

## ASX ANNOUNCEMENT

4 July 2008

### **Imugene's PRRS vaccine for pigs enters further trials** *USA based commercial efficacy trial commenced*

**4 July 2008, Sydney, Australia:** Trials to evaluate Imugene's revised and optimised PRRS vaccine have commenced at a specialist pig trial facility in the USA. PRRS is a highly damaging viral respiratory and reproductive disease in pigs for which there are no effective treatments.

This trial is evaluating an optimised vaccine candidate using components selected from previous Imugene PRRS vaccine trials. The optimised vaccine has undergone a series of modifications and improvements aimed at increasing its effectiveness and commercial value.

In 2007, three Imugene PRRS vaccine candidates were trialled and the best performing candidate was selected as the base for a new improved vaccine to proceed in the product development program. This improved vaccine candidate has now successfully been modified and fully laboratory tested. This work was recently completed and sufficient material exported to the USA trial site. The initial vaccination administration of the 45 pigs has also now occurred. A second dose will be administered prior to exposing the pigs to the PRRS virus.

The animal trial will take approximately 6 weeks with preliminary results anticipated within 4-6 weeks following completion of the live animal phase.

Imugene managing director Dr Warwick Lamb said, "We anticipate that the optimisation and modifications that have been made to the vaccine will deliver commercial levels of protection. The PRRS disease is an increasing economic problem for the major pig producers worldwide."

The vaccine is based on Imugene's Porcine Adenoviral Delivery Vector that delivers selected genetic material to the pig to stimulate the immune system to protect against the PRRS virus.

PRRS is one of the most economically damaging pig diseases worldwide causing industry losses of up to \$1 billion each year. Initially recognised in the US in 1987 the disease spread to Europe in 1990 and subsequently across most of the rest of the world. Australia is one of three countries considered PRRS-free.

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## PORCINE REPRODUCTIVE AND RESPIRATORY SYNDROME (PRRS)

### *Disease*

PRRS also known as mystery swine disease or blue ear disease is characterised by abortion, premature farrowing, stillborn and mummified piglets, respiratory disease with loss by death and chronic poor performance of nursing and weaned pigs.

PRRS is recognised as the biggest problem disease in the worldwide swine industry. For over 20 years there has been little success in economical and effective control of this highly variable viral disease.

The virus of PRRS has a particular affinity for the macrophages particularly those found in the lung. Macrophages are part of the body defences. They ingest and remove invading bacteria and viruses. Those present in the lung are called alveolar macrophages. In contrast to most other bacteria and viruses, macrophages do not destroy the PRRS virus. Instead, the virus multiplies inside them and then kills the macrophages. Up to 40% of the macrophages are destroyed. This removes a major part of the body's defence mechanism and allows bacteria and other viruses to proliferate and cause more damage.

### *Imugene's PRRS vector based vaccine*

The Imugene PRRS vaccine is based on the *Porcine Adenoviral Delivery Vector* that delivers selected genetic PRRS material to the pig to stimulate the immune system to protect against the PRRS virus.

Three versions of the Imugene vaccine constructs were successfully challenge trialled last year and since that time development has concentrated on upgrading the best performing vaccine. Modifications were made to the vaccine based on new external scientific information which indicated that by altering part of the existing vaccine and adding an additional component the result may be a significant improvement in vaccine efficacy. These changes involved genetic engineering and are ideally suited to the vector based system of vaccine production.

### *Commercial proposition*

PRRS is one of the most economically damaging diseases of pigs worldwide causing estimated annual industry losses over US\$1 billion. In the US alone PRRS is estimated to cost US\$550-750 million annually to pork producers. There is no effective treatment for the viral infection. Vaccines have been developed but are either ineffective or suffer safety issues. Farm management procedures have been implemented but the disease persists.

Imugene has been in discussion with several large animal health companies about licensing opportunities for the global registration, manufacture and sales of the PRRS vaccine. Positive results from the current trial will strengthen Imugene's position in these licensing negotiations.

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## About Imugene (ASX: IMU)

Imugene specialises in commercialising animal health products for production animals including pigs and poultry.

Imugene owns the worldwide rights to the *Fowl Adenoviral Vector Delivery System* for poultry and the *Porcine Adenoviral Vector Delivery System* for pigs. Imugene has successfully licensed the first product based on the *Fowl Adenoviral Vector Delivery System* – the *Poultry Productivity Enhancer*.

Imugene's poultry and pig portfolio is targeting a worldwide US\$3 billion annual market with four lead vaccine products under development and a strong product pipeline. Consumer demands for disease free and residue free food will bolster Imugene's prospects.

Imugene's products safely prevent disease and reduce or eliminate antibiotics and harmful chemicals in animals. Animal antibiotics and chemicals in the human food chain have been linked to the emergence of dangerous resistant bacteria in people and food residues.

For more information please visit the Imugene Website [www.imugene.com](http://www.imugene.com)

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