BENITEC
BIOPHARMA
silencing genes for life™

Corporate Presentation

November 2012

Forward Looking Statements

This presentation contains forward looking statements that involve risks and uncertainties.

Although we believe that the expectations reflected in the forward looking statements are reasonable at this time, Benitec Biopharma can give no assurance that these expectations will prove to be correct.

Actual results could differ materially from those anticipated. Reasons may include risks associated with drug development and manufacture, risks inherent in the regulatory processes, delays in clinical trials, risks associated with patent protection, future capital needs or other general risks or factors.

Overview

- **Developing therapeutics based on gene silencing technology**
  - Located in Sydney, AU (ASX: BLT)
  - Pipeline of in-house and partnered programs
  - Dominant IP position in RNAi (ddRNAi)
- **Proprietary, inherent value of ddRNAi**
  - "Silences" disease causing genes by delivering short hairpin RNA (shRNA) that binds to and cleaves a specific gene sequence in a target cell
  - Following delivery of an expression construct, uses the patient's own cellular machinery to continuously manufacture the therapeutic shRNA
  - Provides long-term therapeutic benefit from a single administration
  - Conventional "delivered" siRNA approaches require repetitive administration and often activate non-specific immune responses
- **New management/Board (since June 2010) focused on executing on technology potential**
  - Planning at least one Phase I/IIa trial in 2013 with POC data in up to four other programs in 2013
  - One partnered program commencing Phase I/II trial in HIV/AIDS in 4Q12

Pipeline

Indication	Partners/ Collaborators	Discovery	Pre-clinical	Clinical
HIV/AIDS	Calimmune			
Hepatitis C	**Benitec/Tacere**			
Drug resistant lung cancer	University of New South Wales			
Cancer-associated neuropathic pain	Stanford University			
Hepatitis B	Biomics Biotechnologies			
Oculopharyngeal muscular dystrophy	Royal Holloway, University of London			
Age-Related Macular Degeneration	**Benitec/ Tacere**			
Retinitis Pigmentosa	Genable			

Out-licensed program

In-house program

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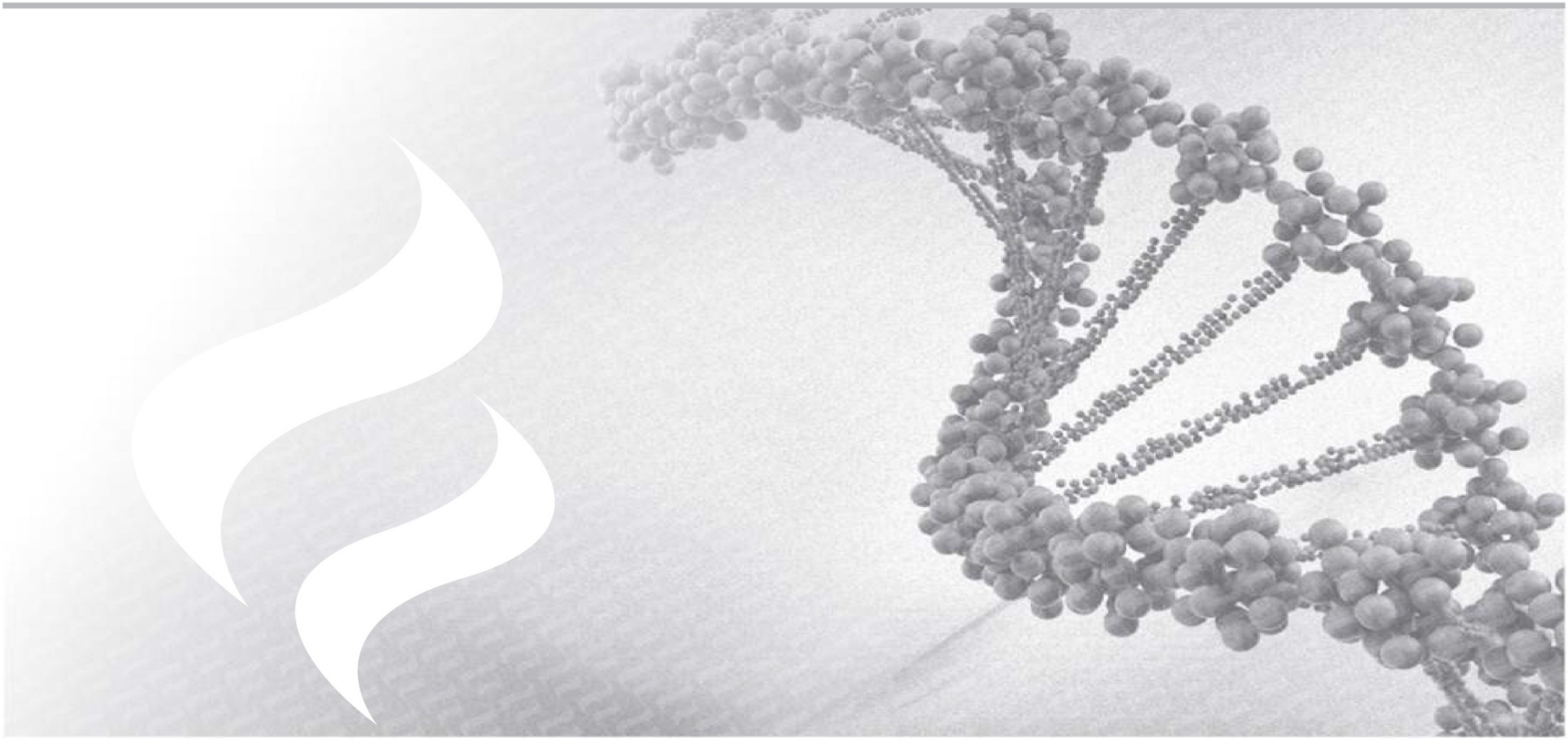
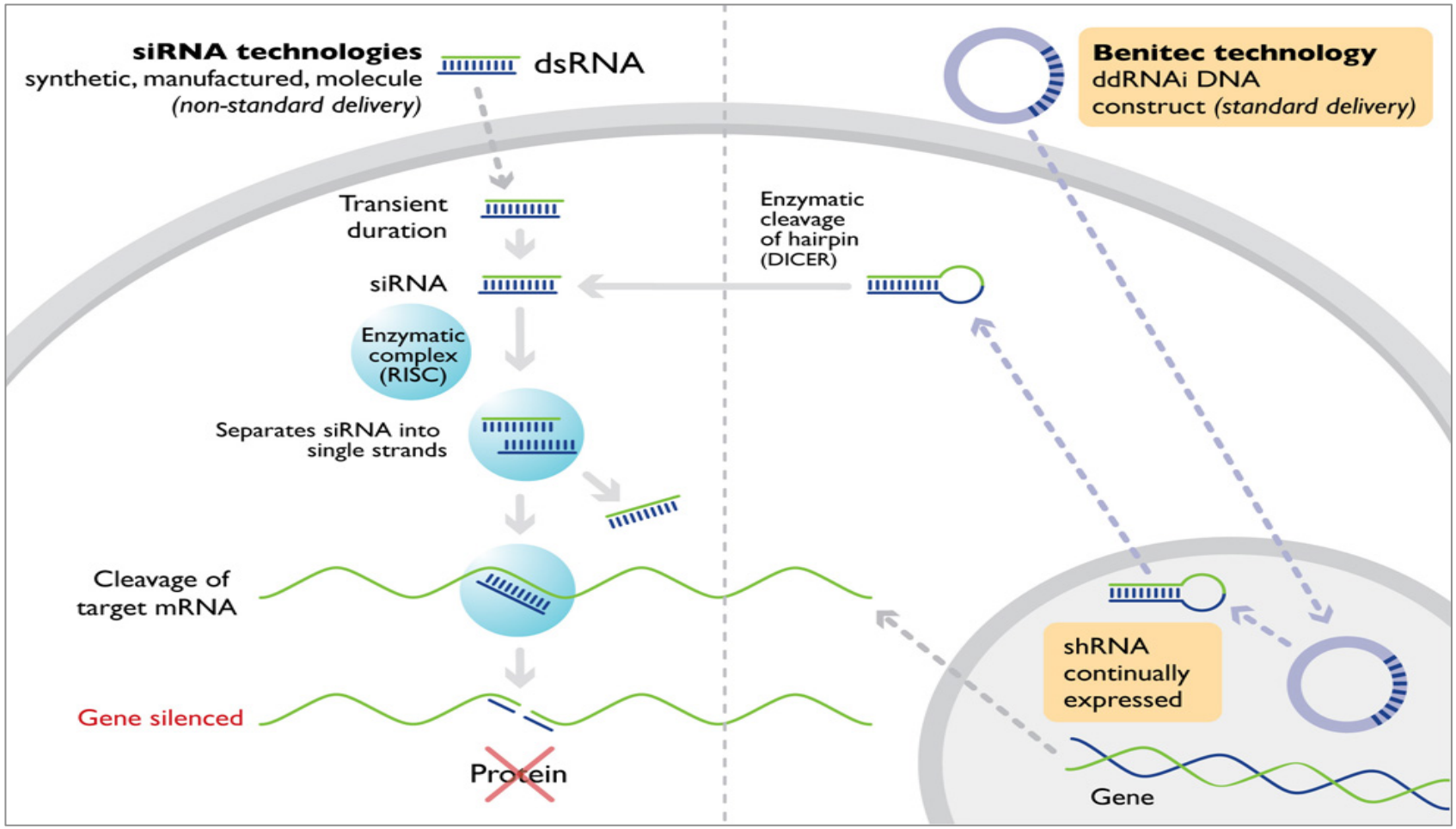
ddRNAi Profile



Gene Silencing Approaches: ddRNAi versus siRNA



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Two Approaches for RNAi-Mediated Gene Silencing

ddRNAi (including shRNA):

Produced intracellularly from expression constructs

Expressed within nucleus, shRNA do not interact with or activate TLRs

Rational design must be used to ensure proper strand loading and controlled expression

A single administration can lead to a sustained therapeutic effect

Uses viral vector capsids/coats for targeted delivery

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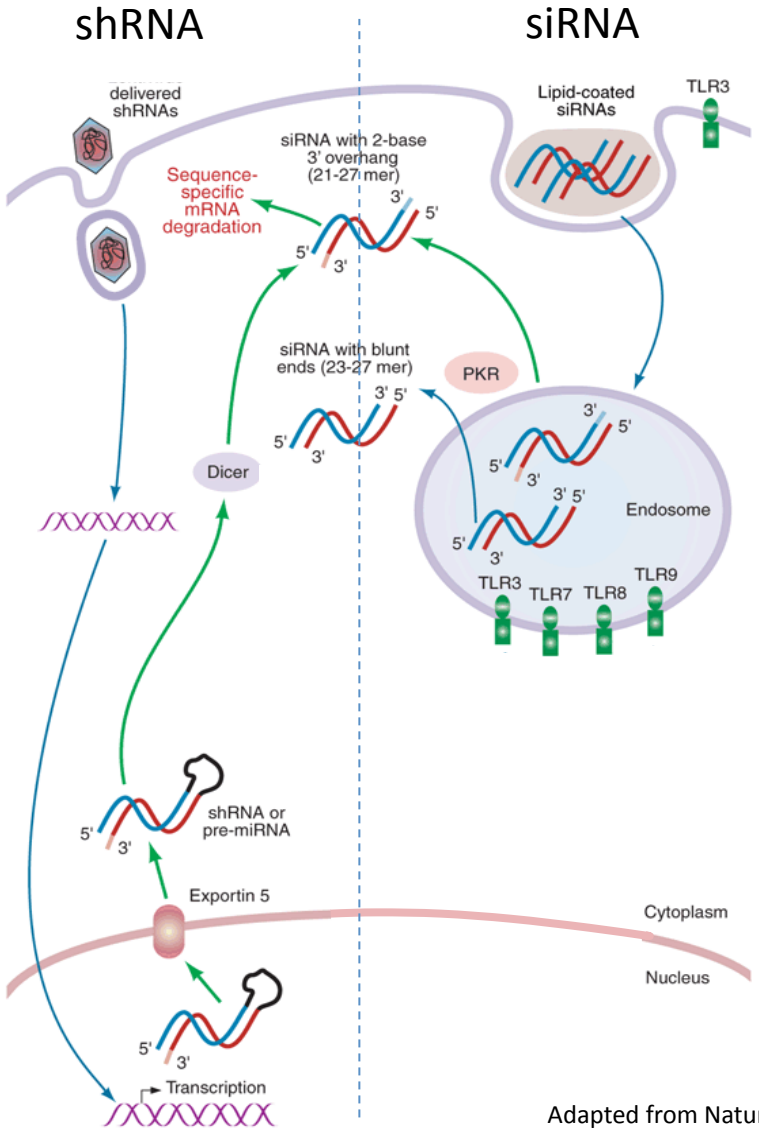
Genable

gradalis

Tacere therapeutics

Calimmune



siRNA:

Pre-synthesized & delivered

Can interact with TLRs resulting in interferon responses. Potentially can be eliminated via rational design or chemistry

Can use chemistries to guide appropriate strand loading

Requires repeat administration for sustained therapeutic effect

Relies upon lipids and nanoparticles for delivery

Targeted delivery methods are complex and/or inefficient

Alnylam PHARMACEUTICALS

MARINA BIOTECH

Quark

RXi

SILENCE

MERCK

Tekmira

Adapted from Nature Biotechnology 24, 521 - 522 (2006

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ddRNAi Competitive Advantages

- ddRNAi can potentially target over 22,000 genes across multiple indications including cancer, neurological disease, infectious disease, autoimmune disease, and genetic disease
- Can design therapeutics simply on the basis of sequence rather than laborious, expensive and time consuming HTS
- Ability to use range of tissue specific delivery options – viral and non-viral
- Long-term therapeutic silencing of genes can be achieved from a single dose
- RNAi is catalytic: a single shRNA can cleave multiple target mRNAs
- A single construct can express multiple, independent therapeutic shRNAs against several gene targets
- Lower cost of goods and easier manufacturing

Established IP Position

- Exclusive worldwide irrevocable license from CSIRO to develop and commercialize all human applications of expressed RNAi (or DNA-directed RNA interference (ddRNAi)) technology
- No royalty obligations to CSIRO (CSIRO is a shareholder)
- Around 100 filed and issued patents, with more than 40 granted or allowed throughout the U.S., UK, Japan, Europe, India, Canada, and Australia
- Benitec continues to develop new patents for specific applications

Patent Estate History

- **Former management initiated litigation in mid 2000s against Nucleonics in defense of Graham family of patents and, as a result, were required to defend them in re-examinations in all major jurisdictions**
- **Benitec prevailed in all patent negotiations with its patents re-examined and re-issued in all major jurisdictions outside Europe and the U.S.**
- **In 2010, the US Patent Office's Board of Appeal reversed previous objections, re-issuing the U.S. 099 patent in question**
- **Several more U.S.-based patents re-issued following the 099 decision**
- **Success in IP litigation highlights the strength of Benitec's patent position**
- **UK Patent Request for Revocation of Graham patent withdrawn in 2012**
- **EU Graham Patent in process of being issued –** management confident that current opposition will be resolved favorably based on US experience

Bi-Modal Growth Strategy

ddRNAi technology

Human therapeutics

Long-term value by developing own pipeline and licensing drugs to pharma after Phase Ib/II

$$$

Revenues from Upfronts, milestones & royalties

Immediate opportunities to leverage potential for wide range of therapeutics

Deals with biotechs & pharma

$

Joint ventures

$$

Research tools

Exploit platform as a research tool through technology licensing

$

Revenues from Licensing

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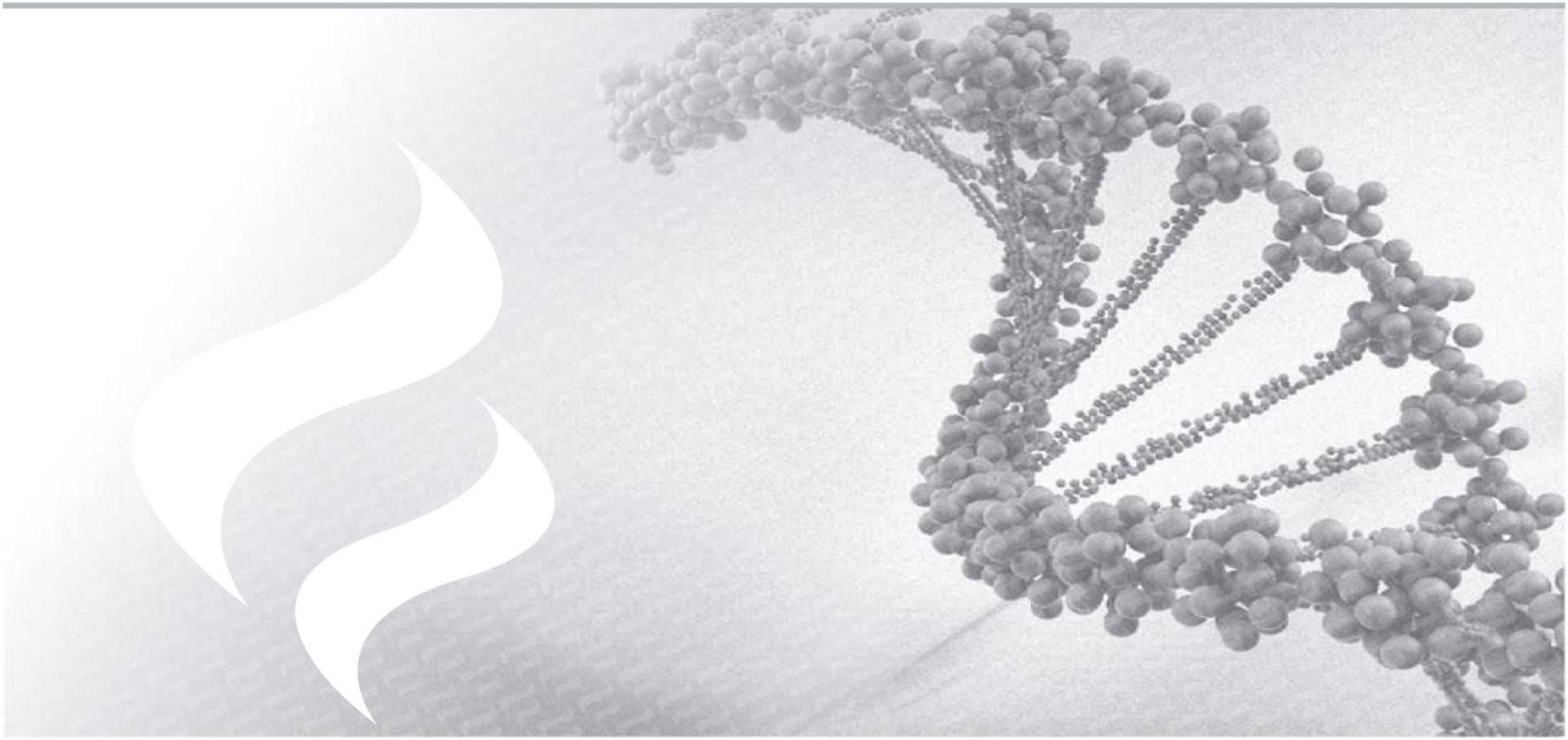
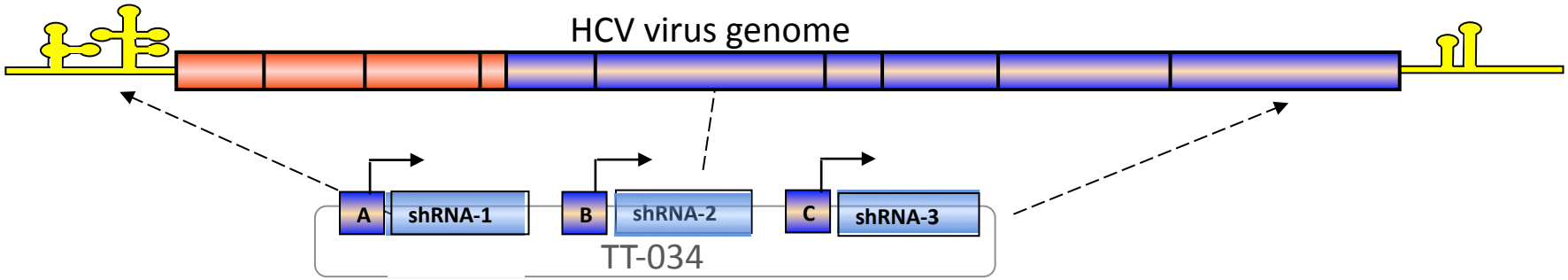
Program Overview



Lead In-house Program – HCV (TT034)

- **Benitec Approach:**
  - A "one shot monotherapy cure," intended to clear HCV with a single injection
    - TT-034 was a high priority program at Pfizer
    - TT-034 is ready to enter a first in man phase I/IIa study subject to final regulatory approval in 2013
  - All required safety and toxicology studies have been conducted with an excellent safety profile
  - TT-034 comprises three shRNAs targeting three separate, highly conserved regions on the HCV virus genome
  - Inhibits HCV resistance development, while maintaining target specificity, high efficacy, and low off-target effects.
  - Mainly targeted to genotype 1



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TT034 Program Status

- **Significant investment by Pfizer to bring TT034 to clinical trials. Reverted to Tacere when Pfizer closed Sandwich facility in UK**
- **First in man Phase I/IIa clinical trial to be conducted in 2013 in US HCV patients**
  - All safety and toxicology studies have been completed
- **Pre-IND meetings with FDA were held in June 2007 and January 2010**
- **Sufficient GMP material has been produced to initiate clinical trials**
- **Key next steps:**
  - Meeting with the NIH Recombinant Advisory Committee
  - Filing of the IND with the FDA
  - Dosing of first patients (planned for mid-2013)

Cancer-Associated Neuropathic Pain

- **Quality of life for patients in end stage disease becomes progressively worse as the need for increasing doses of opiates such as morphine**
- **Global market for cancer associated pain - $2 Billion**
- **Benitec Approach:**
  - Developing a ddRNAi therapeutic that silences the PKC gamma gene, a key mediator in neuropathic pain
  - A single injection has the potential to confer long-term pain relief and overcome morphine tolerance
- **Program Status:**
  - Novel target sequences identified and shRNAs tested *in vitro*
  - Patent application filed on sequences
  - Testing in *in vivo* pre-clinical models of neuropathic pain in progress

Drug Resistant Lung Cancer

- **Lung cancer is the most common cause of cancer death**
- **Only 15% of patients survive more than 5 years**
- **Resistance to chemotherapy is common**
- **Benitec Approach:**
  - Developing a treatment for chemotherapy drug-resistant non-small cell lung cancer (NSCLC)
  - Silencing the Beta III Tubulin gene using ddRNAi overcomes chemotherapy resistance
  - *In vivo* orthotopic lung cancer model used for POC studies
- **Program Status:**
  - *In vitro* data shows our multicassette shRNA construct is highly effective at knocking down the target gene
  - *In vivo* data demonstrate systemic delivery of the construct in an orthotopic lung cancer model results in significant silencing of the the Beta III Tubulin gene in the tumour
  - Further comprehensive *in vivo* data is targeted for Q4 2012

HBV

- **2 Billion people infected with Hepatitis B and 350M are chronic carriers worldwide**
- **In U.S. over 1.25M chronic active patients and over 60,000 new cases/year**
- **Although there is a prophylactic vaccine, there are no current treatments available for acute HBV infection**
- **Complete elimination of virus in chronic patients is rarely achieved by current antivirals and immune modulators, as emergence of viral resistance remains a significant limitation**
- **Benitec Approach:**
  - Utilise experience with Tacere's HCV program
  - Identify RNAi sequences that highly effectively silence HBV polymerase gene
  - Build triple shRNA ddRNAi construct
  - Single administration would provide long term cure and protection from Hepatitis B
- **Program Status:**
  - Program partnered with Biomics Biotechnologies Co, Ltd in China
  - Several effective RNAi sequences identified in the first stage of the collaboration
  - Patent application filed
  - shRNA constructs designed, tested and optimised *in vitro* and *in vivo* (in progress)

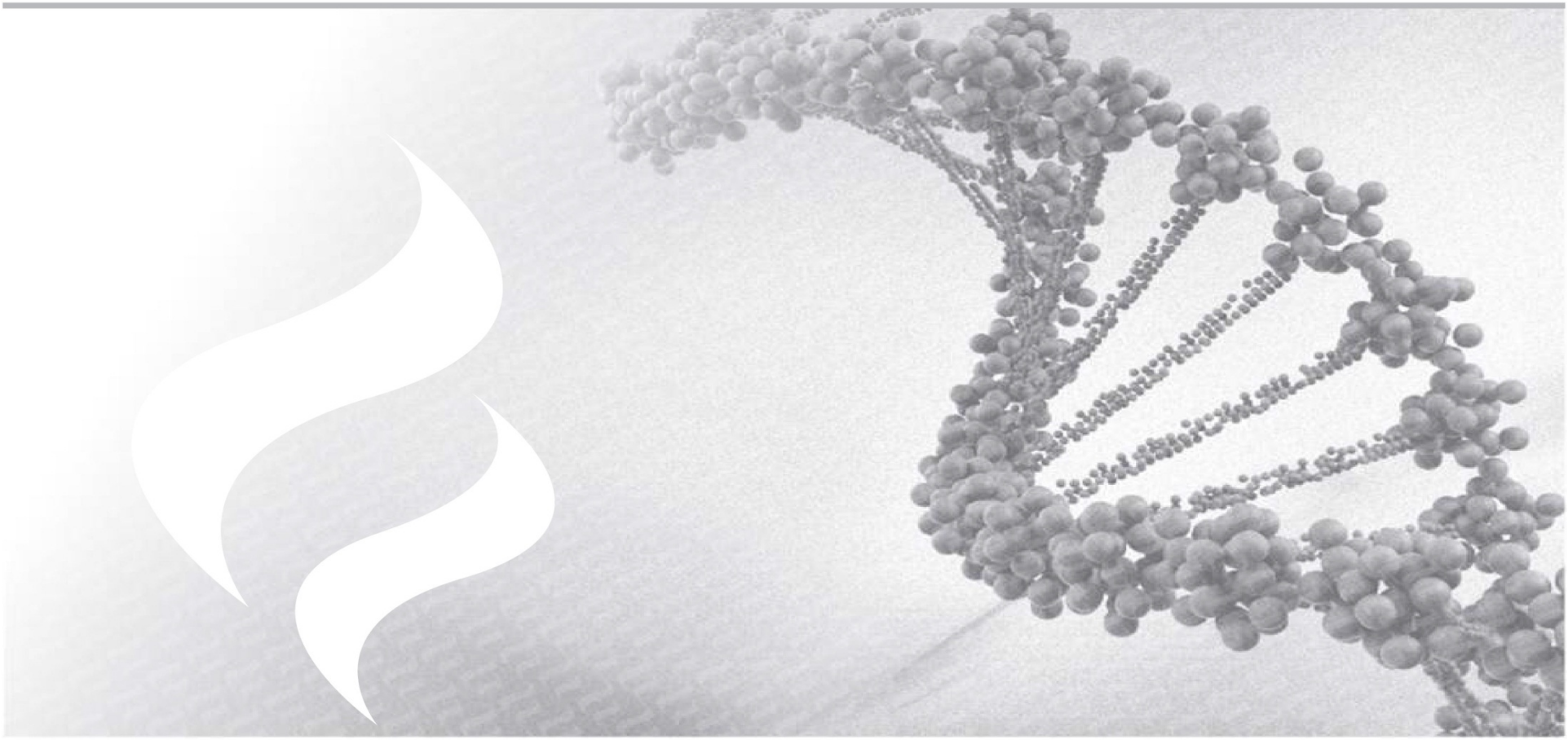
Oculopharyngeal Muscular Dystrophy

- **Rare orphan disease causing muscle wasting**
- **Often fatal with no current disease treatment**
- **A mutant form of gene called Poly (A) Binding Protein Nuclear 1 (PABPN1) is associated with the disease**
- **Benitec Approach:**
  - Develop a DNA construct that both silences the mutant PABPN1 gene (shRNA) and replaces it with the normal gene to provide a long term cure
- **Program Status:**
  - Identification of active shRNA sequences *in vitro*
  - *In vivo* proof of concept studies targeted for 2013

Further Potential Applications of ddRNAi

- Other infectious diseases
- Multiple cancer types
- Cardiovascular disease
- Huntington's disease
- Alzheimer's
- Autoimmune
- Stem cells
- Genetic diseases

Corporate Profile



Management Team

- **Peter French, MBA, PhD: Chief Executive Officer**

  Joined Benitec in 2009 as Chief Scientific Officer before being appointed CEO in 2010. Previously Founder and Director Cryosite (ASX:CTE), a stem cell storage company. Also served as CEO of Probiomics Ltd. where he led the commercial efforts behind six new probiotic–based products Australia-wide. Earned a PhD in cell and molecular biology in 1987 and an MBA in Technology Management in 2000.

- **Michael Graham, PhD: Chief Scientist**

  Founded Benitec's ddRNAi technology in 1998 at CSIRO. Continued work and development of RNAi applications at the University of Queensland. Re-joined Benitec in 2012.

- **David Suhy, PhD: Senior Vice President, R&D (Tacere)**

  Formerly Tacere Therapeutics Director of R&D. Led Tacere's HCV program over the past eight years, including the collaboration with Pfizer. Joined Benitec/Tacere following acquisition in October 2012.

- **Carl Stubbings: Chief Business Officer**

  Joined Benitec in July 2012 having previously served as Vice President, Sales & Marketing for Quest Diagnostics (NASDAQ: DGX), one of the world's largest pathology providers. Serves as a non-executive director of Sienna Diagnostics

- **Greg West, CA: Chief Financial Officer and Company Secretary**

  Chartered Accountant and Director and audit committee Chairman of ITC Limited (a business arm of Wollongong University), IDP Education Pty Ltd and Education Australia Limited. Completed studies with Price Waterhouse and has worked in senior finance executive roles in investment banking with Bankers Trust, Deutsche Bank, NZI, and other financial institutions

Board of Directors

- **Peter Francis (Chairman)**

  A partner at Francis Abourizk Lightowlers (FAL), a firm of commercial and technology lawyers with offices in Melbourne, Australia.

- **Dr. Mel Bridges (Non-Executive Director)**

  Chairman of Alchemia Ltd and Genetic Technologies Ltd. He also co-founded listed company Panbio Ltd. He is a Non-Executive Director of Campbell Brothers Limited, ImpediMed Limited and Tissue Therapies Limited.

- **Dr. John Chiplin (Non-Executive Director)**

  Former CEO of Arana Therapeutics, acquired by Cephalon for a significant premium to market (July 2009). Immediately prior to running Arana, Dr Chiplin was head of the $300M ITI Life Sciences investment fund in the UK.

- **Iain Ross (Non-Executive Director)**

  Former CEO of Silence Therapeutics. A Qualified Chartered Director and currently Chairman of Ark Therapeutics Group plc (LSE); Pharminox Limited; Biomer Technology Limited and a non-executive director of Tissue Therapies Limited (ASX). Vice Chairman of the Council of Royal Holloway, University of London.

Financial Information

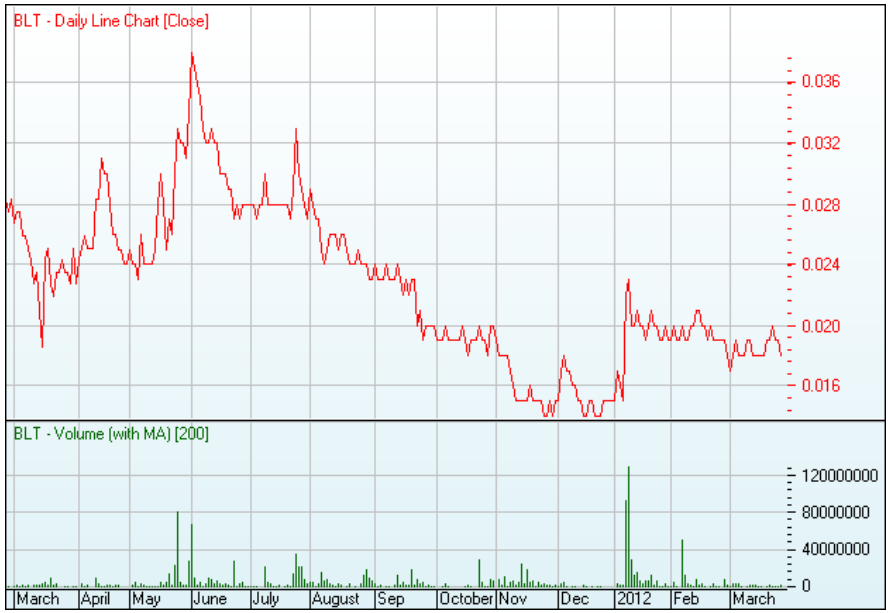
Share price at 30 September	AUD $0.016 per share
Market capitalisation	AUD$ 15.5 million
Issued equity: ordinary shares	970,628,529
Options on issue	424,785,202
Cash balance at 31 December 2011	AUD$ 3.1 million
Operational monthly burn rate for the six months to 30 June 2012	AUD$ 263k

Consolidated Statement of Financial Position

For the half year ended 30 June 2012

	$	$
Cash and cash equivalents	3,075,880	6,654,097
Trade and other receivables	134,523	147,832
Other	30,803	63,409
TOTAL ASSETS	3,251,206	6,865,338
Trade and other payables	588,292	1,197,474
Non current payables	-	171,048
Borrowings	-	292,488
TOTAL LIABILITIES	588,292	1,661,010
EQUITY	2,662,914	5,204,348

➢ **Share price movements**



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HCV Program – 2013 Milestones

- RAC approval
- IND
- Clinical trial commencement
- Interim data review

Opportunity Summary

- Potent long-lasting gene silencing platform technology in ddRNAi
- Robust market potential with over 22,000 human genes and genes from disease-causing organisms
- Dominant global position with IP now secure
- Broad pipeline in multiple high value therapeutic areas
- Clinical safety and efficacy data in 2013
- Multiple pathways to revenue via in-house and partnering programs

Contact Information

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