



## ASX ANNOUNCEMENT

24 August 2006

### **TWO AVIAN INFLUENZA VACCINE CANDIDATES FINALISED. POULTRY EFFICACY TRIALS TO PROCEED**

*The Avian Influenza (Bird Flu) vaccine candidates have been developed in Imugene's new laboratory and are now ready for challenge trials in chickens.*

**Sydney, Australia:** Imugene Limited (ASX:IMU) has successfully completed laboratory development of two avian influenza (H5N1 strain/bird flu) vaccine candidates. These vaccine candidates are now ready for challenge trials in chickens to confirm efficacy in protecting chickens from avian influenza.

The trial vaccines utilise Imugene's proven *Adenoviral Delivery Vector* technology to deliver the necessary genetic material to stimulate the birds' immune system to protect against infection with the bird flu virus.

Imugene Managing Director Dr Warwick Lamb said, "the decision to move our laboratory research work from contract facilities to our own laboratory has paid off with this outstanding result. Imugene's chief scientific officer Dr Mike Sheppard has, in a very short time successfully engineered the vaccine candidates for both the broiler market and the broiler breeder and egg layer markets.

"The vaccine candidates have been thoroughly verified by a series of in-house and external tests and are exactly what we want them to be. A pilot trial to test both candidates in a bird flu challenge trial has been designed and negotiations are underway to secure a trial facility and starting date."

The two vaccine candidates differ as the commercial requirements for broilers and breeders or layers vary. The primary aim for a commercial Bird Flu vaccine for broilers is to provide immunity early in a bird's life but the protection need only be short term as broiler birds typically reach market weight by 42-49 days of age. Layer birds and birds used for breeding stock for the broiler market require longer lasting immunity. The vaccine designed for layers and breeders uses two antigens (rather than the single antigen used in the broiler vaccine) to elicit both antibody and cell mediated immunity.

In April this year, Imugene began developing its own Bird Flu vaccine at its facilities at La Trobe University. This work focused on developing the two Bird Flu vaccine candidates using synthetic genetic material produced in Europe.

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## Major Advantages of the Imugene Vaccine Candidates

An effective vaccine could be used to protect the world's poultry industry from further avian influenza outbreaks and halt the spread towards Australia, Europe and the US. A viable vaccine to control outbreaks must be safe, effective and able to be quickly and easily administered on a large scale.

The Imugene vaccine candidates use technology that allows authorities to differentiate between infected and vaccinated birds, a vital consideration for the international poultry industry.

The vaccine candidates deliver only a portion of the flu genetic material instead of the whole virus. This makes the Imugene vaccines safe by preventing mutations or recombination with human flu viruses.

The vaccine candidates generated using the Imugene delivery system are very cost effective for mass administration to entire poultry sheds and do not require injection of each bird. "Administering the vaccine to large numbers of birds via the birds' drinking water greatly reduces the cost and effort needed to implement large scale injectable vaccination programs" said Dr Lamb.

The vaccine candidates are specific to the H5N1 strain of avian influenza, but can be easily and quickly adapted to protect against other strains of influenza.

The above advantages of the Imugene vaccine solve the limitations of existing vaccines and treatments.

## Scientific details

### Generation of Recombinant Vaccine Candidates Fowl Adenovirus Vectored - Avian Influenza HA & Avian Influenza NP

	<b>Broiler Vaccine</b> FAV - HA	<b>Breeder/Layer Vaccine</b> FAV - HA and NP
<b>Gene Selection and Synthesis</b>	<b>HA - completed</b>	<b>NP - Completed</b>
<b>Gene insertion into Fowl Adenovirus (FAV)</b>	<b>Completed</b>	<b>Completed</b>
<b>Detection of inserted gene</b>	<b>positive</b>	<b>positive</b>
<b>FAV isolation following gene insertion</b>	<b>positive</b>	<b>positive</b>
<b>Test for correct HA or NP protein production</b>	<b>positive</b>	<b>positive</b>

HA = Haemagglutinin from H5N1 avian influenza  
NP = Nucleoprotein from H5N1 avian influenza

## **About Imugene**

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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