



B:OMARIN® | JUNE 2011



## Safe Harbor Statement

This non-confidential presentation contains ‘forward-looking statements’ about the business prospects of BioMarin Pharmaceutical Inc., including potential future products in different areas of therapeutic research and development. Results may differ materially depending on the progress of BioMarin’s product programs, actions of regulatory authorities, availability of capital, future actions in the pharmaceutical market and developments by competitors, and those factors detailed in BioMarin’s filings with the Securities and Exchange Commission such as 10-Q, 10-K and 8-K reports.

# BioMarin at a Glance

Global Biopharma Company Targeting Genetic and Serious Medical Disorders

## Four commercial products

- Q1 2011 - Net product revenue increase of 30%
- Total 2011 revenue: \$422M - \$452M\*

## Multiple new product opportunities

- Advancing clinical programs
- New IND candidates in development
- Ongoing business development efforts

## Solid financials

- Cash on hand as of March 31, 2011: \$394M\*
- 2011E Non-GAAP adjusted EBITDA\*\*: \$51M to \$61M\*



\* Financial information per BioMarin press release issued April 28, 2011

\*\* Non-GAAP adjusted EBITDA excludes depreciation and amortization, contingent consideration expense, interest income and expense, income taxes, stock compensation expense and material non-recurring items



# Financial Outlook - Balance of Spend and Profitability

R&D spend in 2011 expected to be \$195-\$205 million\*

- Clinical: ~50%
- Commercial: ~20%
- Discovery: ~10%
- Other/Stock-comp/Non-allocated: ~20%

Expect cash flow to be near breakeven in 2011 despite ramp up in R&D expenses. (Assuming no new acquisitions)

For the next two years, BioMarin is a pipeline and top-line growth story, not an earnings growth story

- Committed to investing in the pipeline to fuel future growth
- In 2013, if GALNS is successful, we expect to start achieving significant P&L leverage with our global commercial infrastructure

# Investing in the Future

- Recent facility expansion more than doubles manufacturing capacity
- Meets projected commercial needs through at least 2016 for: Aldurazyme, Naglazyme, GALNS and PEG-PAL
- Supports ~\$1 billion in revenue
- Final approval anticipated in 2011
- Leverages experience and utilities from our existing facility



# Steady Growth of Commercial Business

## Growth Drivers

### Naglazyme

- Continued geographic expansion in recently opened counties (Russia, Mexico, Hong Kong)
- Additional patient starts in strong markets (Brazil and Turkey)
- Leverage improved patient finding capabilities in developed regions

### Aldurazyme

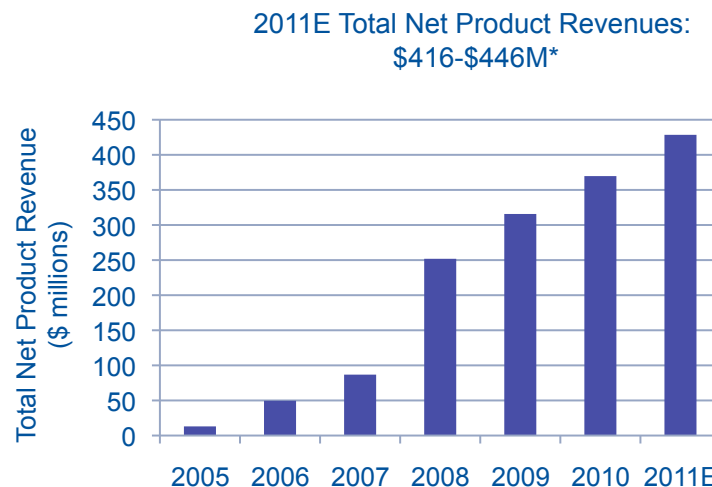
- Post-transplant patients – IST to establish safety and define endpoints (e.g. pulmonary function, joint range of motion, growth)

### Kuvan

- PKU-016 Outcomes Study – open for enrollment
- Randomized, placebo-controlled, 13-week trial
- Endpoints: Clinically validated measures of neuropsychiatric symptoms
- If successful, will support label change

### Firdapse

- Launched in all major Western European countries





# Established Worldwide Commercial Infrastructure

Total Global Commercial Operations FTE ~155 Total

Very small incremental commercial costs to support GALNS for MPS  
IVA and PEG-PAL for PKU, if successful

  
**Naglazyme**<sup>®</sup>  
(GALSULFASE)

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**ALDURAZYME**<sup>®</sup>  
(LARONIDASE)  
Replace the enzyme, help control the disease.

  
**KUVAN**<sup>™</sup>  
sapropterin dihydrochloride

**FIRDAPSE** 

**B:OMARIN**

# Lifecycle Management

**Naglazyme:** Survey study

**Aldurazyme:** Post-transplant study, intrathecal delivery

**PKU Franchise:**

**Blood Phe Monitor** – Available 1H 2012

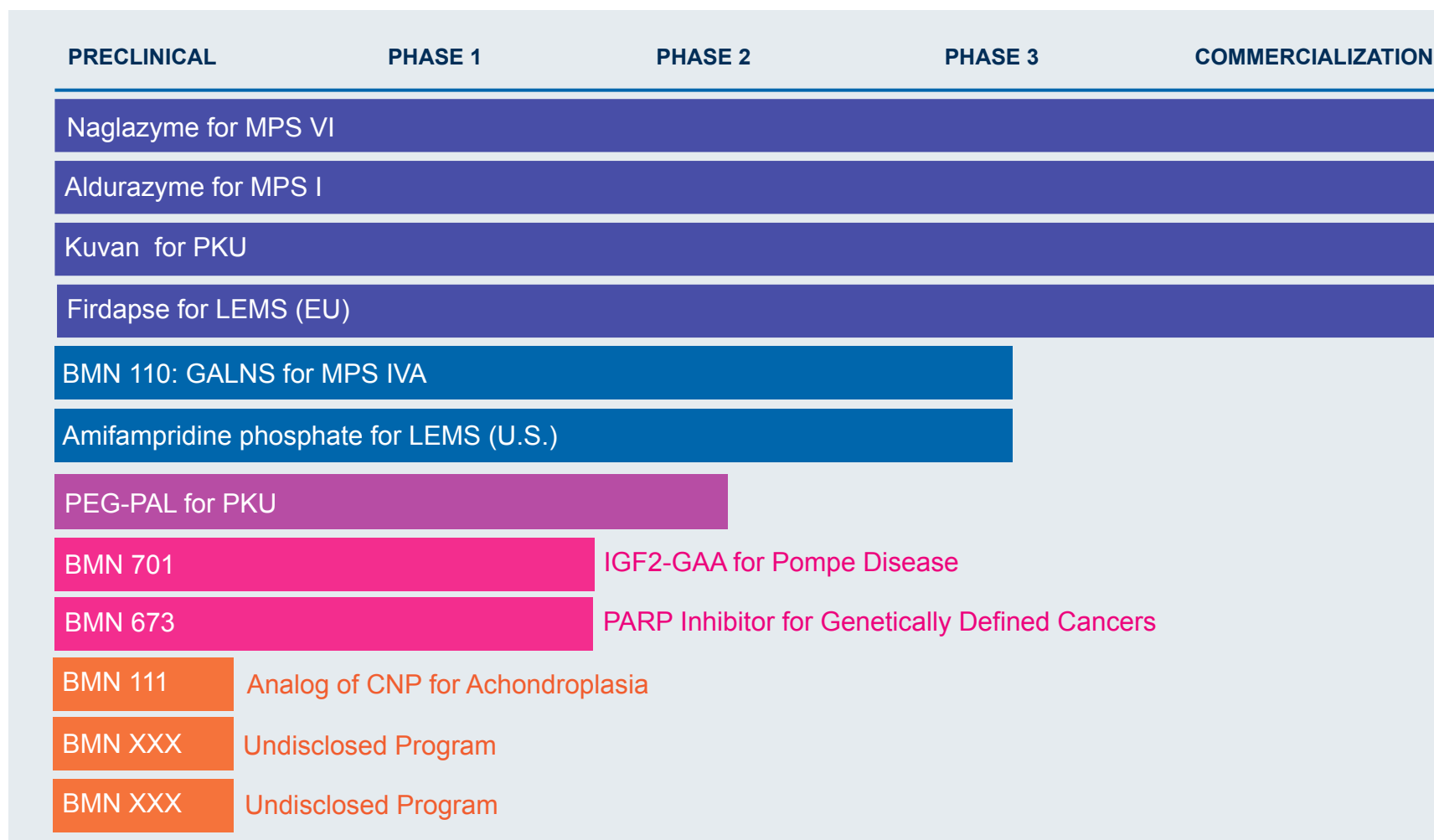
- Significant Benefit for Kuvan - Eliminates logistical barriers of blood draws, motivation for compliance with diet and Kuvan once on therapy
- Essential for PEG-PAL launch - Real-time monitoring of blood Phe levels to optimize therapy

Building IP - Patents issued for stable tablet formulation, once daily dosing and food effect – expires 2024-2025 (10 years of patent protection beyond orphan drug protection)

Neurocognitive studies



# BioMarin's Current Product Pipeline





# Powerful R&D Engine

## Deep R&D pipeline with programs in different stages of clinical development

- Programs advancing in the clinic: GALNS in Phase 3, PEG-PAL completing Phase 2
- New programs in the clinic: BMN-701 for Pompe disease, BMN-673 (PARP-Inhibitor)
- Preclinical programs in development
- Ongoing business development efforts

## Goal of filing one IND a year to ensure continued top-line growth

- 2010: BMN-673 (PARP-inhibitor)  
BMN-701 for Pompe disease
- 2011: CNP for Achondroplasia

# GALNS for MPS IVA

## Market Opportunity

- Prevalence similar or greater to MPS I with no CNS component
- Possibly the largest MPS product for BioMarin
- Over 1,000 patients identified
- Strong established worldwide commercial infrastructure
- Expect significant leverage if and when GALNS reaches the market

## Positive Phase I/II Results

- Endurance improvements were consistent with, and in some cases better than those observed in pivotal studies of approved ERTs
- Clinically meaningful improvements in two measures of endurance (6-minute walk distance and 3-minute stair climb) were achieved at 24/36 weeks
- Clinically meaningful improvements in measures of pulmonary function (FEV1, FVC and MVV) were achieved at 24/36 weeks
- Keratan sulfate levels decreased shortly after the initiation of treatment and fell further as dose increased
- The frequency and severity of infusion reactions were comparable to those observed with Naglazyme and Aldurazyme



# Summary of Efficacy Data – Phase I/II Study

	Statistic	Week 24	Week 36
<b>Endurance</b>			
Change in 6 Minute Walk Distance from Baseline (meters)	N	16	16
	Median (p-value)	38 (p=0.09)	19 (p=0.34)
<b>Change in 6-Minute Walk Distance from Baseline (meters) in Patients with Baseline Walk Distance ≤325m</b>	N	<b>12</b>	12
	Median (p-value)	<b>42 (p=0.02)</b>	24 (p=0.18)
Change in 3-Minute Stair Climb from Baseline (stairs per minute)	N	15	15
	Median (p-value)	7.3 (p=0.01)	10.3 (p=0.06)
<b>Biomarker</b>			
Percent change in Urine KS (% decrease from baseline)	N	18	18
	Median (p-value)	31% (p<0.01)	47% (p<0.01)
<b>Pulmonary function</b>			
Percent increase in FVC	N	16	16
	Median (p-value)	<1% (p=0.85)	11% (p=0.01)
Percent increase in MVV	N	13	14
	Median (p-value)	6.4% (p=0.15)	10% (P=0.06)



## Endurance Benefit in Morquio Similar to other ERTs in MPS

TRIAL (TREATMENT PERIOD)	MEDIAN CHANGE AT END OF TREATMENT PERIOD
Phase 1/2 Morquio (24 weeks)	42m*
Phase 3 MPS VI treated (24 weeks)	19m
Phase 3 MPS VI placebo (24 weeks)	6m
Phase 3 MPS I treated (26 weeks)	28m
Phase 3 MPS I placebo (26 weeks)	-11m



## Drugs Approved by the FDA with 6MWT as a Primary Endpoint

**Alglucosidase alfa (LUMIZYME)**

**Idursulfase (ELAPRASE)**

Ambrisentan (LETAIRIS)

Bosentan (TRACLEER)

Epoprostenol Sodium (FLOLAN)

Iloprost (VENTAVIS)

As part of composite primary endpoint:

**Laronidase (ALDURAZYME)**

Sildenafil Citrate (REVATIO)

Tadalafil (ADCIRCA)

Treprostinil Sodium (REMODULIN)

**Galsulfase (NAGLAZYME) used the 12MWT**

# GALNS Pivotal Phase 3 Protocol

**Design:** Double-blind, randomized, placebo-controlled pivotal trial, three arms

**Primary endpoint:** 6-minute walk distance

**Secondary endpoints:** 3 minute stair climb and urinary KS

**Duration of trial:** 24 weeks

**Doses:** Placebo, 2 mg/kg weekly; 2 mg/kg every other week

**Number of patients:** Approximately 160

**Entry criteria broad**

Age > 5 years

Patients must be ambulatory but with baseline 6MWT <325 meters

**Number of sites:** Approximately 40

**Timeline:** Study initiated in February 2011

Top-line results expected in 2H 2012





## PEG-PAL - Phase II Study Update

33 patients + 8 to 10 patients for daily dosing study (currently enrolling)

Significant efficacy achieved in patients who reached therapeutic levels of dosing

- Majority achieved target Phe < 600  $\mu\text{mol/L}$
- Some achieved physiological levels  $\sim 65 \mu\text{mol/L}$

Of the patients no longer in the Phase II study:

- None reached therapeutic levels of dosing
- Mostly due to logistical issues or study fatigue
- Two AEs (arthralgia and skin reaction)

Safety Update

No SAEs

Most frequent adverse event is headache, followed by injection site reaction

No significant changes from baseline in UA, hematology or chemistry results



# PEG-PAL Summary

## What we know

- PEG-PAL appears to have an acceptable safety profile
- PEG-PAL appears effective at lowering blood Phe levels

## What we need to know

- Optimal dose and dosing regimen
- Optimal formulation

## How we will find out

- Comparison of Phase 1 and Phase 2 material
- Daily dosing study - underway
- Phase 2 top-line results (including daily dosing and formulation study) to inform the design of the Phase 3 trial expected in 3Q 2011
- Phase 3 pivotal trial – Initiation expected in Q1 2012



# BMN-701 for Pompe Disease: Ideal Strategic Fit

Potential Pompe market: \$1.0 billion

- 3,000 to 6,000 patients in the developed world
- Incidence: 1 in 40,000 births

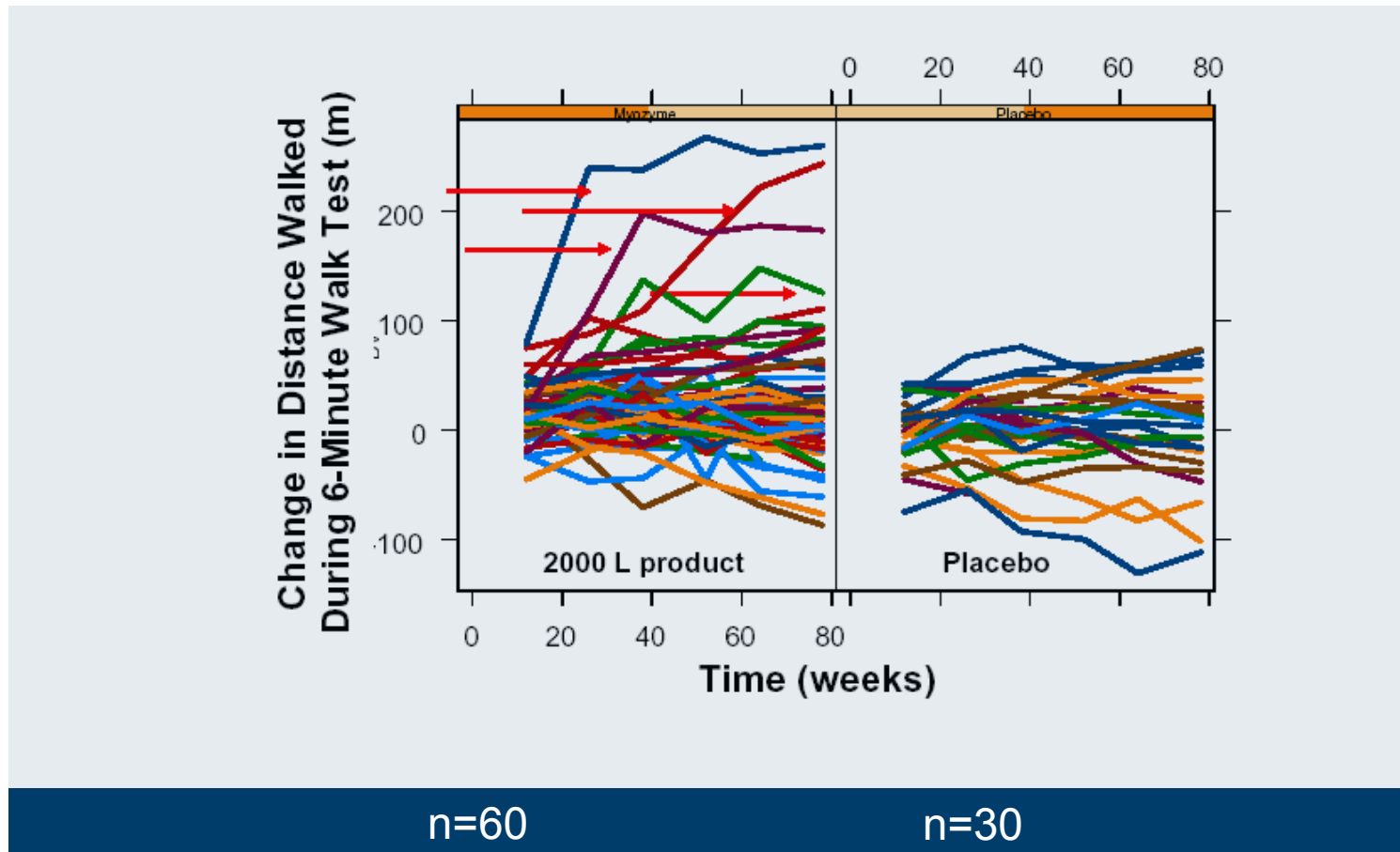
Standard of care: Myozyme or Lumizyme

- Unmet need remains: Even at doses of 20 mg/kg (10x other ERTs), patients still struggle with impaired respiratory function, muscle weakness, fatigue

Clinical timeline

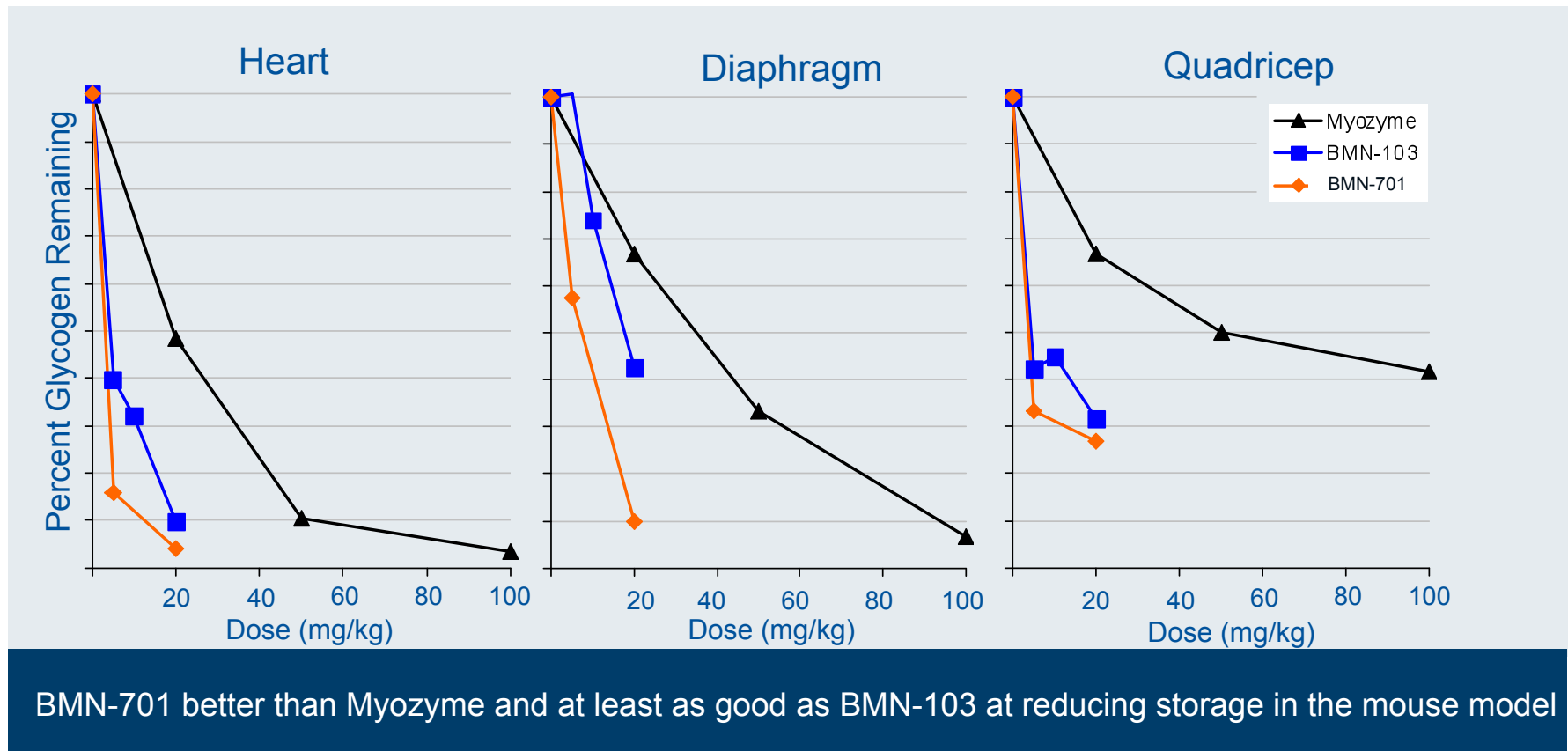
- Phase I/II trial initiated in January 2011
  - Open-label study to evaluate the safety, tolerability, PK, PD and clinical activity of BMN 701
  - Intravenous infusion every two weeks at doses of 5 mg/kg, 10 mg/kg and 20 mg/kg
  - Approximately 30 patients between the ages of 13 and 65 years old with late-onset Pompe disease
  - Treatment period of 24 weeks
  - Top-line results in 2H 2012

# Myozyme: Except for 4 High Responders of 60 Subjects, Most Patients did not Perform Much Better than Placebo in the Adult-Onset Study



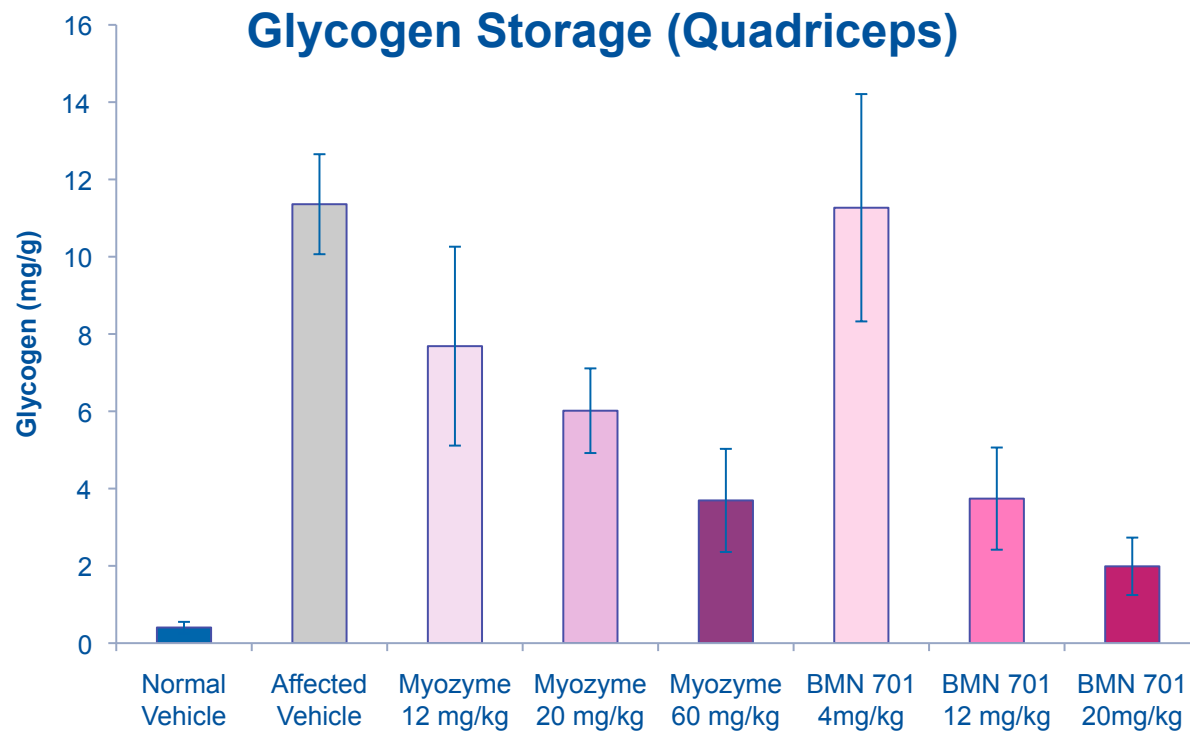
FDA Ceder presentation to the Endocrinologic and Metabolic Drugs Advisory Committee, October 21, 2008

# BMN-701 In Vivo Efficacy



BMN-701 better than Myozyme and at least as good as BMN-103 at reducing storage in the mouse model

# Glycogen Clearance, BMN-701 vs. Myozyme



Only BMN-701 (20 mg/kg) reduced glycogen storage to normal (vehicle) levels.

Statistically equivalent:

Myozyme<sup>®</sup> (60 mg/kg) = BMN 701 (12 mg/kg)

Normal (vehicle) = BMN 701 (20 mg/kg)



# BMN-673: PARP Inhibitor for Genetically Defined Cancers

## Clinical Support

- Results showing significant improvements in survival with two separate compounds strongly support PARP and other defects in homologous recombination as valid targets for cancer therapy
- BMN-673 has been proven to be highly active in mouse xenograft models of human cancer and appears to have favorable properties, including potency, selectivity, and bioavailability

## Development Plan

- Phase I/II trial initiated in January 2011
- In the clinic - identify which cancers and more specifically, which genetic mutations, are more susceptible to treatment with BMN-673



# Status of BMN-673 Development

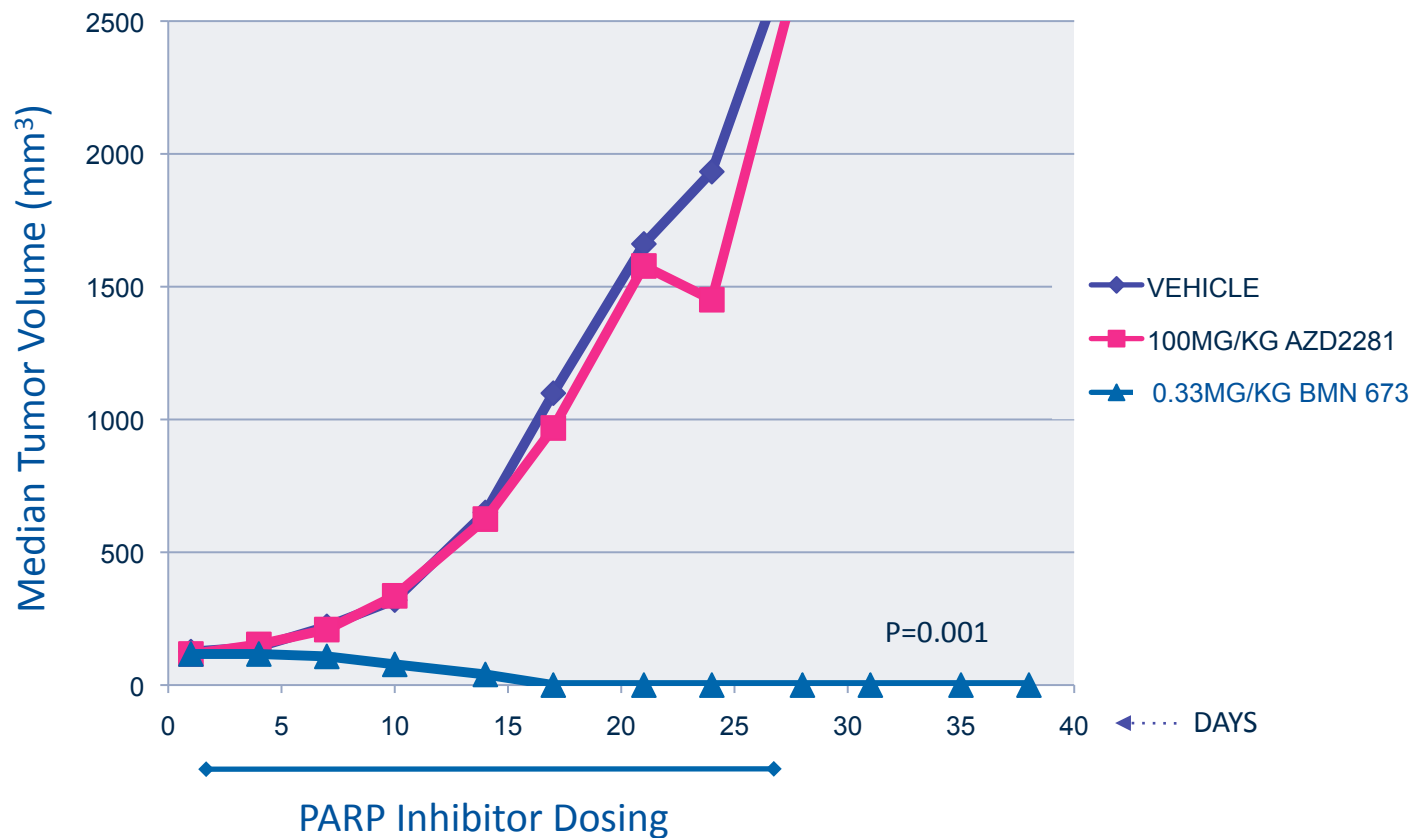
- Phase 1 solid tumor protocol underway
  - US site open—UK site about to open
  - Dose escalation ongoing in cancer patients: Once daily oral dosing
  - Drug levels and pharmacokinetic data from first cohort
- Dose escalation will continue until maximum tolerated dose identified
  
- Phase 1 hematological malignancy protocol to begin 2Q
  - Targeting AML, CLL, mantle cell lymphoma
  - Sites in US and UK



# Finding Tumors Sensitive to PARP Inhibitors

- Brca deficient tumors: Clinically validated to be sensitive to PARP inhibitors
- When MTD reached on solid tumor protocol, high priority will be to enroll brca carriers to enable go/no go decision on further development
- Other DNA repair defects in tumors predicted by preclinical data to be sensitive to PARP inhibition, to be incorporated into Phase 1 clinical protocols:
  - PTEN mutations
  - Atm mutations
  - Functional defects in acute myeloid leukemia
- Research on other DNA repair defects that will make tumors sensitive

# BMN 673 Demonstrates Superiority in MX-1 Tumor Model Study: Monotherapy Efficacy



# BMN-111 for Achondroplasia

## Disease background

- Achondroplasia is the most common form of human dwarfism
- Autosomal dominant activating mutation in the fibroblast growth factor receptor 3 (FGFR3) gene
- Incidence: 1 in 15,000 to 40,000 births with ~ **200 new cases/year in the US**
- **18,000 to 24,000 patients in the US and Europe combined**, estimated addressable market ~25%

## Good strategic fit for BioMarin

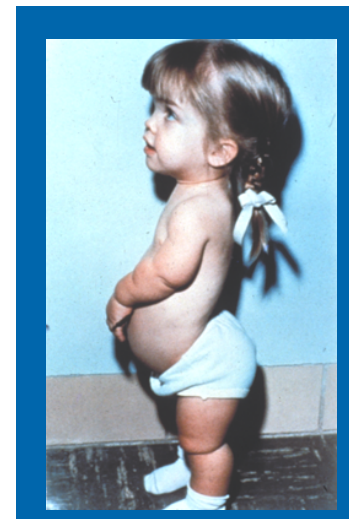
- Orphan disease population with unmet medical need
- Targets specialist prescribing physicians
- Potentially high value therapeutic with premium pricing
- No approved therapy

## BMN-111: Analog of CNP (C-type natriuretic peptide)

CNP is a positive regulator of bone growth

Proof-of-principle studies demonstrated that CNP can reverse the Achondroplastic phenotype in mice

**Clinical plan:** Initiate Phase I trial in 1Q 2012



# KEY MILESTONES

Initiation of Kuvan neurocognitive outcome study	3Q 2010	✓
Announcement of new IND-filing candidate at R&D Day	4Q 2010	✓
File IND for BMN-673 (PARP Inhibitor)	4Q 2010	✓
Initiate Phase I/II trial for BMN-701 for Pompe disease	Jan 2011	✓
Initiate Phase 1b trial for BMN-673	Jan 2011	✓
Initiate pivotal Phase III trial for GALNS for MPS IV	1Q 2011	✓
Initiate pivotal Phase III trial for Firdapse for LEMS in U.S.	2Q 2011	✓
Results from investigator-sponsored trial of Kuvan in autism	3Q 2011	
Results from Phase II PEG-PAL trial, including daily dosing and formulation studies	3Q 2011	
Initiate Phase III PEG-PAL trial	1Q 2012	
Initiate Phase I trial for BMN-111 for Achondroplasia	1Q 2012	
Availability of handheld blood Phe monitor	1H 2012	
Results for Phase III trial for GALNS for MPS IVA	2H 2012	
Results for PKU-016 Kuvan neurocognitive study	2H 2012	
Results for Phase I/II trial for BMN-701 for Pompe disease	2H 2012	
U.S. and European filings for GALNS for MPS IV	4Q 2012/1Q 2013	



# Compelling Investment Thesis for BMRN

## **Growing Commercial Business Generating \$422-452M\* in Sales in 2011**

- Double-digit Y/Y sales growth from current products
- No significant competitors known or in clinical trials

## **Large Clinical Pipeline of Innovative Products (not “me too” products)**

- GALNS and PEG-PAL – Advancing to late-stage development, commercial infrastructure already in place
- Proof of concept studies to read out in 2011 and 2012 for an additional four products
- Aiming for long-term growth and share appreciation through innovation rather than short-term focus on maximum GAAP earnings

## **Commercial Business Generates Significant Cash Which Enables Investment in R&D Without Significant Financing Risk**

- If new product R&D expenses were eliminated, BioMarin would generate large earnings and cash flow
- Minimal financing risk with \$394M in cash at the end of 1Q 2011 and positive cash flow from operations



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