T/L
149	Japanese Black	9	125.149	6.03E-03		T	N
150	Holstein Friesian	78	243.058	1.27E-01		T/L	T/L
151	Japanese Black	139	69.324	1.85E+02		L	L
152	Japanese Black	45	105.435	4.22E-03		T	N
153	Holstein Friesian	69	138.243	1.61E-02		T	T