



# IMUGENE

## Animal Health Biological Products

*Dr Warwick Lamb*

*Managing Director*

**CONFERENCE  
PRESENTATION**

October 2004

**IMUGENE**



**LIMITED**

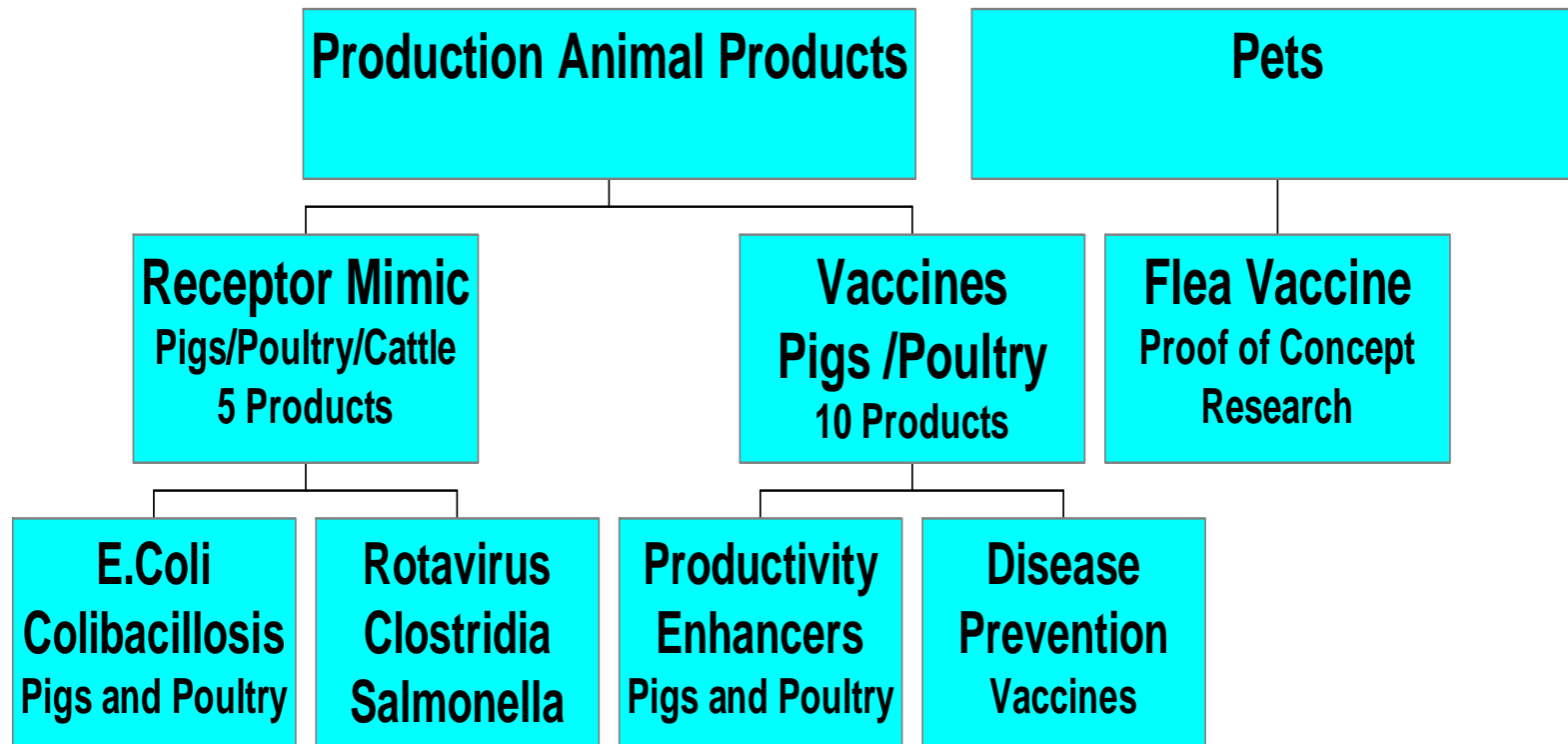
The top banner of the slide features a blue background. On the left, there is a blurred image of laboratory glassware, including beakers and test tubes. On the right, there is a blurred image of a pig's head. The text 'IMUGENE' is centered in white, bold, sans-serif font.

# IMUGENE

A biopharmaceutical company

- **Developing & commercialising biological animal health products:**
  - Improve animal health
  - Improve productivity
  - Eliminate antibiotic and chemical food residues
  - Pig & poultry producers spend US\$4b on preventative treatments each year
    - Sick animals cause expensive production losses

# BIOLOGICAL SOLUTIONS



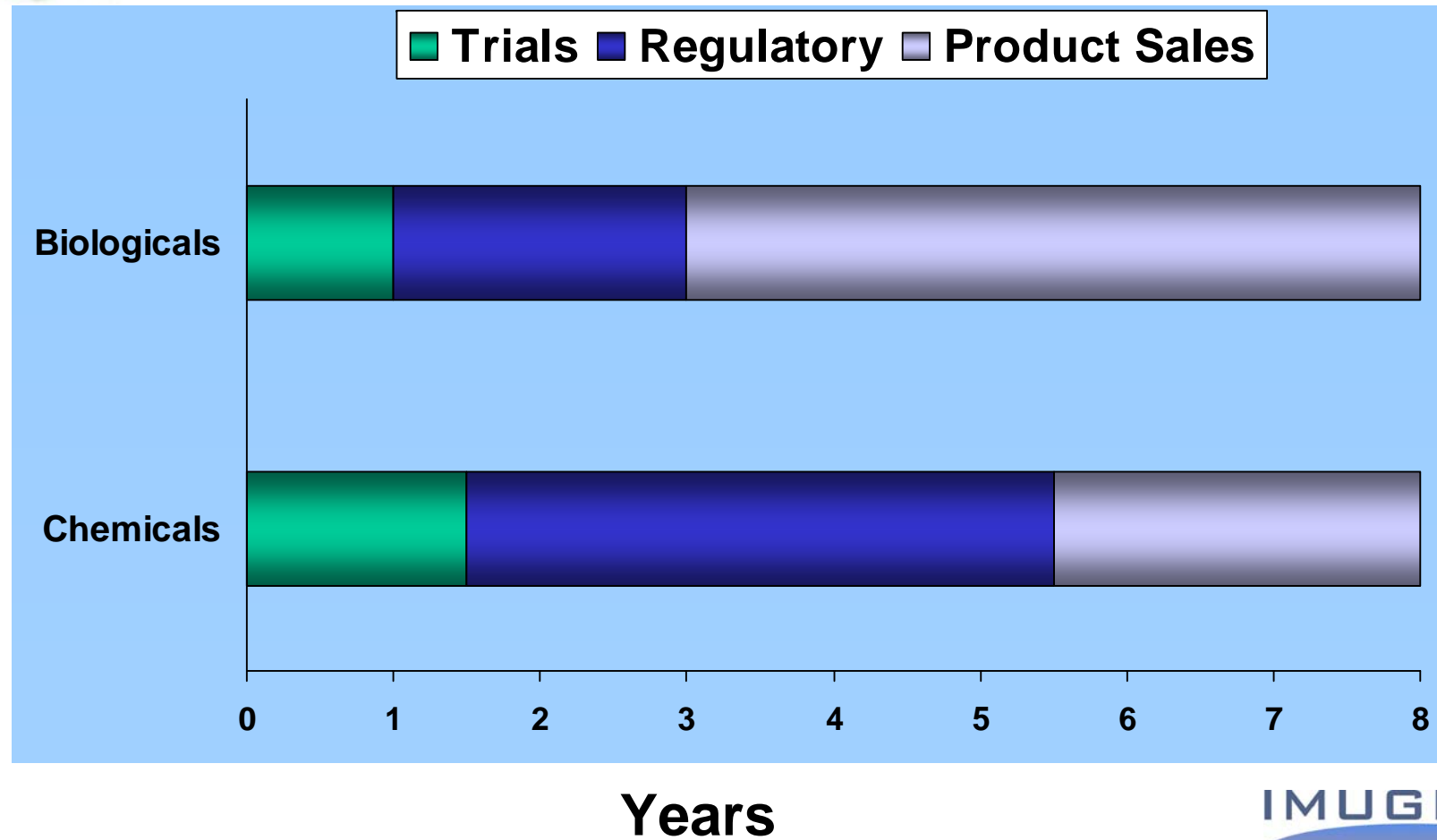


# BIOLOGICAL V CHEMICAL

- **US Department of Agriculture - Not FDA**
  - Shorter dossier preparation and registration
- **Good future market dynamics**
  - Withdrawal of in-feed antibiotics
- **Easily adapted to standard commercial production techniques and existing manufacturing resources**

*Biologicals quicker to market than chemicals or drugs*

# TIME TO MARKET



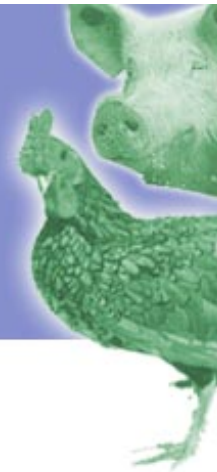


# RECEPTOR MIMIC TECHNOLOGY

## HOW IT WORKS

- **Bacteria, viruses and protozoa cause disease by:**
  - Producing toxins that bind to receptors on the gut wall
  - Adhering to receptors on the gut wall
- **RMT mimics these receptors**
- **Toxins or organisms bind to the RMT in the gut and are harmlessly excreted**
- **RMT prevents production loss from disease**

# RMT – How it works





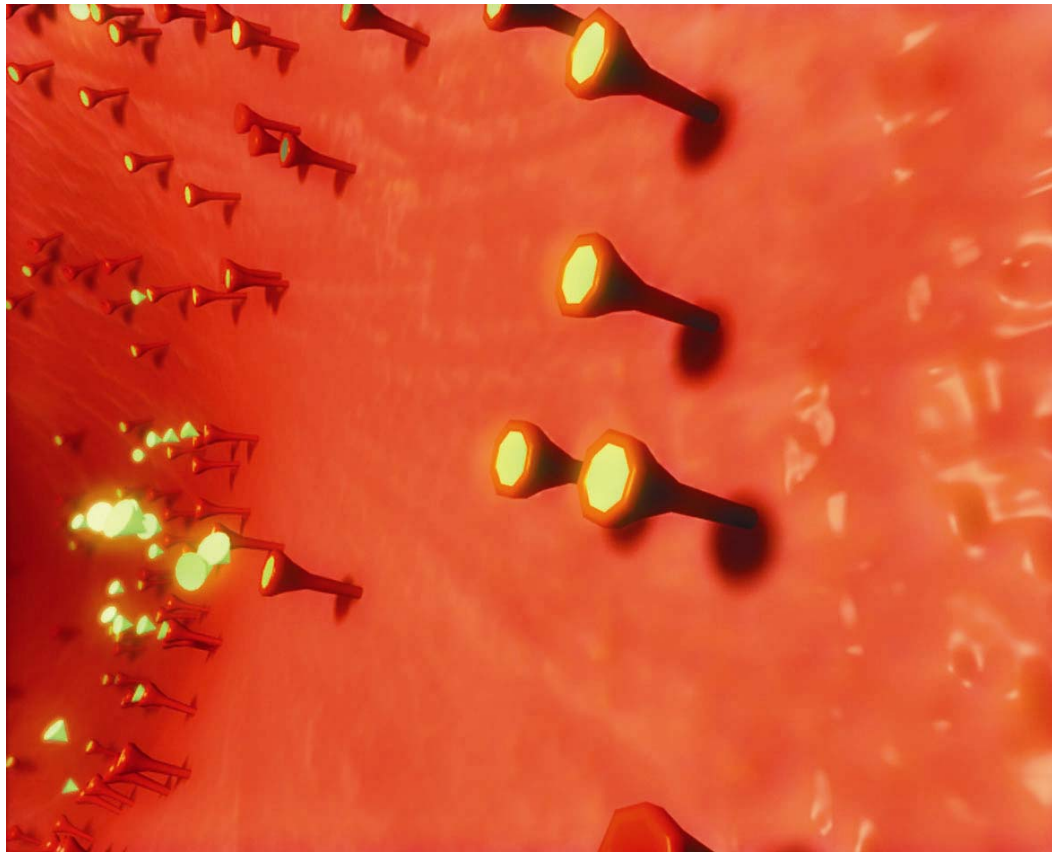
Without RMT

***E coli* produce toxin**



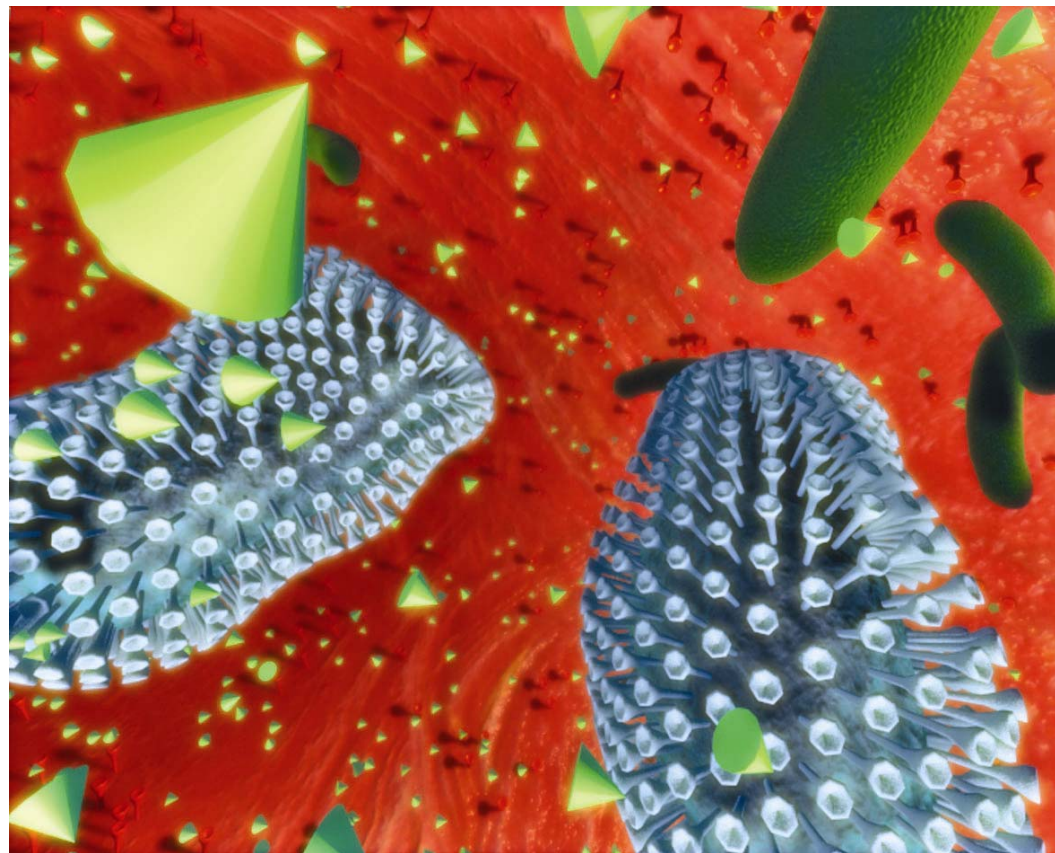
# Without RMT

**Disease caused when toxin binds to gut receptors**



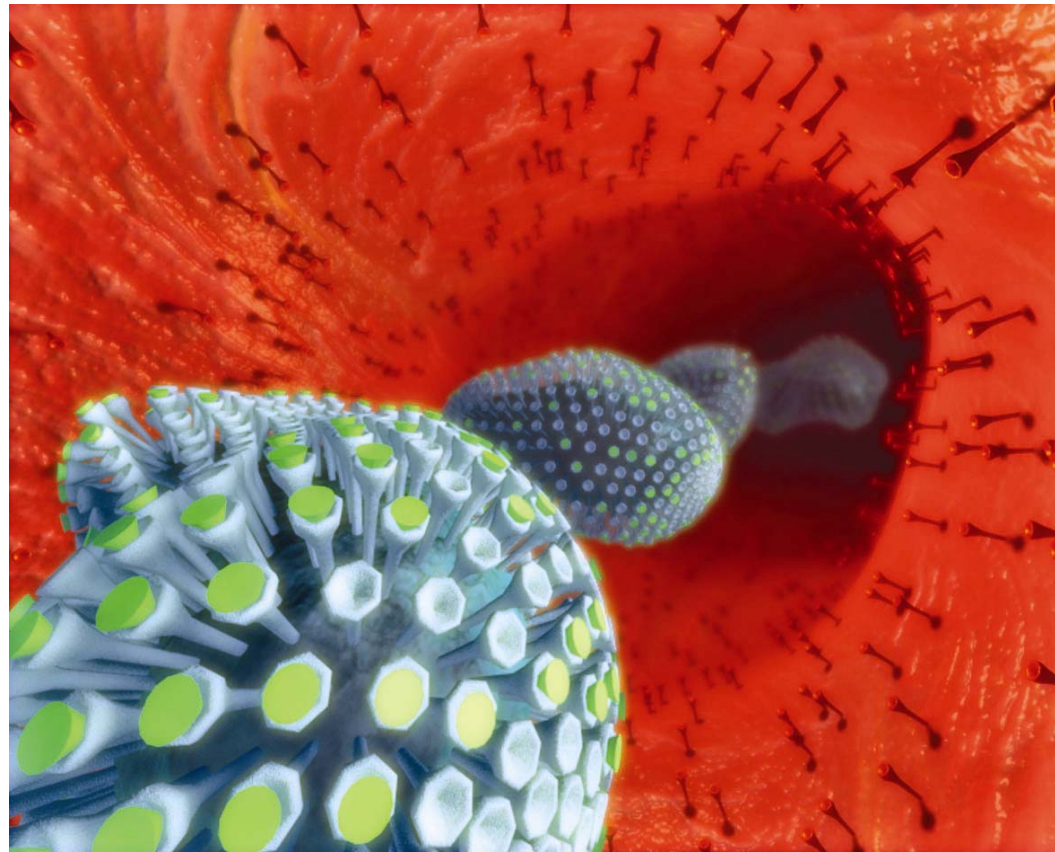
With RMT

# RMT display decoy receptors



# RMT Prevents the Disease

**RMT bound toxin harmlessly excreted**





# COMPETITIVE ADVANTAGES

- **RMT cannot contribute to antibiotic resistance**
- **RMT has no effect on beneficial bacteria**
- **Easy, cost effective manufacture**
- **More rapid to market than chemicals/drugs**
- **No side effects**



# RECEPTOR MIMIC TECHNOLOGY

- **Pig pilot trial completed**
  - Clinical trials fourth quarter 2004
- **Product development commenced for:**
  - Poultry – E coli, Clostridia
  - Cattle - Clostridia
  - Pig rotavirus
- **Scale up to commercial production in TGA approved facility has commenced**
- **Contract manufacturing and distribution via established international veterinary companies**



# WHY CONTRACT MANUFACTURE?

- **Maximises shareholder returns**
  - Lower capital expenditure
  - No time required for factory construction
- **TGA approved product sourced from approved contract manufacturer means regulatory process starts much earlier**
  - Most rapid path to market
  - More sales during patent life
- **Flexibility in response to market demand**



# ADENOVIRAL DELIVERY VECTOR TECHNOLOGY

## Patented Platform Delivery System

**10 products currently under development**

- 7 vaccines against pig/poultry diseases
- 3 biological productivity enhancers
- Large international markets
- Rapid development of new products for new diseases
  - PRRS ('pig reproductive & respiratory disease')
  - Avian Influenza ('bird flu')

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# COMPETITIVE ADVANTAGES

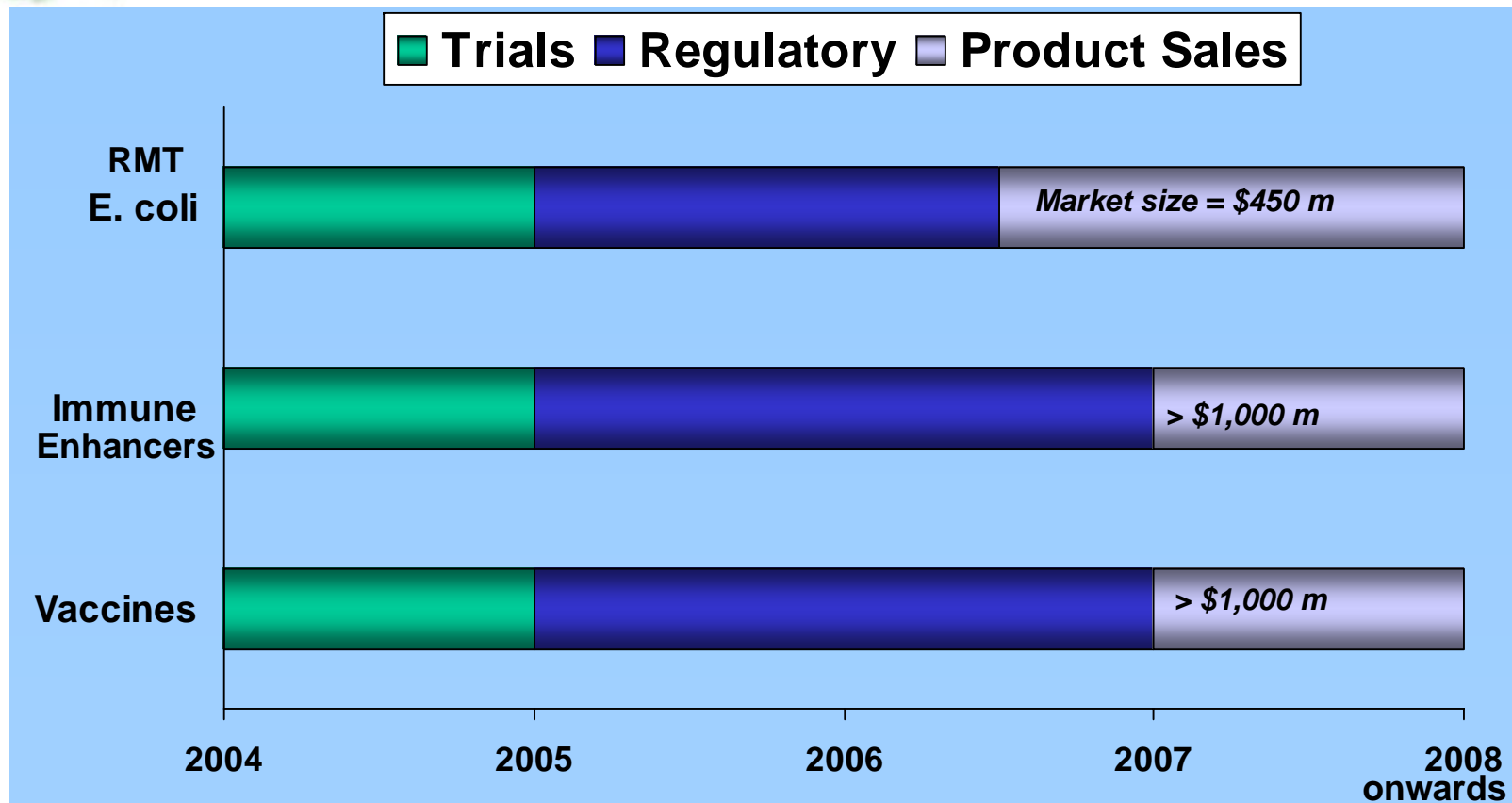
- **Vaccines are highly protective**
- **Easy to administer (feed, water or aerosol)**
- **Trials increase poultry/pig growth up to 10%**
- **Antibiotic feed additives deliver <4%**
- **Vaccines are effective against some diseases that existing vaccines cannot protect against**
- **Residue free in animal**
- **No genetic modification of animal**



# CURRENT AGREEMENTS

- **Merial (Merck and Aventis) – world leading animal health company (annual turnover of US\$1.7 b)**
  - **3 vector products under contract**
- **Market leader in Viral Vector Vaccines**
- **External recognition**
- **Merial to fund all regulatory, trial and scale up manufacturing costs**
- **Expertise/resources in international product development, regulatory affairs and marketing**

# LEAD PRODUCTS





# MANAGEMENT TEAM

- **Strong management team**
  - **proven experience in international animal health companies**
  - **Taking products from research to international markets**
  - **Management of R&D under commercial guidelines**
  - **Integrating research and regulatory affairs**



# STRATEGIC DIRECTION

**Continue to increase shareholder value**



**strong focus on commercialisation**



**contract 'bio-manufacturing' & partnering arrangements**



**lead products have large markets and near term market launches**

# CAPITAL STRUCTURE

<b>Shares on issue</b>	<b>108 m</b>
(major holders: board 15%)	
<b>Options :</b>	
<b>A. public: (11.25c exp. Dec 04)</b>	<b>2.8 m</b>
<b>B. consultants: (22.5c exp. Oct 07)</b>	<b>4.6 m</b>
<b>C. directors &amp; mgmt (30c exp. Dec 06)</b>	<b>6.0 m</b>
<b><u>Cash</u></b>	
<b>Current reserves – June 2004</b>	<b>\$1.0 m</b>
<b>Due from other sources in 2<sup>nd</sup> half 2004</b>	<b>\$1.1 m</b>
(options (see A), grants & other)	
<b>Burn rate per month (12mth average)</b>	<b>\$0.14 m</b>



# KEY POINTS

- **Biological solutions: replacing drugs and chemicals**
  - Poultry & pig health & growth promotion and disease control
  - Flea control in companion animals
- **Effective & safe - no residues or genetic modification of animal**
- **Large existing global markets & potential to expand markets**
- **Multiple commercialisation strategies**
- **Multinational pharmaceutical validation – including MERIAL – the world’s leading animal health company**
- **IP secure – patent position**
- **Relevant and experienced management of research, development, commercialisation and corporate finance**