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FEATURE

Week's Special

IMUGENE: BIOLOGICAL ANIMAL HEALTH PRODUCT COMPANY OFFERS SIGNIFICANT OPPORTUNITY

By Jenny Prabhu and Gerald Stanley

Imugene Ltd has early mover advantage in replacement products that eliminate or reduce the need for the use of chemicals and antibiotics for the treatment of animal health and their potential effect on the human food chain.

While there is increasing government regulation in the area, it is likely that consumer demand will drive the replacement of harmful chemicals with biological substitutes in the area of animals reared for food and for pets much faster than government regulation.

Imugene has several developed and patented vaccines, three of which are licenced to the world's biggest animal health company Merial, a joint venture between Aventis and Merck, and others are under negotiation.

But Imugene's jewel in the crown is the new Receptor Mimic Technology – licence acquired some six weeks ago, that competes directly with Chemeq's ecoli product in the area of pig health.

Imugene resembles Chemeq in 2001, which traded at around 45c when its 'animal intestinal antiseptic' first came to notice in 2001. Chemeq hit \$2.80 the next year, \$8 in June 2003 and is currently trading at over \$5, with its 20 tonne per annum factory under way after years of successful testing and strong global demand.

Size of targeted markets

*The global market for pig animal health is worth around \$US3.5 billion per annum, with the sector targeted by the Imugene products worth about \$US1.5 billion per annum.

Within that market Imugene's E. coli product, which competes directly with Chemeq's E. coli product, targets a market worth \$US450 million.

*The poultry products market is worth around \$US3.2 billion with Imugene targeting a \$US1.2 billion market.

*Imugene's chicken productivity enhancer market is worth about \$US1 billion.

*Other Imugene vaccine products are worth around \$US300 million.

*Imugene's flea control vaccine research is targeting a global market for flea control products worth in excess of \$US1.5 billion per annum. An efficient biological vaccine has the potential to immediately gain a large share of this market from the current over the counter chemical treatments.

Highly credentialled scientists

Imugene's scientific officers are highly credentialled, closely tied to CSIRO. Dr Kevin Fahey, chairman of the Scientific Advisory Board worked with SmithKline Beecham Animal Health and most recently as Executive Director – Biological Discovery for Pfizer Global R&D.

The Chief Scientific Officer Mike Sheppard also spent ten years with Smith Kline Beecham and Pfizer, the world's largest pharmaceutical company in the US, as Director of Biological Discovery.

Dr Colin Hort has been recruited from Novartis Animal Health, one of the world's Top 10 veterinary pharmaceutical companies.

At its current cash burn rate, and given a further \$1.1 million expected from grants and the exercise of options, Imugene will have no need of funds for over a year. A capital raising when the share price is more appropriate is envisaged.

What the brokers say

Several brokers follow the stock, including Southern Cross Equities in Sydney, EG Capital, Intersuisse, Taylor Collison in Adelaide and Montagu in Perth.

Southern Cross Equities analyst Stuart Roberts is in the process of completing a major report on Imugene (to coincide with a roadshow being hosted by Southern Cross Equities on July 19 and 20).

In May when Imugene acquired its E. coli product licence from Adelaide University (a direct competitor to Chemeq's E. coli product) Stuart Roberts commented in his "Biotech Buzz newsletter" dated May 21, "Imugene ... is now in a position to demonstrate that Chemeq doesn't have a monopoly over methods to treat E.Coli infection in pigs without engendering antibiotic resistance. Yesterday Imugene announced that it had in-licensed a technology developed at the University of Adelaide and at Adelaide's Women's and Children's Hospital called the Receptor Mimic Technology, or RMT for short, which notionally can do much the same thing as Chemeq's polymer .. RMT is something of a platform technology..."

The broker says if Imugene gets the RMT based first products to market to treat colibacillosis and porcine oedema, "then RMT is worth 38c per Imugene share based on a 10 per cent discount rate and the assumptions that 1) \$3m in development costs will be borne by Imugene; 2) Imugene will earn a 6 pct royalty on the product from 2007 and pay a 30 per cent tax rate on this and 3) sales will grow at only 3 per cent p.a. after 2010. Add this tentative 38c valuation for RMT to our existing 40 cps valuation for the rest of Imugene, and factor in the likely uplift from commercialisation of the company's PRRS vaccine ... and the current stock price is markedly undervaluing Imugene's potential. The stock remains a Speculative Buy for Knowledgeable Professional Investors".

IMUGENE LTD – A SNAPSHOT

Imugene Ltd listed in the shell of VosTech in August 2002 after completion of the acquisition of Brightsun Investments Pty Ltd, including the rights and ownership in animal biotech developers VectoGen Ltd (50 pct) and Paragen Pty Ltd (37.5 pct). Imugene now has a diverse portfolio of new and innovative animal health products.

Brightsun was formed to commercialise projects that had been researched for several years at the Livestock Industries division of the CSIRO and at the Division of Veterinary and Biomedical Sciences at Murdoch University.

Imugene has two distinct streams of products. One is for the production animal markets (pigs and poultry), the other is for companion animals, developing efficient and biological flea control vaccines.

A number of key patents had already been granted in the USA and other countries.

In April last year Imugene acquired the balance of shares in its animal husbandry subsidiary VectoGen, in which Imugene's poultry and pig portfolio of products is contained through the issue of 14.745 million shares and the issue of 8,872 Convertible prefs split into Series A, B and C. These convertible preference shares have now been converted into 8,872 ordinary shares.

The Receptor Mimic Technology

On May 20 2004 Imugene announced it was licensing a new platform technology for the prevention, treatment and diagnosis of gastrointestinal diseases in pigs. The "Receptor Mimic Technology" is a new biological method for disease control and consistent with Imugene's current range of products under development is safe, residue free and aims to improve animal health whilst reducing or replacing the use of antibiotics, drugs and chemicals in food producing animals.

Imugene is licensing the technology from the University of Adelaide's commercial arm. It is the result of research by Dr Adrienne Paton, Dr Renato Morona and Prof James Paton, recognised as world leaders in the field.

The technology has been proven both in vitro and in mouse trials. A wide reaching patent was filed in September 2000. Further provisional patents are in process of being filed. It is expected to take 12/18 months to bring to market (biological products have a much shorter regulatory regime than chemical products) with the company intending to contract manufacture the product by a manufacturer who already has TGA and FDA approval.

The first product to be commercialised will treat Post Weaning Diarrhoea caused by E.coli in pigs.

The product, being a biological oral treatment, has a much shorter registration process compared to chemical treatments.

Trials are expected to begin shortly at the Primary Industry Research Institute in Victoria.

The second product to proceed to animal trials will prevent Piglet Oedema Disease, another usually fatal disease in piglets caused by a different strain of E coli bacteria.

Further products to be developed will target diseases such as Rotavirus, Clostridia and other important bacterial and viral causes of infectious diarrhoea in pigs.

The Adenoviral Delivery Vectors product

In December 2002 Imugene and CSIRO were awarded the prestigious CSIRO medal for developing an innovative productivity enhancer for the \$US2bn a year poultry market, identifying a novel method of delivering the natural productivity enhancers called cytokines through the patented Adenoviral Vector delivery technology.

In September 2003 Imugene announced modifications conceived by its Chief Scientific Officer Dr Mike Sheppard have resulted in a significant improvement in the adenoviral Delivery Vectors themselves, with commercial benefits to apply to all the company's pig and poultry products.

The improvement was achieved by successfully changing a component of the vector called the promoter. The new promoter greatly increases the expression of any gene delivered.

Vaccines

Imugene is currently developing 10 vaccine and therapeutic products for the pig and poultry markets, eight of which have been completed. All of the eight products will have the new more powerful promoter, the Adenoviral Delivery Vectors product.

The two remaining vaccine products are a new pig vaccine for the Chinese market and the poultry vaccine for Avian influenza.

***Avian Influenza:**

Imugene in February announced research work along with CSIRO Livestock Industries has begun, designed to develop a vaccine for chickens at risk of contracting avian influenza. The research will use Imugene's Adenoviral Vector Delivery System which originated from CSIRO research.

The vaccine candidate is now within weeks of being completed and will be trialled for 1 to 3 months in the secure animal health facility in Geelong.

Imugene is very confident it has a successful vaccine for influenza – there has not been a successful vaccine for avian influenza as yet.

Imugene's vaccine is certainly one that cannot by any chance re-infect birds since only a very small part of the virus is used, so that it cannot mutate.

Patented poultry productivity enhancer

In November last year Imugene was granted \$250,000 relating to its patented poultry productivity enhancer. The biological poultry productivity enhancer improves flock health and therefore growth rates, delivering major productivity gains to producers and reducing or eliminating the need for in feed antibiotics, drugs and chemicals.

Flea vaccine project

FRIDAY, JULY 09, 2004, 9:30AM

The initial range of possible flea vaccine candidates have now been determined by the Murdoch University researchers. Negotiations are underway with Murdoch University to increase the candidates proceeding to dog trials.

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Imugene's partner Merial

Three of the vaccines are under contract with Imugene's partner Merial, the jointly owned animal health company of Merck & Aventis. Two contracts relate to Imugene's biological poultry productivity enhancer and a vaccine for a viral disease of poultry, the third contract utilises the adenoviral vector to deliver a potential vaccine against a viral pig disease.

(There are about 15 vaccines that fall into that category on the market, Merial have about 12 of them).

Two licences for vaccines are under negotiations with global majors.

IMUGENE FINANCIALS

Last Traded price 21 cents
 Shares Issued 108.0 m
 Market Cap \$ 22.7 m
 Year ended June 30, Values in Millions\$

INCOME	2004 Int	2003	2002
Op Revenue	-	0.5	1.3
Op Profit (loss)	(1.1)	(2.0)	(0.8)
Net (Loss) (attributed Members)	(0.8)	(1.3)	(0.8)
(Loss) per share	(0.7)	(1.9)	(0.5)

BALANCE SHEET	2004	2003	2002
Current Assets	2.0	2.7	0.8
Non Current Assets..	5.3	5.5	-
Current Liabilities	0.6	0.7	-
Non Current Liabilities	-	-	-
Net Assets & Shareholders' Funds	6.7	7.5	0.8
Intangibles	4.8	5.0	-
Net Tangible Assets	1.9	2.5	0.8
Gearing (Net of Cash) %	Nil	Nil	Nil
NTA per share (cents)	1.8	2.3	
Shares Issued (Millions)	107.8	107.2	97.1

Cash Flows:	2004 Mar qtr	2004 Interim	2003	2002	2001
Cash on hand (at open)	2.0	2.6	0.8	0.0	
Operating Activities	(0.3)	(0.5)	(1.4)	(0.8)	
Investing	-	(0.2)	(0.4)	-	
Financing Activities	-	0.1	3.6	1.6	
Cash on hand at Year end	1.7	2.0	2.6	0.8	

The company's cash burn rate is about \$140,000 a month and this stage it has funding for 12/18 months.

Emoluments for directors and Chief Scientific Officers are exceptionally modest.

The company expects about another \$1.1 million by the end of the year from the exercise of options, grant money and tax rebates.

A capital raising is envisaged when the share price level is more appropriate.

Directors:

Graham Dowland, executive chair. For the past 15 years has been a significant shareholder, director or senior consultant with a variety of public companies listed in Australia, Canada and the UK including pharmaceutical R&D companies and gold miners.

Dr Warwick Lamb managing director is a specialist veterinarian with experience in the profession at all levels. He was awarded Small Animal Practitioner of the Year 2001 by the Australian Small Animal Veterinary Association.

Roger Steinepreis, non exec director

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Company secretary: Mark Pearce

Scientific Advisory Board:

Dr Kevin Fahey Chairman, Imugene's Commercial and Scientific Advisory Board is an internationally recognised animal health expert in both the R&D of new vaccines and biopharmaceutical products. He has worked with SmithKline Beecham Animal Health and recently with Pfizer, where he became Executive Director – Biological Discovery for Pfizer Global Research & Development.

Dr Mike Sheppard Chief Scientific Officer, appointed early 2003. Dr Sheppard is a molecular biologist. He has ten years international R&D experience in the USA with Smith Kline Beecham (now Glaxo Smith Kline) and the world's largest pharmaceutical company Pfizer as the director of Biological Discovery and has worked 5 years with CSIRO.

Dr Colin Hort, Commercial Manager, a veterinarian, was recruited from Novartis Animal Health, one of the world's Top 10 veterinary pharmaceutical companies where he was Technical Services Director responsible for Australia and New Zealand. Over the past 10 years with Novartis, Dr Hort has gained valuable experience in the practical realities of development, manufacturing, distribution and marketing of new pharmaceutical products.

Key Research Personnel

Receptor Mimic Technology

Prof James Paton
Dr Adrienne Paton
Dr Renato Morona

VectoGen Ltd/CSIRO (Production Animals) – 100 pct owned by Imugene

Dr Chris Prideaux – PAV and FAV Manager
Dr Jef Jammond – PAV project Leader
Dr Scott Tyack – FAV Project Leader

Paragen Pty Ltd (Companion Animals) – 37.5 pct owned by Imugene Ltd

Prof Andrew Thompson – joint CSO
Dr Wayne Greene – joint CSO
Dr Marion Macnish – Snr Researcher

Major shareholders:

Graham Dowland and Dr Warwick Lamb each with about 6 pct of the company.

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