

Outcome of proficiency test on EIA serology

Anses Dozulé Laboratory for equine diseases
VIPARE unit

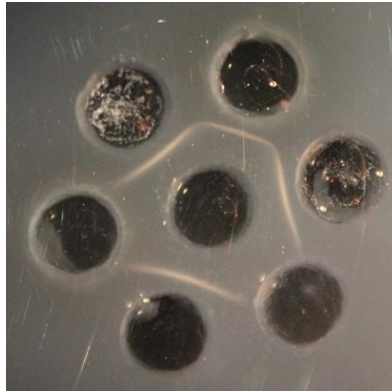
Delphine Gaudaire

EIA PT GENERAL INFORMATION

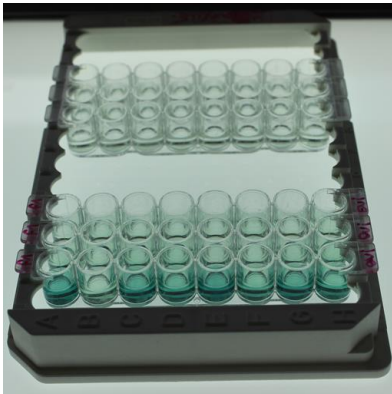
- **AIM OF THE PT**

- Detect EIA antibodies:

using Agar Gel Immuno-Diffusion Test (AGID test) as described in the OIE manual Chapter 2.5.6



using Enzyme ImmunoSorbent Assay (ELISA)



EIA PT GENERAL INFORMATION

- **INFORMATION TO 34 LABS**

- Information sent by e-mail on May 17th, 2018

- **SCHEDULE OF THE BOTH EIA PT**

- Samples sent on June 12th, 2018
- Results due on July 6th, 2018
- Each participant received an outcome of the PT by e-mail:
 - EIA AGID PT: September 3rd, 2018
 - EIA ELISA PT: September 4th, 2018
- Official report will be sent to each lab by the end of September

EIA PT CODIFICATION

- Lab codification:

	EIA AGID lab code	EIA ELISA lab code
Participant 1	18-A	18-G
Participant 2	18-B	/
Participant 3	18-C	18-D

- Codification of samples :

Lab code	Sample #													
	1	2	3	4	5	6	7	8	.....	20	21	22	23	24
18-A	645	267	288	426	95	656	632	691	....	816	758	690	538	194
18-B	721	397	891	384	14	959	58	256	....	572	533	794	191	958
18-C	407	569	893	172	623	776	355	405	....	772	108	187	300	446

Anses – Dozald Laboratory for equine diseases
 2018 EIA AGID PT
18-A-645
 Reconstitute with 0,5 ml of distilled water

EIA PT sample validation

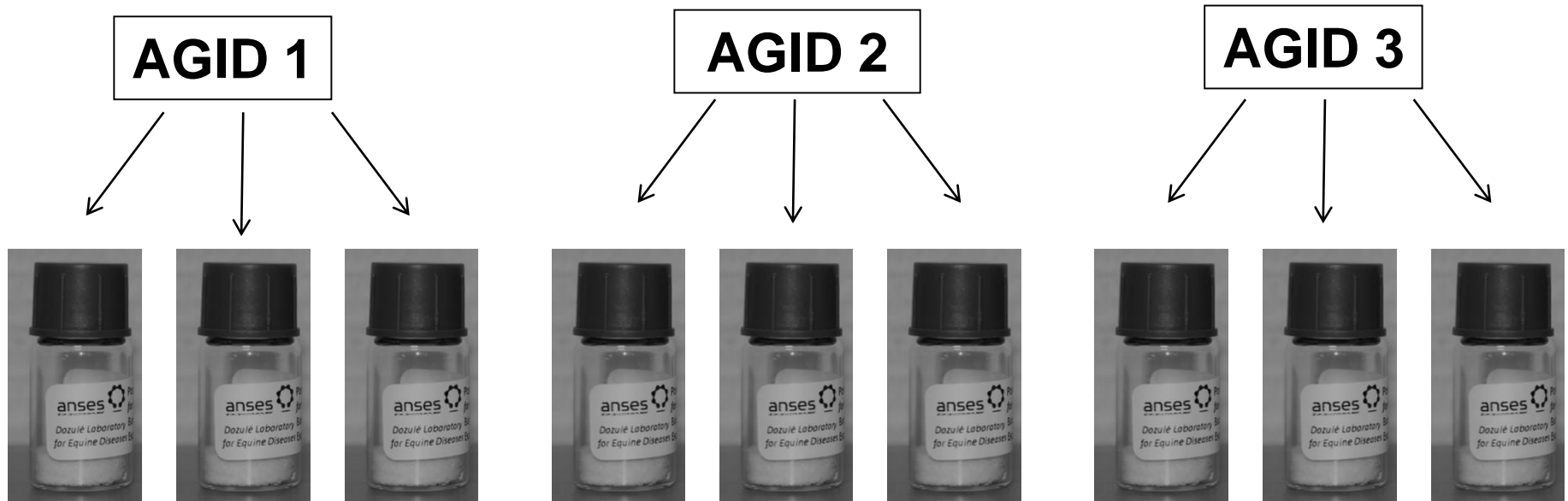
- Validation of each lyophilized serum:

Homogeneity

25 tested vials in 1 assay (FD ISO GUIDE 35) using ELISA

Reproducibility

3 vials tested in three independent AGID tests



EIA PT sample validation

Stability

Short-term stability (stability after reconstitution):

3 days at room temperature

1 week at +2-8° C

1 month at -20° C

Long-term stability (accelerated conditions):

3 weeks at +30° C before reconstitution

Homogeneity, reproducibility and stability have been validated for all the sera produced for the both PT

Outcome of EIA AGID PT

EIA AGID PT GENERAL INFORMATION

- EIA AGID PT nb of participants: 32 (26 NRLs)

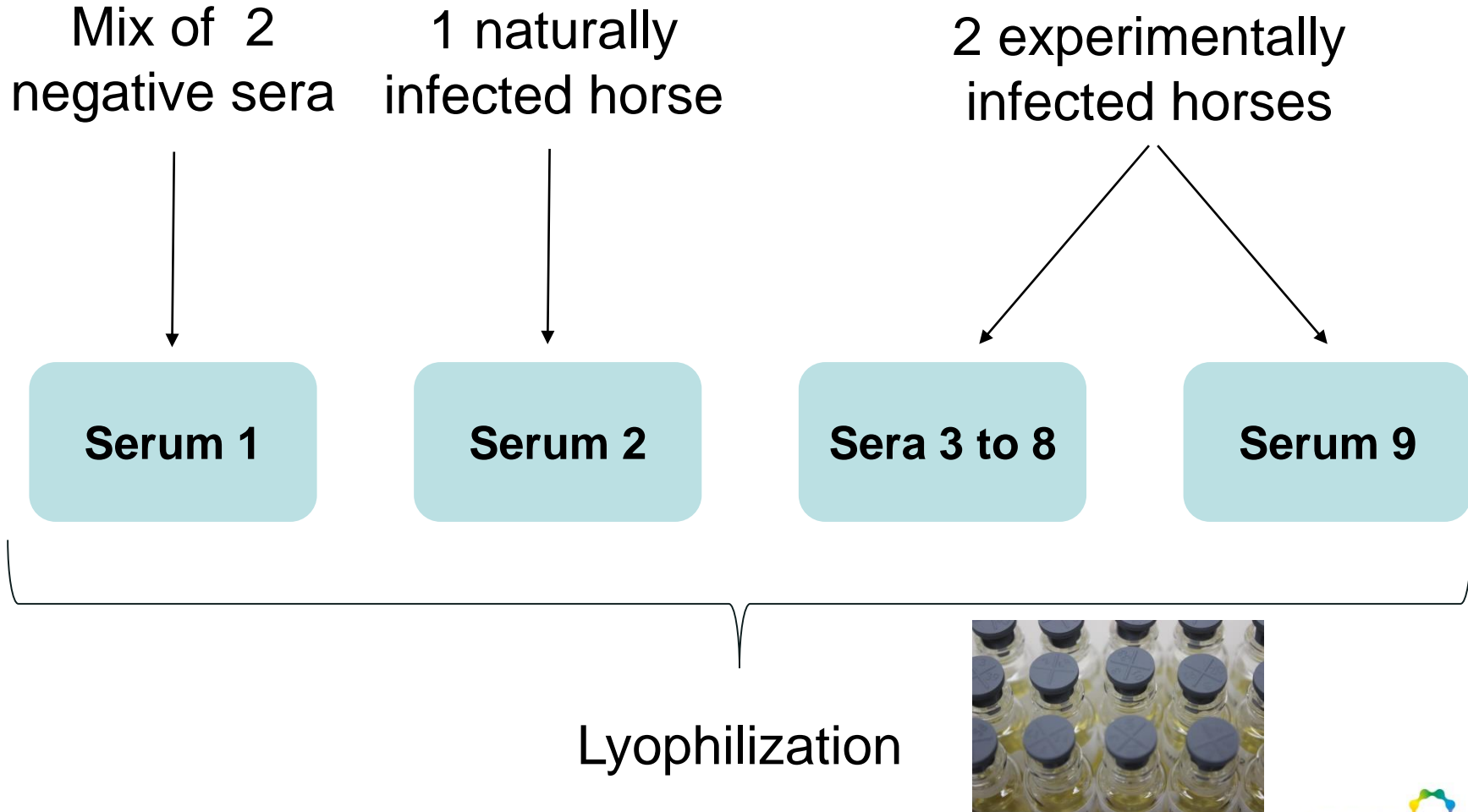


EU COUNTRIES	EIA AGID PT		
	2010	2014	2018
AUSTRIA	■	■	■
BELGIUM	■	■	■
BULGARIA	■	■	■
CROATIA	■	■	■
CZECH REPUBLIC	■	■	■
CYPRUS	■	■	■
DENMARK	■	■	■
ESTONIA	■	■	■
FINLAND	■	■	■
FRANCE	■	■	■
GERMANY	■	■	■
GREECE	■	■	■
HUNGARY	■	■	■
IRELAND	■	■	■
ITALY	■	■	■
LATVIA	■	■	■
LITHUANIA	■	■	■
LUXEMBOURG	■	■	■
MALTE	■	■	■
POLAND	■	■	■
PORTUGAL	■	■	■
ROMANIA	■	■	■
SLOVAKIA	■	■	■
SLOVENIA	■	■	■
SPAIN	■	■	■
SWEDEN	■	■	■
THE NETHERLANDS	■	■	■
UNITED KINGDOM	■	■	■

21/26 24/28 26/28

EIA AGID PT samples

- Preparation of 9 batches of serum



EIA AGID PT samples

- 24 samples/panel to be analyzed by AGID test :

Serum #	Sample #	Expected result
1	1 to 12	Negative
2	13 to 14	Positive
3	15 to 16	Positive
4	17	Positive
5	18	Positive
6	19 to 20	Positive
7	23	Positive
8	24	Positive
9	21 to 22	Positive

4 strong positive:
sample# 15-16-17-23

3 medium positive:
sample# 18-21-22

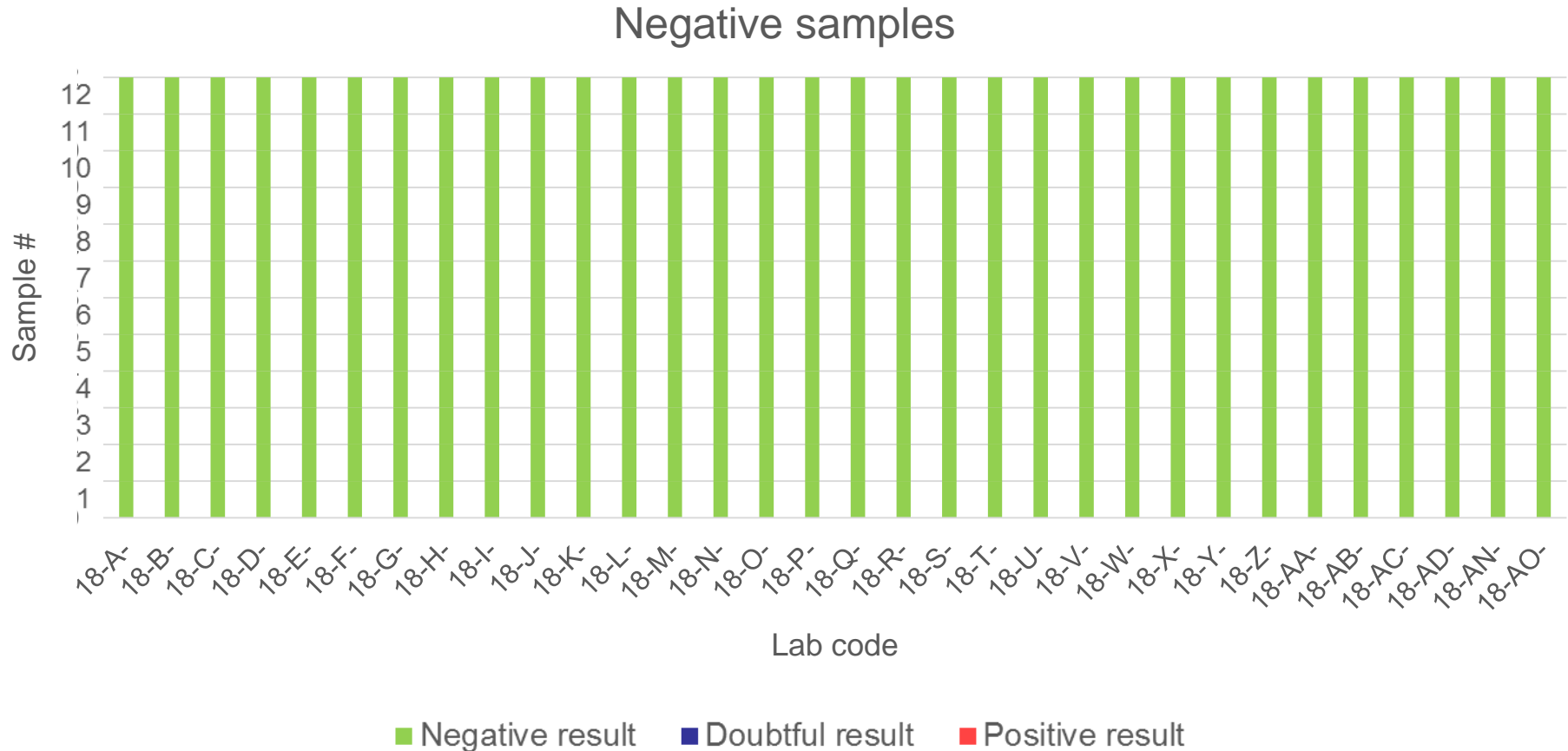
5 weak positive:
sample# 13-14-19-20-24

- 12 negative samples
- 12 positive samples

EIA AGID PT results

- Criteria to evaluate the performance of each participant :
 - ✓ All negative samples should be found as such
 - ✓ All positive samples should be found as such
 - ✓ Only one mistake out of 24 samples was accepted

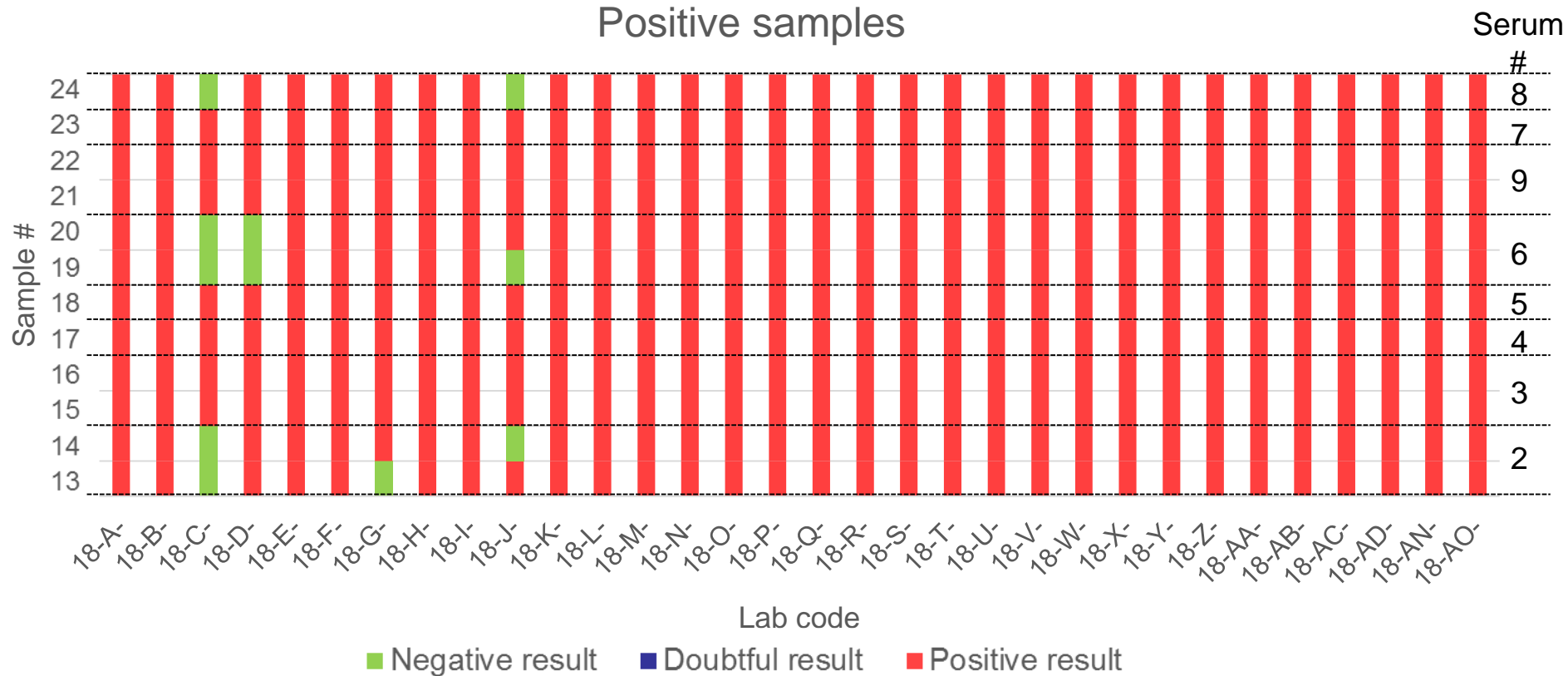
EIA AGID PT results



- 100% of participants obtained satisfactory results

Each laboratory exhibited a very good specificity

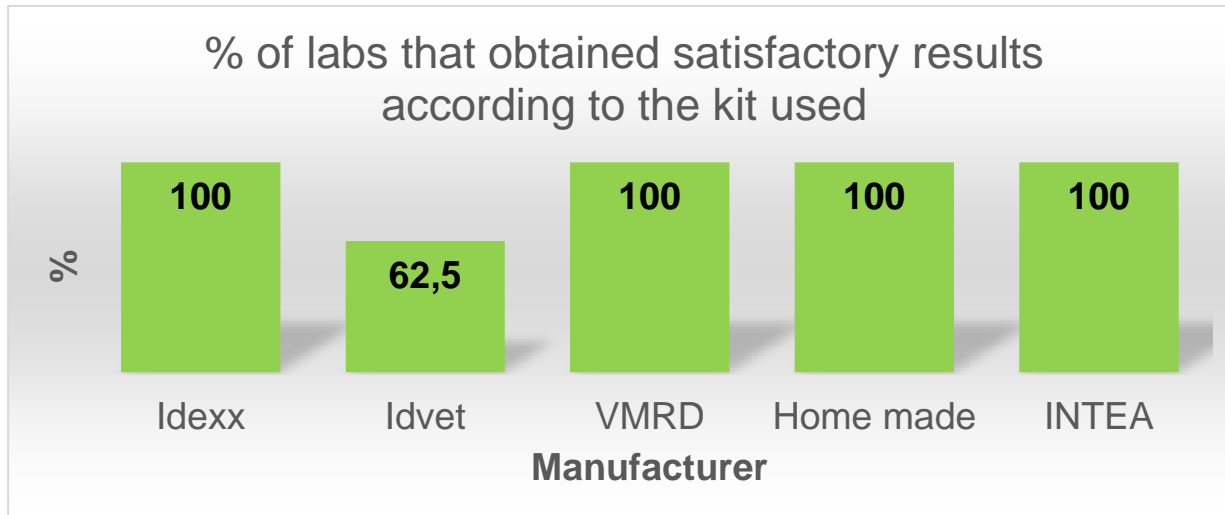
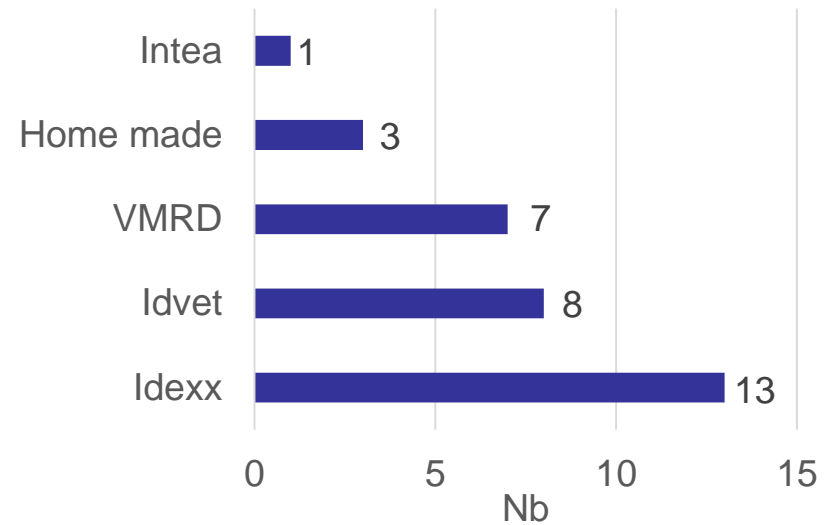
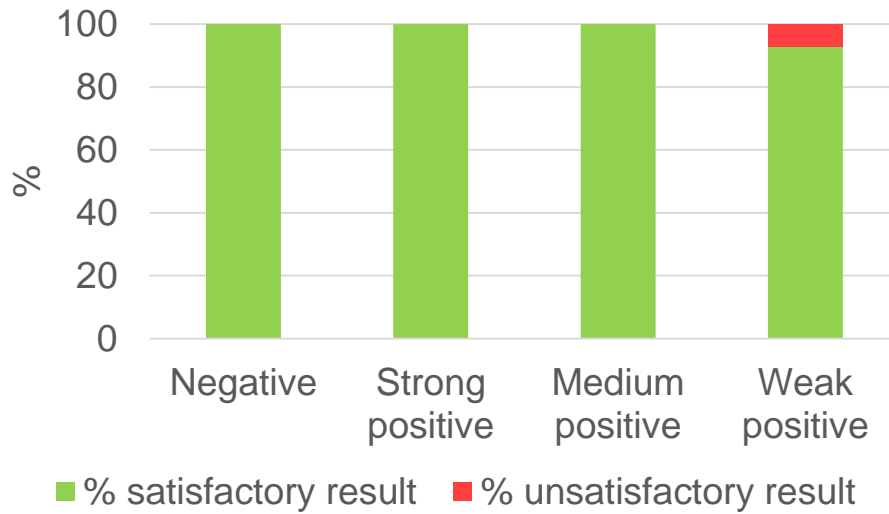
EIA AGID PT results



- 11 out of 372 positive samples have been analyzed as negative (specificity: 97%)
- 3 laboratories failed to detect positive samples

29 out of 32 participants obtained satisfactory results

EIA AGID PT results



Unsatisfactory results are not in relation with the kit used

EIA AGID PT conclusion

- 29 out of the 32 labs obtained satisfactory results
- European NRL network exhibited a very good specificity
26/26 detected all negative samples
- The sensitivity of European NRL network is 88,5%
23/26 European NRL detected all positive samples
- 3 labs need to improve their sensitivity to detect all positive samples (especially weak positive sample)
- Training session will be organize by the EU-NRL

Outcome of EIA ELISA PT

EIA ELISA PT GENERAL INFORMATION

- EIA AGID PT nb of participants: 23

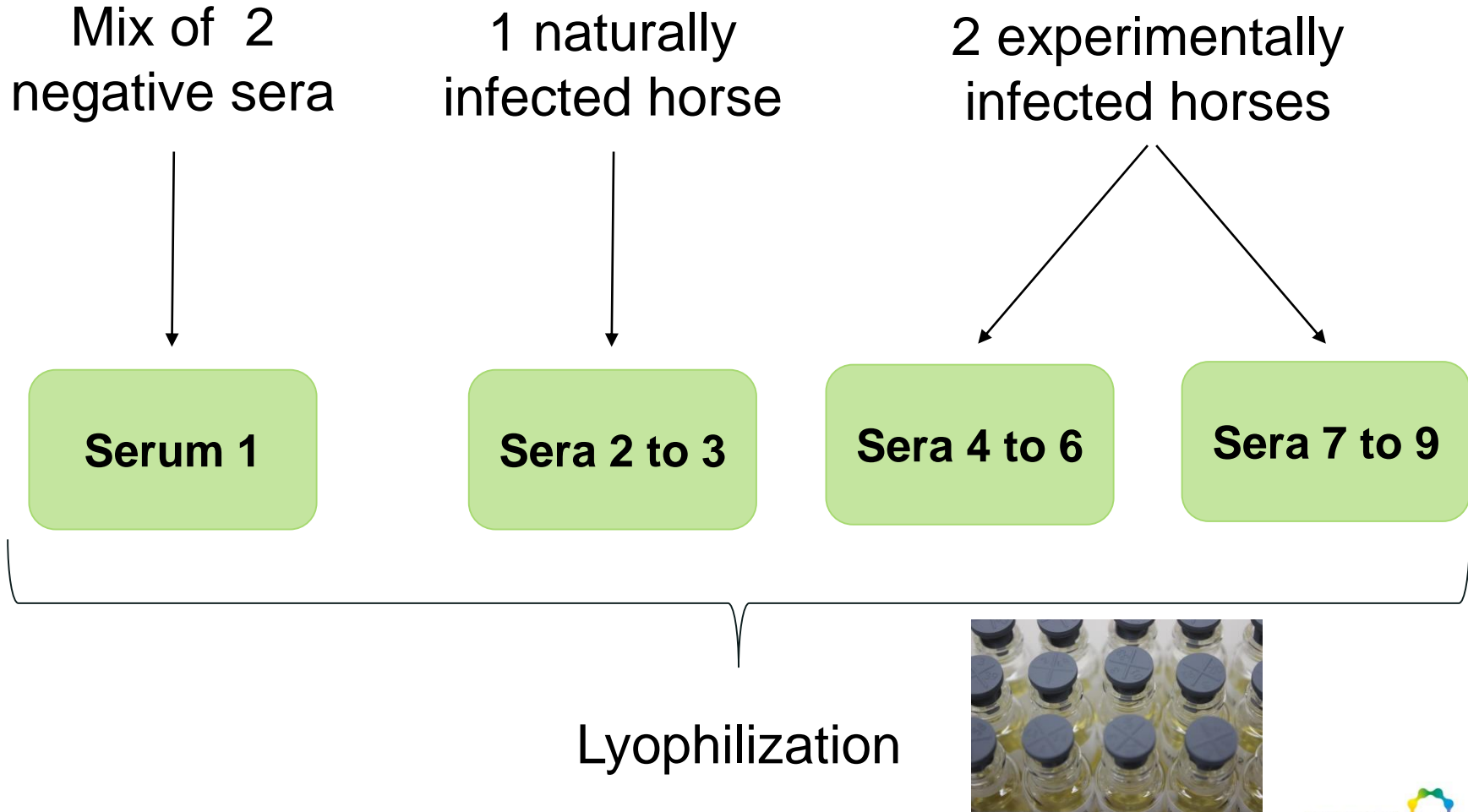


EU COUNTRIES	EIA ELISA PT 2018
AUSTRIA	Green
BELGIUM	White
BULGARIA	White
CROATIA	Green
CZECH REPUBLIC	Green
CYPRUS	Green
DENMARK	White
ESTONIA	White
FINLAND	Green
FRANCE	Green
GERMANY	Green
GREECE	Green
HUNGARY	Green
IRELAND	Green
ITALY	Green
LATVIA	Green
LITHUANIA	Green
LUXEMBOURG	White
MALTE	White
POLAND	White
PORTUGAL	Green
ROMANIA	Green
SLOVAKIA	White
SLOVENIA	Green
SPAIN	Green
SWEDEN	White
THE NETHERLANDS	Green
UNITED KINGDOM	Green

19/26

EIA ELISA PT samples

- Preparation of 9 batches of serum



EIA ELISA PT samples

- 24 samples/panel to be analyzed by ELISA:

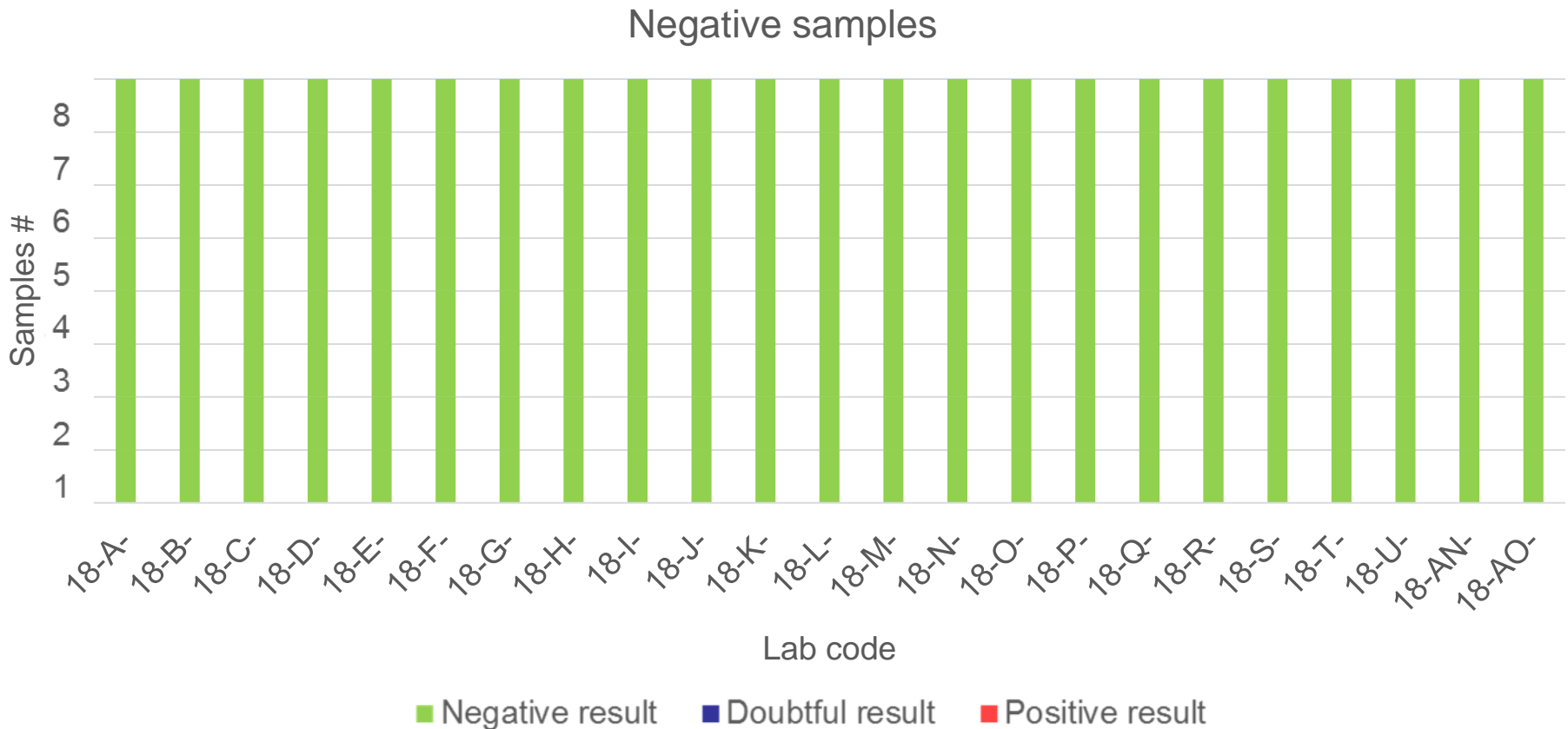
Serum #	Sample #	Expected result
1	1 to 8	Negative
2	9 to 11	Positive
3	12 to 14	Positive
4	15	Positive
5	16 to 18	Positive
7	19	Positive
6	20 to 21	Positive
8	22	Positive
9	23 to 24	Positive

- 8 negative samples
- 16 positive samples

EIA ELISA PT results

- Criteria to evaluate the performance of each participant :
 - ✓ All negative samples should be analyzed as such
 - ✓ All positive samples should be analyzed as such

EIA ELISA PT results



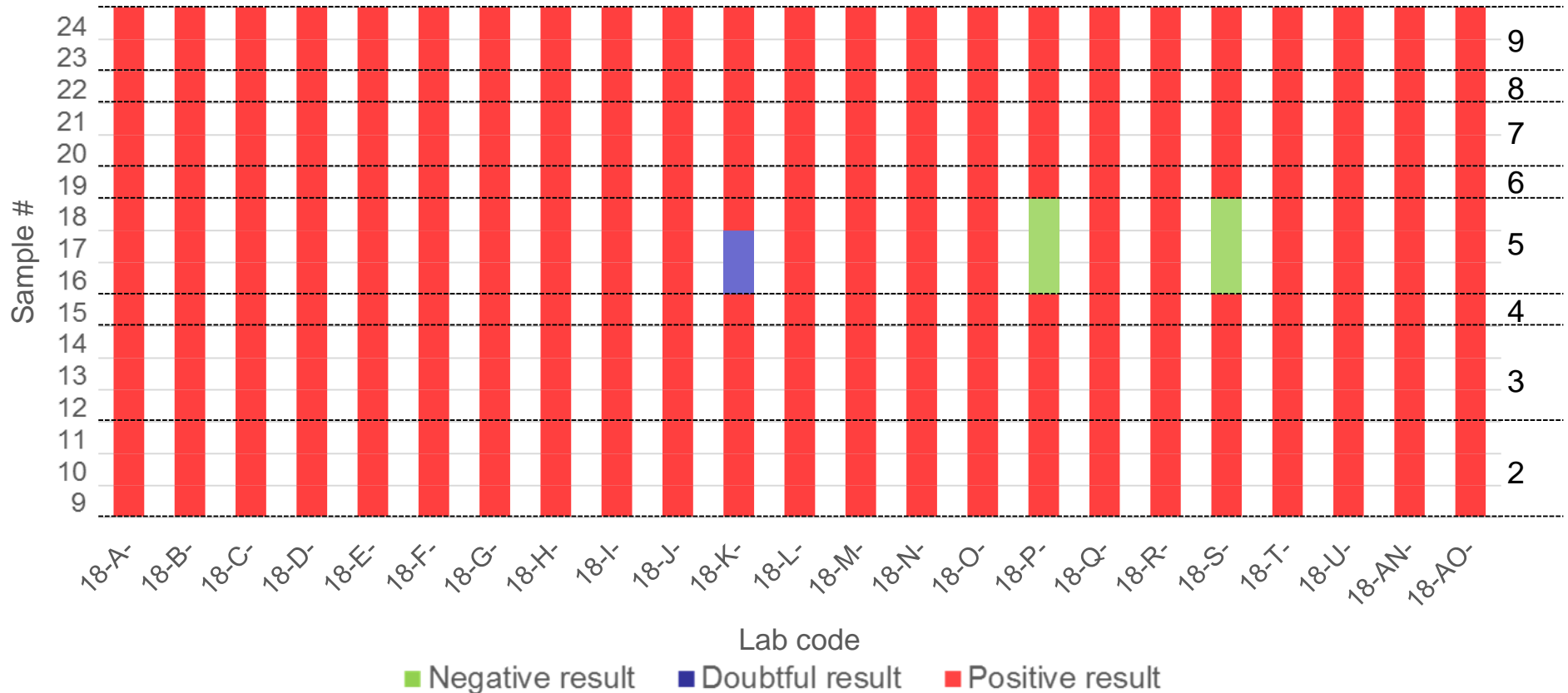
- 100% of participants obtained satisfactory results

Each laboratory exhibited a very good specificity

EIA ELISA PT results

Positive samples

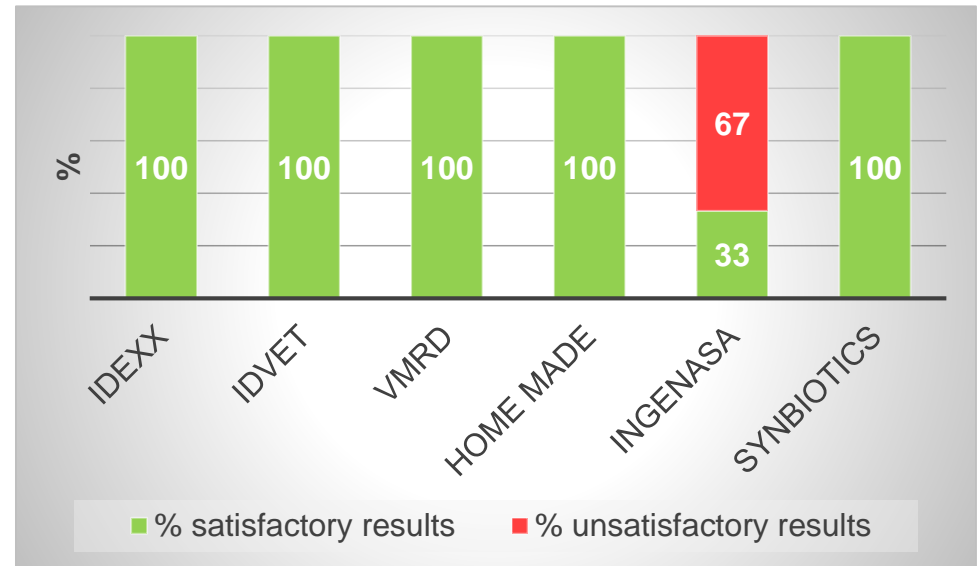
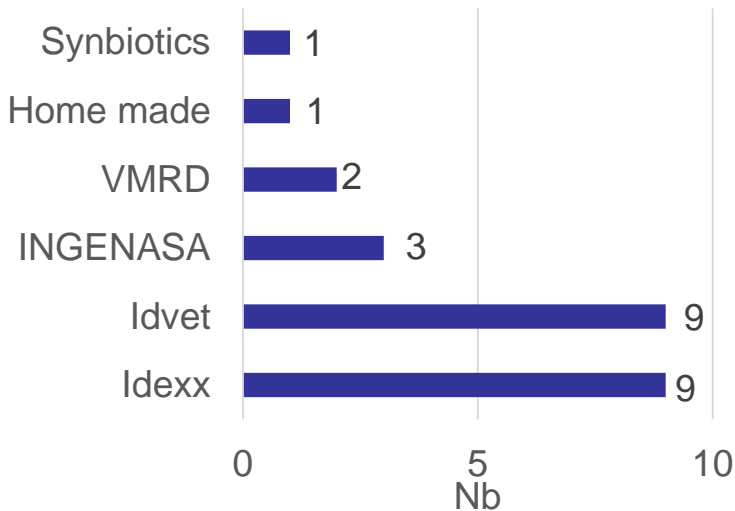
Serum #



- 2 laboratories failed to detect positive samples (sensitivity: 98,4%)

21 out of 23 labs obtained satisfactory results

EIA ELISA PT results



- Lab code 18-P and 18-S failed to detect the same serum (# 5)

3 labs used INGENASA kits and 2 out of 3 failed to detect the positive serum 5

EIA ELISA PT results

- 21 out of the 23 labs obtained satisfactory results
- European NRL network exhibited a very good specificity
- The sensitivity of European NRL network is 89,5%
17 out of 19 European NRL detected all positive samples
- 2 labs failed to detect all positive samples of the ELISA PT

Acknowledgments



Aymeric HANS



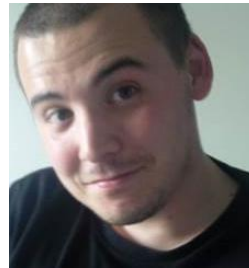
Alexandre DESHIERE



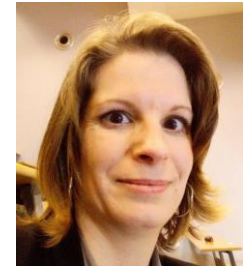
Laurent HÉBERT



Fanny LECOUTURIER



Anthony MADELINE



Jessy VANDEKERKHOVE



Thank for your attention