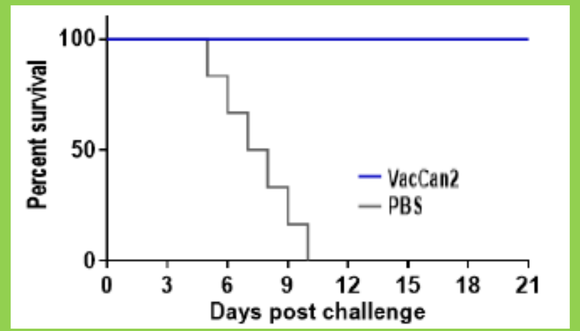

ASFV vaccine candidate conferring 100% protection in vaccinated pigs

The challenge

- There are no commercially available vaccines to prevent African swine fever.
- Conventional vaccine development technologies are time-consuming and cumbersome hence impeding efforts to generate vaccines against ASF.
- There is an urgent need to deploy enabling technologies to expeditiously generate safe and efficacious vaccines to combat this disease.

Our innovative approach

- Used a genotype IX ASF virus, isolated from an outbreak area in Eastern Africa, to establish a CRISPR/Cas9 gene editing platform to generate gene-deleted viruses, for testing as live-attenuated vaccines.

Accelerated development of genotype IX African swine fever virus vaccine candidates using rapid CRISPR/Cas9 editing

- Pig meat, with a stable share of 40% of global meat production, is a major source of protein in human diets thereby supporting the livelihoods of numerous households that depend on pigs as a source of protein and income.
- However, pig production is under constant threat from African swine fever (ASF), a deadly viral disease of pigs.
- The recent ASFV outbreak has taken ¼ of world's pigs off the market, hurt livelihoods, spiked meat prices globally, and pushed food inflation to an eight-year high. In fact, the recent outbreak of ASFV caused an estimated 200B USD global economic loss.
- African swine fever is present in 26 countries in sub-Saharan Africa, posing a significant economic impact on smallholders and emerging commercial farmers.

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Outcomes

- Established a CRISPR/Cas9 gene editing platform to rapidly generate ASFV vaccine candidates.
- Immunisation with a vaccine candidate conferred 100% safety and 100% protection in pigs.

Next steps

- Test whether this candidate can protect against different ASFV types.
- Test whether the vaccine candidate stays safe over time.
- Engaging partners to upscale the testing and production of the vaccine candidate.

Funders

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