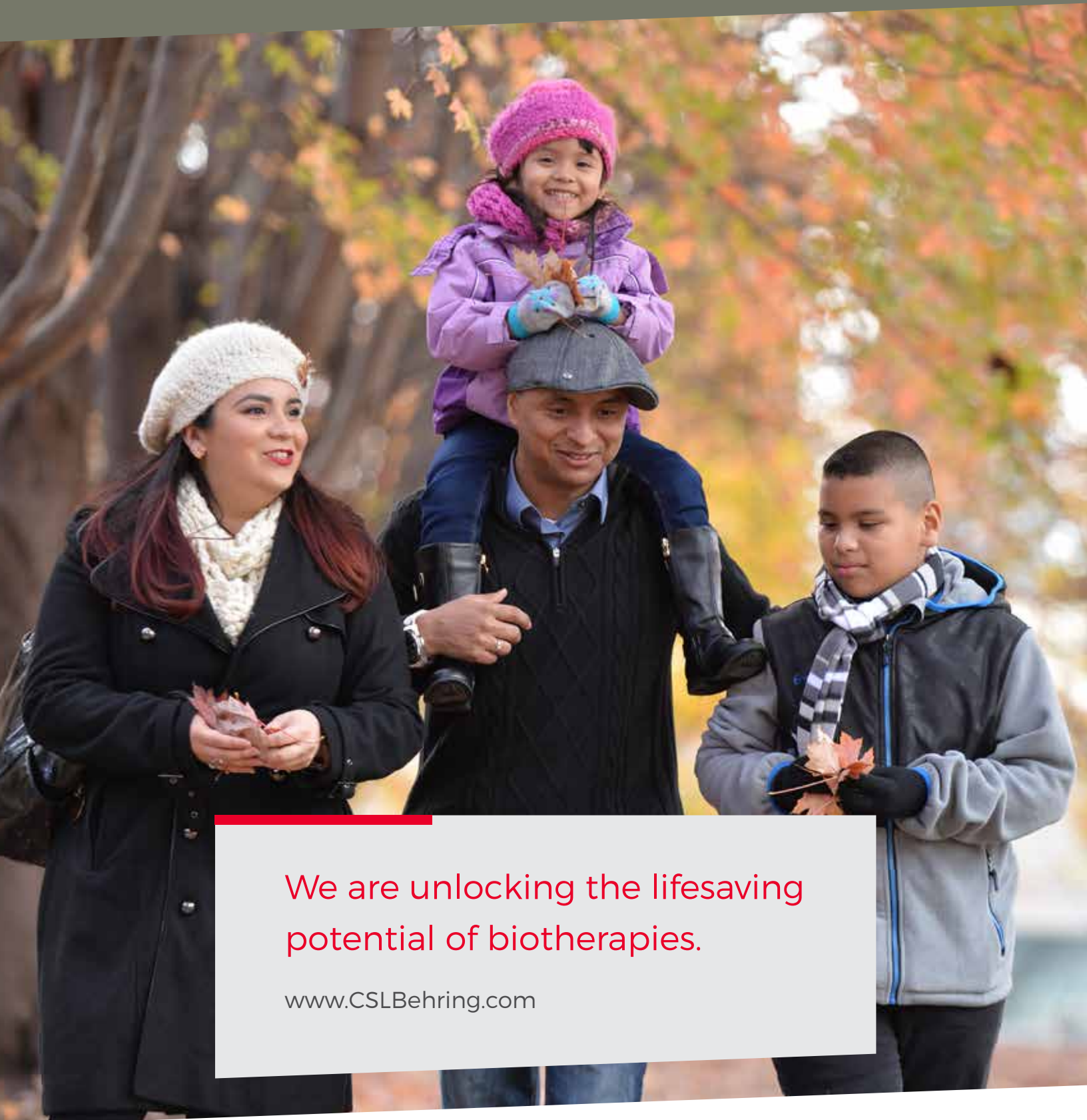


**CSL Behring**

Biotherapies for Life®

Driven by Our Promise™



We are unlocking the lifesaving  
potential of biotherapies.

[www.CSLBehring.com](http://www.CSLBehring.com)

# Driven by Our Promise

CSL Behring has been at the forefront of biotherapeutics research and development for more than 100 years. We trace our roots to Emil von Behring, the first Nobel Prize recipient in physiology and medicine. CSL Behring and the collective group of CSL companies have a heritage of outstanding contributions to medicine and human health.

Throughout the years our passion and commitment to delivering on our promise to save and improve the lives of people with rare and serious diseases has remained strong. We're proud of our history, and we're excited about the future because we're just getting started. Our ability to innovate and deliver lifesaving products for patients with unmet medical needs around the world continues to grow in response to the demand for our products.

Today, we are one of the largest and fastest growing protein biotherapeutics businesses in the world with more than 16,000 employees operating in more than 30 countries. Our products are delivered to patients in more than 60 countries. We offer the broadest range of quality plasma-derived and recombinant therapies in the protein biotherapeutics industry, and have substantial markets in North America, Europe, Asia and Australia.

## Our products are used around the world to treat conditions such as:

- Immune Disorders
- Bleeding Disorders
- Hereditary Angioedema
- Neurological Disorders
- Inherited Respiratory Disease

## We focus on patients

The people who trust and rely on us come first in everything we do. We are keenly aware that our therapies are essential to their health and well-being, and we bring that sense of purpose to work every day. We are passionate about meeting the needs of our patients, which begins with listening to them and their healthcare providers.

Our innovations respond to people's needs, not market size. For example, one of our orphan therapies treats a condition affecting approximately 300 patients in the U.S. Our innovative spirit drives the many programs and services we offer patients with rare diseases.

We work with patient groups, plasma donors, researchers, physicians, nurses, pharmacists and home healthcare companies to promote quality care, improve patient access to care, expand educational outreach efforts, and affect public healthcare policy.

## Recognized and respected by patient organizations worldwide

We strive to be the best at what we do, and we are proud that our pioneering work in developing therapies to treat rare and serious conditions, and our outstanding workplace, have received recognition from patient organizations and other third parties worldwide.

This includes the *2017 Industry Innovation Award* presented by the National Organization for Rare Disorders (NORD), the *2017 Healthcare Innovator of the Year Award* presented by the *Philadelphia Business Journal*, the *2016 Innovator Break-Through Award* presented by Marcum and *SmartCEO* magazine, the National Hemophilia Foundation's *2015 Leadership Award*, and *Best Places to Work* awards in Switzerland, Germany and Italy in 2015. The thousands of talented employees at CSL Behring who share our vision, values and passion for saving lives are the engine that drives our superior performance.

## Broadest range of therapies to treat rare diseases

Our portfolio of innovative medicines includes a wide range of recombinant and plasma-derived products for treating bleeding disorders and immune deficiencies, and our specialty products for treating hereditary angioedema and Alpha-1 Antitrypsin Deficiency.

CSL Behring also manufactures critical care products that are used in cardiac surgery and organ transplantation, and to treat trauma, shock, burns and acquired bleeding. They are also used to reverse the effects of Warfarin and to prevent hemolytic disease of the newborn.



## Hereditary Bleeding Disorders

CSL Behring is a world leader in innovative medicines and technologies for the treatment of bleeding or coagulation disorders. Our therapies are used to treat patients who are deficient in some of their natural blood proteins, making them vulnerable to bleeding, which can be debilitating and life-threatening. Today we offer the largest portfolio for the treatment of congenital bleeding disorders with more than a dozen plasma-derived and recombinant coagulation factor concentrates.

Our portfolio of plasma-derived therapies includes plasma-derived factor VIII/VWF concentrates for the treatment of von Willebrand Disease and hemophilia A, and factor VIII and factor IX concentrates for the treatment of hemophilia A and B, respectively. Recombinant therapies are made in genetically adapted cell cultures, where an original cell is modified or re-programmed to produce specifically desired proteins such as rVIII-SingleChain for hemophilia A and rIX-FP for hemophilia B.

These therapies offer patients strong and sustained efficacy with less frequent dosing. Our recombinant product portfolio was built on our scientific expertise in bleeding disorders, our strength in protein research and development, and on our long-standing commitment to the hemophilia community.

We also continue to advance the development of our recombinant fusion protein linking coagulation factor VIIa with albumin (rVIIa-FP) for treatment of patients with hemophilia A or B who have developed inhibitors and for patients with a congenital deficiency of factor VII.

Our commitment to improving quality of life for hemophilia patients is further reflected in our investment in state-of-the-art manufacturing facilities for the production of recombinant fusion albumin proteins.

## Immunodeficiency and Autoimmune Diseases

Immunoglobulin (Ig) antibodies are specific proteins of the immune system and are key components in keeping us healthy. Through our global Ig franchise, CSL Behring offers one of the most comprehensive portfolios of safe, high-quality, technically advanced Ig therapies and is the leading Ig manufacturer in the world.

Our therapies are comprised of intravenous (IV) and subcutaneous formulations of Ig used to treat or prevent a variety of diseases. Ig is used as replacement therapy to provide missing protective antibodies in patients with primary and secondary immunodeficiencies. Additionally, Ig is used for its immunomodulatory effects in many neurological, hematological, and vasculitic diseases. Other approved indications include primary immune thrombocytopenia and chronic inflammatory demyelinating polyneuropathy.

Our Ig therapies offer choice in route of administration, varied concentration levels across different therapies, and strive to optimize patient convenience through room temperature storage options and self-administration.

CSL Behring continuously innovates to make our products safer, such as implementing steps aimed at reducing isoagglutinin levels in IVIg products in order to reduce the risk of haemolysis. We also developed the first 20% subcutaneous immunoglobulin (SCIg) therapy that delivers steady state immunoglobulin G levels and flexible dosing options.

In the U.S., CSL Behring markets the most frequently prescribed therapy for primary immunodeficiency (PI) and the leading Ig hospital product. We also manufacture hyperimmune immunoglobulins, which are administered to treat infections such as tetanus, rabies and hepatitis B.





### **Alpha-1 Antitrypsin Deficiency**

Alpha-1 Antitrypsin Deficiency (AATD), also called alpha-1, is a disorder caused by low levels of the protein alpha-1 antitrypsin. This protein is made in the liver and protects the lungs from damage caused by infection and inhaled irritants such as smoke. People with AATD have very low levels of alpha-1 antitrypsin, meaning their lungs do not have the same protection as people without the disorder. People with AATD may have an increased chance of developing lung disease, such as chronic obstructive pulmonary disease (COPD) or emphysema. CSL Behring's alpha-1 proteinase inhibitor treats this disorder by increasing the levels of alpha-1 antitrypsin protein in patients with alpha-1-related emphysema.

### **Hereditary Angioedema**

Hereditary Angioedema (HAE) is a rare but potentially life-threatening condition caused by a lack or malfunction of C1-esterase inhibitor (C1-INH), the protein that regulates inflammation and vascular permeability. CSL Behring's subcutaneous C1-INH therapy is used prophylactically to treat symptoms of HAE, which is characterized by acute attacks of edema (swelling) of the face, larynx (airways), abdomen and extremities. CSL Behring's intravenous C1-INH therapy is used for on-demand treatment of HAE symptoms.

### **Critical Care**

CSL Behring's critical care products are used to treat life-threatening conditions including shock, burns or fluid loss. Our factor concentrates are used to control bleeding and for management of perioperative bleeding complications and emergency bleeding. Prothrombin complex concentrate restores specific coagulation factors that are missing or depleted, and is used for the immediate reversal of the effects of Warfarin. Fibrinogen concentrates

replace a major protein involved in clot formation and help control bleeding.

Albumin is used to support blood volume and blood pressure in the treatment of shock or sepsis and to replace blood proteins lost from severe burns. It is also used during cardiac surgery to augment fluid replacement therapy and to treat certain liver disorders.

CSL Behring's surgical hemostatics include fibrin agents containing certain plasma-derived coagulation factors: fibrinogen and thrombin and the anti-fibrinolytic agent, aprotinin. Surgical hemostatics are used to speed up healing during surgery and to control bleeding. Our surgical hemostatics are used during a wide range of surgical procedures.

### **Breakthrough Medicines and Innovative Technologies**

Positive results from our Phase 2b clinical trial designed to evaluate the safety and proof of mechanism of CSL112, a novel apolipoprotein A-I (apoA-I) infusion therapy, have been presented. CSL112 is being developed to reduce the high incidence of early recurrent cardiovascular events that occur in the weeks to months following a heart attack by rapidly stabilizing additional atherosclerotic plaques at risk of rupture.

Data from the trial demonstrated that CSL112 does not cause significant changes in liver or kidney function and demonstrated that it is well-tolerated on administration in the acute myocardial infarction setting, thereby meeting the primary safety endpoints. CSL112's unique mechanism of action, the removal of cholesterol from atherosclerotic plaque in the arteries, was also confirmed by the study.

*Our entire family of biotherapies is on pages 14 and 15.*

# World-class R&D: unlocking the promise of biotherapies

Innovation has been in our DNA since 1916 and continues at the core of everything we do today. Our integrated global research and development organization is driven by an experienced team of 1,400 scientists who work collaboratively at worldwide locations. They continually explore new innovations to unlock the promise of biotherapies. Their contributions to medicine and human health have been possible because we continually grow our investment in R&D.

Over the last five years we have invested more than \$2.6 billion in R&D. This entails balanced investments in longer term, new product development activities in areas aligned with our core capabilities and commercial strengths and in life cycle management and market development of existing products.

We continue to sharpen our technological edge, including the acquisition of Calimmune, Inc., a biotechnology company focused on the development of ex vivo hematopoietic stem cell (HSC) gene therapy. The acquisition provides CSL Behring with a pre-clinical asset, CAL-H, an HSC gene therapy for the treatment of sickle cell disease and  $\beta$ -thalassemia, which complements our current product portfolio and deep expertise in hematology.

The acquisition also included two unique proprietary platform technologies, Select+™ and Cytegrity™. These technologies are designed to address some of the major challenges currently associated with the commercialization of stem cell therapy, including the ability to manufacture consistent, high-quality products, and to improve engraftment, efficacy and tolerability. Both technologies have broad applications in ex vivo stem cell gene therapy.

## Operational Excellence

We employ the most sophisticated production methods available and we meet or exceed stringent international safety and quality standards. Each step of our manufacturing process reflects CSL Behring's unyielding commitment to ensure our products are safe and effective.

To meet growing demand and bring more therapies to more patients, we continue to invest in the expansion of all our manufacturing facilities located in the U.S., Germany, Switzerland and Australia. In Kankakee, U.S., we completed an expansion that increased capacity for base fractionation 140 percent, and increased capacity for albumin production 200 percent.

In 2017 we acquired a majority stake in Wuhan Zhong Yuhan Rui De Biological Products Co. Ltd, which manufactures plasma-derived therapies in China. The transaction provides CSL with a strategic presence in the Chinese domestic plasma fractionation market and complements the leadership position that its CSL Behring business has built over the past 20 years as a provider of imported albumin in China.

Construction continues on CSL's 130,000 square-meter manufacturing facility in Lengnau, Switzerland, which will produce our novel, long-acting recombinant products. We also launched a multi-year \$450 million capacity expansion project to include a new base fractionation facility in Kankakee and albumin manufacturing capability in Broadmeadows, Australia. An expansion of Marburg's base fractionation facility was approved in 2016.

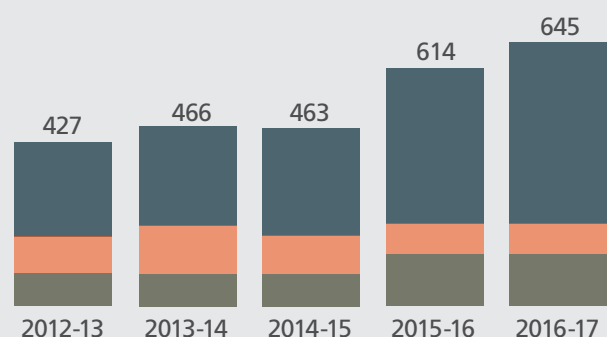
These multi-site expansions are an important step toward future viability and sustainability of our operations and activities within the CSL Group.

In addition, our world-class cell culture facility in Melbourne, Australia and recombinant purification facility in Marburg, Germany will play a key role in developing recombinant products for cancer and bleeding disorders, along with other new therapies progressing through our product pipeline.

CSL Behring operates one of the largest plasma collection networks in the world through our subsidiary, CSL Plasma. New collection centers are continually being opened to meet the demand for plasma.

Information about the innovations in CSL Behring's product pipeline can be viewed at [www.cslbehring.com/research-development](http://www.cslbehring.com/research-development). Learn about CSL Behring clinical trials at [www.cslbehring.com/clinical-trials](http://www.cslbehring.com/clinical-trials).

CSL R&D investment growth in millions of U.S. dollars



- New Product Development** activities focus on innovative new therapies for life-threatening diseases.
- Market Development Strategies** seek to bring therapies to new markets and new indications.
- Life Cycle Management** ensures continuous improvement of existing products.

# People with serious diseases are our community – their stories are our stories

## Patient focus is a core value

We believe our role extends beyond developing and manufacturing therapies for rare and serious diseases. CSL Behring has a long history of working closely with patient organizations across Europe and the U.S. to promote awareness, early diagnosis, testing, quality medical care and services, education, outreach and research.

Successful advocacy results from the empowerment of those who are impacted by a particular disease. We partner with patient groups to train patients to be their own best advocate, and to promote availability and access to safe and effective biotherapies for all patients. CSL Behring also advocates for public policies that foster innovation and the development and licensing of new therapies.

Our patient support initiatives and efforts to improve access to care would not be possible without the involvement of dedicated physicians and healthcare professionals, in addition to patient advocacy groups. Collectively, we facilitate awareness and are a powerful force for increasing access to treatment therapies.

CSL Behring also offers comprehensive support for patients and their families. This includes innovative programs and services to help families better manage the daily challenges of living with a chronic disorder. We also offer programs and services to assist patients and physicians with reimbursement support and ways to ensure access to the therapies patients need to stay healthy.



### Ben Davies

Ben Davies is a 21-year-old college student who was diagnosed with primary immunodeficiency (PI) when he was 8. His mother Tracie Davies is a special education case manager in Maryland. She said when Ben was young she communicated regularly with his school to help them understand his illness.

"Communication and education are essential," she said. "Often, teachers, nurses and other school personnel are not familiar with PI and do not understand what it is to be a PI patient."

Davies said that while she continued to stay in frequent contact with teachers, administrators and the school nurse over the years, her son would have preferred otherwise. "Ben did not want to tell anyone about his illness. Even his closest friends were not aware," she said.

But Ben didn't let PI keep him from participating in sports and being out in the world. His mother said he played sports through his teen years and always worked on the family farm, where he helped raise Texas Longhorns. In high school, he was involved in the Future Farmers of America and 4H.

Still, he preferred to keep quiet about his PI. "I didn't even tell my closest friends until I got hurt in 10th grade and had to tell them," he said. Today, things are much different. Ben, a student at University of Maryland who runs his own landscaping business, said he is more open about his PI.

And his mother remains a strong advocate. "Kids go through so many changes from elementary to middle then high school, as well as transitioning into adulthood," she said. "It is important to let them express, or not express, how they feel."



## Gina Perez

When Gina Perez' oldest son was diagnosed with hemophilia B, it was the first time she'd heard of the rare bleeding disorder. "I was in the supermarket with my son, Zachary, when a woman approached us and accused me of abusing him because of bruises on his arms, legs and face."

Six months later, after seeing a hematologist recommended by her son's pediatrician, Gina learned that Zachary had hemophilia B. "We didn't have hemophilia in our family, so it was a complete shock. Just the thought of my perfect baby having a life-changing rare disease was devastating."

Gina was tested and found not to be a carrier, which led her and her husband to think there was no way a second child would have



hemophilia B. But when Emiliano was born, he had the same mutation as his brother.

"My world came crashing down," Gina says. "I couldn't believe my second son had hemophilia." But she and her husband had learned of the importance of encouraging their sons to be active. "We let them decide what they wanted to do," Gina says, which included participating in CSL Behring's Gettin' in the Game Junior National Championship (JNC).

Gina remembers Zachary's first water polo match, and how she sat nervously in the stands holding a dose of factor in the event Zachary needed it.

Today Zachary is in his junior year of high school at a military school and is planning on becoming an engineer. "He's in Silver Rifles and carries factor with him when they travel on a bus or plane," Gina says.

Emiliano, 12, who played baseball when he was younger, now has his sights set on trying out for soccer. When it comes to infusing factor, Gina says Emiliano prepares everything himself. "He knows what he needs to keep healthy," she adds.

## Christie Hardin

At age 13, Christie Hardin awoke from a night's sleep to find her lips and face swollen beyond recognition. She recalls saying to her mother, "Look at my face, what's wrong with my face?" Her mother knew right away that it was hereditary angioedema (HAE), which had been in the family for five generations.

Christie's mother and daughter also live with the rare, potentially life-threatening disorder, which is caused by a deficiency of C-1 esterase inhibitor (C1-INH). The condition is inherited and its symptoms include unpredictable, substantial, and painful swelling in the intestines, face, hands, feet, and/or larynx.

"No one outside of my family understood what it was like to deal with HAE and the attacks," Christie says. She adds that being a patient and also a caregiver for someone with HAE is particularly difficult. "Even on days when I feel healthy, if my daughter has an attack it stresses me out because I'm so concerned about her, and sometimes I end up getting an attack."

Christie, who has been a nurse for 12 years, is also a patient-to-patient advocate. She says one of the most touching and rewarding experiences she's had is talking to patients who never before met or spoke with someone with HAE.

"That just blew me away," Christie says. "With generations of family members impacted by HAE - I've had the opportunity to have a lot of people around me who can give me support when I'm sick. I want to be there for those who don't have people in their life who they can talk to about HAE."





## Hector Grisalez

Hector Grisalez was born in Colombia and moved to Chicago in the U.S., where he now lives with his wife Maria, son Jonathan and daughter Johanna. Jonathan, who is 10, was diagnosed with hemophilia A at six months. "We saw some bruising and took him to his pediatrician," says Hector. "She drew blood and the next day his arm swelled up like a balloon."

Since then, Hector says he and his family have participated in a number of hemophilia events. "We like to help other families, especially in the Latino community, learn about their options," says Hector. "People who don't speak English sometimes have a fear of asking questions, or don't know what questions to ask."

Hector knew what to expect early on. When he and his wife were dating, she told him her father and uncles have a blood disorder where their blood doesn't coagulate properly. But it didn't hit home until Jonathan was diagnosed. "It's very hard trying to hold down your son so that he can receive his infusion of treatment and knowing that deep down inside you want to express that - it's for your own good, we're not trying to do any harm to you."

Today Jonathan is on a prophylaxis therapy that allows him to infuse two rather than three times a week. "When you see your child running, riding a bike and playing with his friends it can be mind-blowing," Hector adds. "In the hemophilia community, the most important thing you can see is your kid doing everything his friends do."

## Baylee Gregory

Baylee Gregory is a high school student and an avid golfer and soccer player who hopes to one day play those sports in college. She also has common variable immune deficiency (CVID). "I always had sinus infections," she said. "I always had ear problems, stomach issues. I'd go to the doctor and they'd tell me, 'It's just allergies' or 'take an antibiotic, it's another sinus infection, it'll go away.'"

Baylee's the fourth of six siblings and according to her mother, Annette, she was sick from the day she was born. "Baylee was delivered not breathing and at about 4 weeks old she was having what they call failure to thrive," said Annette Gregory.

Annette lost her father in April of 2014 and Baylee wasn't diagnosed until one year later. Her mother remembered her coming to her at three o'clock in the morning. "Mom, listen to me breathing," Baylee said to her mother. "I'm breathing like Papa before he died. Mom, I don't want to die." Annette Gregory said the experience gave her even more reason to search for an answer as to why Baylee was always sick and having problems. "When the doctor who now treats Baylee first examined her," Annette remembered, "he said, 'it's a miracle you're still alive.'"

Baylee said CVID is one of the 300+ primary immunodeficiency diseases. "CVID is when my immune system doesn't work like someone else's would," she explained. "Primary immunodeficiency (PI) has impacted my life a lot. But since I've been receiving treatment, I feel the best that I've felt in a long time."

Her mother said since Baylee was diagnosed and given medication, she's a whole different person. "Baylee's got so much life and energy," Annette said. "And, she's going to live a life that she wants to live and not let things stand in her way." Baylee said that after college, she plans to go to medical school and become an anesthesiologist.





# Our promise to quality and safety runs deep

Our site in Marburg developed, patented and introduced a special method for the pasteurization of plasma products to increase their virus safety. We made history in 1981 with the first pasteurized factor VIII product in the world, introducing technology to ensure our medicines are safe and effective.

CSL Behring's steadfast commitment to product safety is driven by an integrated system of safety that spans four critical areas of the company's operations: plasma selection, product manufacturing, monitoring and testing, and pharmacovigilance.

The company monitors every step involved in the plasma collection process from rigorous on-site donor selection and donation screening, through freezing to transporting plasma units that have tested non-reactive in virus screening assays to the manufacturing sites.

We meet very stringent international standards for plasma product purity, safety and quality in

accordance with regulatory agencies worldwide. CSL Behring applies effective and robust pathogen inactivation and removal processes, including pasteurization, low pH incubation, solvent detergent treatment and virus filtration, resulting in final products with a high margin of safety. CSL personnel are rigorously trained to ensure strict adherence to demanding regulations and to the company's own quality standards.

Quality Assurance personnel monitor each step of the manufacturing process to assure that the finished product meets all quality attributes. Final products are released to the market only when they meet all pre-defined specifications based on a thorough batch record review.

Post-marketing surveillance and reporting for marketed products is conducted on an ongoing basis so that CSL maintains visibility over the safety and efficacy of our products after they enter the market.

## Integrated Safety System

DONOR SELECTION

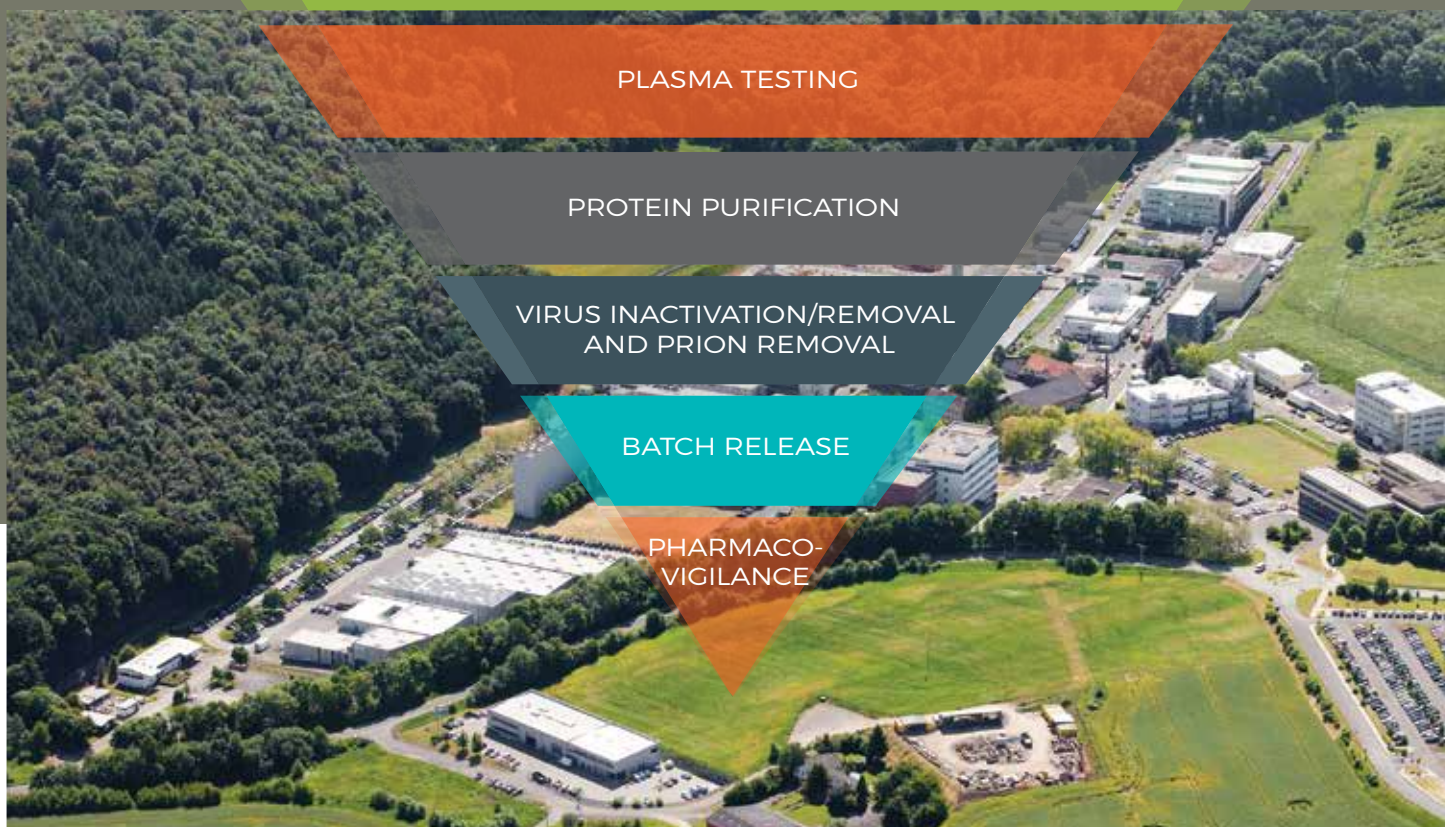
PLASMA TESTING

PROTEIN PURIFICATION

VIRUS INACTIVATION/REMOVAL  
AND PRION REMOVAL

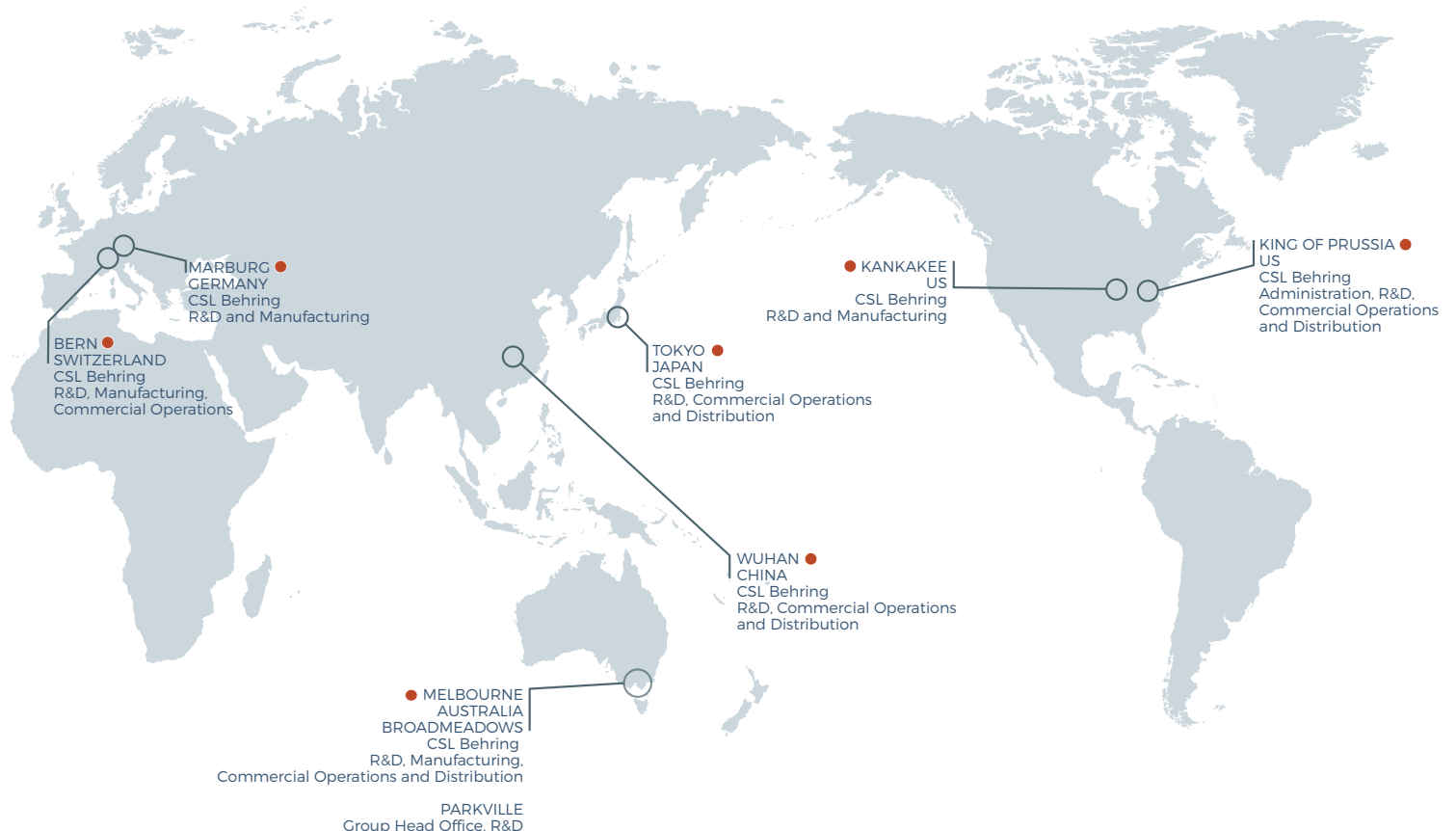
BATCH RELEASE

PHARMACO-  
VIGILANCE





## Global R&D and Manufacturing Sites





## Our Reputation

Ethical and responsible conduct defines who we are as a sustainable company. We live by the CSL Code of Responsible Business Practice. The code sets the bar for the standard of behavior expected of all employees, and makes it clear what stakeholders, from patients to shareholders, can expect in their dealings with us; our relationships are built on trust and transparency.

We take our role as a socially responsible enterprise very seriously. CSL contributed \$29.6 million to patient, biomedical and local communities in 2016 and renewed a three-year partnership with the World Federation of Hemophilia to provide 10 million international units of coagulation factor product over three years starting in 2016. We regularly evaluate options to provide our medically necessary therapies to qualified patients who can't afford them.

The CSL Corporate Responsibility Report is available at <http://corporateresponsibility.csl.com.au/>.

## CSL Behring at a Glance

CSL Behring is a global biotherapies leader driven by our promise to save lives.

CSL Behring also operates one of the world's largest plasma collection networks, CSL Plasma. CSL Behring is a subsidiary of CSL Limited, a biotechnology company with headquarters in Melbourne, Australia.

Significant capital investments have made our facilities among the most modern in the industry.

## Employees

16,000+ employees providing lifesaving therapies to people in more than 60 countries

## Operational Headquarters

King of Prussia, Pennsylvania, United States

## Manufacturing Facilities

### Broadmeadows, Australia

Broadmeadows core products: immunoglobulins, coagulation factors and toll manufacturing

### Marburg, Germany

Marburg core products: plasma-derived and recombinant coagulation factors, C-1 inhibitor, and critical care products

### Kankakee, Illinois, United States

Kankakee core products: Alpha-1, intermediates and albumin

### Bern, Switzerland

Bern core products: immunoglobulins and albumin

Full operations are scheduled to begin in 2020 at CSL's new facility in Lengnau, Switzerland, which will manufacture recombinant coagulation factors.

### Wuhan, China

Wuhan core products: immunoglobulins, albumin and hyperimmune immunoglobulins

## Research and Development

CSL has more than 1,400 research and development scientists with facilities in Marburg, Germany; Bern, Switzerland; Kankakee, Illinois, United States; King of Prussia, Pennsylvania, United States; Tokyo, Japan; Wuhan, China and Broadmeadows and Parkville, Australia.

## CSL Plasma

- Headquartered in Boca Raton, Florida, United States
- Testing laboratories in United States and Germany
- Plasma logistics centers in the United States and Germany
- 170+ collection centers in the United States and Europe

Product availability and approved indications vary from country to country, depending on registration status.

Please contact your CSL Behring representative for details.

CSL Behring is a company of CSL Limited 2017.



# Timeline of Innovative “Firsts”

**Researchers discover Alpha-1**—Alpha-1 antitrypsin, a proteinase inhibitor, is discovered, purified and characterized for the first time by researchers of Behringwerke.

**Japan's first IVIg**—Behringwerke launches Gamma-Venin®, the first intravenous immune globulin (IVIg) product in Japan.

**First IVIg approved in U.S.**—ZLB receives approval for polyvalent immunoglobulin.

**First highly purified FIX in U.S.**—Mononine®, a monoclonal antibody purified factor IX product for treatment of hemophilia B is approved for use in the U.S.

**First company to fractionate human plasma on an industrial scale in Europe**—Behringwerke, CSL Behring's predecessor company, is the first in Europe to begin fractionating plasma proteins from human plasma on an industrial scale.

**First pasteurized plasma protein solution**—ZLB, another CSL Behring predecessor company, produces the first pasteurized plasma protein solution.

**First pasteurized factor VIII therapy launched**—Behringwerke introduces Haemate® human plasma coagulation factor VIII/von Willebrand factor complex, first marketed in Europe for the treatment of patients with hemophilia A. It is the first pasteurized factor VIII product in the world.

**Launch of first virus-filtered liquid anti-D Ig**—Rhophylac®, the first virus-filtered liquid anti-D immunoglobulin for the prevention of hemolytic diseases of the newborn due to Rh factor incompatibility, launches in Switzerland.

**First von Willebrand factor in U.S.**—Humate-P® human coagulation factor VIII/von Willebrand factor complex is approved for treatment of von Willebrand disease, the most common hereditary bleeding disorder in the U.S.



2003

**Vivaglobin®, first SClg treatment**—Vivaglobin® is approved for use in adults and children who require antibody replacement due to primary immunodeficiency in the U.S and U.K.

**First proline-stabilized IVIg approved**—Privigen® is approved in U.S. for treatment of primary immunodeficiency and chronic immune thrombocytopenic purpura.

**First virus-filtered human normal Ig for IV administration**—Carimune® NF approved for use in the U.S.

**FDA approves Zemaira®**—Zemaira® human Alpha-1 proteinase inhibitor is approved for individuals with Alpha-1 proteinase inhibitor deficiency and clinical evidence of emphysema.

2006

2007

2009

**Berinert®, first therapy for acute attacks of HAE in U.S.**—Berinert® C1-esterase inhibitor, the country's first therapy for the treatment of acute abdominal or facial attacks of hereditary angioedema (HAE), is approved for use in the U.S.

2010

**Corifact®, first and only FXIII concentrate approved in U.S.**—Corifact® is approved for the treatment of congenital factor XIII (FXIII) deficiency. Congenital FXIII deficiency is a rare and potentially life-threatening bleeding disorder. Corifact is also available in other markets under the trade name Fibrogammin®.

**Kcentra®, first non-activated 4-factor prothrombin complex concentrate (PCC) in U.S.**—is approved for the urgent reversal of acquired coagulation factor deficiency induced by vitamin K antagonist therapy.

**Hizentra®, first 20 percent SClg in U.S and Europe**—Hizentra®, is approved for use in the U.S. and Europe. Stabilized with L-proline, Hizentra is ready to use; it requires no refrigeration throughout its 30-month shelf-life, offering patients and physicians convenience and portability.

2011

2013

2015

**EMA approves Respreeza®**—Respreeza® human Alpha-1 proteinase inhibitor approved for individuals with Alpha-1 proteinase inhibitor deficiency and clinical evidence of emphysema.

2016

**IDELVION® first hemophilia B therapy with up to 14-day dosing intervals**—is approved for use in the U.S. and Europe.

2017

**AFSTYLA® first and only recombinant single-chain factor VIII (FVIII) product for the treatment of hemophilia A**— is approved for use in the U.S.

**FDA approves HAEGARDA®**— first and only subcutaneous preventive treatment for hereditary angioedema.

# Major Therapeutic Products Marketed by CSL Behring



## Hematology

### Recombinant Therapies

#### Factor VIII Single Chain

- AFSTYLA®

#### Factor IX Albumin Fusion Protein

- IDELVION®

#### Factor VIII

- Helixate® FS
- Helixate® NexGen
- Iblas®

### Plasma-derived Therapies

#### Factor VIII and von Willebrand Factor

- Beriate®
- Monoclate P®
- Humate P®
- Haemate P®
- Voncento®
- Biostate®

#### Factor IX

- Berinin® P
- Mononine®

#### Factor I (Fibrinogen)

- Haemocomplettan® P / RiaSTAP®

#### Factor X

- Factor X P

#### Factor XIII

- Corifact® / Fibrogammin® P / Cluvot®

#### Other Products

- Stimate®
- Octostim\*

\* Octostim is a trademark of Ferring GmbH.

Product availability varies from country to country, depending on registration status. Please contact your CSL Behring representative. For more information about these products, see [www.cslbehring.com](http://www.cslbehring.com).



## Specialty Care

### C1-Esterase Inhibitor

- BERINERT®
- HAEGARDA®

### Prothrombin Complex Concentrates

- Beriplex® P/N / Confidex® / Kcentra®

### Fibrinogen Concentrate

- Haemocomplettan® P

### Albumin Management

- Albuminar®
- Alburex® / AlbuRx®
- Human Albumin
- Humanalbin®

### Antithrombin III concentrate

- Kybernin® P

### Pulmonology

- Respreeza® / Zemaira®

### Other Products

Wound healing therapies are used to facilitate healing

- Beriplast® P Combi-Set -
- Fibrogammin® P
- Tachocomb\*

## Immunology

### Intravenous Immunoglobulins

- Privigen®
- Carimune® NF
- Sandoglobulin® / Sanglopor®

### Subcutaneous Immunoglobulins

- Hizentra®

### Specific Immunoglobulin

- Beriglobin® P
- Berirab® P
- Hepatitis B Immunoglobulin P
- Rhophylac®
- Tetagam® P
- Varicellon® P
- Cytogam®

\* Tachocomb is a trademark of Nycomed.  
Product availability varies from country to country, depending on registration status. Please contact your CSL Behring representative.  
For more information about these products, see [www.cslbehring.com](http://www.cslbehring.com).



# CSL Behring

Biotherapies for Life®

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