

Effect of the vaccination route on the humoral immune response

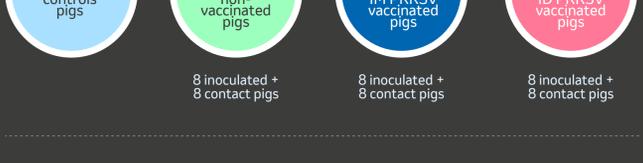
and PRRSV transmission after challenge

Porcilis PRRS is a PRRSV1 modified live vaccine for use in both young pigs and breeding age female pigs, gilts and sows administered either **intramuscularly (IM)** or **intradermally (ID)**

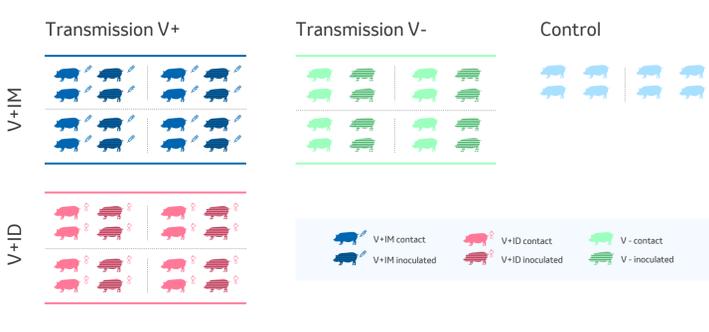
Does the vaccination route have an impact on the humoral immune response and PRRSV transmission after infection?

Experimental design

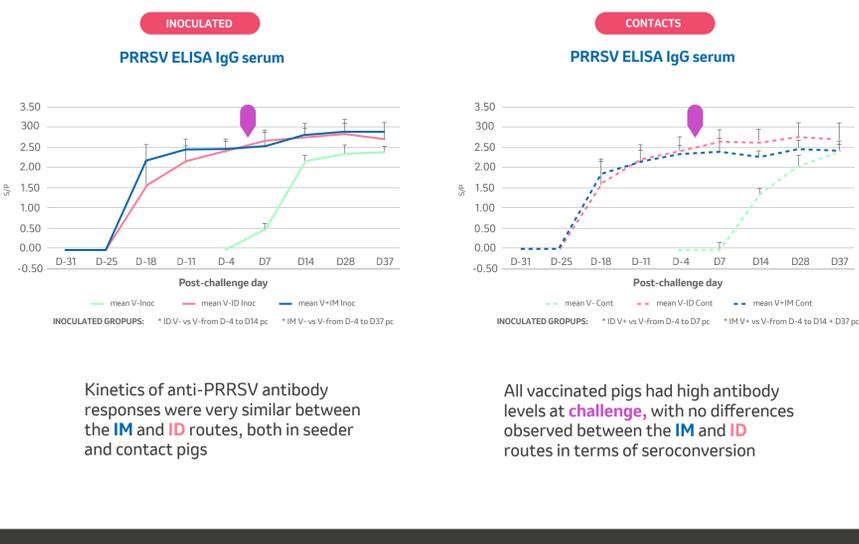
Fifty-six SPF piglets divided in 4 groups:



Pigs were challenged with the Finistere PRRSV1 strain.



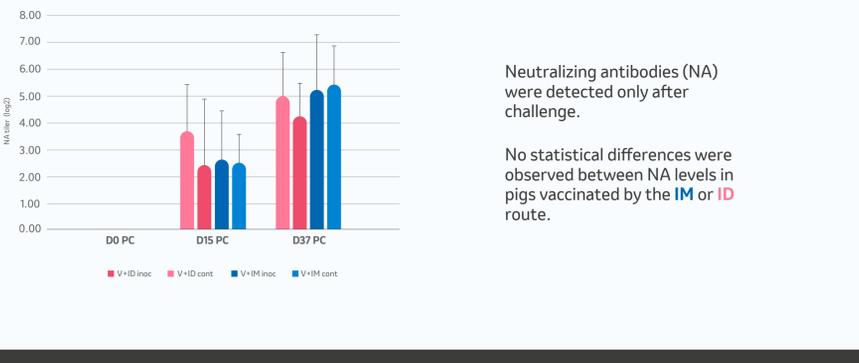
Systemic humoral immune response against PRRSV



Kinetics of anti-PRRSV antibody responses were very similar between the **IM** and **ID** routes, both in seeder and contact pigs

All vaccinated pigs had high antibody levels at **challenge**, with no differences observed between the **IM** and **ID** routes in terms of seroconversion

Systemic humoral immune response against PRRSV



Neutralizing antibodies (NA) were detected only after challenge.

No statistical differences were observed between NA levels in pigs vaccinated by the **IM** or **ID** route.

Mucosal humoral immune response against PRRSV

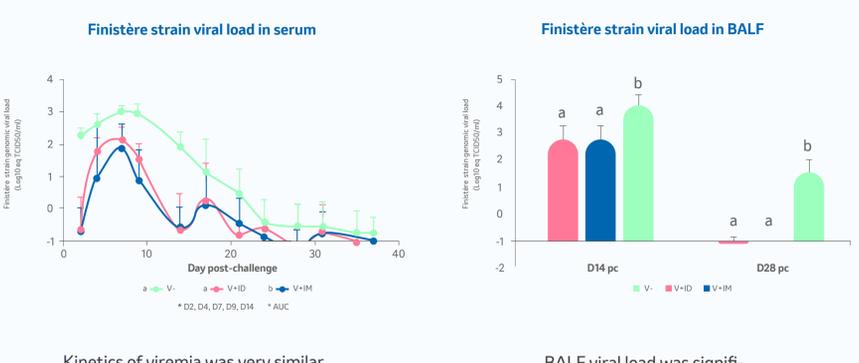


Low levels of IgG PRRSV-antibodies were detected in bronchoalveolar lavage fluid (BALF) in vaccinated pigs before **challenge**.

After **challenge**, **IM**- or **ID**-vaccinated and inoculated pigs showed higher mucosal antibody levels than non-vaccinated pigs (booster effect).

A rapid rise of the mucosal antibody levels was observed in non-vaccinated contact pigs, indicative of PRRSV infection.

Viremia and viral load in BALF



Kinetics of viremia was very similar between the **IM** and **ID** routes, the viral load was significantly lower in vaccinated pigs compared to the non-vaccinated ones across multiple time post-challenge.

BALF viral load was significantly lower in vaccinated pigs compared to the non-vaccinated ones after challenge.

PRRSV transmission

	Transmission	
	median	95% CI
V-	0.25	[0.11, 0.50]
V+ID	0.008	[4E-4, 0.04]
V+IM	0.009	[5E-4, 0.04]

Transmission rate was much lower in vaccinated pigs compared to the non-vaccinated ones, with no differences between the **IM** or **ID** route.

Keypoints

- Both the **IM** and **ID** routes elicit a **similar humoral immune response** against PRRSV.
- Viremia post-challenge is greatly **reduced in vaccinated pigs**, with no differences between **IM** and **ID** routes.
- Transmission of PRRSV is **significantly reduced in vaccinated pigs**, with no differences between **IM** and **ID** routes.

Porcilis PRRS generates a strong humoral immune response against PRRSV and effectively reduces virus transmission, either administered via intradermal or intramuscular injection.

