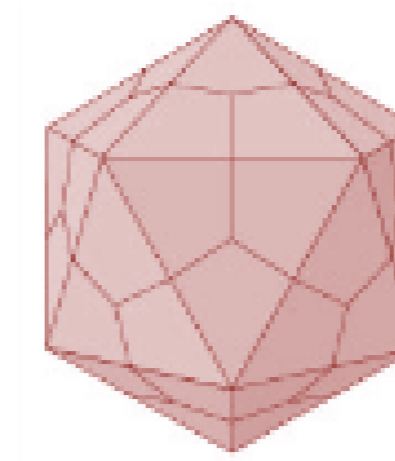


Assessing the diagnostic performances of two ELISAs to detect PCV2 antibodies

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CONTEXT

- ✓ PCV2 is one of the economically most important viral pathogens affecting the swine industry worldwide. The virus is associated with various disease conditions known as porcine circovirus-associated diseases.
- ✓ The availability of accurate and rapid to perform serological tests is necessary for epidemiological, diagnostic and control purposes.
- ✓ Several ELISAs ("in-house" and commercial) are available to detect PCV2 antibodies but the performances of all these tests have not been compared to date.

AIM

To assess the diagnostic characteristics of two PCV2 ELISAs: an in-house ELISA (I-ELISA) and the SERELISA®PCV2 (S-ELISA)

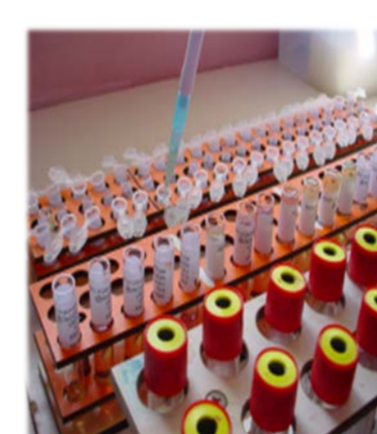
➤ 465 serum samples from finishing pigs (25 herds) not vaccinated against PCV2



Laboratory analyses for the detection of PCV2 antibodies

I-ELISA (Blanchard et al., 2003)

A sample was considered positive when the OD value was ≥ 1.5 (cut-off previously determined by comparison to IPMA)



S-ELISA

(SERELISA®PCV2 Ab Mono Blocking, Synbiotics)

Statistical analysis

A ROC curve was used to assess the optimal threshold of the S-ELISA by taking the I-ELISA as reference.
→ S-ELISA result ≥ 170 was considered as positive

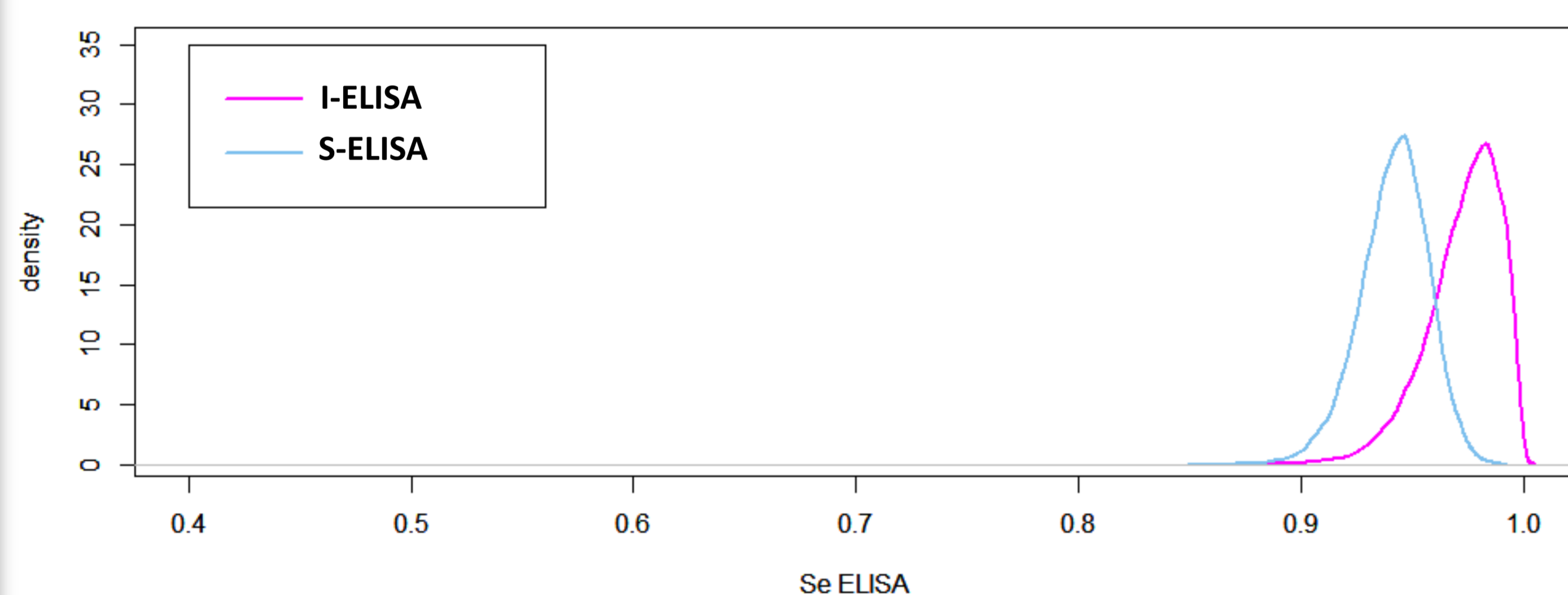


Assessment of the sensitivity & specificity of I-ELISA & S-ELISA without gold-standard

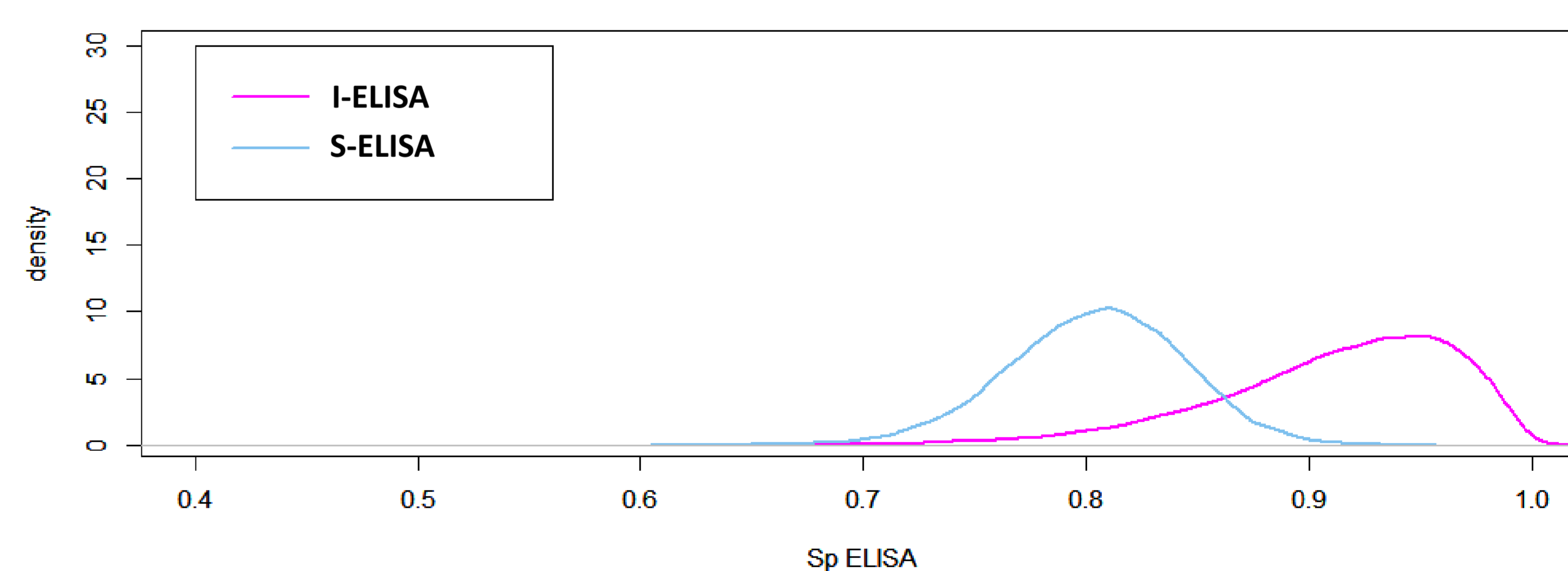
→ Latent class Bayesian model (Branscum et al., 2005)

Diagnostic performances

Posterior density of the sensitivities of both ELISAs



Posterior density of the specificities of both ELISAs



✓ The mean sensitivity and specificity of I-ELISA were **0.97** (Credibility Interval at 95% CI95%: [0.93-1.00]) and **0.91** (CI95%: [0.79-0.99]) respectively.

✓ S-ELISA reached a mean sensitivity and specificity of **0.94** (CI95%: [0.91-0.97]) and **0.80** (CI95%: [0.72-0.88]) respectively.

CONCLUSION

The results of the present study indicate that both PCV2 ELISAs provided fairly good diagnostic performances and are valuable tools for the detection of antibodies specific to PCV2.

However, I-ELISA obtained higher diagnostic performances compared to S-ELISA, particularly on the specificity, to detect antibodies against PCV2.

REF

- Blanchard et al., 2003. Vet. Microbiol., 94, 183-194
- Branscum et al., 2005. Prev. Vet. Med., 68, 145-163