

# Efficacy of the Porcilis® Begonia vaccine

Porcilis® Begonia is a live attenuated vaccine against Aujeszky's disease based on the NIA-3 strain with deletions in the gE and TK genes.

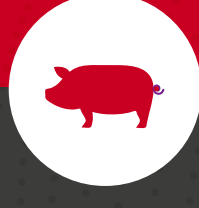
## Is Porcilis® Begonia vaccine efficacious against experimental infection with Chinese PRV strain ZJ01?

Since the re-emergence of new variants of pseudorabies virus (PRV) in China in 2011, efforts have been made to find effective vaccine strategies to control Aujeszky's disease in pig herds.

It has been suggested that vaccines based on the Bartha-K61 strain do not provide effective protection against infection with these new PRV strains.

Is Porcilis® Begonia vaccine, based on the NIA-3 strain, efficacious against virulent and contemporary Chinese PRV strains?

## Study design



Four groups of PRV-negative 5-week-old piglets were included in this study.

Vaccine dose was  $10^6$  TCID<sub>50</sub> per animal.

The challenge PRV strain ZJ01 was given intranasally at  $0.5 \times 10^5$  TCID<sub>50</sub>/pig.

Following challenge, all piglets were observed daily for clinical signs and temperature was measured.

All surviving pigs were necropsied, and gross pathological lesions were assessed at 14 days post-challenge.

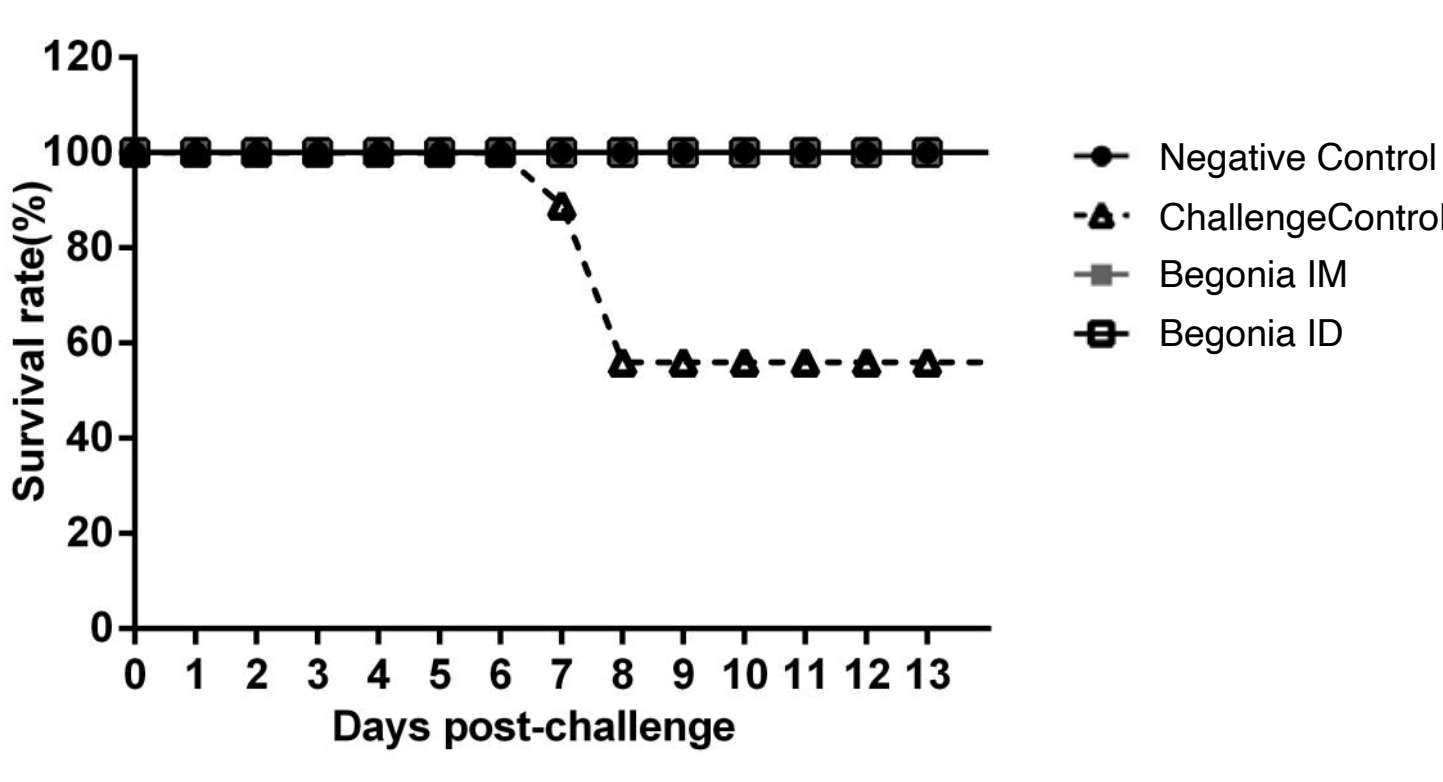
GROUP	VACCINATION	PRV CHALLENGE
BEGONIA ID	✓	✓
BEGONIA IM	✓	✓
CHALLENGE CONTROL	✗	✓
NEGATIVE CONTROL	✗	✗

## Clinical signs & Survivability

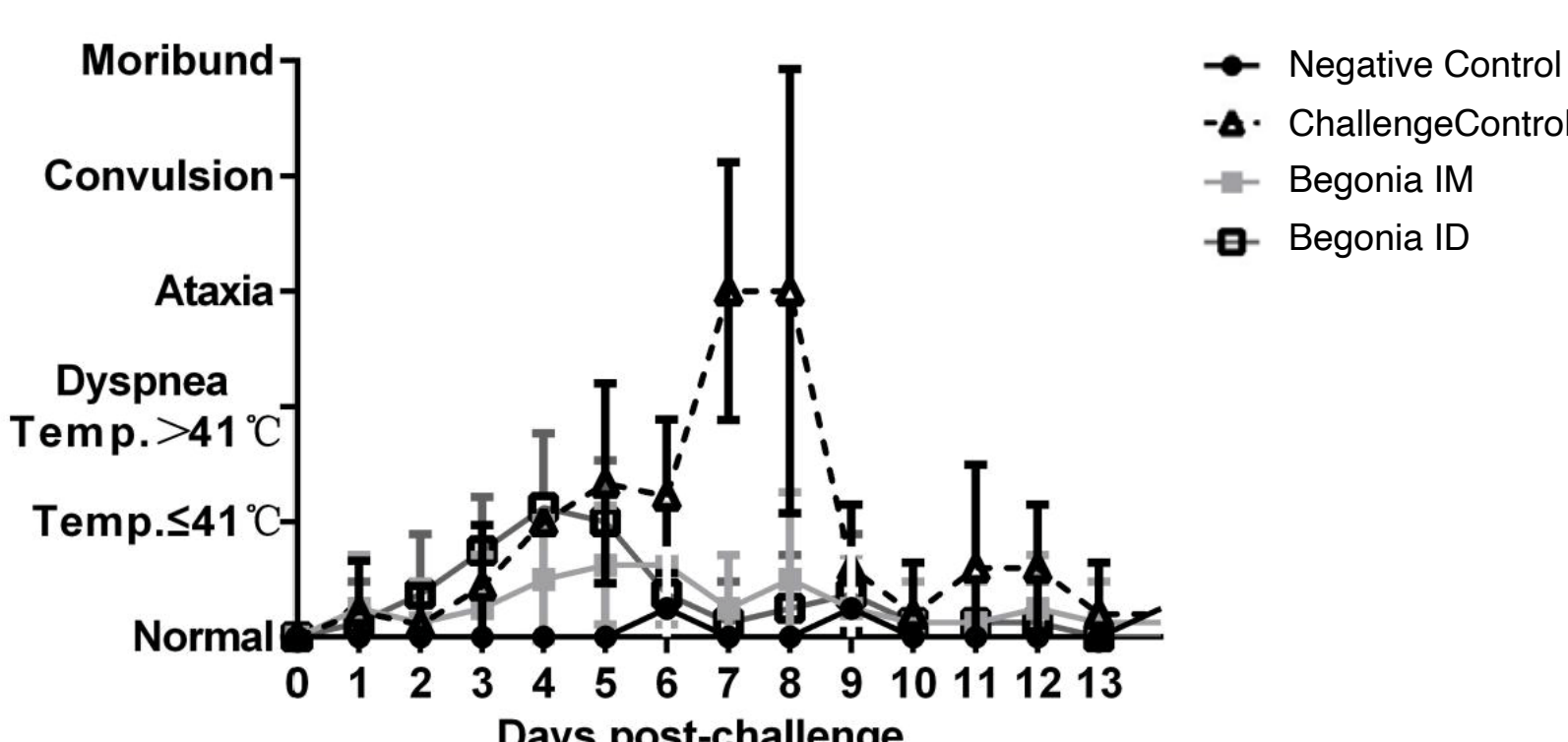
After challenge, the non-vaccinated challenge control pigs displayed steady progression of Aujeszky's disease, from fever and respiratory signs to neurological symptoms and eventually **4 out of 9 animals died**.

In contrast, the vaccinated pigs developed a transient fever, but remained healthy without mortality.

### Survival rate between groups challenged with PRV



### Evolution of clinical signs per group after PRV challenge



## Pathological lesions

The pigs that survived in the challenge control group had mild cerebral edema and hemorrhage, blood spots/consolidation in the lungs and multiple small focal areas of necrosis in the liver and tonsil.

GROUP	BRAIN	TONSIL	HEART	LIVER	SPLEEN	KIDNEY	LUNG	LYMPH NODE
BEGONIA ID	2/8	0/8	0/8	1/8	1/8	1/8	2/8	0/8
BEGONIA IM	3/8	0/8	0/8	2/8	6/8	2/8	6/8	4/8
CHALLENGE CONTROL	9/9	5/9	0/9	6/9	8/9	9/9	9/9	1/9
MOCK	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4

Proportion of pigs with pathological lesions at 14 days after challenge with ZJ01

## Keypoints

01

Porcilis® Begonia vaccination protected animals from ZJ01-induced mortality and clinical signs.

02

Porcilis® Begonia may be a good option for the control of Aujeszky's disease in pig herds where Bartha-K61-based vaccines fail.

With the appropriate pig vaccination strategy, the clinical signs and mortality associated with Aujeszky's disease can be substantially improved on the farm.

