CSL Limited
Biopharmaceuticals for Life

R&D Briefing

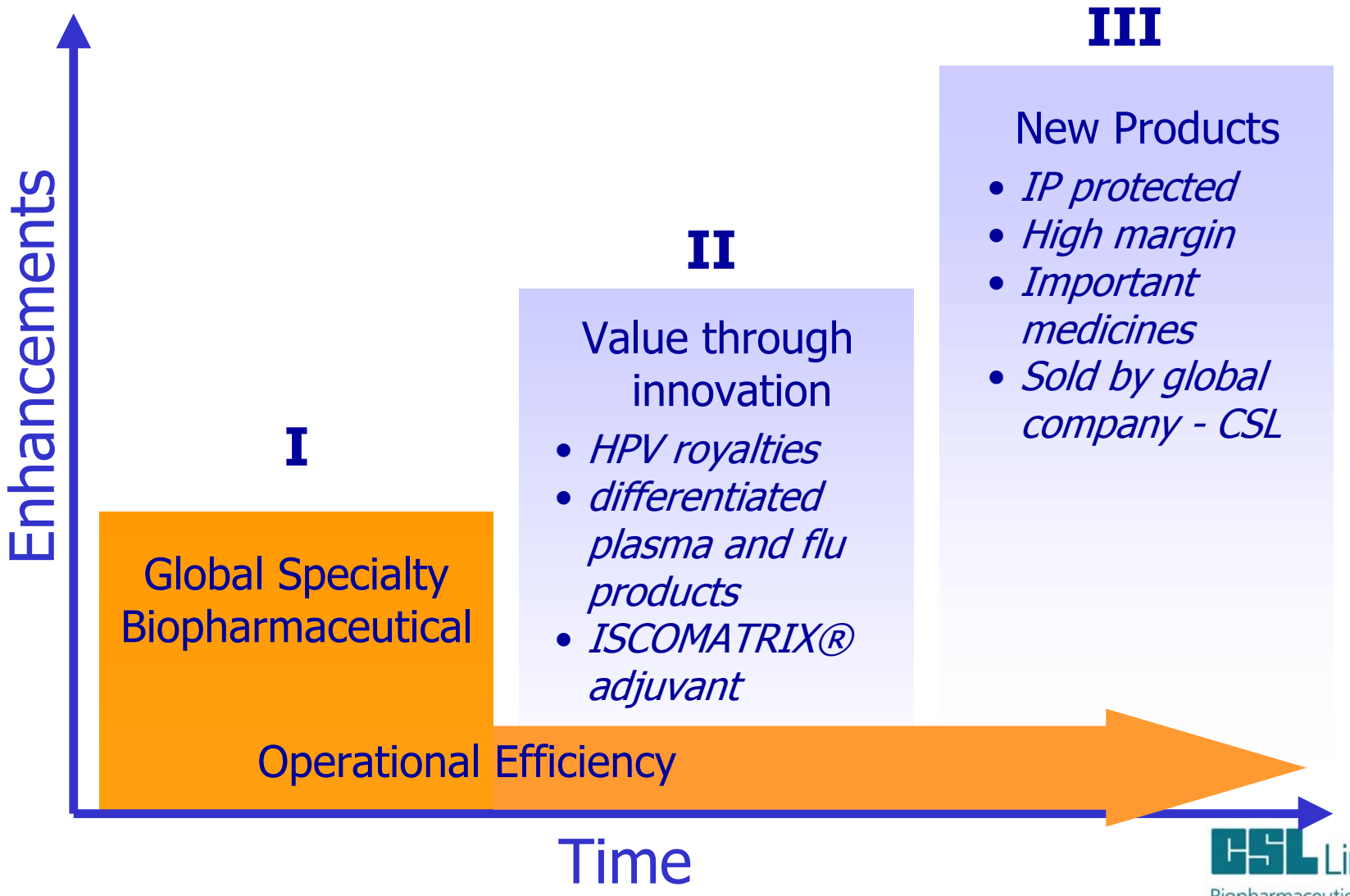
December, 2005

Agenda 2006 R&D Briefing

Welcome	Mark Dehring
Introduction and Biotech Project Update	Andrew Cuthbertson
– Strategy, portfolio and budget mix	
– HPV	
– rHDL: ACS	
Pandemic influenza vaccine development	
Tea break	
Plasma Products	Jeff Davies
ISCOMATRIX® Adjuvant	Debbie Drane
Recombinant Monoclonal Antibodies	
– Introduction	Andrew Cuthbertson
– Therapeutic Leukaemia Antibody	David Gearing
Q&A and wrap up	Andrew Cuthbertson

CSL Limited
Biopharmaceuticals for L

The Phased Development of CSL Limited



Developing the Right R&D Portfolio

- Investment strategy
- Staff and structure
- Budget mix

Insightful R&D Investment

Traditional Biologics	Therapeutic focus	Biotechnology	R&D focus
Plasma	Coagulation	Recombinant proteins	Improved products
Plasma	Specialty Products		Expand markets rHDL: ACS
Plasma Vaccines	Immune System	Antigens Adjuvants Antibodies	Immune modulation • cancer • inflammatory disease • eye disease Infection • HPV • Flu

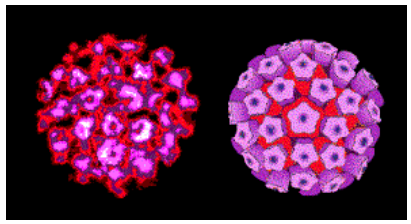
CSL Limited
Biopharmaceuticals for L

CSL Limited
Biopharmaceuticals for Life

CSL HPV Franchise

CSL HPV Franchise

- Merck's HPV vaccine Gardasil™
  - submitted to FDA for US approval December 1st, 2005
  - submitted MAA in Europe
  - submitted TGA in Australia



Breakthrough vaccine prevents cervical cancer, the second leading cause of death in women worldwide

- CSL's HPV therapeutic entering Phase 2 trial

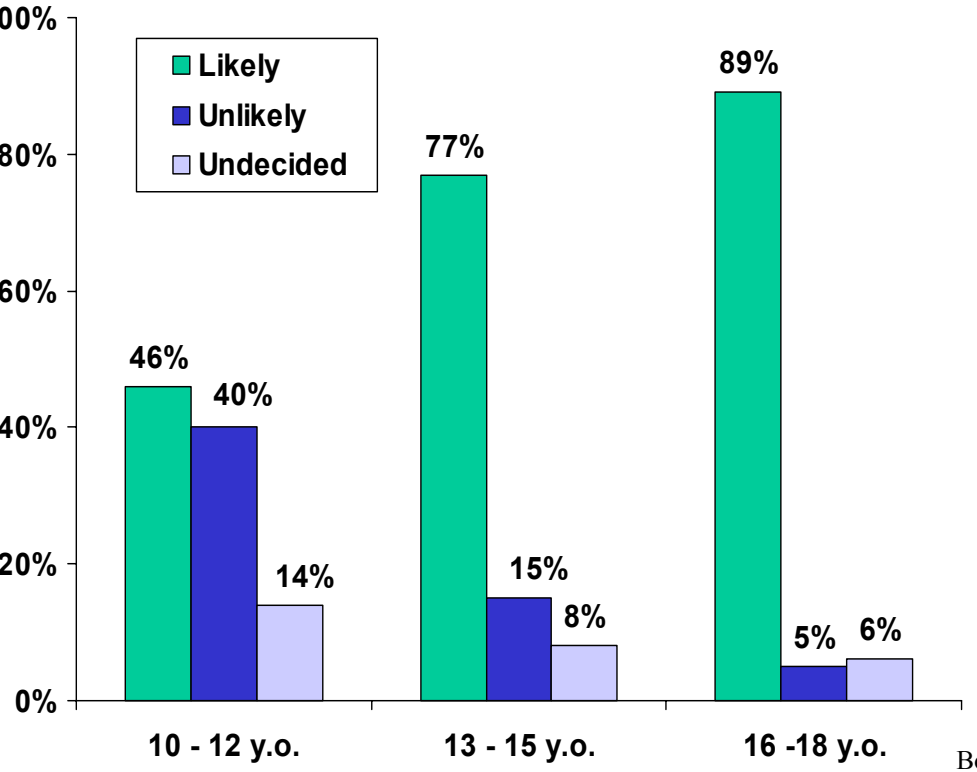
Cervical Cancer: A Serious Global Burden

Slides from Merck's Annual Business Briefing: Dec 15, 2005

- Globally 630 million people, including 20 million Americans, are currently infected with human papillomavirus (HPV)
- Infection with certain types of HPV is the cause of cervical cancer
- HPV infection also causes other cancers, genital warts and cervical dysplasia
- HPV causes a high level of personal and financial burden
  - HPV-related disease, including screening, follow-up and treatment costs about $5 billion per year in the U.S.

Significant Physician and Consumer Interest in HPV Vaccine

Strong Physician Intent to Vaccinate…



Market research conducted by CDC in September 2005 and presented at October 2005 ACIP meeting

and Consumer Vaccine Acceptance

74% of female college students would accept a vaccine

> 80% of females (18–30) believed HPV vaccine was good for themselves and their daughters

Growing support among stakeholder groups for role of HPV vaccine along with behavior education and screening

Boehner CW, et al. Viral Sexually Transmitted Disease Acceptability Among College Students. *Sexually Transmitted Diseases* 2003, Kahn JA, et al. Attitudes about human papillomavirus vaccine in young women. *International Journal of STD & AIDS* 2003; 14:300 – 306, Parent Quantitative Market Research Project: November 2003

CSL Limited
Biopharmaceuticals for L

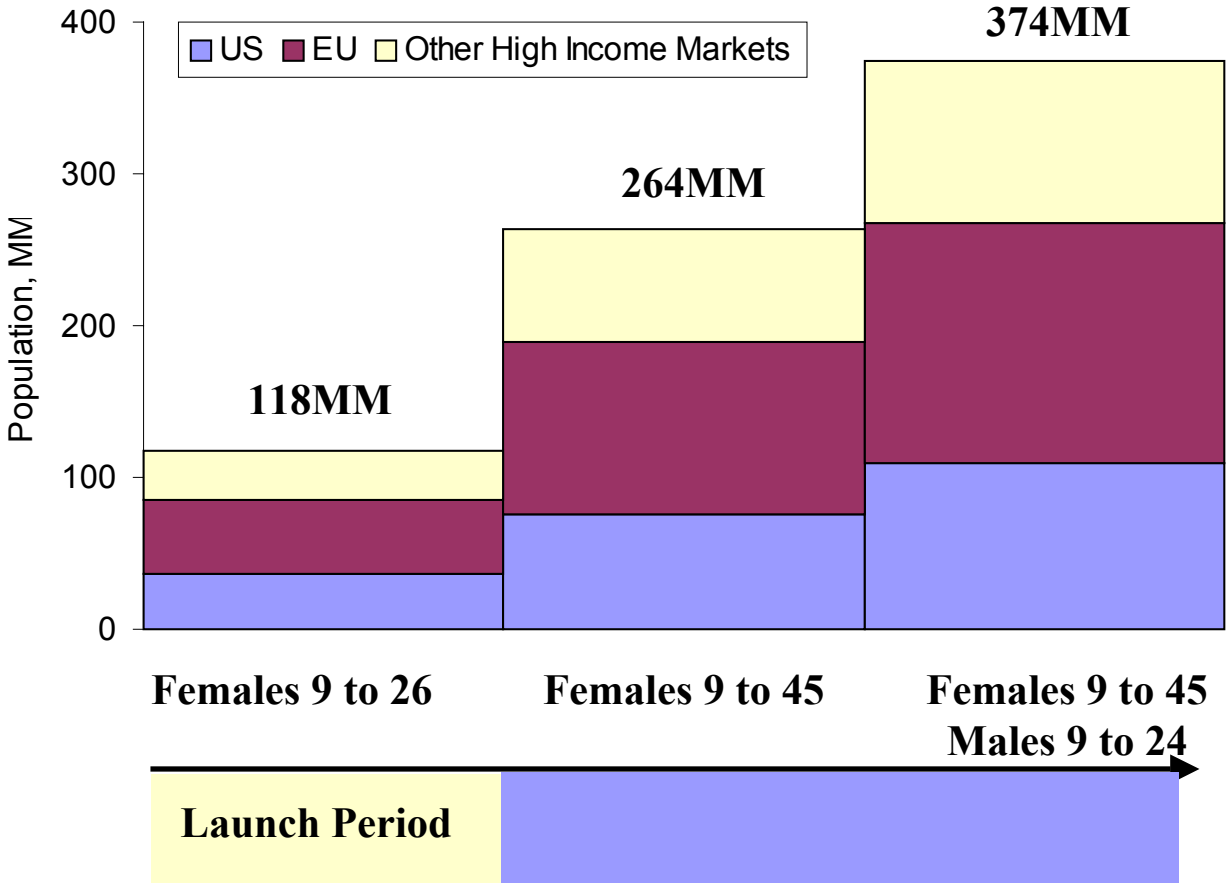
Gardasil® is Expected to be the First HPV Vaccine to Market with Broadest Coverage

- Represents a significant medical breakthrough in cancer prevention
- The only investigational cancer vaccine for the prevention of cervical cancer, cervical dysplasia and genital warts
- Broadest coverage will be provided through a quadrivalent vaccine
- Expected to be the first cervical cancer vaccine worldwide
- Submitted to FDA for U.S. approval on December 1, 2005; submissions in other markets will closely follow

CSL Limite
Biopharmaceuticals for L

Large Potential Vaccination Cohort

- Leverage first mover advantage to capture large appropriate catch-up cohort
- Future growth will be fueled by indications for additional populations



[1]Per capita GNI > $9,385; developing markets to be addressed via partnerships

Phase III Studies for Gardasil® with 25,000 Participants Demonstrated 100% Efficacy

Gardasil® prevented 100% of HPV 16/18/6/11-related CIN, AIS or EGL in women not yet infected with HPV 16/18 and/or 6/11 at enrollment

Endpoint	Vaccine Cases	Placebo Cases	Efficacy (%)
CIN 1, 2/3, AIS related to HPV 16/18/6/11	0	37	100
CIN 2/3 or AIS related to HPV 16/18	0	21	100
EGL related to HPV 6/11	0	40	100

Participants in 33 countries in all regions of the world

Prepared to Maximize Launch of Gardasil®

- Gardasil® represents a major breakthrough in cancer prevention
- Benefits a large vaccination cohort and addresses an important unmet medical need
- High global burden raises significant physician and consumer interest in a vaccine
- Merck is poised to rapidly convert widespread interest and excitement into appropriate routine vaccination globally
- Implementation of strategy will contribute to public health and to Merck's performance
- Potential future indications will drive continued growth

CSL Limite
Biopharmaceuticals for L

CSL Limited
Biopharmaceuticals for Life

Therapy of Existing Lesions Enlarges CSL's HPV Franchise

CSL HPV Therapeutic

- Not based on VLPs
- Wholly owned project
- E6E7 plus ISCOMATRIX® adjuvant
- Issued U.S. patent
- On target for phase 2 study in AIN therapy to commence Q2 2006

CSL Limited
Biopharmaceuticals for Life

CSL Pandemic Influenza Vaccine Development

Current Pandemic Clinical Trial

- Testing human immune response to avian flu vaccine candidate

- Testing effective doses which can be used practically to protect Australian population
  - one or two doses
  - 7.5 and 15 mcg antigen
  - effect traditional immune stimulant

Decision Tree Following February Pandemic Vaccine Clinical Data

- Best case
- Middle ground
- Worst case

Research Evaluation: ISCOMATRIX® - potent immunostimulant

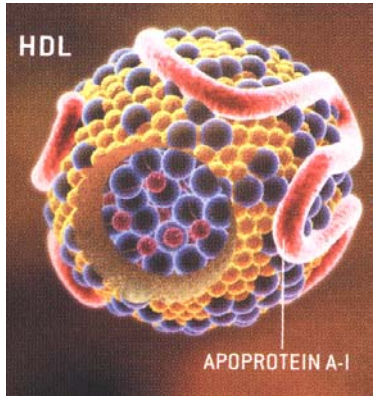
- Dose-sparing
- More effective
- Plant capacity + dose-sparing = more rapid response to pandemic threat

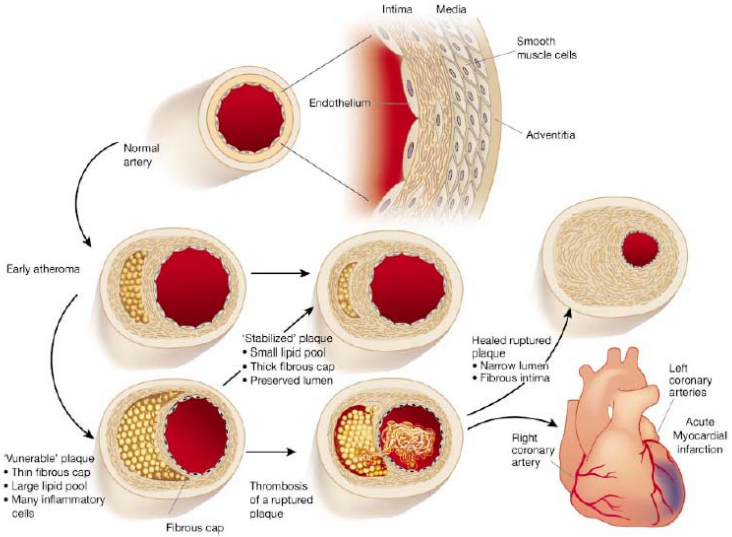
CSL Limited
Biopharmaceuticals for Life

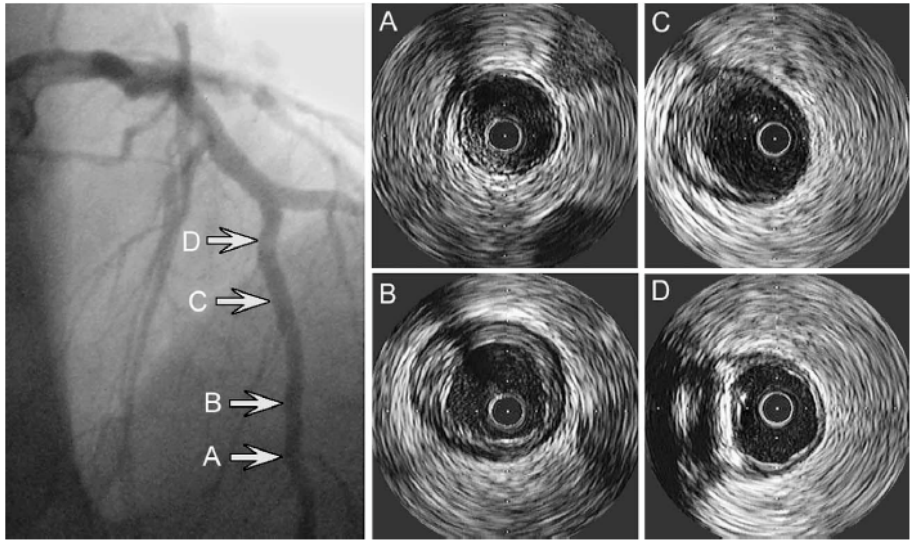
Reconstituted High Density Lipoprotein Clinical Studies

rHDL: Acute Coronary Syndromes

- <u>ACS (ERASE Study)</u>
- sites actively recruiting - study progressing well
- aiming for initial data to be available Q3 2006







CSL Limited
Biopharmaceuticals for Life

Plasma Products R&D

Jeff Davies

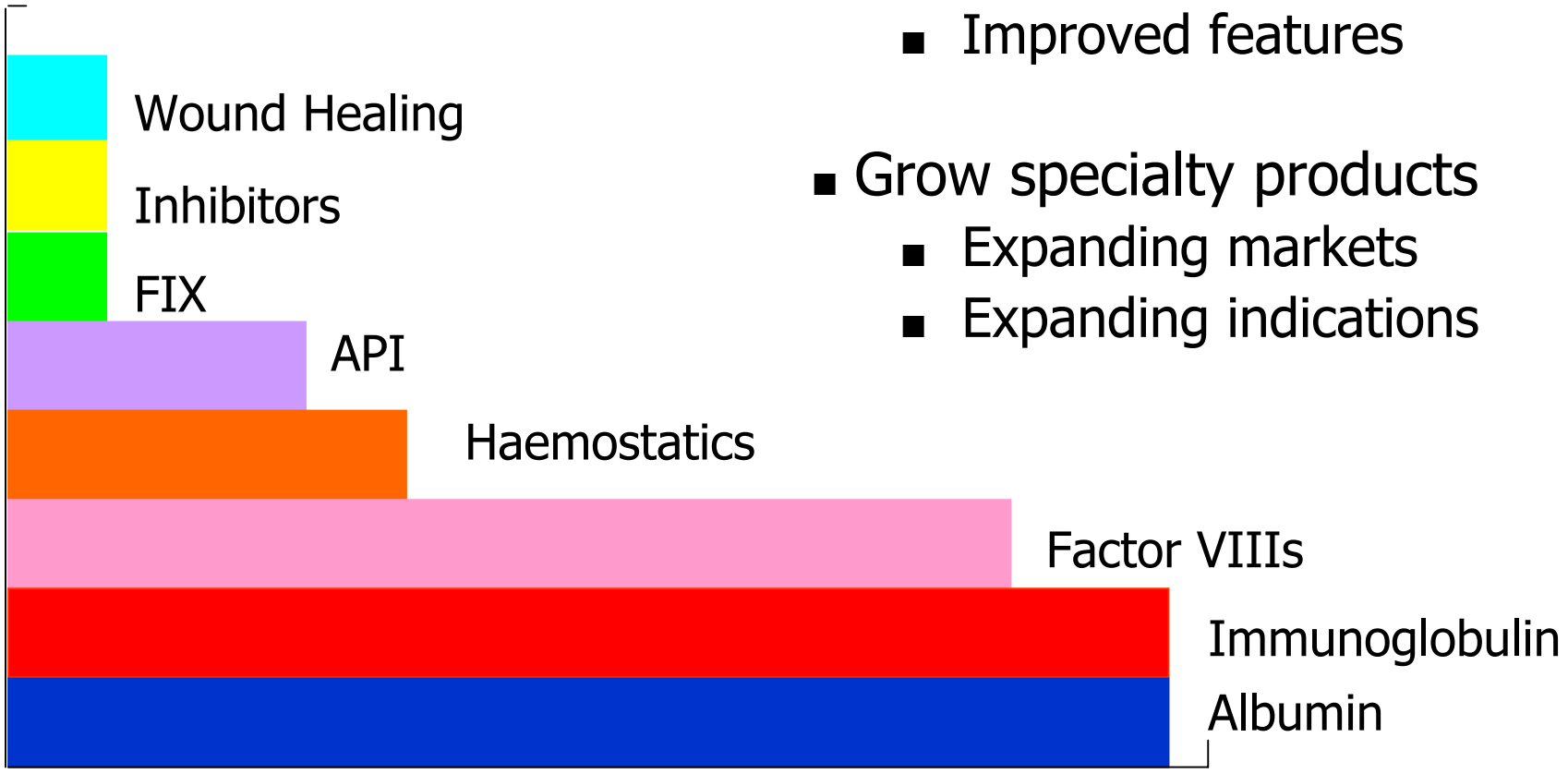
General Manager, CSL Bioplasma

Plasma R&D Centres of Excellence

- Marburg, Germany
  - Coagulation, speciality products, wound healing
- Bern, Switzerland
  - Immunoglobulins, reconstituted HDL
- Melbourne, Australia
  - Product support, new separation and filtration technologies
- Kankakee & King of Prussia, USA
  - Alpha-1 Proteinase inhibitor, fractionation, US clinical trials

Opportunities for Growth

- Grow established markets
  - Manufacturing efficiency
  - Improved features
- Grow specialty products
  - Expanding markets
  - Expanding indications



Benefits of Integration for Key Products

IVIG	~~• Gamma P~~ ~~• Gamma Venin~~ ~~• Venimmune~~		• **Carimune / Sandoglobulin**
Anti-D	~~• Rhesogam~~		• **Rhophylac**
Critical Care	• **Albuminar**		• **ZLB-Albumin / Human Albumin**

Improved Operational Efficiencies

Improved Product Features

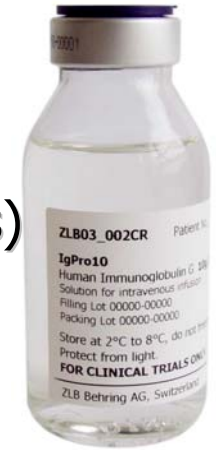
CSL Limited
Biopharmaceuticals for L

Strengthening our IgG Portfolio

Sandoglobulin ®
(Lyophilized, IV)
Carimune ®

Sandoglobulin ® Liquid
(12%, IV)

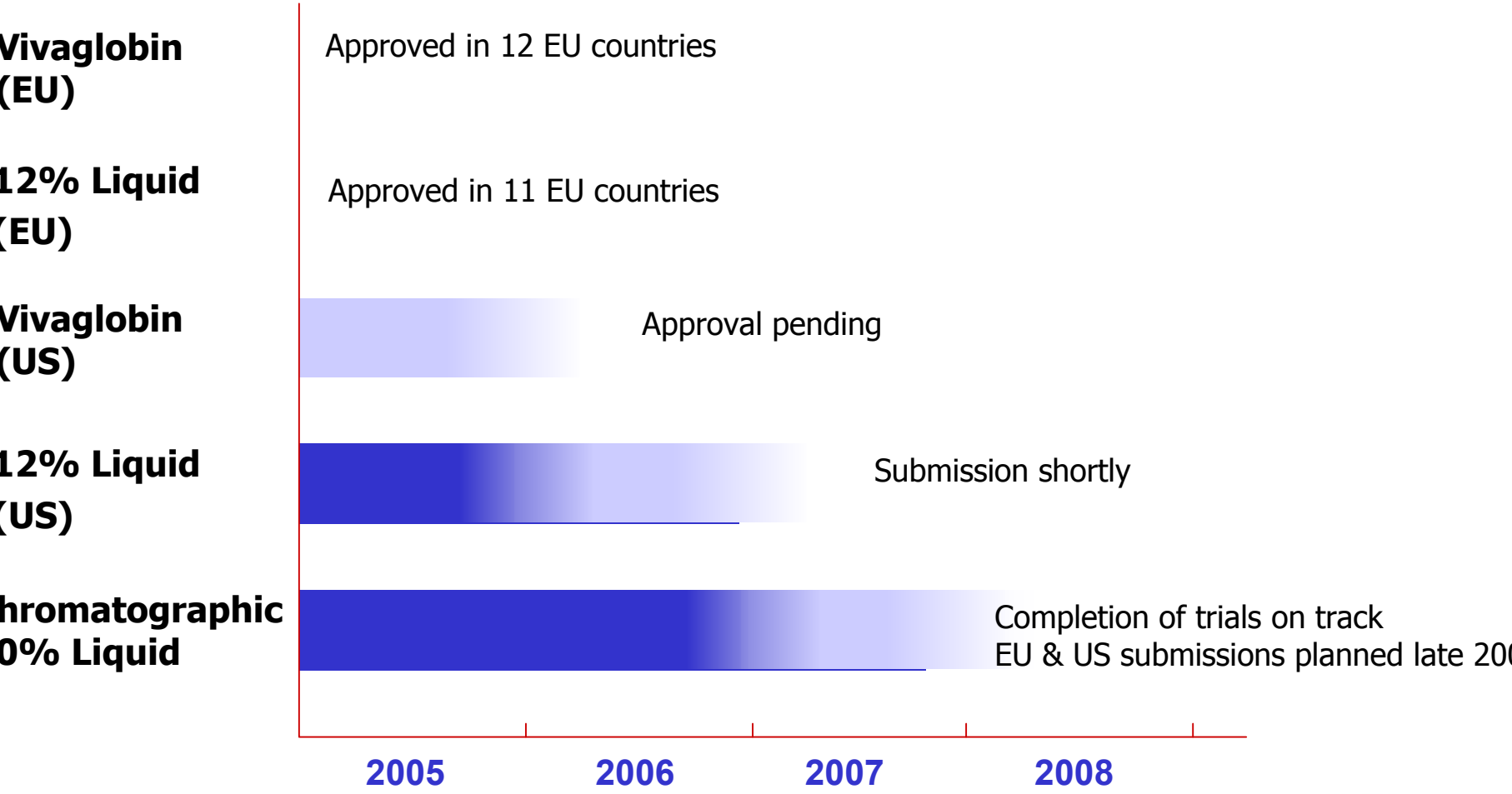
Vivaglobin ®
(16%, Sub-cutaneous)



Chromatographic
(10%, IV)

CSL Limited
Biopharmaceuticals for L

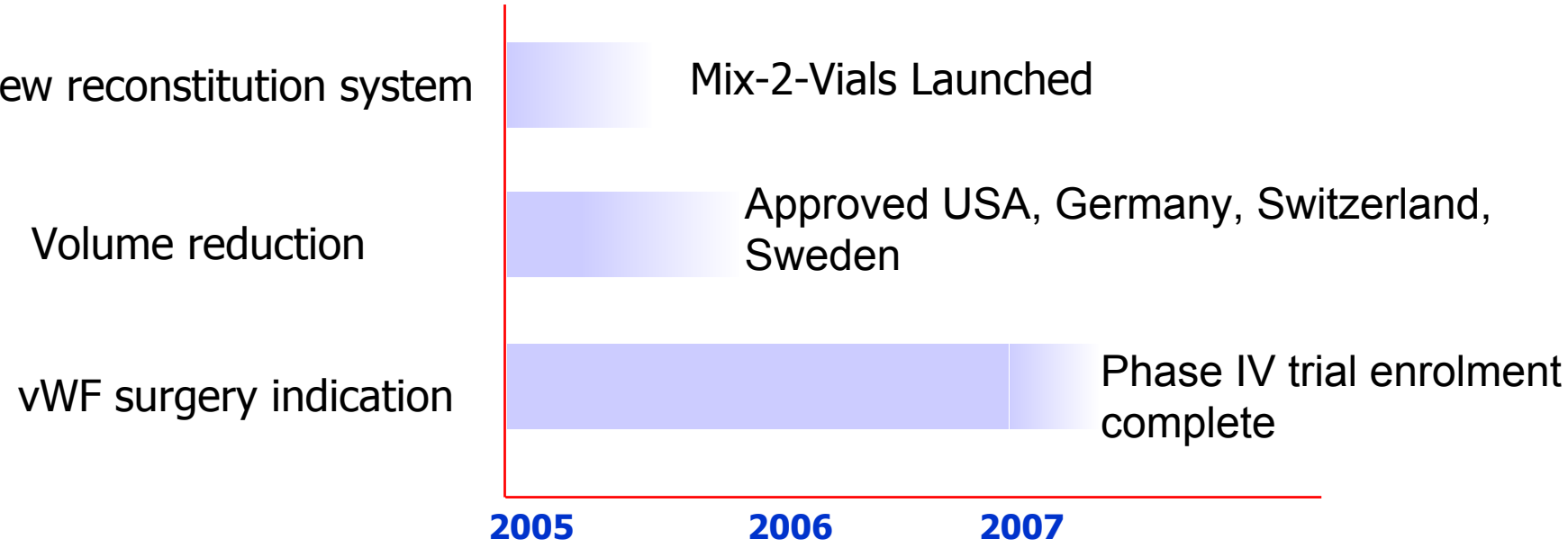
Strengthening our IgG Portfolio



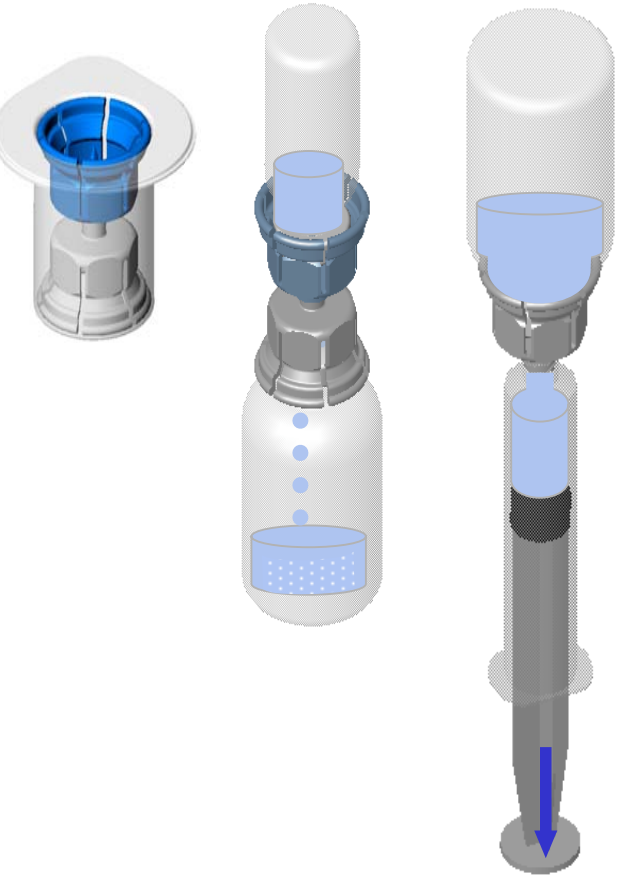
Estimated submission & approval timings by calendar year
Regulatory review timeframe may take considerable time and is difficult to predict

CSL Limited
Biopharmaceuticals for L

Coagulation Portfolio: Humate/Haemate P



Plasma Products



ZLB Behring Products

Haemate/Humate-P

CSL Bioplasma Products

Biostate

PTX-HT

Thrombotrol-VF

MonoFIX-VF

Maximising Profitable Litres

- Haemocomplettan (fibrinogen)
  - congenital deficiency
  - new markets/indications

- Fibrogammin (FXIII)
  - congenital deficiency
  - new markets/indications

Berinert P (C1 Esterase Inhibitor)

- *Clinical trial design for treatment of acute episodes approved by the FDA and trial commenced*

- Competitive advantage
  - half life
  - multifactorial action
  - well tolerated

Alpha-1-Proteinase Inhibitor Deficiency

- Expanded market in USA
- Investigating expanded use internationally
- Clinical trial (Phase IV) commenced
- Kankakee output to increase in 2006

Zemaira™

alpha$_1$-proteinase inhibitor (Human)

Expect Purity. Expect Convenience.

CSL Limited

Biopharmaceuticals for L

Integration Complete and Projects Well Advanced

- Immunoglobulin manufacturing delivering on yield projections (synergy case)
- Immunoglobulin portfolio improvements advanced
- Coagulation product improvements delivered
- Specialty product R&D programs advanced

CSL Limited
Biopharmaceuticals for Life

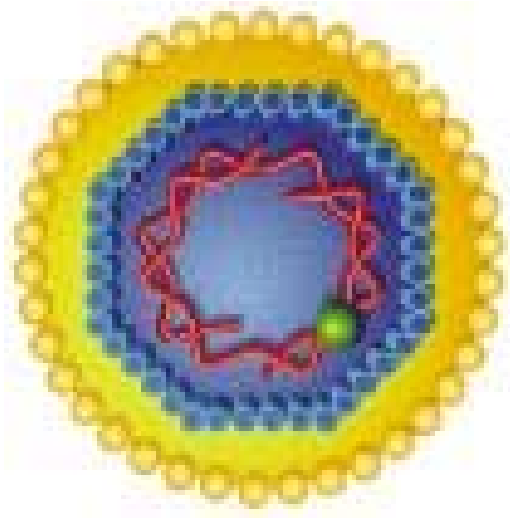
ISCOMATRIX® Adjuvant

Debbie Drane

Program Leader

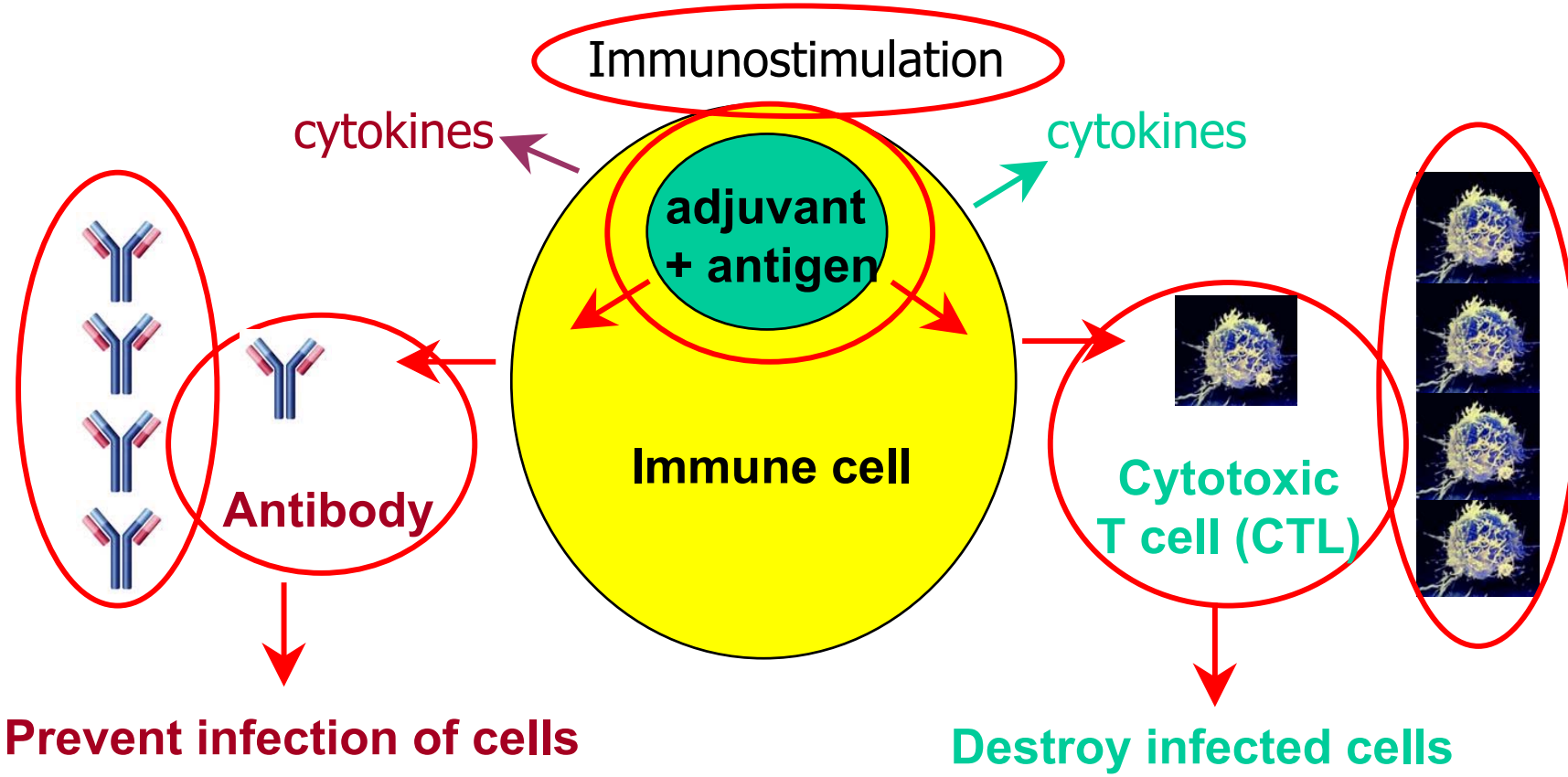
Vaccines and Adjuvants

- Vaccines
  - traditional
  - recombinant antigens
  - therapeutic
- Adjuvants
  - many in research
  - few in development



Virus particle

Adjuvant Mechanisms: "Help" Immune Response



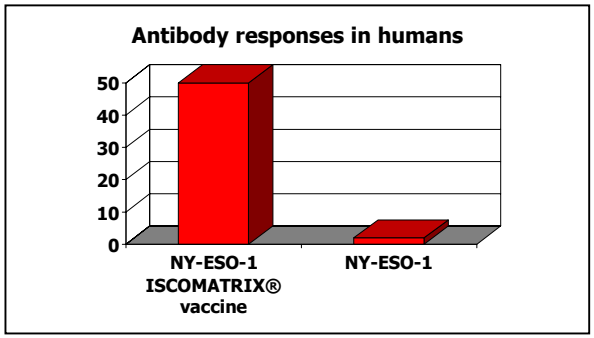
ISCOMATRIX® adjuvant has multiple functions

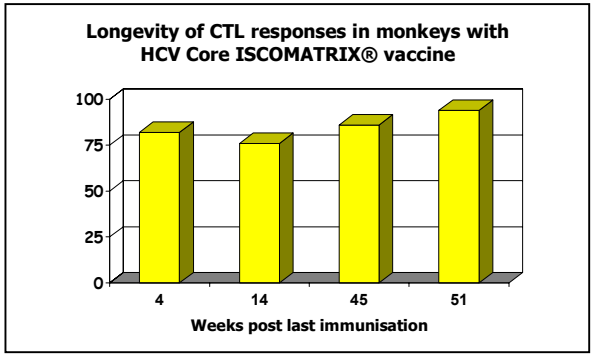
CSL Limited
Biopharmaceuticals for L

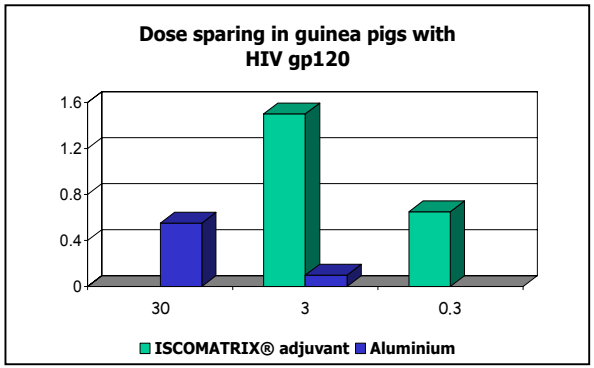
ISCOMATRIX® Adjuvant: Uniquely Positioned

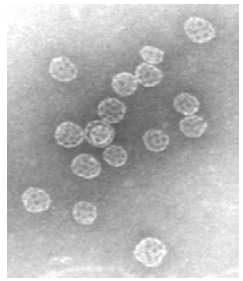
Technology	Immuno-stimulatory	Delivery	Ab	CTL
ISCOMATRIX® adjuvant	✓	✓	✓	✓
Aluminium	✓		✓	
MF59		✓	✓	
MPL	✓		✓	
Virosomes		✓	✓	
CpG	✓		✓	✓
QS21	✓		✓	✓

ISCOMATRIX® Adjuvant Meets All Criteria









- "Looks" like virus
- Antibody and CTL responses in animal models and humans
- Long lasting responses
- Dose sparing capability
- Good safety profile in humans
- Industrialised

CSL Limited
Biopharmaceuticals for L

Development of Industrialised Manufacturing Processes

- Optimised proprietary processes
  - ISCOPREP® saponin (critical component)
  - ISCOMATRIX® adjuvant
- Processes consistent, robust, scalable
- Product stable and characterised
- Pilot facilities in Melbourne

CSL Limited
Biopharmaceuticals for L

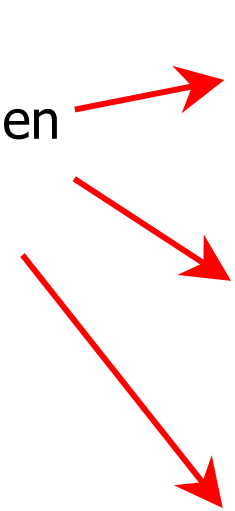
Commercialisation Strategy Drives Long Term Value

- Internal projects
- License by application to major vaccine manufacturers
- IP
  - patents, know how, trademarks
- Worldwide supplier of ISCOMATRIX® adjuvant

ISCOMATRIX® Adjuvant: Attractive Package for Partners

ISCOMATRIX® adjuvant + antigen

- GMP manufacturing
- Consistent, scalable process
- Defined components
- Characterised
- Integrated action
- Range of antigens
- Toxicology package
- Clinical data
- IP portfolio



CSL
- E6E7 and NY-ESO-1

Merck
- multiple applications

Chiron
- HCV

Sanofi Pasteur
- Chlamydia

CSL Limited
Biopharmaceuticals for L

ISCOMATRIX® Adjuvant: Commercialised

- Unique position
- IP protected
- Major partners
- Commercial manufacture
  - Kankakee (Chicago)
    - facilities
    - process expertise

CSL Limited
Biopharmaceuticals for L

CSL Limited
Biopharmaceuticals for Life

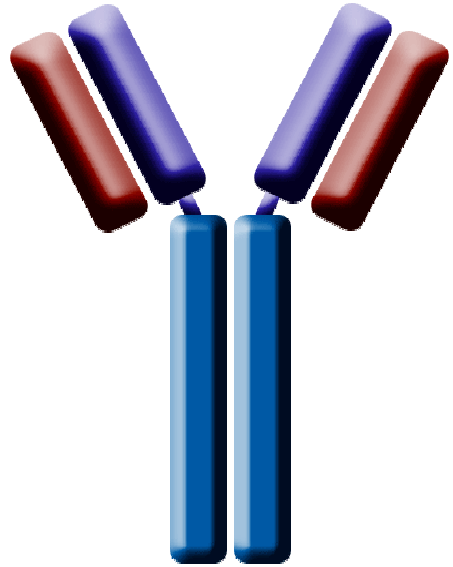
TLA Recombinant Antibody

David Gearing PhD

Director, Research

Recombinant Antibodies

- Significant part of biotech sector
- Many profitable drugs
- Good success rate
- Proteins



Selected Recombinant Antibodies

ReoPro®	Haemostasis
Synagis®	Infection
OrthocloneOKT3®	Immunological
Zenapax®	Immunological
Remicade®	Immunological
Humira®	Immunological
Xolair®	Immunological
Raptiva®	Immunological
Rituxan®	Oncological
Herceptin®	Oncological
Mylotarg®	Oncological
Campath-1H®	Oncological
Avastin®	Oncological
Erbitux®	Oncological
Zevalin®	Oncological
Bexxar®	Oncological

Acute Myeloid Leukemia

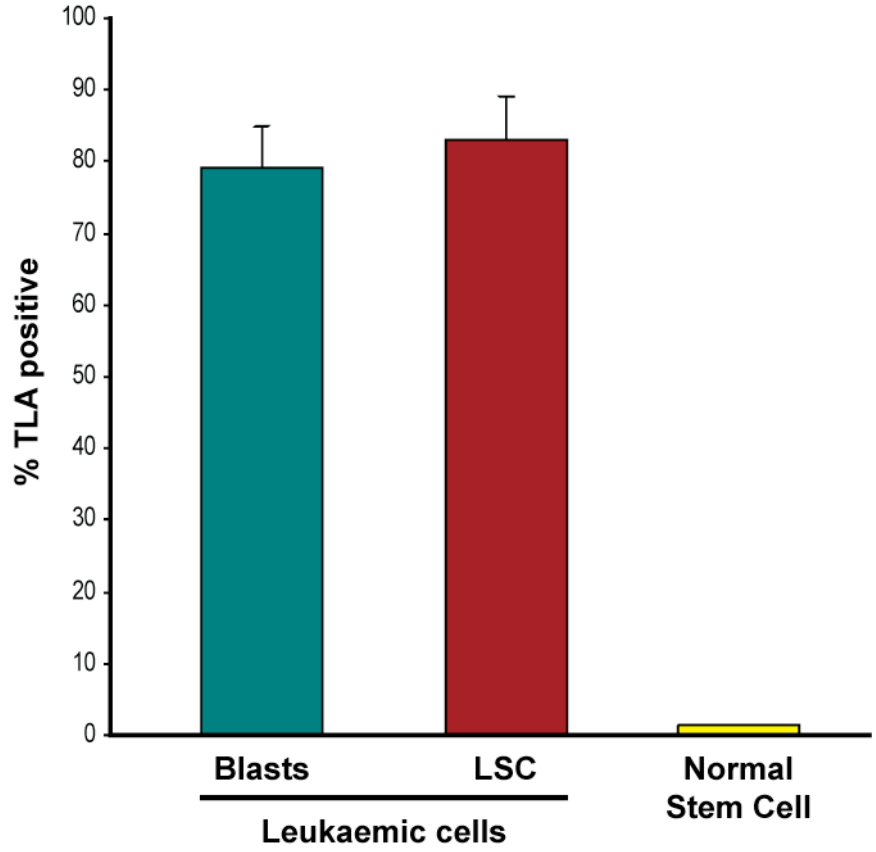
- Anaemia, infection, bleeding
- US incidence 10,500
- 18% 5 year survival, often only months
- First line therapy chemo +/- BMT
- 80% relapse / refractory
- Limited treatment options

Therapeutic Leukaemia Antibody

- IP from Australian academic collaborator
- Target differentially expressed between leukemia and normal blood cells
- Target common to all types of AML

TLA target: Expression on AML

- On mature leukaemic blasts and stem cells



TLA Target: Correlation With Outcome

TLA target expression level	% of patients surviving (months)		
	0-20	20-40	40-60
Low	48	22	30
High	90	5	5

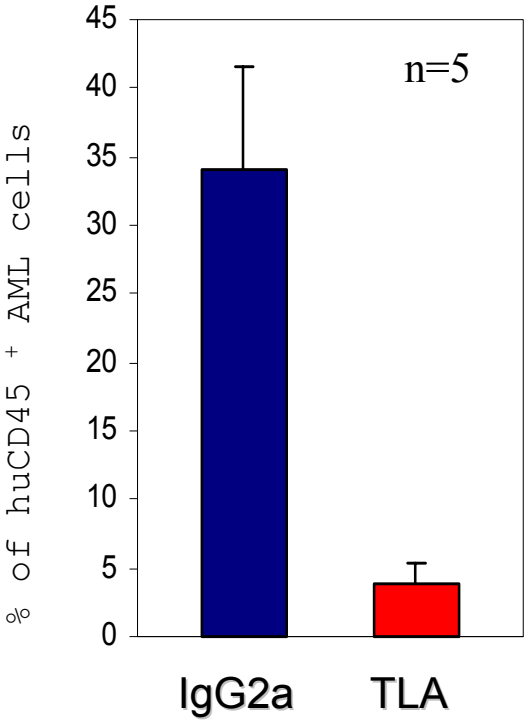
In vivo Leukaemia Assays

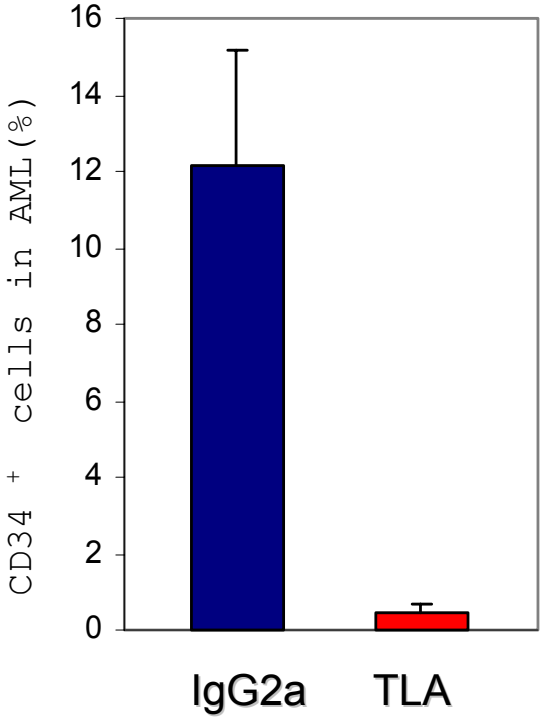
AML

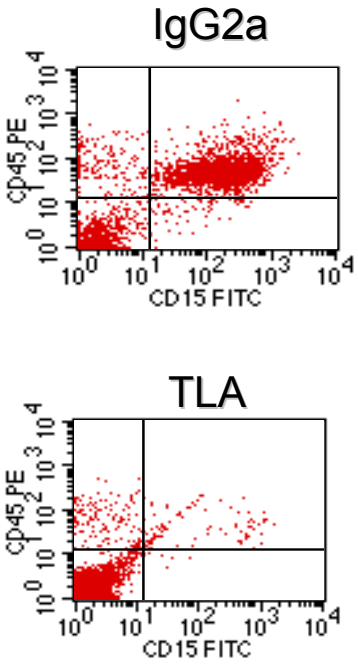
4-8 weeks

Engraftment: AML stem cells initiate human leukemia when transplanted into irradiated NOD/SCID mice. Quantitative assay for AML stem cells.

Suppression of AML Xenograft *in vivo*





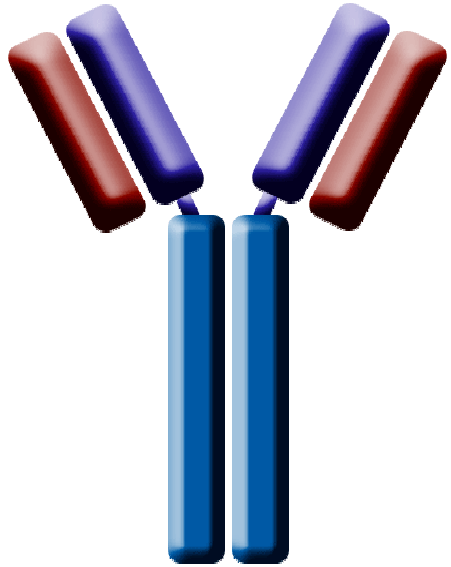


TLA 2006

- POC studies
- Humanized antibody
- Cell line development
- Scale up
- Preclinical toxicity
- Clinic targeted for 18-24 mo.

TLA Recombinant Antibody

- Novel leukaemia target
- IP protected antibody
- Efficacy vs AML in vivo
- Humanized
- Stage: Pre-clinical



Insightful R&D Investment

Traditional Biologics	Therapeutic focus	Biotechnology	R&D focus
Plasma	Coagulation	Recombinant proteins	Improved products
Plasma	Specialty Products		Expand markets rHDL: ACS
Plasma Vaccines	Immune System	Antigens Adjuvants Antibodies	Immune modulation • cancer • inflammatory disease • eye disease Infection • HPV • Flu

CSL Limited
Biopharmaceuticals for L

Agenda

▪ Welcome	Mark Dehring
▪ Introduction and Biotech Project Update	Andrew Cuthbertson
– Strategy, portfolio and budget mix	
– HPV	
– rHDL Stroke and ACS	
▪ Pandemic influenza vaccine development	
▪ Tea break	
▪ Plasma Products	Jeff Davies
▪ ISCOMATRIX® Adjuvant	Debbie Drane
▪ Recombinant Monoclonal Antibodies	
– Introduction	Andrew Cuthbertson
– Therapeutic Leukaemia Antibody	David Gearing
▪ Q&A and wrap up	Andrew Cuthbertson

CSL Limite
Biopharmaceuticals for L

CSL Limited
Biopharmaceuticals for Life

END