BENITEC BIOPHARMA
silencing genes for life™

NASDAQ: BNTC
ASX: BLT

Cell & Gene Meeting on the Mesa

David Suhy
Chief Scientific Officer

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This presentation contains "forward-looking statements" within the meaning of section 27A of the US Securities Act of 1933 and section 21E of the US Securities Exchange Act of 1934. Benitec has tried to identify such forward-looking statements by use of such words as "expects," "intends," "hopes," "anticipates," "believes," "could," "may," "evidences" and "estimates," and other similar expressions, but these words are not the exclusive means of identifying such statements. Such statements include, but are not limited to, any statements relating to Benitec's pipeline of ddRNAi-based therapeutics, including the initiation, progress and outcomes of clinical trials and any other statements that are not historical facts. Such forward-looking statements involve risks and uncertainties, including, but not limited to, risks and uncertainties relating to the difficulties or delays in our plans to develop and potentially commercialize our product candidates, the timing of the initiation and completion of preclinical and clinical trials, the timing of patient enrolment and dosing in clinical trials, the timing of expected regulatory filings, the clinical utility and potential attributes and benefits of ddRNAi and our product candidates, potential future out-licenses and collaborations, our intellectual property position and duration of our patent portfolio, the ability to procure additional sources of financing and other risks detailed from time to time in filings that Benitec makes with US Securities and Exchange Commission, including our most recent annual report on Form 20-F and our reports on Form 6-K. Such statements are based on management's current expectations, but actual results may differ materially due to various factors, including those risks and uncertainties mentioned or referred to in this presentation. Accordingly, you should not rely on those forward-looking statements as a prediction of actual future results.

Business Overview
A multi-product clinical stage company in 2018

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Benitec has created a novel combination of gene therapy and RNA interference (gene silencing) to change treatment paradigms of human disease

PROVEN TECHNOLOGY	Validated technology with two clinical assets by the end of 2018
ROBUST PIPELINE	Assets in oncology, orphan genetic disorders, retinal disease, and infectious disease
VALUABLE PRODUCTS	Human therapeutic products for commercialization, partnering, and collaborations

Experienced Executive Team

Greg West **Chief Executive Officer**	• Former CFO of Benitec Biopharma, 10 years biotech experience • Prior roles at PriceWaterhouse, Bankers Trust, Deutsche Bank and NZI
Dr. David Suhy **Chief Scientific Officer**	• Former SVP of Research & Development, Benitec Biopharma • Prior roles at Tacere Therapeutics, Antara Biosciences and PPD Discovery
Georgina Kilfoil **Chief Clinical and Development Operations Officer**	• Former VP of Clinical Operations, Benitec Biopharma • Prior roles at Anthera Pharmaceuticals, InClin and Peninsula Pharmaceuticals
Dr. Cliff Holloway **Chief Business and Operating Officer**	• Former CEO and MD of Sienna Cancer Diagnostics, and Biosceptre International • Prior VP BD role at Arana Therapeutics (now Teva Pharma)
Bryan Dulhunty **Chief Financial Officer**	• Former Executive Chairman, Viralytics • Prior roles as NED, MD, CFO and Company Secretary of a number of listed and non-listed biotech companies
Dr. Michael Graham **Head of Discovery & Founding Scientist**	• Discoverer of ddRNAi at CSIRO; Former Senior Research Fellow, University of Queensland • Prior roles at QDPI and CSIRO

Company Highlights

Programs advancing to the clinic

- Phase II ready EGFR-targeted gene silencing therapeutic achieved POC in **head & neck cancer** entering confirmatory Phase II trial in Q1 2018.
- Unique “silence and replace” therapeutic against orphan disease **oculopharyngeal muscular dystrophy** by silencing expression of the mutant disease-causing gene (PABPN1) and simultaneously reintroduces a normal copy of the gene. Anticipated to enter clinic at end of 2018.
- Other programs targeting **retinal disorders** and **infectious disease** expected to be clinic-ready late 2018/2019.

Capital markets access

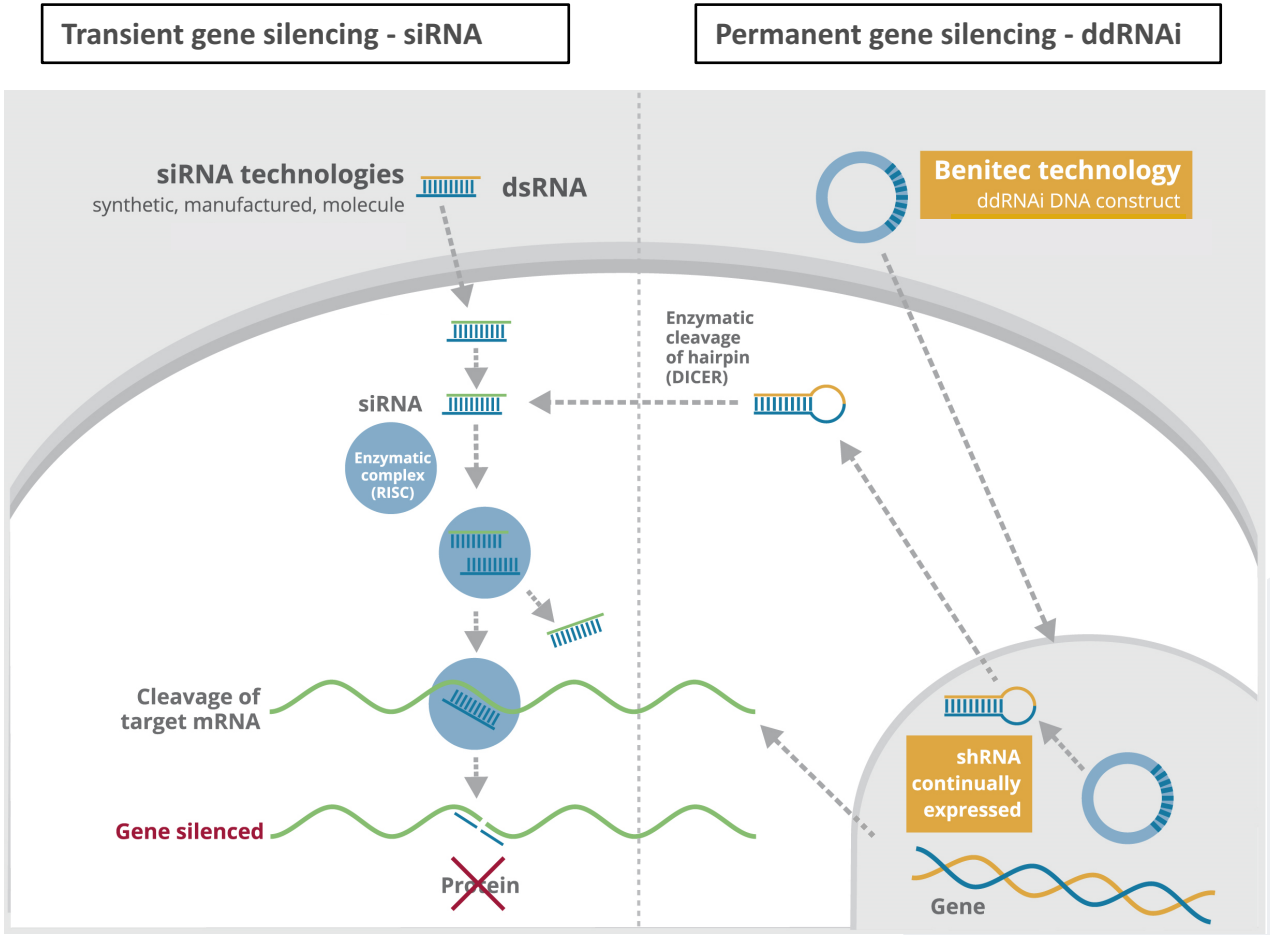
- Listed on ASX (2002) and NASDAQ (2015)
- Has raised US$40M capital since 2014
- US SEC shelf registration June 2017

Strong in-house capabilities

- 23 staff with scientific operations in Hayward CA, including 13 PhDs with deep expertise in gene therapy
- In-house manufacturing expertise for process optimization and scalability
- Extensive commercial and drug development expertise

Permanent Gene Silencing with DNA-Directed RNA Interference (ddRNAi)

- Combines RNA interference with gene therapy delivery
- Long term therapeutic potential from a single administration
- Constant, steady state levels of shRNA expression
- Silence a single gene or simultaneously target multiple genes
- “Silence and Replace”: Simultaneous silencing of disease causing genes with co-expression of normal genes to restore function



Benitec Pipeline Programs

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Program	Delivery	Discovery	Preclinical	IND-Enabling	Early stage clinical (IND – Phase 2)	Late stage clinical (Phase 2 – Phase 3)	Commercial Rights
Oncology – head and neck squamous cell carcinoma (HNSCC)							
HNSCC **BB-401**	Plasmid Intratumoral						• global
HNSCC **BB-501**	ddRNAi Intratumoral						• global
Orphan Disease – oculopharyngeal muscular dystrophy (OPMD)							
OPMD **BB-301**	AAV Intramuscular						• global
Retinal Disease – age-related macular degeneration (AMD)							
AMD **BB-201**	Novel AAV Intravitreal						• global
Infectious Disease – hepatitis B (HBV)							
HBV **BB-103**	AAV Intravenous						• global

Head and Neck Squamous Cell Carcinoma (HNSCC) Program Update

Program	Delivery	Discovery	Preclinical	IND-Enabling	Early stage clinical (IND – Phase 2)	Late stage clinical (Phase 2 – Phase 3)	Commercial Rights
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Infectious Disease – hepatitis B (HBV)							
HBV BB-103	AAV Intravenous						• global

Head and Neck Squamous Cell Carcinoma (HNSCC)

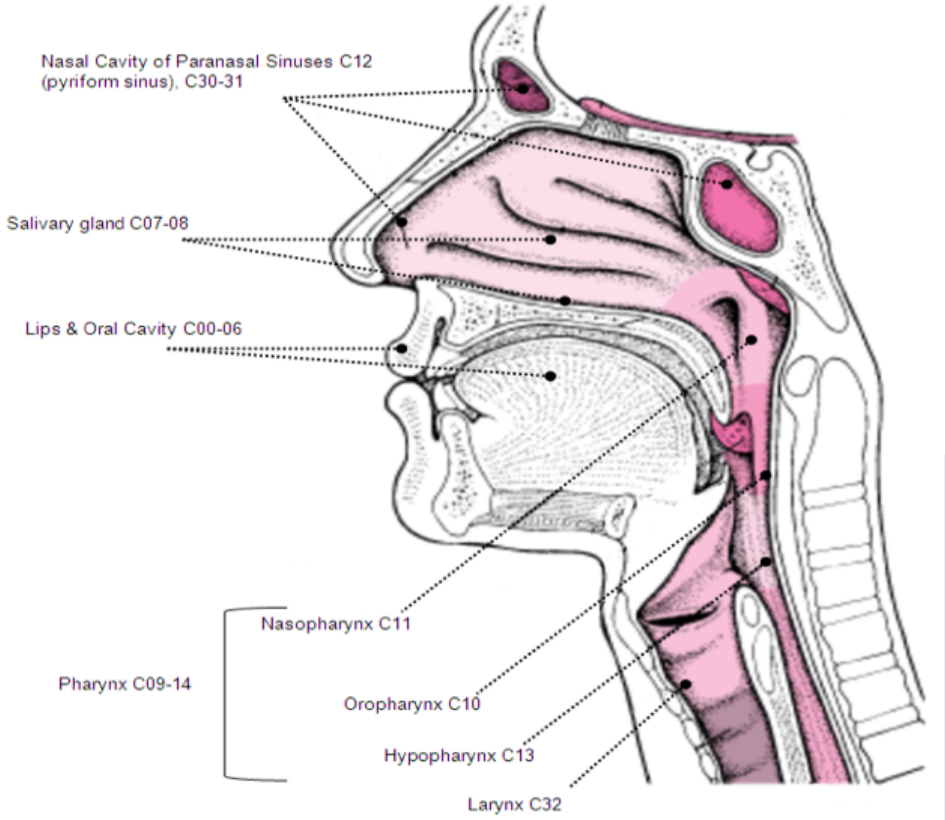
Incidence and Patient Mortality:

- Circa 64,000 patients diagnosed annually in US
- 50% of patients expected to develop recurrent or metastatic disease
- 13,000 deaths annually in the US
- ***Over 90% of HNSCC lesions overexpress epidermal growth factor receptor (EGFR)***

Unmet Medical Need:

- Significant patient morbidity derived form loco-regional tumor growth and progression in confines of small anatomical space
- Durable tumor reduction or eradication
- Lack of biomarkers to reliably predict response to targeted therapy

Anatomical sites of HNSCC

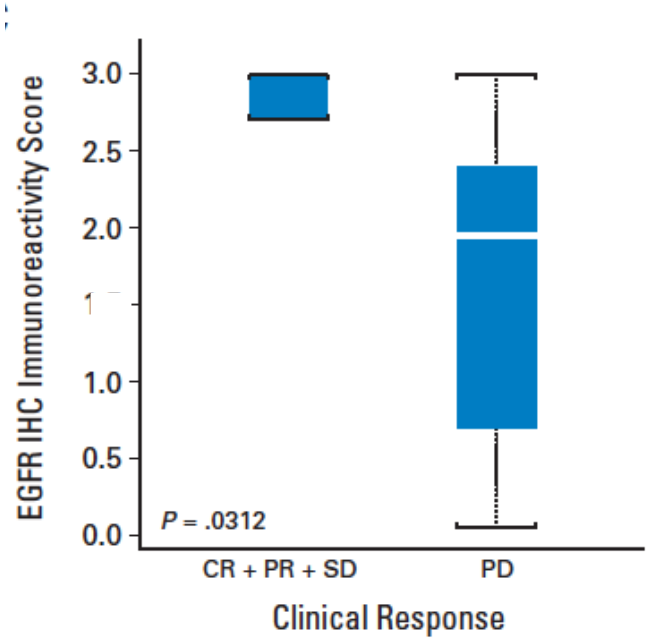


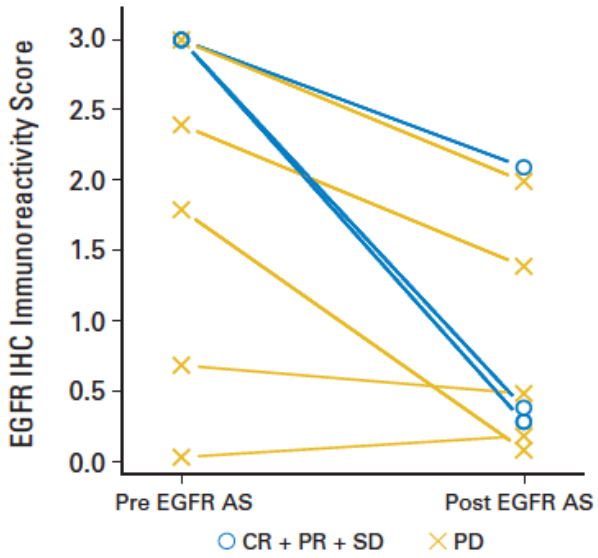
BB-401: Expressed Anti-Sense RNA Against EGFR
Phase 1 Single Agent Clinical Data

- Phase I study* of 17 patients with advanced, refractory HNSCC

- Safety and efficacy evaluated following direct intra-tumoral injection weekly for 4 weeks:
  - 29 % (5 patients) -Objective Response
  - Of these 2 patients experienced Complete Response (100% reduction in size by RECIST) & 3 patients Partial Responses (reduction >30% by RECIST)
  - 2 additional patients - Stable Disease
  - 41% overall disease control rate
  - 6.5 months observed anti-tumor response

- Strong correlation between baseline level of EGFR expression and clinical response

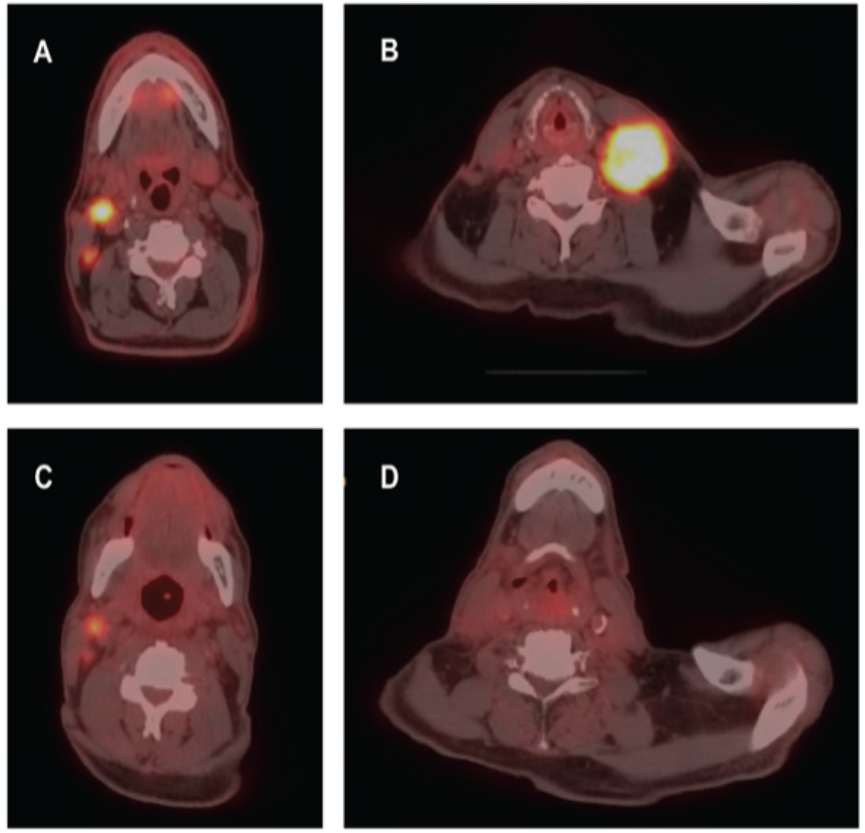




*Lai *et al*., Journal of Clinical Oncology, 2009

BB-401: Follow on Phase 1 Study of BB-401 in Combination with Cetuximab and Radiation

- 6 patients were treated in a Phase 1 study of BB-401 in combination with radiation and cetuximab
- 5 of 6 patients experiencing Objective Responses (83%)
- 4 patients Complete Response & 1 patient Partial Response



Grandis et al, University of Pittsburgh
Poster from ASCO 2015

Head & Neck Squamous Cell Carcinoma
Clinical Candidate BB-401: Product Overview

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Head & Neck Squamous Cell Carcinoma	• Over 50,000 new cases diagnosed in US in 2017, global market estimated at US$1.5 billion in 2024 • Morbidity caused by spatial effects of tumors in confined anatomical structures of the head and neck • Over 90% of HNSCC overexpress epidermal growth factor receptor (EGFR)
BB-401 Product Profile	• EGFR Targeted via expressed antisense RNA EGFR • In Phase I, strong correlation of response versus EGFR expression • Robust response when compared to other monotherapy treatments or when paired with SOC
Value / Commercial Opportunity	• Near-term value inflection point: Phase II study in up to 50 patients planned for initiation in 1Q18 • Selective and direct targeting of malignant lesions underlying the core morbidity could uniquely address the unmet medical need in HNSCC • BB-401 is intended to be paired with diagnostic

Oculopharyngeal Muscular Dystrophy (OPMD) Program Update

Program	Delivery	Discovery	Preclinical	IND-Enabling	Early stage clinical (IND – Phase 2)	Late stage clinical (Phase 2 – Phase 3)	Commercial Rights
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Retinal Disease – age-related macular degeneration (AMD)							
AMD BB-201	Novel AAV Intravitreal						• global
Infectious Disease – hepatitis B (HBV)							
HBV BB-103	AAV Intravenous						• global

OPMD Disease Overview

Disease:

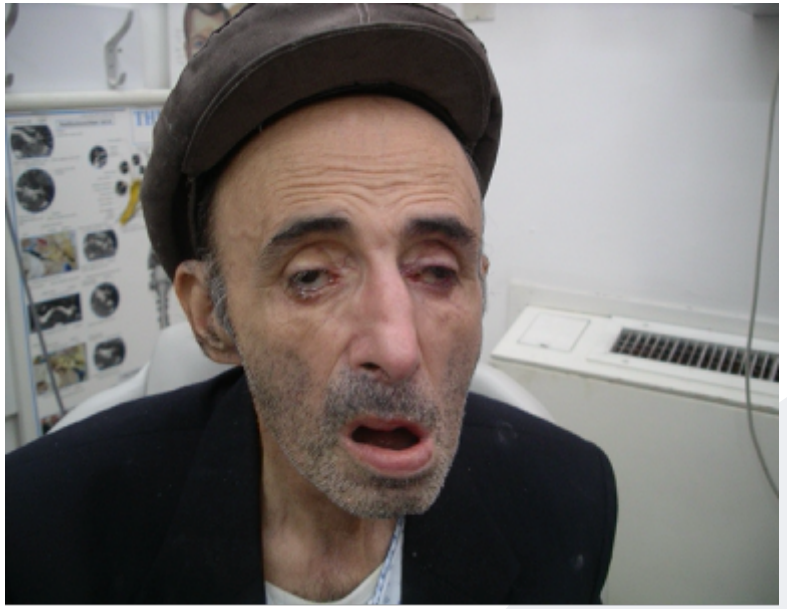
- Rare autosomal dominant inheritance
- 1:100,000 (Europe)
- As high as 1:600 in specific populations
- Typical age of onset is in 50's or 60's

Characterized by:

- Eyelid drooping (ptosis)
- Swallowing difficulty (dysphagia)
- Proximal limb weakness
- Death due to aspiration pneumonia & malnutrition

Histopathology:

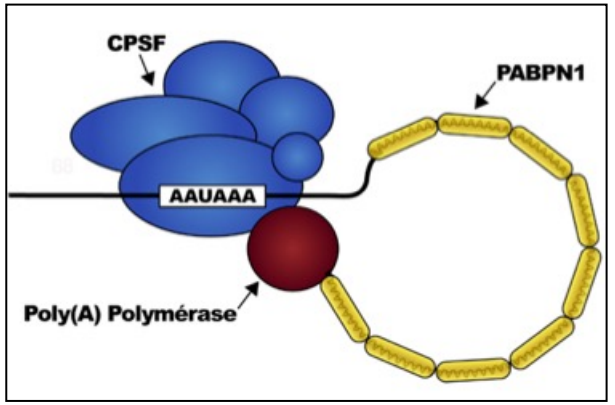
- Decrease of muscle fiber number
- Variation in the size of muscle fibers
- Fibrosis (connective tissue)



Genetic Basis of OPMD: Expansion of the Poly-Alanine Tract Within PABPN1

PABPN1:

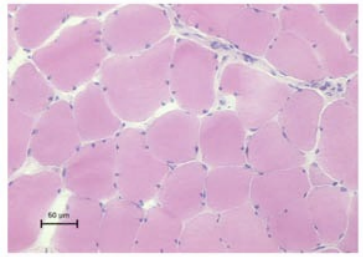
- A ubiquitous factor that promotes interaction between the poly(A) polymerase and CPSF (cleavage and polyadenylation specificity factor) and thus controls the length of mRNA poly(A) tails, mRNA export from the nucleus, and alternative poly(A) site usage.



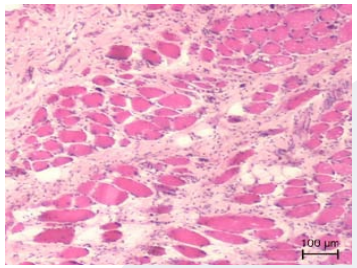
In OPMD:

- A genetic mutation results in trinucleotide repeat expansion within exon 1 of PABPN1 and results in an expanded poly-alanine tract at the N-terminal end of PABPN1.

WT ATG $(GCG)_6$ ----------$(GCA)_3$ GCG GGG GCT GCG..
MUT ATG $(GCG)_6$ $(GCG)_{1-7}$ $(GCA)_3$ GCG GGG GCT GCG…--

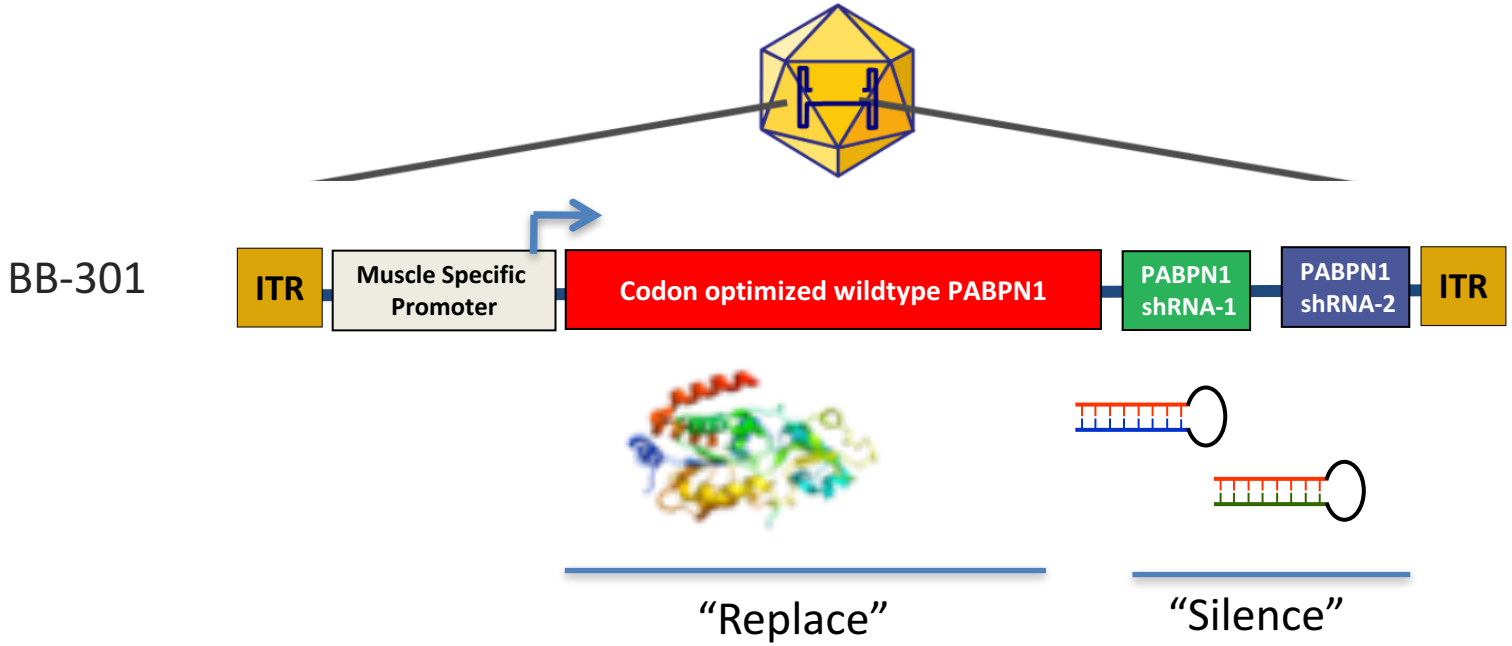


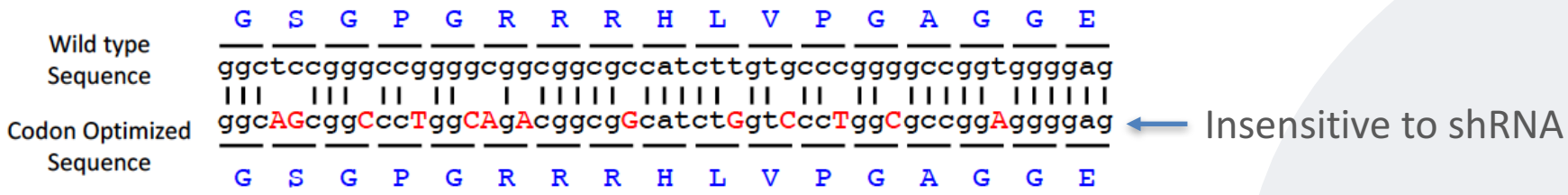
Non-affected



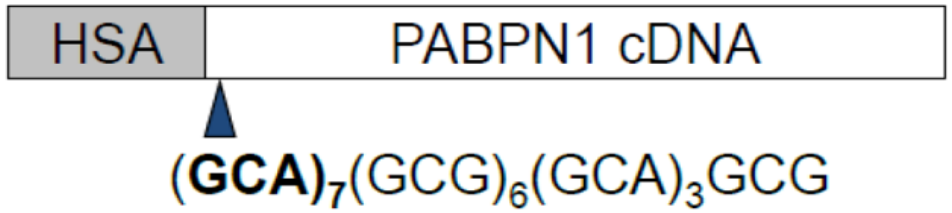
Affected

BB-301: ‘Silence and Replace’ Approach





Pre-Clinical Model of OPMD: The 'A17' Mouse



- Transgenic mouse: express a mutated bovine PABPN1 driven by the human skeletal actin promoter in addition to the endogenous PABPN1
- Recapitulates severe muscle atrophy
- Mimics many of the disease pathologies:
  - Progressive muscle weakness/ atrophy
  - Fibrosis
  - Mitochondrial / Ubiquitin-Proteasome defects
  - Muscles contain intranuclear inclusions

BB-301 Treatment Inhibits Diseased Gene Expression & Restores Wildtype PABPN1 Levels in A17 Mice

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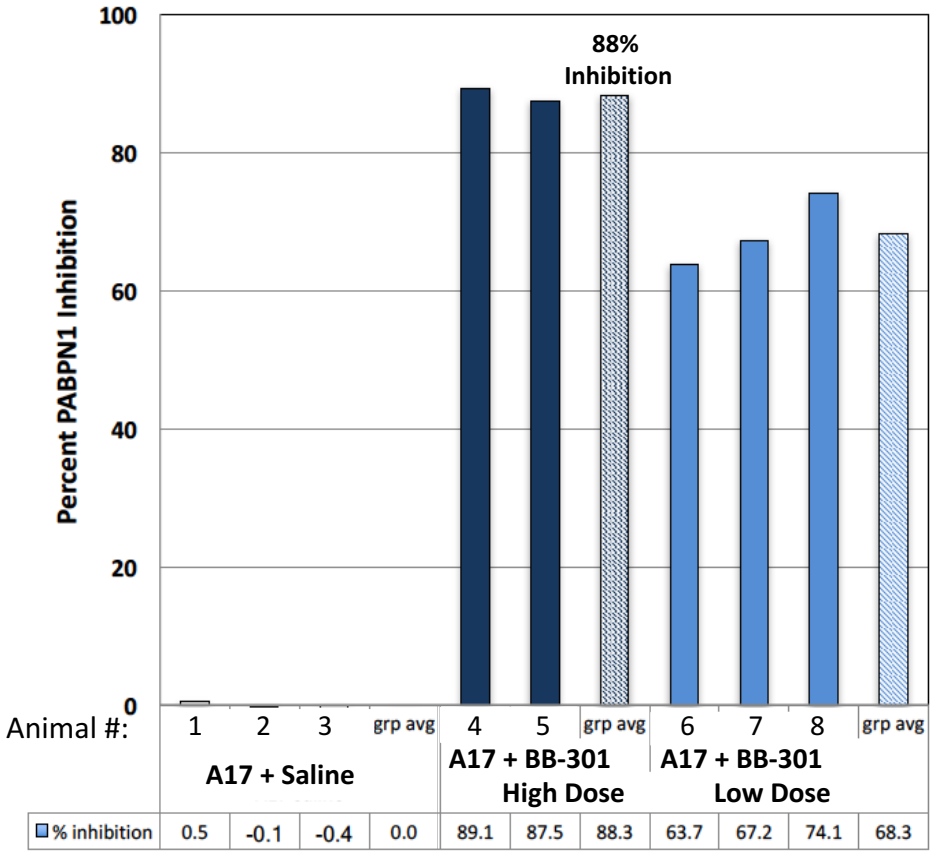
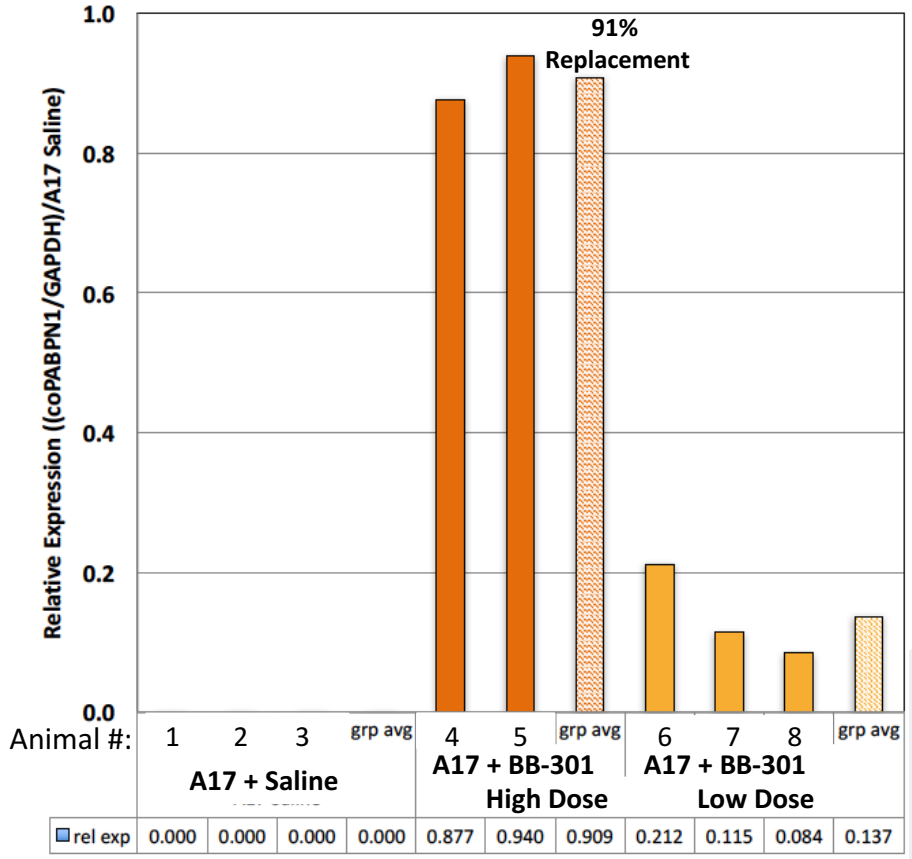
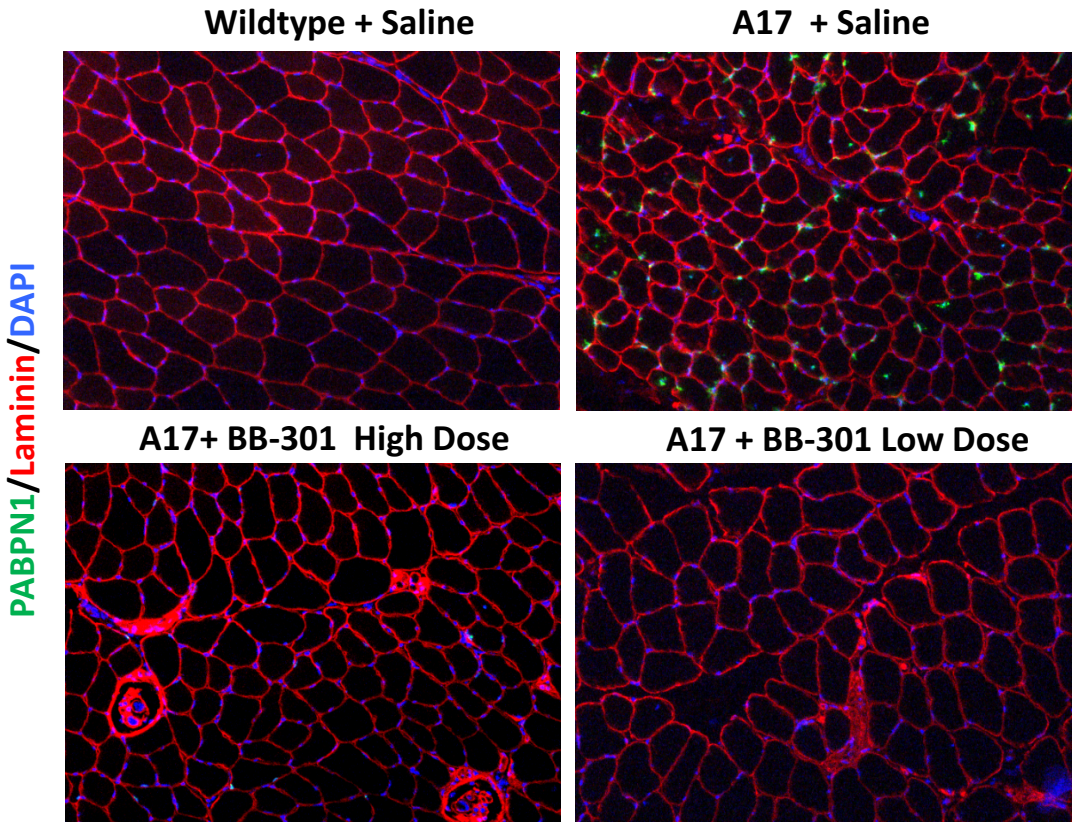
SILENCE: Inhibition of PABPN1 Expression

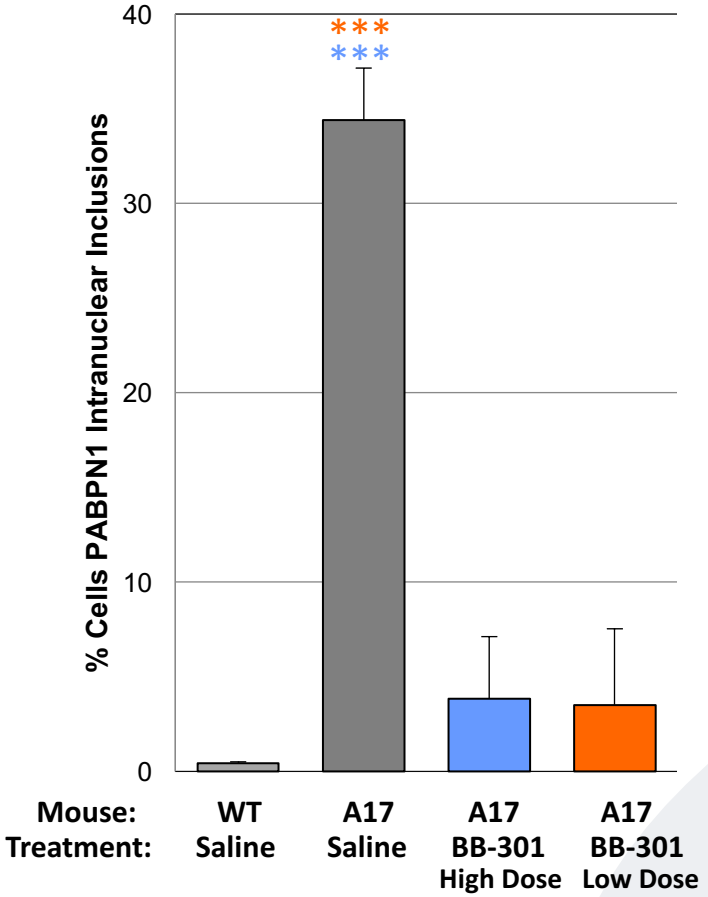


REPLACE: Codon-Optimized PABPN1 Expression

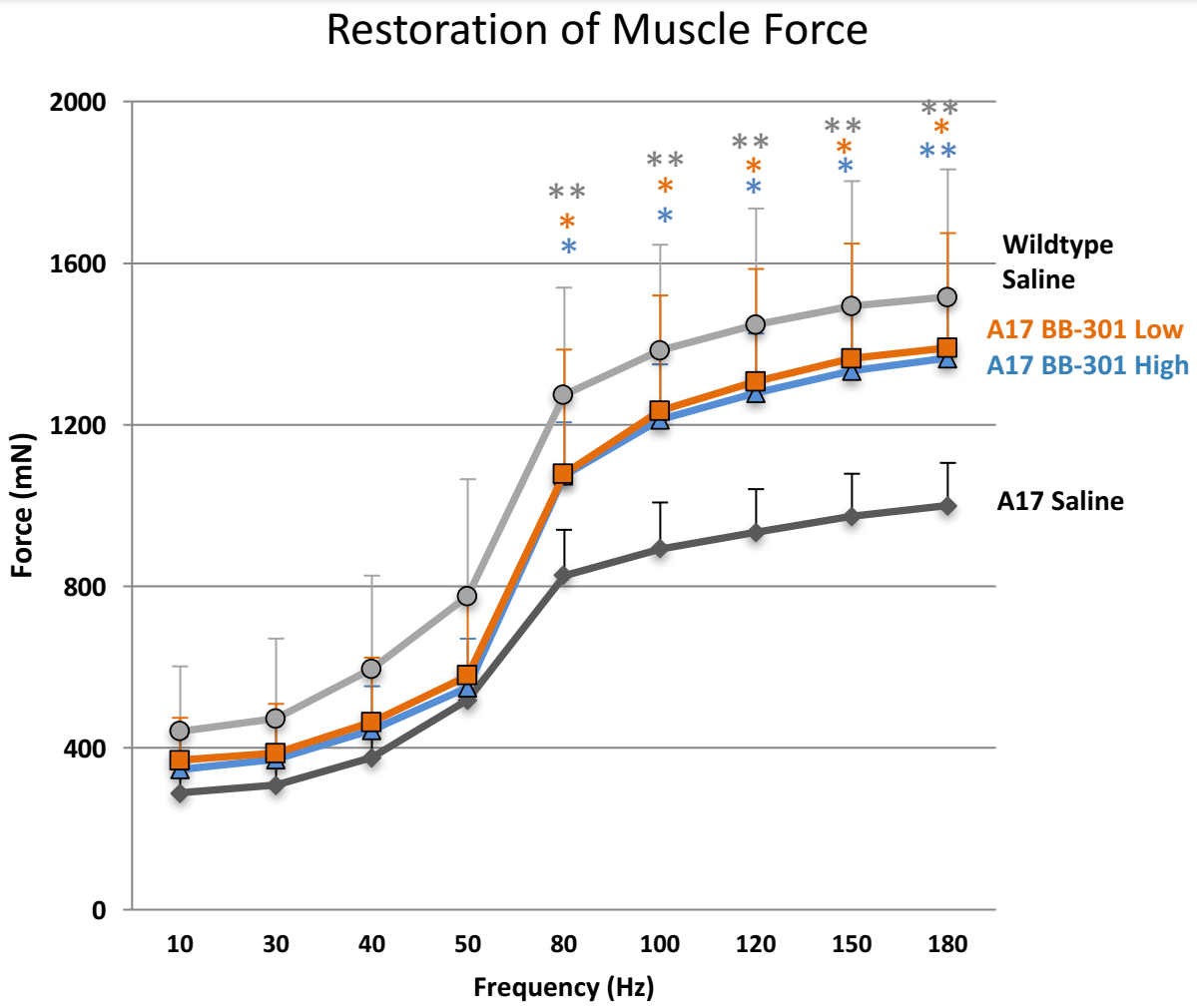


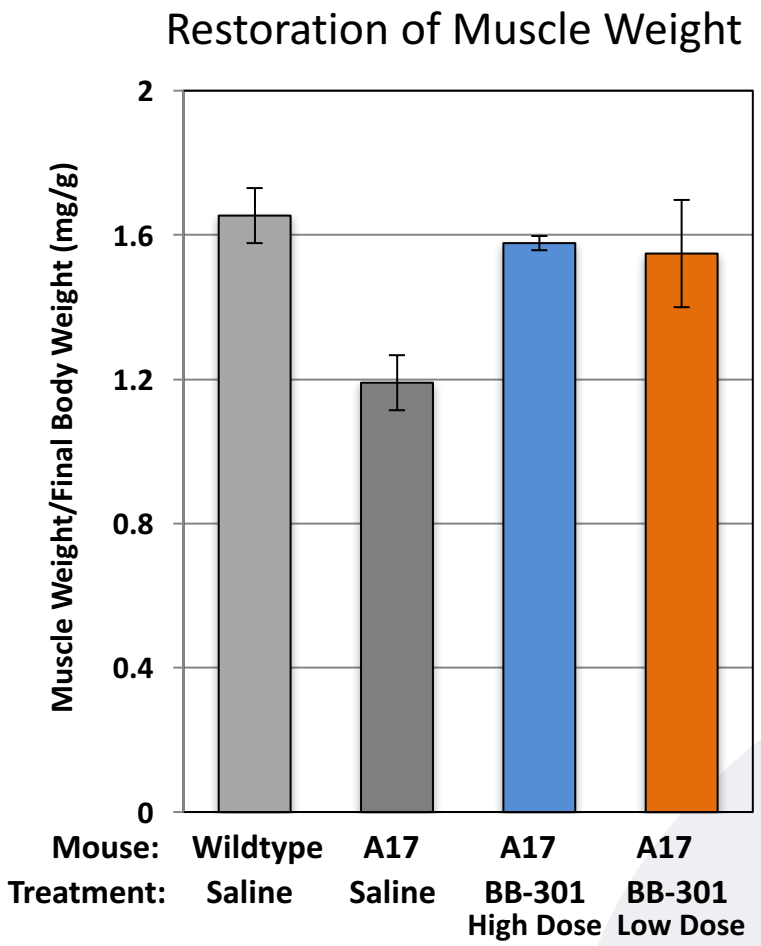
Intranuclear Inclusions are Resolved in A17 Mice Treated with BB-301





BB-301 Treatment Restores Muscle Force and Muscle Weight in A17 Mice





Oculopharyngeal Muscular Dystrophy
Clinical Candidate BB-301: Product Overview

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Oculopharyngeal Muscular Dystrophy

- Rare, autosomal dominant, monogenic disease
- Estimated 12,000 patients in Western countries
- Eyelid drooping, swallowing difficulties, proximal limb weakness, death due to aspiration pneumonia & malnutrition

BB-301 Product Profile

- Designed to treat dysphagia associated with OPMD
- 'Silence and Replace' – unique gene therapy mechanism
- Silence: Inhibits mutant PABPN1 gene
- Replace: Simultaneously reintroduces normal PABPN1 gene to restore function

Value / Commercial Opportunity

- Near-term value inflection point: 2H18 clinic entry
- Significant unmet medical need with no direct competition
- Orphan status provides expeditious and cost efficient commercialization path
- Commercial opportunity potentially in excess of US$1 billion
- Potential for silence and replace approach for other monogenic disorders

Multiple Shots on Goal

Longer Term Milestones 2017-2019

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	2017	2018	2019
HNSCC **BB-401 (EGFR-AS)**	• IND filing	• Phase 2 initiation	• Phase 2 completion
HNSCC **BB-501 (ddRNAi EGFR)**	• Discovery • Preclinical POC	• IND-enabling studies	• Phase 1/2 initiation
OPMD **BB-301**	• Pre-IND meetings	• IND enabling studies • Phase 1/2 initiation	• Phase 1/2
AMD **BB-201**	• Preclinical POC • Pre-IND meetings	• IND enabling studies • Phase 1/2 Ready	• Phase 1/2
Hepatitis B **BB-103**	• IND-enabling studies	• Phase 1/2 Ready	• Phase 1/2

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