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172-TEST

PROFICIENCY TESTING 2010

INFECTIOUS BOVINE RHINOTRACHEITIS (IBR)

***Detection of IBRgE- and IBRgB-specific antibodies in serum by
Enzyme Linked Immunosorbent Assay (ELISA)***

**OPERATIONAL UNIT
COORDINATION OF VETERINARY DIAGNOSIS
EPIDEMIOLOGY AND RISK ASSESSMENT
(CVD-ERA)**

DATE BEGIN PT: 7 JUNE 2010

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I. Introduction

Details relevant to the proficiency test are available in the Procedure PRO/2.5/01 'Beheer van de proficiency testen/Gestion des essais d'aptitude'.

II. Aim

This proficiency test, focusing on the detection of IBRgE- and IBRgB-specific antibodies in serum, aims to assess the analytical accuracy of tests conducted by participants.

III. Materials and methods

III.1. Conduct of diagnostic tests

In the framework of this proficiency test, predefined reference serum samples must be tested by means of an ELISA test. The procedures for the ELISA tests must be fully described in the SOPs of the participating laboratories.

III.2. Reference samples

III.2.1. IBRgE-specific antibodies

Replicates of six reference serum samples either free from detectable IBRgE-specific antibodies ($n = 3$; coded 'PT2010IBRgESERNS1', 'PT2010IBRgESERNS4', and 'PT2010IBRgESERNS5') or containing detectable IBRgE-specific antibodies ($n = 3$; coded 'PT2010IBRgESERPS2', 'PT2010IBRgESERPS4', and 'PT2010IBRgESERPS6') were used. In total 210 aliquots were sent to the participating laboratories. Since 2007, these six reference serum samples are accompanied with a certificate containing the assigned value (status of the sample = 'golden standard'). The assigned value for each reference serum sample was obtained by the reference laboratory of the Veterinary and Agrochemical Research Centre (CODA-CERVA) by testing each sample 10 times. For this proficiency test, the six reference serum samples were tested once before the proficiency test (pre-verification) and once after the proficiency test (post-verification) by the reference laboratory of CODA-CERVA to confirm the assigned value. Consequently, these reference serum samples were considered as reliable samples to evaluate the ability to identify the absence or presence of IBRgE-specific antibodies in serum of bovine origin.

III.2.2. IBRgB-specific antibodies

Replicates of seven reference serum samples either free from detectable IBRgB-specific antibodies ($n = 3$; coded 'PT2010IBRgBSERNS3', 'PT2010IBRgBSERNS4', and 'PT2010IBRgBSERNS5') or containing detectable IBRgB-specific antibodies ($n = 4$; coded 'PT2010IBRgBSERPS1', 'PT2010IBRgBSERPS2', 'PT2010IBRgBSERPS4', and 'PT2010IBRgBSERPS5') were used. In total 240 aliquots were sent to the participating laboratories. Since 2007, these seven reference serum samples are accompanied with a certificate containing the assigned value (status of the sample = 'golden standard'). The assigned value for each reference serum sample was obtained by the reference laboratory of CODA-CERVA by testing each sample 10 times. For this proficiency test, seven the reference serum samples were tested once before the proficiency test (pre-verification) and once after the proficiency test (post-verification) by the reference laboratory of CODA-CERVA to confirm the assigned value. Consequently, these reference serum samples were considered as reliable samples to evaluate the ability to identify the absence or presence of IBRgB-specific antibodies in serum of bovine origin.

III.3. Classification of results, level of agreement and threshold for qualification

III.3.1. Classification of results

Results provided by the participating laboratories are categorized as *success* (positive result when the reference sample is truly positive, negative result when the reference sample is truly negative, non-interpretable result when the reference sample is truly non-interpretable) or *failure* (positive result when the reference sample is truly negative or non-interpretable, negative result when the reference sample is truly positive or non-interpretable, non-interpretable result when the reference sample is truly negative or positive).

III.3.2. Level of agreement

The level of agreement achieved by a participating laboratory is expressed as the percentage of success for all 30 samples (aliquots) for IBRgE-specific antibodies and/or for all 30 samples (aliquots) for IBRgB-specific antibodies carried out for this proficiency test.

III.3.3. Threshold for qualification

Following the procedure, a participating laboratory is only qualified if the level of agreement for all reference serum samples is at least 90%.

IV. Results

For confidentiality reasons, the participating laboratories are quoted anonymously and the concordance table is safely kept at the Operational Unit: CVD-ERA of the CODA-CERVA.

IV.1. Reference samples

IV.1.1. Allocation of serum samples to participating laboratories

All participating laboratories were given:

- i. 15 aliquots of reference serum samples free from detectable IBRgE-specific antibodies: PT2010IBRgESERNS1 samples (n = 5), PT2010IBRgESERNS4 samples (n = 5), and PT2010IBRgESERNS5 samples (n = 5);
- ii. 15 aliquots of reference serum samples containing detectable IBRgE-specific antibodies: PT2010IBRgESERPS2 samples (n = 5), PT2010IBRgESERPS4 samples (n = 5), and PT2010IBRgEPS6 samples (n = 5).
- iii. 12 aliquots of reference serum samples free from detectable IBRgB-specific antibodies: PT2010IBRgBSERNS3 samples (n = 3), PT2010IBRgBSERNS4 samples (n = 5), and PT2010IBRgBSERNS5 samples (n = 4);
- iv. 18 aliquots of reference serum samples containing detectable IBRgB-specific antibodies: PT2010IBRgBSERPS1 samples (n = 6), PT2010IBRgBSERPS2 samples (n = 6), PT2010IBRgBSERPS4 samples (n = 3), and PT2010IBRgBSERPS5 samples (n = 3).

IV.1.2. Transfer and start of the analyses

The 60 aliquots (30 for IBRgE-specific antibodies and 30 for IBRgB-specific antibodies) or 30 aliquots (LAB8: IBRgB-specific antibodies) of reference serum samples were sent by national or international courier on the 7th of June 2010 to each of the eight participating laboratories (450 aliquots in total). Four laboratories (LAB1, LAB4, LAB5 and LAB6) acknowledged receipt of the samples on 7 June 2010 and four laboratories (LAB2, LAB3, LAB7 and LAB8) acknowledged receipt of the samples on 8 June 2010.

For IBRgE-specific antibodies, the analyses were carried out on 7 (LAB6), 9 (LAB1, LAB2, LAB3 and LAB4), 11 (LAB5), , and 17 (LAB7) June 2010.

For IBRgB-specific antibodies, the analyses were carried out on 8 (LAB6), 9 (LAB1, LAB2, LAB3, LAB4, and LAB8), and 11 (LAB5 and LAB7) June 2010.

IV.2. Dates at which results were returned to the CVD-ERA

Results from participating laboratories have been received on 11 (LAB3, LAB6, and LAB8), 14 (LAB2), 15 (LAB4), 17 (LAB1), and 18 (LAB5 and LAB7) June 2010.

IV.3. Compliance with the procedure

Only six participating laboratories (LAB1, LAB3, LAB4, LAB6, LAB7, and LAB8) have provided a duly dated and signed copy of the results.

IV.4. Level of agreement

Five participating laboratories (LAB1, LAB2, LAB3, LAB4 and LAB5) reached 100% of agreement for the detection of IBRgE- and IBRgB-specific antibodies in reference serum samples (Table 1 and 2) and LAB8 reached 100% of agreement for the detection of IBRgB-specific antibodies in reference serum samples (Table 2).

One participating laboratory (LAB6) reached 100% of agreement for the detection of IBRgE-specific antibodies (Table 1) and 73.3% of agreement for the detection of IBRgB-specific antibodies in reference serum samples (Table 2).

One participating laboratory (LAB7) reached 100% of agreement for the detection of IBRgB-specific antibodies (Table 2) and 93.3% of agreement for the detection of IBRgE-specific antibodies in reference serum samples (Table 1).

Box plots of the raw data (OD-values and % inhibition) per sample and per participating laboratory are attached in Annex 1.

Table 1. Agreement between results generated by the participating laboratories (LABNR) and the status of reference serum samples. The purpose of the proficiency test is to detect IBRgE-specific antibodies in reference serum samples by ELISA.

Success while screening the samples (0 = Failure, 1 = Success)							
Variable	LABNR						
	1 (N=30)	2 (N=30)	3 (N=30)	4 (N=30)	5 (N=30)	6 (N=30)	7 (N=30)
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
0	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (6.7)
1	30 (100.0)	30 (100.0)	30 (100.0)	30 (100.0)	30 (100.0)	30 (100.0)	28 (93.3)

Table 2. Agreement between results generated by the participating laboratories (LABNR) and the status of reference serum samples. The purpose of the proficiency test is to detect IBRgB-specific antibodies in reference serum samples by ELISA.

Success while screening the samples (0 = Failure, 1 = Success)								
Variable	LABNR							
	1 (N=30)	2 (N=30)	3 (N=30)	4 (N=30)	5 (N=30)	6 (N=30)	7 (N=30)	8 (N=30)
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
0	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	8 (26.7)	0 (0.0)	0 (0.0)
1	30 (100.0)	30 (100.0)	30 (100.0)	30 (100.0)	30 (100.0)	22 (73.3)	30 (100.0)	30 (100.0)

IV.5. Variability among participating laboratories

The responses of the eight participating laboratories that provided their results for the reference serum samples are displayed in Table 3 and 4.

Table 3. IBRgE ELISA: The responses (RESULT) of the participating laboratories (LABNR) with the identification (SAMPLE) of the reference serum samples, the position (LABPOSIT) of the reference serum samples as placed in the block, and the results (STATUS) obtained by repeated screening by the CODA-CERVA.

	LABNR	LABPOSIT	SAMPLE	STATUS	RESULT	SUCCESS
1	1	1	PT2010IBRgEPS2	POS	POS	1
2	1	2	PT2010IBRgENS4	NEG	NEG	1
3	1	3	PT2010IBRgEPS6	POS	POS	1
4	1	4	PT2010IBRgENS1	NEG	NEG	1
5	1	5	PT2010IBRgEPS4	POS	POS	1
6	1	6	PT2010IBRgENS5	NEG	NEG	1
7	1	7	PT2010IBRgEPS2	POS	POS	1
8	1	8	PT2010IBRgENS5	NEG	NEG	1
9	1	9	PT2010IBRgEPS6	POS	POS	1
10	1	10	PT2010IBRgENS1	NEG	NEG	1
11	1	11	PT2010IBRgENS1	NEG	NEG	1
12	1	12	PT2010IBRgEPS6	POS	POS	1
13	1	13	PT2010IBRgEPS4	POS	POS	1
14	1	14	PT2010IBRgEPS4	POS	POS	1
15	1	15	PT2010IBRgEPS6	POS	POS	1
16	1	16	PT2010IBRgENS5	NEG	NEG	1
17	1	17	PT2010IBRgEPS4	POS	POS	1
18	1	18	PT2010IBRgENS4	NEG	NEG	1
19	1	19	PT2010IBRgEPS2	POS	POS	1
20	1	20	PT2010IBRgEPS6	POS	POS	1
21	1	21	PT2010IBRgENS1	NEG	NEG	1
22	1	22	PT2010IBRgEPS2	POS	POS	1
23	1	23	PT2010IBRgENS4	NEG	NEG	1
24	1	24	PT2010IBRgENS1	NEG	NEG	1
25	1	25	PT2010IBRgENS5	NEG	NEG	1
26	1	26	PT2010IBRgENS4	NEG	NEG	1
27	1	27	PT2010IBRgEPS2	POS	POS	1
28	1	28	PT2010IBRgENS5	NEG	NEG	1
29	1	29	PT2010IBRgENS4	NEG	NEG	1
30	1	30	PT2010IBRgEPS4	POS	POS	1



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	LABNR	LABPOSIT	SAMPLE	STATUS	RESULT	SUCCESS
31	2	1	PT2010IBRgENS4	NEG	NEG	1
32	2	2	PT2010IBRgEPS2	POS	POS	1
33	2	3	PT2010IBRgENS5	NEG	NEG	1
34	2	4	PT2010IBRgENS4	NEG	NEG	1
35	2	5	PT2010IBRgEPS4	POS	POS	1
36	2	6	PT2010IBRgEPS2	POS	POS	1
37	2	7	PT2010IBRgENS4	NEG	NEG	1
38	2	8	PT2010IBRgEPS6	POS	POS	1
39	2	9	PT2010IBRgENS1	NEG	NEG	1
40	2	10	PT2010IBRgEPS4	POS	POS	1
41	2	11	PT2010IBRgENS5	NEG	NEG	1
42	2	12	PT2010IBRgEPS2	POS	POS	1
43	2	13	PT2010IBRgENS5	NEG	NEG	1
44	2	14	PT2010IBRgEPS6	POS	POS	1
45	2	15	PT2010IBRgENS1	NEG	NEG	1
46	2	16	PT2010IBRgENS1	NEG	NEG	1
47	2	17	PT2010IBRgEPS6	POS	POS	1
48	2	18	PT2010IBRgEPS4	POS	POS	1
49	2	19	PT2010IBRgEPS4	POS	POS	1
50	2	20	PT2010IBRgEPS6	POS	POS	1
51	2	21	PT2010IBRgENS5	NEG	NEG	1
52	2	22	PT2010IBRgEPS4	POS	POS	1
53	2	23	PT2010IBRgENS4	NEG	NEG	1
54	2	24	PT2010IBRgEPS2	POS	POS	1
55	2	25	PT2010IBRgEPS6	POS	POS	1
56	2	26	PT2010IBRgENS1	NEG	NEG	1
57	2	27	PT2010IBRgEPS2	POS	POS	1
58	2	28	PT2010IBRgENS4	NEG	NEG	1
59	2	29	PT2010IBRgENS1	NEG	NEG	1
60	2	30	PT2010IBRgENS5	NEG	NEG	1



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	LABNR	LABPOSIT	SAMPLE	STATUS	RESULT*	SUCCESS
61	3	1	PT2010IBRgENS1	NEG	NEG	1
62	3	2	PT2010IBRgEPS2	POS	POS	1
63	3	3	PT2010IBRgENS4	NEG	NEG	1
64	3	4	PT2010IBRgENS1	NEG	NEG	1
65	3	5	PT2010IBRgENS5	NEG	NEG	1
66	3	6	PT2010IBRgENS4	NEG	NEG	1
67	3	7	PT2010IBRgEPS2	POS	POS	1
68	3	8	PT2010IBRgENS5	NEG	NEG	1
69	3	9	PT2010IBRgENS4	NEG	NEG	1
70	3	10	PT2010IBRgEPS4	POS	POS	1
71	3	11	PT2010IBRgEPS2	POS	POS	1
72	3	12	PT2010IBRgENS4	NEG	NEG	1
73	3	13	PT2010IBRgEPS6	POS	POS	1
74	3	14	PT2010IBRgENS1	NEG	NEG	1
75	3	15	PT2010IBRgEPS4	POS	POS	1
76	3	16	PT2010IBRgENS5	NEG	NEG	1
77	3	17	PT2010IBRgEPS2	POS	POS	1
78	3	18	PT2010IBRgENS5	NEG	NEG	1
79	3	19	PT2010IBRgEPS6	POS	POS	1
80	3	20	PT2010IBRgENS1	NEG	NEG	1
81	3	21	PT2010IBRgENS1	NEG	NEG	1
82	3	22	PT2010IBRgEPS6	POS	POS	1
83	3	23	PT2010IBRgEPS4	POS	POS	1
84	3	24	PT2010IBRgEPS4	POS	POS	1
85	3	25	PT2010IBRgEPS6	POS	POS	1
86	3	26	PT2010IBRgENS5	NEG	NEG	1
87	3	27	PT2010IBRgEPS4	POS	POS	1
88	3	28	PT2010IBRgENS4	NEG	NEG	1
89	3	29	PT2010IBRgEPS2	POS	POS	1
90	3	30	PT2010IBRgEPS6	POS	POS	1

*Same results for the 2 ELISA kits used



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	LABNR	LABPOSIT	SAMPLE	STATUS	RESULT	SUCCESS
91	4	1	PT2010IBRgENS5	NEG	NEG	1
92	4	2	PT2010IBRgEPS4	POS	POS	1
93	4	3	PT2010IBRgENS4	NEG	NEG	1
94	4	4	PT2010IBRgEPS2	POS	POS	1
95	4	5	PT2010IBRgEPS6	POS	POS	1
96	4	6	PT2010IBRgENS1	NEG	NEG	1
97	4	7	PT2010IBRgEPS2	POS	POS	1
98	4	8	PT2010IBRgENS4	NEG	NEG	1
99	4	9	PT2010IBRgENS1	NEG	NEG	1
100	4	10	PT2010IBRgENS5	NEG	NEG	1
101	4	11	PT2010IBRgENS4	NEG	NEG	1
102	4	12	PT2010IBRgEPS2	POS	POS	1
103	4	13	PT2010IBRgENS5	NEG	NEG	1
104	4	14	PT2010IBRgENS4	NEG	NEG	1
105	4	15	PT2010IBRgEPS4	POS	POS	1
106	4	16	PT2010IBRgEPS2	POS	POS	1
107	4	17	PT2010IBRgENS4	NEG	NEG	1
108	4	18	PT2010IBRgEPS6	POS	POS	1
109	4	19	PT2010IBRgENS1	NEG	NEG	1
110	4	20	PT2010IBRgEPS4	POS	POS	1
111	4	21	PT2010IBRgENS5	NEG	NEG	1
112	4	22	PT2010IBRgEPS2	POS	POS	1
113	4	23	PT2010IBRgENS5	NEG	NEG	1
114	4	24	PT2010IBRgEPS6	POS	POS	1
115	4	25	PT2010IBRgENS1	NEG	NEG	1
116	4	26	PT2010IBRgENS1	NEG	NEG	1
117	4	27	PT2010IBRgEPS6	POS	POS	1
118	4	28	PT2010IBRgEPS4	POS	POS	1
119	4	29	PT2010IBRgEPS4	POS	POS	1
120	4	30	PT2010IBRgEPS6	POS	POS	1



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	LABNR	LABPOSIT	SAMPLE	STATUS	RESULT	SUCCESS
121	5	1	PT2010IBRgENS1	NEG	NEG	1
122	5	2	PT2010IBRgEPS6	POS	POS	1
123	5	3	PT2010IBRgEPS4	POS	POS	1
124	5	4	PT2010IBRgEPS4	POS	POS	1
125	5	5	PT2010IBRgEPS6	POS	POS	1
126	5	6	PT2010IBRgENS5	NEG	NEG	1
127	5	7	PT2010IBRgEPS4	POS	POS	1
128	5	8	PT2010IBRgENS4	NEG	NEG	1
129	5	9	PT2010IBRgEPS2	POS	POS	1
130	5	10	PT2010IBRgEPS6	POS	POS	1
131	5	11	PT2010IBRgENS1	NEG	NEG	1
132	5	12	PT2010IBRgEPS2	POS	POS	1
133	5	13	PT2010IBRgENS4	NEG	NEG	1
134	5	14	PT2010IBRgENS1	NEG	NEG	1
135	5	15	PT2010IBRgENS5	NEG	NEG	1
136	5	16	PT2010IBRgENS4	NEG	NEG	1
137	5	17	PT2010IBRgEPS2	POS	POS	1
138	5	18	PT2010IBRgENS5	NEG	NEG	1
139	5	19	PT2010IBRgENS4	NEG	NEG	1
140	5	20	PT2010IBRgEPS4	POS	POS	1
141	5	21	PT2010IBRgEPS2	POS	POS	1
142	5	22	PT2010IBRgENS4	NEG	NEG	1
143	5	23	PT2010IBRgEPS6	POS	POS	1
144	5	24	PT2010IBRgENS1	NEG	NEG	1
145	5	25	PT2010IBRgEPS4	POS	POS	1
146	5	26	PT2010IBRgENS5	NEG	NEG	1
147	5	27	PT2010IBRgEPS2	POS	POS	1
148	5	28	PT2010IBRgENS5	NEG	NEG	1
149	5	29	PT2010IBRgEPS6	POS	POS	1
150	5	30	PT2010IBRgENS1	NEG	NEG	1



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	LABNR	LABPOSIT	SAMPLE	STATUS	RESULT	SUCCESS
151	6	1	PT2010IBRgENS5	NEG	NEG	1
152	6	2	PT2010IBRgEPS2	POS	POS	1
153	6	3	PT2010IBRgENS5	NEG	NEG	1
154	6	4	PT2010IBRgEPS6	POS	POS	1
155	6	5	PT2010IBRgENS1	NEG	NEG	1
156	6	6	PT2010IBRgENS1	NEG	NEG	1
157	6	7	PT2010IBRgEPS6	POS	POS	1
158	6	8	PT2010IBRgEPS4	POS	POS	1
159	6	9	PT2010IBRgEPS4	POS	POS	1
160	6	10	PT2010IBRgEPS6	POS	POS	1
161	6	11	PT2010IBRgENS5	NEG	NEG	1
162	6	12	PT2010IBRgEPS4	POS	POS	1
163	6	13	PT2010IBRgENS4	NEG	NEG	1
164	6	14	PT2010IBRgEPS2	POS	POS	1
165	6	15	PT2010IBRgEPS6	POS	POS	1
166	6	16	PT2010IBRgENS1	NEG	NEG	1
167	6	17	PT2010IBRgEPS2	POS	POS	1
168	6	18	PT2010IBRgENS4	NEG	NEG	1
169	6	19	PT2010IBRgENS1	NEG	NEG	1
170	6	20	PT2010IBRgENS5	NEG	NEG	1
171	6	21	PT2010IBRgENS4	NEG	NEG	1
172	6	22	PT2010IBRgEPS2	POS	POS	1
173	6	23	PT2010IBRgENS5	NEG	NEG	1
174	6	24	PT2010IBRgENS4	NEG	NEG	1
175	6	25	PT2010IBRgEPS4	POS	POS	1
176	6	26	PT2010IBRgEPS2	POS	POS	1
177	6	27	PT2010IBRgENS4	NEG	NEG	1
178	6	28	PT2010IBRgEPS6	POS	POS	1
179	6	29	PT2010IBRgENS1	NEG	NEG	1
180	6	30	PT2010IBRgEPS4	POS	POS	1



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	LABNR	LABPOSIT	SAMPLE	STATUS	RESULT	SUCCESS
181	7	1	PT2010IBRgEPS2	POS	POS	1
182	7	2	PT2010IBRgENS4	NEG	NEG	1
183	7	3	PT2010IBRgEPS6	POS	POS	1
184	7	4	PT2010IBRgENS1	NEG	NEG	1
185	7	5	PT2010IBRgEPS4	POS	POS	1
186	7	6	PT2010IBRgENS5	NEG	NEG	1
187	7	7	PT2010IBRgEPS2	POS	POS	1
188	7	8	PT2010IBRgENS5	NEG	NEG	1
189	7	9	PT2010IBRgEPS6	POS	POS	1
190	7	10	PT2010IBRgENS1	NEG	NEG	1
191	7	11	PT2010IBRgENS1	NEG	NEG	1
192	7	12	PT2010IBRgEPS6	POS	POS	1
193	7	13	PT2010IBRgEPS4	POS	POS	1
194	7	14	PT2010IBRgEPS4	POS	POS	1
195	7	15	PT2010IBRgEPS6	POS	POS	1
196	7	16	PT2010IBRgENS5	NEG	NEG	1
197	7	17	PT2010IBRgEPS4	POS	POS	1
198	7	18	PT2010IBRgENS4	NEG	NEG	1
199	7	19	PT2010IBRgEPS2	POS	POS	1
200	7	20	PT2010IBRgEPS6	POS	POS	1
201	7	21	PT2010IBRgENS1	NEG	NEG	1
202	7	22	PT2010IBRgEPS2	POS	POS	1
203	7	23	PT2010IBRgENS4	NEG	NEG	1
204	7	24	PT2010IBRgENS1	NEG	NEG	1
205	7	25	PT2010IBRgENS5	NEG	NEG	1
206	7	26	PT2010IBRgENS4	NEG	NEG	1
207	7	27	PT2010IBRgEPS2	POS	NEG	0
208	7	28	PT2010IBRgENS5	NEG	NEG	1
209	7	29	PT2010IBRgENS4	NEG	NEG	1
210	7	30	PT2010IBRgEPS4	POS	NEG	0

Table 4. IBRgB ELISA: The responses (RESULT) of the participating laboratories (LABNR) with the identification (SAMPLE) of the reference serum samples, the position (LABPOSIT) of the reference serum samples as placed in the block, and the results (STATUS) obtained by repeated screening by the CODA-CERVA.

	LABNR	LABPOSIT	SAMPLE	STATUS	RESULT	SUCCESS
1	1	1	PT2010IBRgBSERNS3	NEG	NEG	1
2	1	2	PT2010IBRgBSERPS1	POS	POS	1
3	1	3	PT2010IBRgBSERNS4	NEG	NEG	1
4	1	4	PT2010IBRgBSERPS4	POS	POS	1
5	1	5	PT2010IBRgBSERPS2	POS	POS	1
6	1	6	PT2010IBRgBSERNS4	NEG	NEG	1
7	1	7	PT2010IBRgBSERPS1	POS	POS	1
8	1	8	PT2010IBRgBSERPS2	POS	POS	1
9	1	9	PT2010IBRgBSERNS3	NEG	NEG	1
10	1	10	PT2010IBRgBSERNS4	NEG	NEG	1
11	1	11	PT2010IBRgBSERPS5	POS	POS	1
12	1	12	PT2010IBRgBSERPS2	POS	POS	1
13	1	13	PT2010IBRgBSERPS1	POS	POS	1
14	1	14	PT2010IBRgBSERNS5	NEG	NEG	1
15	1	15	PT2010IBRgBSERPS5	POS	POS	1
16	1	16	PT2010IBRgBSERPS4	POS	POS	1
17	1	17	PT2010IBRgBSERNS3	NEG	NEG	1
18	1	18	PT2010IBRgBSERNS5	NEG	NEG	1
19	1	19	PT2010IBRgBSERPS2	POS	POS	1
20	1	20	PT2010IBRgBSERPS1	POS	POS	1
21	1	21	PT2010IBRgBSERPS5	POS	POS	1
22	1	22	PT2010IBRgBSERNS4	NEG	NEG	1
23	1	23	PT2010IBRgBSERPS1	POS	POS	1
24	1	24	PT2010IBRgBSERPS2	POS	POS	1
25	1	25	PT2010IBRgBSERNS5	NEG	NEG	1
26	1	26	PT2010IBRgBSERPS4	POS	POS	1
27	1	27	PT2010IBRgBSERNS5	NEG	NEG	1
28	1	28	PT2010IBRgBSERPS2	POS	POS	1
29	1	29	PT2010IBRgBSERNS4	NEG	NEG	1
30	1	30	PT2010IBRgBSERPS1	POS	POS	1



(CONTINUED)

	LABNR	LABPOSIT	SAMPLE	STATUS	RESULT	SUCCESS
31	2	1	PT2010IBRgBSERNS5	NEG	NEG	1
32	2	2	PT2010IBRgBSERPS2	POS	POS	1
33	2	3	PT2010IBRgBSERNS4	NEG	NEG	1
34	2	4	PT2010IBRgBSERPS1	POS	POS	1
35	2	5	PT2010IBRgBSERNS3	NEG	NEG	1
36	2	6	PT2010IBRgBSERPS1	POS	POS	1
37	2	7	PT2010IBRgBSERNS4	NEG	NEG	1
38	2	8	PT2010IBRgBSERPS4	POS	POS	1
39	2	9	PT2010IBRgBSERPS2	POS	POS	1
40	2	10	PT2010IBRgBSERNS4	NEG	NEG	1
41	2	11	PT2010IBRgBSERPS1	POS	POS	1
42	2	12	PT2010IBRgBSERPS2	POS	POS	1
43	2	13	PT2010IBRgBSERNS3	NEG	NEG	1
44	2	14	PT2010IBRgBSERNS4	NEG	NEG	1
45	2	15	PT2010IBRgBSERPS5	POS	POS	1
46	2	16	PT2010IBRgBSERPS2	POS	POS	1
47	2	17	PT2010IBRgBSERPS1	POS	POS	1
48	2	18	PT2010IBRgBSERNS5	NEG	NEG	1
49	2	19	PT2010IBRgBSERPS5	POS	POS	1
50	2	20	PT2010IBRgBSERPS4	POS	POS	1
51	2	21	PT2010IBRgBSERNS3	NEG	NEG	1
52	2	22	PT2010IBRgBSERNS5	NEG	NEG	1
53	2	23	PT2010IBRgBSERPS2	POS	POS	1
54	2	24	PT2010IBRgBSERPS1	POS	POS	1
55	2	25	PT2010IBRgBSERPS5	POS	POS	1
56	2	26	PT2010IBRgBSERNS4	NEG	NEG	1
57	2	27	PT2010IBRgBSERPS1	POS	POS	1
58	2	28	PT2010IBRgBSERPS2	POS	POS	1
59	2	29	PT2010IBRgBSERNS5	NEG	NEG	1
60	2	30	PT2010IBRgBSERPS4	POS	POS	1



(CONTINUED)

	LABNR	LABPOSIT	SAMPLE	STATUS	RESULT*	SUCCESS
61	3	1	PT2010IBRgBSERPS1	POS	POS	1
62	3	2	PT2010IBRgBSERPS2	POS	POS	1
63	3	3	PT2010IBRgBSERN5	NEG	NEG	1
64	3	4	PT2010IBRgBSERPS4	POS	POS	1
65	3	5	PT2010IBRgBSERN5	NEG	NEG	1
66	3	6	PT2010IBRgBSERPS2	POS	POS	1
67	3	7	PT2010IBRgBSERN4	NEG	NEG	1
68	3	8	PT2010IBRgBSERPS1	POS	POS	1
69	3	9	PT2010IBRgBSERN3	NEG	NEG	1
70	3	10	PT2010IBRgBSERPS1	POS	POS	1
71	3	11	PT2010IBRgBSERN4	NEG	NEG	1
72	3	12	PT2010IBRgBSERPS4	POS	POS	1
73	3	13	PT2010IBRgBSERPS2	POS	POS	1
74	3	14	PT2010IBRgBSERN4	NEG	NEG	1
75	3	15	PT2010IBRgBSERPS1	POS	POS	1
76	3	16	PT2010IBRgBSERPS2	POS	POS	1
77	3	17	PT2010IBRgBSERN3	NEG	NEG	1
78	3	18	PT2010IBRgBSERN4	NEG	NEG	1
79	3	19	PT2010IBRgBSERPS5	POS	POS	1
80	3	20	PT2010IBRgBSERPS2	POS	POS	1
81	3	21	PT2010IBRgBSERPS1	POS	POS	1
82	3	22	PT2010IBRgBSERN5	NEG	NEG	1
83	3	23	PT2010IBRgBSERPS5	POS	POS	1
84	3	24	PT2010IBRgBSERPS4	POS	POS	1
85	3	25	PT2010IBRgBSERN3	NEG	NEG	1
86	3	26	PT2010IBRgBSERN5	NEG	NEG	1
87	3	27	PT2010IBRgBSERPS2	POS	POS	1
88	3	28	PT2010IBRgBSERPS1	POS	POS	1
89	3	29	PT2010IBRgBSERPS5	POS	POS	1
90	3	30	PT2010IBRgBSERN4	NEG	NEG	1

*Same results for the 2 ELISA kits used



(CONTINUED)

	LABNR	LABPOSIT	SAMPLE	STATUS	RESULT	SUCCESS
91	4	1	PT2010IBRgBSERPS2	POS	POS	1
92	4	2	PT2010IBRgBSERPS1	POS	POS	1
93	4	3	PT2010IBRgBSERPS5	POS	POS	1
94	4	4	PT2010IBRgBSERNS4	NEG	NEG	1
95	4	5	PT2010IBRgBSERPS1	POS	POS	1
96	4	6	PT2010IBRgBSERPS2	POS	POS	1
97	4	7	PT2010IBRgBSERNS5	NEG	NEG	1
98	4	8	PT2010IBRgBSERPS4	POS	POS	1
99	4	9	PT2010IBRgBSERNS5	NEG	NEG	1
100	4	10	PT2010IBRgBSERPS2	POS	POS	1
101	4	11	PT2010IBRgBSERNS4	NEG	NEG	1
102	4	12	PT2010IBRgBSERPS1	POS	POS	1
103	4	13	PT2010IBRgBSERNS3	NEG	NEG	1
104	4	14	PT2010IBRgBSERPS1	POS	POS	1
105	4	15	PT2010IBRgBSERNS4	NEG	NEG	1
106	4	16	PT2010IBRgBSERPS4	POS	POS	1
107	4	17	PT2010IBRgBSERPS2	POS	POS	1
108	4	18	PT2010IBRgBSERNS4	NEG	NEG	1
109	4	19	PT2010IBRgBSERPS1	POS	POS	1
110	4	20	PT2010IBRgBSERPS2	POS	POS	1
111	4	21	PT2010IBRgBSERNS3	NEG	NEG	1
112	4	22	PT2010IBRgBSERNS4	NEG	NEG	1
113	4	23	PT2010IBRgBSERPS5	POS	POS	1
114	4	24	PT2010IBRgBSERPS2	POS	POS	1
115	4	25	PT2010IBRgBSERPS1	POS	POS	1
116	4	26	PT2010IBRgBSERNS5	NEG	NEG	1
117	4	27	PT2010IBRgBSERPS5	POS	POS	1
118	4	28	PT2010IBRgBSERPS4	POS	POS	1
119	4	29	PT2010IBRgBSERNS3	NEG	NEG	1
120	4	30	PT2010IBRgBSERNS5	NEG	NEG	1



(CONTINUED)

	LABNR	LABPOSIT	SAMPLE	STATUS	RESULT	SUCCESS
121	5	1	PT2010IBRgBSERPS5	POS	POS	1
122	5	2	PT2010IBRgBSERPS4	POS	POS	1
123	5	3	PT2010IBRgBSERNS3	NEG	NEG	1
124	5	4	PT2010IBRgBSERNS5	NEG	NEG	1
125	5	5	PT2010IBRgBSERPS2	POS	POS	1
126	5	6	PT2010IBRgBSERPS1	POS	POS	1
127	5	7	PT2010IBRgBSERPS5	POS	POS	1
128	5	8	PT2010IBRgBSERNS4	NEG	NEG	1
129	5	9	PT2010IBRgBSERPS1	POS	POS	1
130	5	10	PT2010IBRgBSERPS2	POS	POS	1
131	5	11	PT2010IBRgBSERNS5	NEG	NEG	1
132	5	12	PT2010IBRgBSERPS4	POS	POS	1
133	5	13	PT2010IBRgBSERNS5	NEG	NEG	1
134	5	14	PT2010IBRgBSERPS2	POS	POS	1
135	5	15	PT2010IBRgBSERNS4	NEG	NEG	1
136	5	16	PT2010IBRgBSERPS1	POS	POS	1
137	5	17	PT2010IBRgBSERNS3	NEG	NEG	1
138	5	18	PT2010IBRgBSERPS1	POS	POS	1
139	5	19	PT2010IBRgBSERNS4	NEG	NEG	1
140	5	20	PT2010IBRgBSERPS4	POS	POS	1
141	5	21	PT2010IBRgBSERPS2	POS	POS	1
142	5	22	PT2010IBRgBSERNS4	NEG	NEG	1
143	5	23	PT2010IBRgBSERPS1	POS	POS	1
144	5	24	PT2010IBRgBSERPS2	POS	POS	1
145	5	25	PT2010IBRgBSERNS3	NEG	NEG	1
146	5	26	PT2010IBRgBSERNS4	NEG	NEG	1
147	5	27	PT2010IBRgBSERPS5	POS	POS	1
148	5	28	PT2010IBRgBSERPS2	POS	POS	1
149	5	29	PT2010IBRgBSERPS1	POS	POS	1
150	5	30	PT2010IBRgBSERNS5	NEG	NEG	1



(CONTINUED)

	LABNR	LABPOSIT	SAMPLE	STATUS	RESULT	SUCCESS
151	6	1	PT2010IBRgBSERPS5	POS	POS	1
152	6	2	PT2010IBRgBSERPS2	POS	POS	1
153	6	3	PT2010IBRgBSERPS1	POS	POS	1
154	6	4	PT2010IBRgBSERNS5	NEG	NEG	1
155	6	5	PT2010IBRgBSERPS5	POS	POS	1
156	6	6	PT2010IBRgBSERPS4	POS	POS	1
157	6	7	PT2010IBRgBSERNS3	NEG	POS	0
158	6	8	PT2010IBRgBSERNS5	NEG	NI	0
159	6	9	PT2010IBRgBSERPS2	POS	POS	1
160	6	10	PT2010IBRgBSERPS1	POS	POS	1
161	6	11	PT2010IBRgBSERPS5	POS	POS	1
162	6	12	PT2010IBRgBSERNS4	NEG	NI	0
163	6	13	PT2010IBRgBSERPS1	POS	POS	1
164	6	14	PT2010IBRgBSERPS2	POS	POS	1
165	6	15	PT2010IBRgBSERNS5	NEG	POS	0
166	6	16	PT2010IBRgBSERPS4	POS	POS	1
167	6	17	PT2010IBRgBSERNS5	NEG	NEG	1
168	6	18	PT2010IBRgBSERPS2	POS	POS	1
169	6	19	PT2010IBRgBSERNS4	NEG	POS	0
170	6	20	PT2010IBRgBSERPS1	POS	POS	1
171	6	21	PT2010IBRgBSERNS3	NEG	POS	0
172	6	22	PT2010IBRgBSERPS1	POS	POS	1
173	6	23	PT2010IBRgBSERNS4	NEG	POS	0
174	6	24	PT2010IBRgBSERPS4	POS	POS	1
175	6	25	PT2010IBRgBSERPS2	POS	POS	1
176	6	26	PT2010IBRgBSERNS4	NEG	NEG	1
177	6	27	PT2010IBRgBSERPS1	POS	POS	1
178	6	28	PT2010IBRgBSERPS2	POS	POS	1
179	6	29	PT2010IBRgBSERNS3	NEG	POS	0
180	6	30	PT2010IBRgBSERNS4	NEG	NEG	1



(CONTINUED)

	LABNR	LABPOSIT	SAMPLE	STATUS	RESULT	SUCCESS
181	7	1	PT2010IBRgBSERPS1	POS	POS	1
182	7	2	PT2010IBRgBSERPS2	POS	POS	1
183	7	3	PT2010IBRgBSERNS3	NEG	NEG	1
184	7	4	PT2010IBRgBSERNS4	NEG	NEG	1
185	7	5	PT2010IBRgBSERPS5	POS	POS	1
186	7	6	PT2010IBRgBSERPS2	POS	POS	1
187	7	7	PT2010IBRgBSERPS1	POS	POS	1
188	7	8	PT2010IBRgBSERNS5	NEG	NEG	1
189	7	9	PT2010IBRgBSERPS5	POS	POS	1
190	7	10	PT2010IBRgBSERPS4	POS	POS	1
191	7	11	PT2010IBRgBSERNS3	NEG	NEG	1
192	7	12	PT2010IBRgBSERNS5	NEG	NEG	1
193	7	13	PT2010IBRgBSERPS2	POS	POS	1
194	7	14	PT2010IBRgBSERPS1	POS	POS	1
195	7	15	PT2010IBRgBSERPS5	POS	POS	1
196	7	16	PT2010IBRgBSERNS4	NEG	NEG	1
197	7	17	PT2010IBRgBSERPS1	POS	POS	1
198	7	18	PT2010IBRgBSERPS2	POS	POS	1
199	7	19	PT2010IBRgBSERNS5	NEG	NEG	1
200	7	20	PT2010IBRgBSERPS4	POS	POS	1
201	7	21	PT2010IBRgBSERNS5	NEG	NEG	1
202	7	22	PT2010IBRgBSERPS2	POS	POS	1
203	7	23	PT2010IBRgBSERNS4	NEG	NEG	1
204	7	24	PT2010IBRgBSERPS1	POS	POS	1
205	7	25	PT2010IBRgBSERNS3	NEG	NEG	1
206	7	26	PT2010IBRgBSERPS1	POS	POS	1
207	7	27	PT2010IBRgBSERNS4	NEG	NEG	1
208	7	28	PT2010IBRgBSERPS4	POS	POS	1
209	7	29	PT2010IBRgBSERPS2	POS	POS	1
210	7	30	PT2010IBRgBSERNS4	NEG	NEG	1



(CONTINUED)

	LABNR	LABPOSIT	SAMPLE	STATUS	RESULT	SUCCESS
211	8	1	PT2010IBRgBSERNS4	NEG	NEG	1
212	8	2	PT2010IBRgBSERPS4	POS	POS	1
213	8	3	PT2010IBRgBSERPS2	POS	POS	1
214	8	4	PT2010IBRgBSERNS4	NEG	NEG	1
215	8	5	PT2010IBRgBSERPS1	POS	POS	1
216	8	6	PT2010IBRgBSERPS2	POS	POS	1
217	8	7	PT2010IBRgBSERNS3	NEG	NEG	1
218	8	8	PT2010IBRgBSERNS4	NEG	NEG	1
219	8	9	PT2010IBRgBSERPS5	POS	POS	1
220	8	10	PT2010IBRgBSERPS2	POS	POS	1
221	8	11	PT2010IBRgBSERPS1	POS	POS	1
222	8	12	PT2010IBRgBSERNS5	NEG	NEG	1
223	8	13	PT2010IBRgBSERPS5	POS	POS	1
224	8	14	PT2010IBRgBSERPS4	POS	POS	1
225	8	15	PT2010IBRgBSERNS3	NEG	NEG	1
226	8	16	PT2010IBRgBSERNS5	NEG	NEG	1
227	8	17	PT2010IBRgBSERPS2	POS	POS	1
228	8	18	PT2010IBRgBSERPS1	POS	POS	1
229	8	19	PT2010IBRgBSERPS5	POS	POS	1
230	8	20	PT2010IBRgBSERNS4	NEG	NEG	1
231	8	21	PT2010IBRgBSERPS1	POS	POS	1
232	8	22	PT2010IBRgBSERPS2	POS	POS	1
233	8	23	PT2010IBRgBSERNS5	NEG	NEG	1
234	8	24	PT2010IBRgBSERPS4	POS	POS	1
235	8	25	PT2010IBRgBSERNS5	NEG	NEG	1
236	8	26	PT2010IBRgBSERPS2	POS	POS	1
237	8	27	PT2010IBRgBSERNS4	NEG	NEG	1
238	8	28	PT2010IBRgBSERPS1	POS	POS	1
239	8	29	PT2010IBRgBSERNS3	NEG	NEG	1
240	8	30	PT2010IBRgBSERPS1	POS	POS	1

V. Discussion

The purpose of this proficiency test is to assess performances of participating laboratories when analyzing reference serum samples of bovine origin for the detection of IBRgE- and IBRgB-specific antibodies by ELISA.

For this proficiency test the participating laboratories used ELISA kits from different producers as well as different batches from the same producer.

For the detection of IBRgE-specific antibodies, three different batches from the same producer (IDEXX) were used: DF881 (LAB1 and LAB3), AF223 (LAB2, LAB4, LAB5, and LAB6), and BF441 (LAB3 and LAB7). LAB3 was the only laboratory that used 2 different batches and obtained the same qualitative results. No difference in the qualitative response of the reference serum samples was observed for six of the seven participating laboratories. Only LAB7 misclassified two serum samples: PT2010IBRgEPS2 (strong positif) and PT2010IBRgEPS4 (strong positif) were classified once as negative.

For the detection of IBRgB-specific antibodies, three different producers were used: IDEXX batch V061 (LAB1 and LAB2), batch T611 (LAB3 and LAB4), batch T521 (LAB5), and batch V001 (LAB6 and LAB7), Synbiotics (LAB8) and Institut Pourquoier (LAB3). LAB3 was the only laboratory that used 2 ELISA kits from 2 different producers but obtained the same qualitative results. No difference in the qualitative response of the reference serum samples was observed for seven of the eight participating laboratories. On the other hand LAB6 misclassified several times different negative serum samples as positive: PT2010IBRgBNS3 (3 times), PT2010IBRgBNS4 (3 times), and PT2010IBRgBNS5 (2 times).

Overall, six participating laboratories provided qualitative results that were in full agreement with the true status of the reference serum samples even if the participants used different ELISA producers and/or batches. One participating laboratory (LAB7) reached 100% agreement for the detection of IBRgB-specific antibodies and 93.3% of agreement for the detection of IBRgE-specific antibodies and one participating laboratory (LAB6) reached 100% agreement for the detection of IBRgE-specific antibodies and 73.3% of agreement for the detection of IBRgB-specific antibodies in the reference serum samples.

VI. Conclusions

According to the procedure currently in force, the performances of a participating laboratory is satisfactory if at least 90% of the results provided by this laboratory are in agreement with the status of the reference serum samples (Section III.3.3. of this Report). Consequently, seven participating laboratories achieved a satisfactory performance. One laboratory (LAB6) achieved a satisfactory performance for the detection of IBRgE-specific antibodies and didn't achieve a satisfactory performance for the detection of IBRgB-specific antibodies.

Head CVD-ERA
Yves Van der Stede

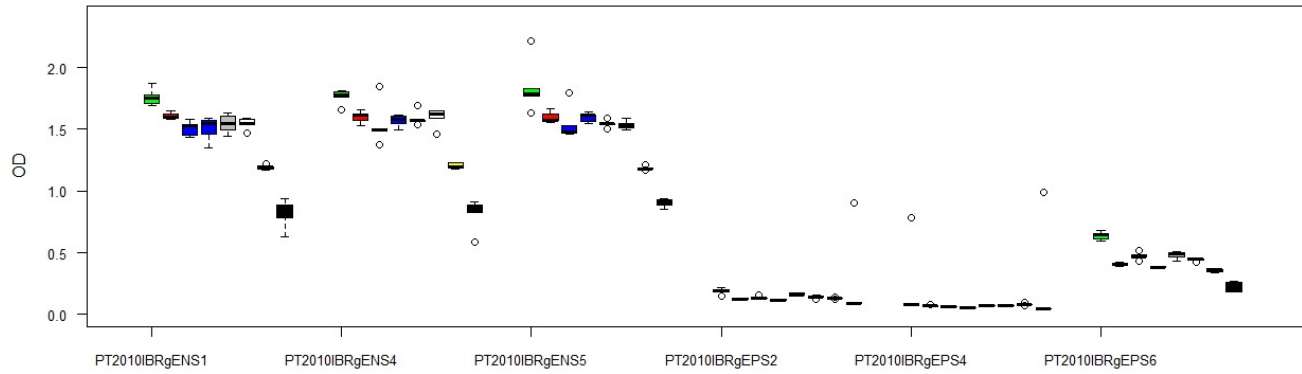
Appendix:

Name of the participating Laboratories

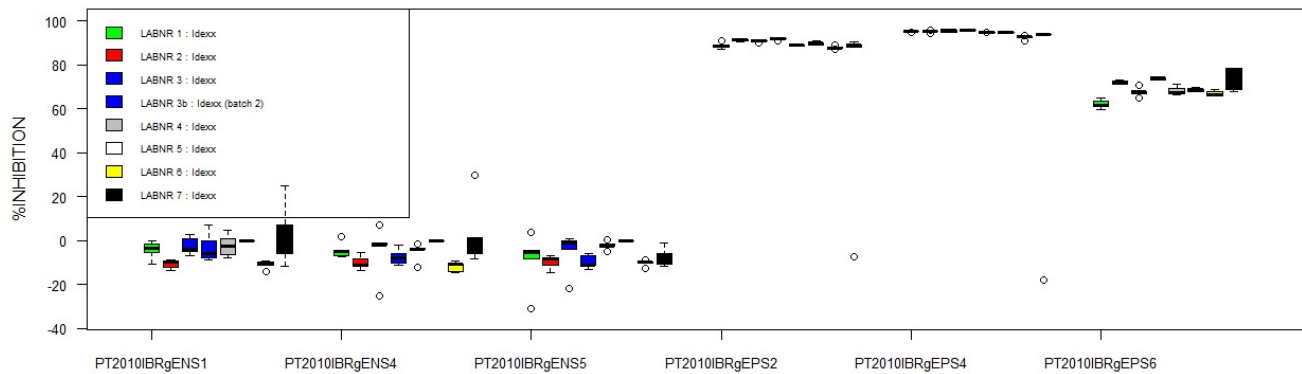
AFSSA (Sophia Antipolis)
ARSIA (Ciney)
CODA-CERVA
DGZ (Torhout)
FLI (NRL for BHV1)
Idexx (Switzerland)
LMVE (Laboratoire de Médecine Vétérinaire de l'Etat)
Synbiotics

ANNEX 1:

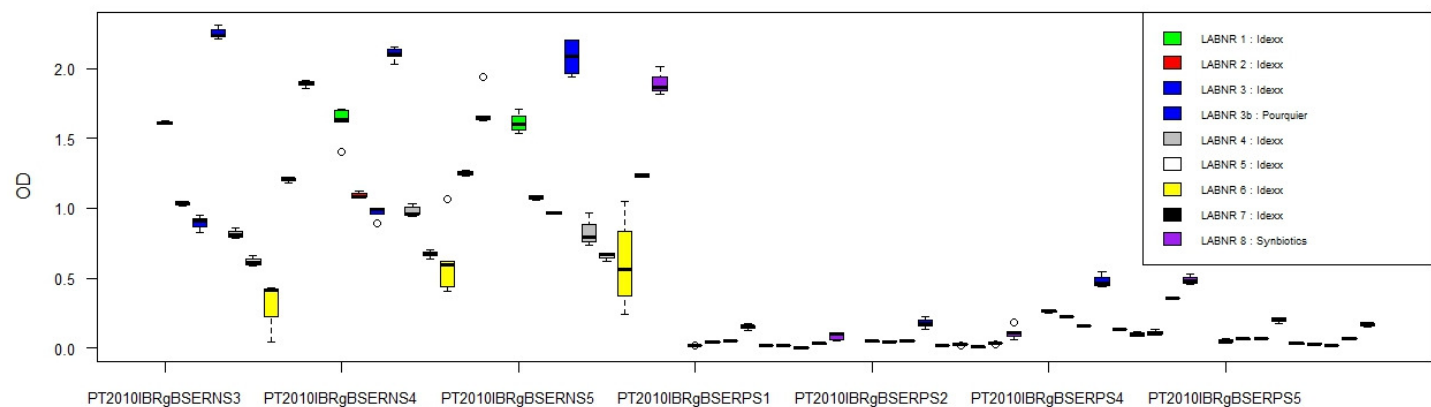
PT 2010 IBRgE ELISA - OD values



PT 2010 IBRgE ELISA - % inhibition



PT 2010 IBRgB ELISA - OD values



PT 2010 IBRgB ELISA - % inhibition

