


The BioMarin logo features the word "BIO" in a dark blue font, followed by a vertical stack of four colored dots (red, orange, yellow, green), and then "MARIN" in a dark blue font. The entire logo is set against a background of a laboratory setting with a petri dish and a pipette.

BIO MARIN®

A close-up photograph of a gloved hand holding a glass petri dish. Inside the dish, a series of blue spots are arranged in a curved line, resembling a DNA microarray or a gel electrophoresis result. A blue pipette tip is positioned above the spots, as if it has just deposited a drop of liquid. The background is a blurred laboratory environment with various glassware and equipment.

# THE SCIENCE OF SUCCESS

BioMarin Pharmaceutical Inc.  
2008 Annual Report





BY LEVERAGING EXPERTISE IN  
ORPHAN DRUG DEVELOPMENT,  
MANUFACTURING AND  
COMMERCIALIZATION,  
BIOMARIN IS PROVIDING  
INNOVATIVE TREATMENT  
OPTIONS TO PATIENTS WITH  
RARE DISEASES.

BIOMARIN



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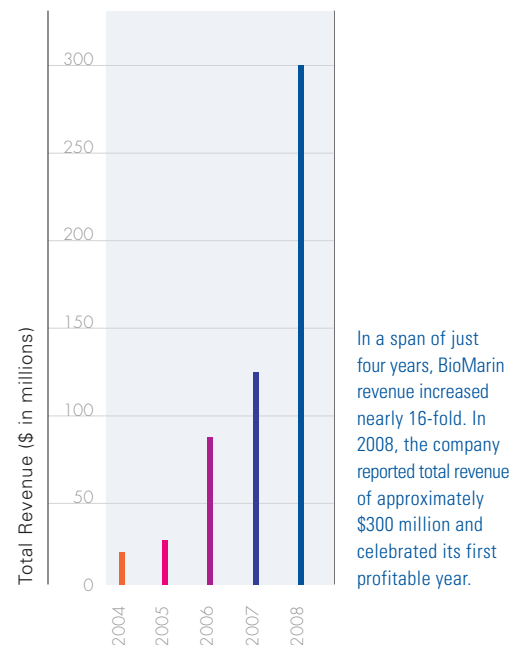
2008 : YEAR IN REVIEW

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BIOMARIN CELEBRATED A NOTABLY SUCCESSFUL YEAR IN 2008, ONE THAT MARKED THE COMPANY'S FIRST FULL YEAR OF PROFITABILITY, A VERY SIGNIFICANT MILESTONE IN THE ORGANIZATION'S 11-YEAR HISTORY. REVENUES INCREASED 144 PERCENT AS THE RESULT OF SALES OF THREE GROWING COMMERCIAL PRODUCTS, NAGLAZYME®, ALDURAZYME® AND KUVAN®. THE COMPANY'S BUSINESS, RESEARCH AND DEVELOPMENT EFFORTS YIELDED A RICH PRODUCT PIPELINE AND THE PROGRESSION OF A PROMISING COLLECTION OF EARLY-STAGE PROGRAMS NOW UNDER DEVELOPMENT.

Today, BioMarin is a fully integrated biopharmaceutical company and one of the leading pioneers in the highly complex industry of orphan drug development. By leveraging a secure financial foundation, growing revenues and a uniquely refined methodology for the development, manufacturing and commercialization of therapies for rare diseases, BioMarin is well positioned for continued long-term growth.

We invite you to learn more about BioMarin's people, products and science in the pages that follow.





A professional portrait of Jean-Jacques Bienaimé, Chief Executive Officer of Biogen. He is a middle-aged man with light brown hair, wearing a dark pinstriped suit jacket, a white shirt, and a blue patterned tie. He is smiling slightly and has his hands clasped in front of him. The background is a blurred office interior with warm lighting.

*"IN 2008, BIOMARIN ACHIEVED  
IMPORTANT MILESTONES THAT  
WILL FUEL FUTURE GROWTH  
OPPORTUNITIES IN THE ORPHAN  
DISEASE INDUSTRY."*

JEAN-JACQUES BIENAIMÉ  
CHIEF EXECUTIVE OFFICER

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A MESSAGE FROM THE CEO

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A well known French poet once said, "L'homme est ainsi bâti: Quand un sujet l'enflamme L'impossibilité disparaît à son âme." Loosely translated, this means that for people who are inspired with passion and determination, nothing is unattainable. For them, anything is possible. That is how I would describe the people at BioMarin and the force that drives the company's success.

There is a sense of exhilaration in our offices, hallways and laboratories that is fueled by a sense of urgency to bring important drugs to market as quickly as possible. With collaboration, hard work and determination, BioMarin's team of physicians, researchers and business professionals is committed to harnessing its expertise in biopharmaceutical science to improve the lives of people with rare disease. Please join me in congratulating the entire team on the successes they achieved in 2008.

The year 2008 was a very important milestone in BioMarin's history. We achieved our first profitable full year, with total revenues up 144 percent from 2007 to nearly \$300 million, and increased sales across all of our three products. We continue to build an exciting pipeline, with a clinical portfolio featuring PEG-PAL for PKU and GALNS for MPS IV, and a preclinical lineup that provides hope to many other patients with a variety of other rare diseases.

The year also brought with it the U.S. launch of Kuvan and we have been encouraged by the progress made thus far in a market with unique complexities. We continue to look for new ways to enhance our commercial efforts in this area and we remain very optimistic about the long-term potential of the product.

Other successes throughout the year included several regulatory achievements such as the approval of Naglazyme in Japan and South Korea, and the recent approval of Kuvan secured in the European Union by our partner Merck Serono.

In 2008, BioMarin achieved important milestones that will fuel future growth opportunities in the orphan drug industry. Today, as a fully integrated mid-cap biopharmaceutical company with three products on the market, strong revenues and cash reserves of nearly \$560 million, we are confident and well positioned for the long-term. In 2009, we will continue to advance our pipeline and actively pursue valuable business development opportunities to bring increased value to patients, shareholders and employees.

Thank you for your support.

Sincerely,



Jean-Jacques Bienaimé

Chief Executive Officer

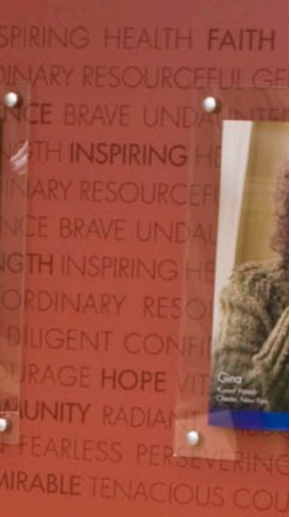




"OUR PRODUCT DEVELOPMENT STRATEGY FOCUSES ON LEVERAGING OUR EXPERTISE IN TREATING PATIENTS WITH RARE GENETIC DISORDERS AND CAREFULLY EXPANDING OUR REACH INTO OTHER AREAS OF UNMET MEDICAL NEED."

DAN OPPENHEIMER, PH.D.  
VICE PRESIDENT,  
PORTFOLIO STRATEGY





BUILDING A ROBUST PRODUCT PIPELINE


MEET BIOMARIN'S MORQUIO CORE TEAM:

Aaron, Monica, Michael, Celeste, Kris, Florence Candice, and Cori (pictured on the left) are members of one of BioMarin's cross-functional core teams who work together to advance individual product candidates from the research bench, into the clinic, and past the finish line on to regulatory approval and commercialization.

Each program illustrated on the bars below represents the work of a collection of scientists, physicians, clinicians and other biopharmaceutical professionals who mobilize their passion, urgency and scientific expertise to bring important new therapies to patients with rare diseases.

PRECLINICAL TESTING	PHASE 1	PHASE 2	PHASE 3	BLA : NDA : MAA	COMMERCIAL
<b>Naglazyme</b> for MPS VI					
<b>Aldurazyme</b> for MPS I					
<b>Kuvan</b> for PKU					
<b>PEG-PAL</b> for PKU					
<b>GALNS</b> for MPS IVA					
<b>BMN-195</b> Utrophin upregulator for Duchenne Muscular Dystrophy					
<b>BMN-185</b> IgA Protease for IgA Nephropathy					

Pictured on page 4 (left to right): Aaron Olsen (Finance), Monica Miller (Program Management), Michael Vellard, Ph.D. (Research), Celeste Decker, M.D. (Medical/Clinical Affairs), Kris Antonsen, Ph.D. (Process Development), Florence Lorget, Ph.D. (Pharm/Tox), Candice Henkel (Clinical Operations, Genetics) and Cori Leonard (Regulatory Affairs). Not pictured: Jill Jepson (Marketing). Background photo: Liam, Kuvan patient.



*"AS WE ADVANCE OUR RESEARCH PROGRAMS, IT'S INSPIRING TO THINK THAT OUR WORK HAS THE POTENTIAL TO HELP HUNDREDS OF PATIENTS WITH RARE DISEASES."*

KIEU LY  
RESEARCH ASSOCIATE,  
PROCESS DEVELOPMENT



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 LEVERAGING COMPELLING BIOLOGY
 

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FOLLOWING THE SUCCESSFUL DEVELOPMENT AND COMMERCIALIZATION OF THREE ORPHAN DRUG THERAPIES NOW PRESCRIBED TO PATIENTS AROUND THE WORLD, BIOMARIN CONTINUES TO ACTIVELY PURSUE THE DEVELOPMENT OF ADDITIONAL BIOLOGICAL COMPOUNDS FOR A VARIETY OF RARE DISEASES. WITH THE ADVANCEMENT OF THESE CLINICAL AND PRE-CLINICAL RESEARCH PROGRAMS COMES THE POSSIBILITY OF HOPE FOR HUNDREDS MORE PATIENTS WITH DEBILITATING DISEASES LIKE MORQUIO TYPE A SYNDROME (MPS IVA), DUCHENNE MUSCULAR DYSTROPHY (DMD) AND IGA NEPHROPATHY, JUST TO NAME A FEW. AS OF YET, THESE PATIENTS LACK ADEQUATE MEDICAL TREATMENT OPTIONS.

**PEG-PAL FOR PKU**

BioMarin expects to initiate a Phase 2 proof of concept study for PEG-PAL in mid-2009. The trial is designed to evaluate the safety and efficacy of repeat injections in patients with PKU. If successful, this new drug candidate will complement the company's existing drug, Kuvan, by treating an additional population of PKU patients who do not respond adequately to Kuvan.

**GALNS FOR MORQUIO TYPE A SYNDROME**

GALNS (N-acetylgalactosamine-6-sulfate sulfatase) recently entered the clinic and is designed to address a population of underserved patients who are very anxious to receive medical treatment. By leveraging its expertise in the area of enzyme replacement therapy, BioMarin is developing this product candidate with the hope that it will prove safe and effective in the clinic and advance quickly through the regulatory approval process. This population of patients is estimated to be roughly the same incidence rate as MPS I.

**UTROPHIN UPREGULATOR FOR DUCHENNE MUSCULAR DYSTROPHY**

An estimated one in 3,500 boys in the United States and Europe suffer from DMD, a chronically debilitating and ultimately fatal disease that, as of yet, has no viable treatment options. Now in pre-clinical development, a small molecule inducer of the protein utrophin has demonstrated a potential to help patients with DMD by replacing a defective protein (dystrophin) in their systems. Inspired with the hope of success, researchers, clinicians, patients and families await further development of this much-needed pre-clinical product candidate.

**IGA PROTEASE FOR IGA NEPHROPATHY**

IgA Nephropathy is a chronic, often progressive kidney disease that affects an estimated one in 7,500 Americans and commonly results in end-stage renal failure. In vitro data has demonstrated that IgA protease may be effective in the treatment of this disease and BioMarin is currently evaluating the compound in vivo trials with the hope of initiating an early development plan in the future.



**BIOMARIN**  
NDC 68135-020-01  
**Aglazyme**  
(GALISULFASE)  
10 mg/5 mL (1 mg/mL)  
Concentrated Solution for  
Intravenous Infusion Only  
Must be diluted prior to use.  
Rx Only

**B**  
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SERVING PATIENTS AROUND THE WORLD

Every year, newly identified patients around the world experience the benefits of Naglazyme, the only therapeutic treatment available for MPS VI. International demand for the drug is increasing steadily in Latin America, including Brazil, where the drug recently received regulatory approval from the National Health Surveillance Agency. A growing number of patients throughout Eastern Europe, Western Europe and the Middle East are also receiving this much-needed therapy.







*"WE ARE CONSTANTLY WORKING TO ENHANCE THE CLINICAL DATA FOR ALL OF OUR PRODUCTS. WE WANT TO LEARN MORE ABOUT THE DISEASES WE TREAT IN ORDER TO IMPROVE PATIENT CARE, COMPLIANCE AND MAINTENANCE OF LONG-TERM THERAPY."*

ANDREA SCHATZ, R.N., B.S.N.  
SENIOR MEDICAL SCIENCE LIAISON



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 ACTIVELY PURSUING ADVANCED TREATMENT OPTIONS
 

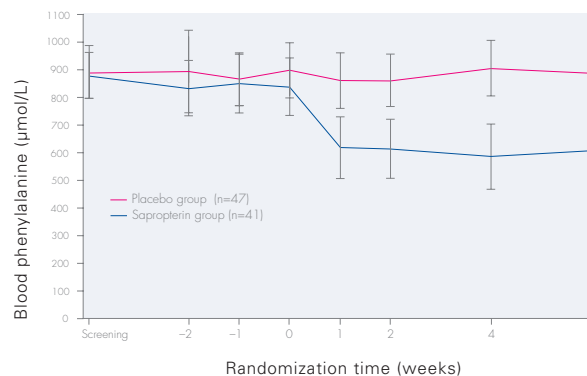
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BIOMARIN'S RIGOROUS RESEARCH EFFORTS DO NOT END WITH THE REGULATORY APPROVAL AND COMMERCIALIZATION OF ITS PRODUCTS. IN ORDER TO CONTINUE BUILDING IMPORTANT CLINICAL DATA, THE COMPANY SUPPORTS A NUMBER OF POST-MARKETING TRIALS DESIGNED TO FURTHER ENHANCE EXISTING RESEARCH ON LONG-TERM PRODUCT SAFETY AND EFFICACY MEASURES.



For example, there are currently a number of open and planned post-marketing studies for Kuvan that will assess a range of measures, including improvement in neurocognitive, social and behavioral function, depression, anxiety, short term memory, processing speed, executive function, and changes in bone density and nutrition. These studies, along with an ongoing PKU patient registry program will generate additional data over time to support the use of Kuvan. Other similar programs for Naglazyme and Aldurazyme are also in progress.

High Phe levels are toxic to the brain. Kuvan is helping hundreds of patients better manage their PKU by lowering Phe levels. In a Phase 3 placebo controlled trial, the drug was responsible for a significant reduction in blood Phe levels ( $p < 0.001$ ). The mean Phe level in the Kuvan group was reduced by 29%, while the mean Phe level in the placebo group increased by 3%. In addition, the proportion of patients with Phe levels  $< 600 \mu\text{mol/L}$  was significantly higher in the group treated with Kuvan (Levy HL, et al. Lancet. 2007;370: 504–510).







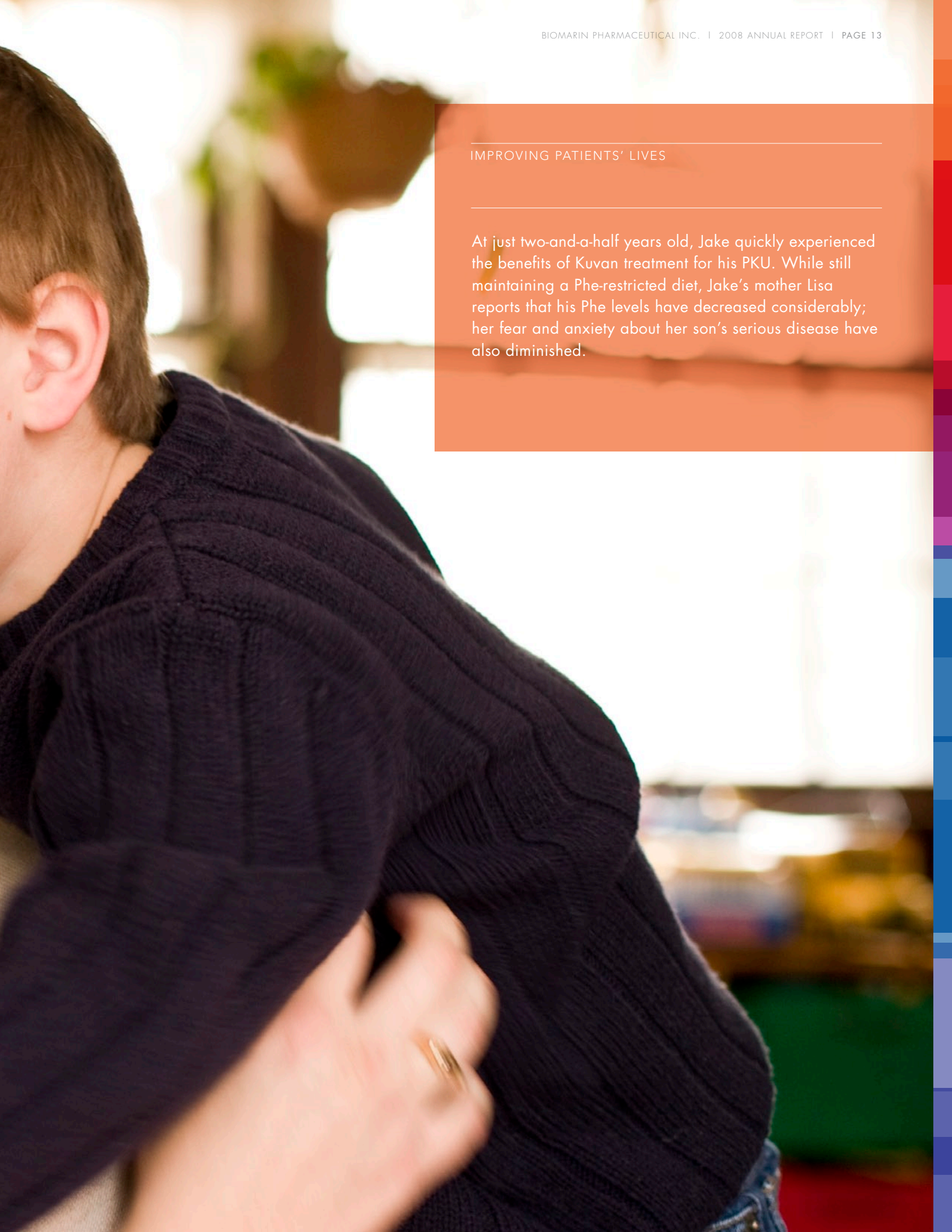


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IMPROVING PATIENTS' LIVES

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At just two-and-a-half years old, Jake quickly experienced the benefits of Kuvan treatment for his PKU. While still maintaining a Phe-restricted diet, Jake's mother Lisa reports that his Phe levels have decreased considerably; her fear and anxiety about her son's serious disease have also diminished.





*"I AM CONTINUOUSLY  
MOVED AND INSPIRED BY  
THE STRENGTH, JOY AND  
DETERMINATION OF THESE  
EXTRAORDINARY PEOPLE  
AND THEIR FAMILIES."*

DR. PAUL HARMATZ  
CLINICAL RESEARCHER,  
CHILDREN'S HOSPITAL AND  
RESEARCH CENTER OAKLAND







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#### FULLFILLING UNMET MEDICAL NEEDS

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PEDIATRIC GASTROENTEROLOGIST, DR. PAUL HARMATZ, OF CHILDREN'S HOSPITAL AND RESEARCH CENTER OAKLAND, IS ONE OF A GROUP OF PHYSICIANS AROUND THE COUNTRY PARTICIPATING IN ONGOING CLINICAL TRIALS WITH PATIENTS WHO RECEIVE NAGLAZYME TREATMENT FOR MPS VI. HE AND LONGTIME PATIENT, ISABELLE (*PICTURED HERE*), MEET EVERY FRIDAY WITH OTHER LOCAL PATIENTS FOR WEEKLY ENZYME REPLACEMENT THERAPY. THEY ALSO PLAYED AN INSTRUMENTAL ROLE IN THE 2003-04 PHASE 3 CLINICAL TRIALS FOR THE DRUG.

Today, four years after the commercialization of Naglazyme, BioMarin clinicians and physicians like Dr. Harmatz continue to gather important data that will enable further advancements in the treatment of patients with MPS VI and other rare genetic diseases. Currently, an international group of physician investigators is conducting a clinical surveillance program to study the long-term safety and efficacy of Naglazyme therapy. This program will also provide information about the natural history of MPS VI patients, both treated and untreated with enzyme replacement therapy.

Patients with MPS I (mucopolysaccharidosis I), are also receiving valuable therapy with a similar enzyme replacement therapy, Aldurazyme, which was co-developed by BioMarin and Genzyme Corp.

Introduced in the United States in 2008, and recently approved in the European Union, Kuvan for PKU (phenylketonuria) is enabling patients to actively reduce the blood Phe (phenylalanine) levels that, if elevated, are toxic to the brain.

## CORPORATE INFORMATION

BIOMARIN DEVELOPS AND COMMERCIALIZES INNOVATIVE BIOPHARMACEUTICALS FOR SERIOUS DISEASES AND MEDICAL CONDITIONS. THE COMPANY'S PRODUCT PORTFOLIO COMPRISES THREE APPROVED PRODUCTS AND MULTIPLE CLINICAL AND PRECLINICAL DRUG PRODUCT CANDIDATES.

## EXECUTIVES

**Jean-Jacques Bienaimé**  
Chief Executive Officer

**Jeffrey H. Cooper**  
Senior Vice President,  
Chief Financial Officer

**Henry J. Fuchs, M.D.**  
Senior Vice President,  
Chief Medical Officer

**Stephen Aselage**  
Senior Vice President,  
Global Commercial Development

**Robert A. Baffi, Ph.D.**  
Senior Vice President,  
Technical Operations

**G. Eric Davis**  
Vice President,  
General Counsel & Secretary

**Mark Wood**  
Vice President,  
Human Resources

**Jeff Ajer**  
Vice President,  
Sales & Marketing Operations

**Luisa Bigornia, Ph.D.**  
Vice President,  
Intellectual Property

**Lewis P. Chapman**  
Vice President,  
Global Marketing

**Steve Glass**  
Vice President,  
General Manager, European Operations

**Joshua A. Grass**  
Vice President,  
Business & Corporate Development

**Steven Jungles**  
Vice President,  
Supply Chain

**Daniel P. Maher**  
Vice President,  
Product Development

**Brian Mueller**  
Vice President,  
Controller

**Charles A. O'Neill, Ph.D.**  
Vice President,  
Pharmacological Sciences

**Dan Oppenheimer, Ph.D.**  
Vice President,  
Portfolio Strategy

**R. Andrew Ramelmeier, Ph.D.**  
Vice President,  
Manufacturing and Process Development

**Victoria Sluzky, Ph.D.**  
Vice President,  
Quality and Analytical Chemistry

**Gordon Vehar, Ph.D.**  
Vice President,  
Research

**Eduardo E. Von Pervieux**  
Vice President,  
Information Technology, Chief Information Officer

**Amy Waterhouse**  
Vice President,  
Regulatory & Government Affairs

## BOARD OF DIRECTORS

**Jean-Jacques Bienaimé**  
Chief Executive Officer

**Michael Grey**  
President & Chief Executive Officer,  
Auspex Pharmaceuticals, Inc.

**Elaine Heron**  
Chairman & Chief Executive Officer,  
Amplix Pharmaceuticals, Inc.

**Joseph Klein, III**  
Managing Director,  
Gauss Capital Advisors, LLC.

**Pierre Lapalme**  
Former President & Chief Executive Officer,  
North America Ethypharm, Inc.

**V. Bryan Lawlis, Ph.D.**  
President & Chief Executive Officer,  
Itero Biopharmaceuticals, Inc.

**Alan Lewis, Ph.D.**  
President & Chief Executive Officer,  
Juvenile Diabetes Research Foundation

**Randy Meier**  
President & Chief Operating Officer  
Advanced Medical Optics, Inc.

## CORPORATE HEADQUARTERS

**BioMarin Pharmaceutical Inc.**

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www.bmrn.com

BioMarin operates two subsidiary offices in London, UK, and Sao Paulo, Brazil, with branch offices in multiple countries around the world

## STOCK LISTING

BioMarin Pharmaceutical is listed on the NASDAQ Global Select Market under the symbol BMRN (NASDAQ: BMRN).

## INDEPENDENT ACCOUNTANTS

**KPMG LLP**  
San Francisco, CA

## TRANSFER AGENT

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**FORWARD-LOOKING STATEMENT:** This annual report contains forward-looking statements about the business prospects of BioMarin Pharmaceutical Inc., including, without limitation, statements about: the expectations of revenue and sales related to Naglazyme, Kuvan, and Aldurazyme; the financial performance of the BioMarin as a whole; PEG-PAL, GALNS and other product candidates; the continued clinical development and commercialization of Aldurazyme, Naglazyme, Kuvan, and its product candidates; and actions by regulatory authorities. These forward-looking statements are predictions and involve risks and uncertainties such that actual results may differ materially from these statements. These risks and uncertainties include, among others: our success in the continued commercialization of Naglazyme and Kuvan; Genzyme Corporation's success in continuing the commercialization of Aldurazyme; results and timing of current and planned preclinical studies and clinical trials; our ability to successfully manufacture our products and product candidates; the content and timing of decisions by the U.S. Food and Drug Administration, the European Commission and other regulatory authorities concerning each of the described products and product candidates; the market for each of these products and particularly Aldurazyme, Naglazyme and Kuvan; actual sales of Aldurazyme, Naglazyme and Kuvan; Merck Serono's activities related to Kuvan and factors detailed in BioMarin's filings with the Securities and Exchange Commission, including, without limitation, the factors contained under the caption "Risk Factors" in BioMarin's 2008 Annual Report on Form 10-K, and the factors contained in BioMarin's reports on Form 10-Q. Stockholders are urged not to place undue reliance on forward-looking statements, which speak only as of the date hereof. BioMarin is under no obligation, and expressly disclaims any obligation to update or alter any forward-looking statement, whether as a result of new information, future events or otherwise.





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## Feature DVD Presentation: 2008 in Review

BioMarin invites you to view the enclosed DVD to learn more about the company's milestone year and become acquainted with some of the people behind the science who are responsible for the company's continued success. Please view the feature presentation and participate in an interactive dialogue with company executives. To learn more about our patients, products and people, BioMarin also welcomes you to visit us online at [www.BMRN.com](http://www.BMRN.com).

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