Realizing the Potential of Plasma-Derived Therapies Investor Relations Day, Covington, GA

15th November 2019

Julie Kim

President, Plasma-Derived Therapies Business Unit (PDT BU)

Better Health, Brighter Future

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Financial information

Takeda's financial statements are prepared in accordance with International Financial Reporting Standards ("IFRS").

The revenue of Shire plc ("Shire"), which were presently, presented in accordance with accounting principles generally accepted in the United States ("U.S. GAAP"), have been conformed to IFRS, without material difference.

The Shire acquisition closed on January 8, 2019, and our consolidated results for the fiscal year ended March 31, 2019 include Shire's results from January 8, 2019 to March 31, 2019. References to "Legacy Takeda" businesses are to our businesses held prior to our acquisition of Shire. References to "Legacy Shire" businesses are to those businesses acquired through the Shire acquisition.

This presentation includes certain pro forma information giving effect to the Shire acquisition as if it had occurred on April 1, 2018. This pro forma information has not been prepared in accordance with Article 11 of Regulation S-X. This pro forma information is presented for illustrative purposes and is based on certain assumptions and judgments based on information available to us as of the date hereof, which may not necessarily have been applicable if the Shire acquisition had actually happened as of April 1, 2018. Moreover, this pro forma information gives effect to certain transactions and other events which are not directly attributable to the Shire acquisition and/or which happened subsequently to the Shire acquisition, such as divestitures and the effects of the purchase price allocation for the Shire acquisition, and therefore may not accurately reflect the effect on our financial condition and results of operations if the Shire acquisition had actually been completed on April 1, 2018. Therefore, undue reliance should not be placed on the pro forma information included herein.

Thank you to the Georgia BioScience Training Center

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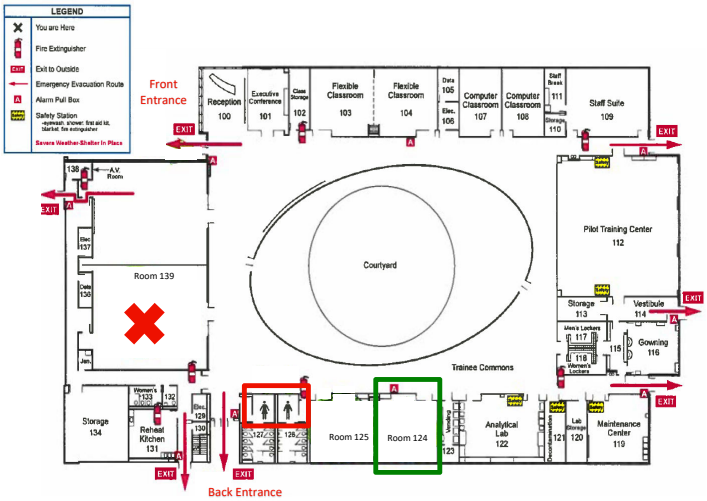


Agenda

PDT Overview	**Julie Kim**, *President, PDT BU*
Lunch buffet	
PDT R&D Overview	**Christopher Morabito**, *Head, R&D, PDT*
Covington Site Introduction	**Carlos Soto**, *Covington Site Head*
Q&A	**Sue Brown**, *Head, Global BioLife Operations* **Julie Kim**, *President, PDT BU* **Christopher Morabito**, *Head, R&D, PDT* **Adrian Murphy**, *Head of Plasma Operating Unit, Global Manufacturing & Supply* **Costa Saroukos**, *Chief Financial Officer* **Carlos Soto**, *Covington Site Head*
Close	**Julie Kim**, *President, PDT BU*
Training Center & Covington Site tour	

Introducing Takeda's Plasma-Derived Therapies Business

Julie Kim
President, Plasma-Derived Therapies Business Unit

Plasma-derived therapies are critical, life-saving medicines, relied upon by thousands of people worldwide with rare and complex diseases

Lynayah's Family

I probably wouldn't have lived to see six months, which is why my family and I are eternally grateful for you. Your time, and your donation helped save my life.

Lynayah & Family

Pawel

It's not always easy but, to reach the top, you must go uphill.

March 2019

Plasma presents a unique opportunity

Plasma is a durable business with compelling growth opportunity…

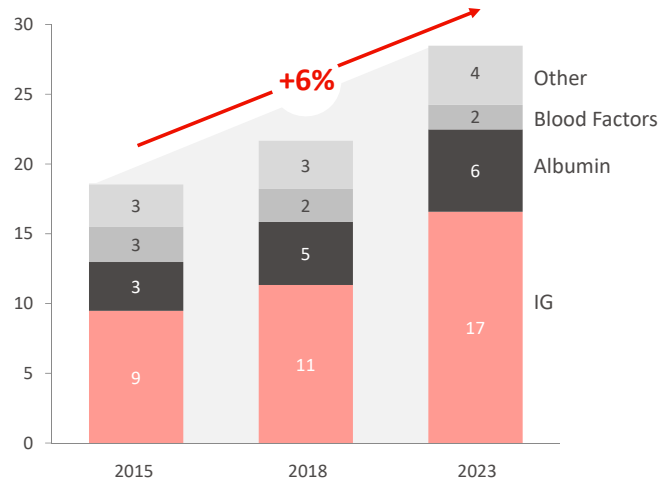
1. Products have **lifecycle spanning decades**
2. Indication **expansion** continues
3. **Not subject to patent cliffs**
4. **Probability of success for R&D** is generally high
5. **Market demand** continues to **grow steadily**

…AND HAS DISTINCT ASPECTS

- Plasma is collected from human donations - scarce supply
- It can take more than 7 months to produce plasma-derived therapies
- Capital-intensive manufacturing process

Demand for key plasma-derived therapies has been continuously increasing and expected to grow

Worldwide demand for plasma-derived therapies is expected to increase each year



Global plasma market ($B), 2015-23

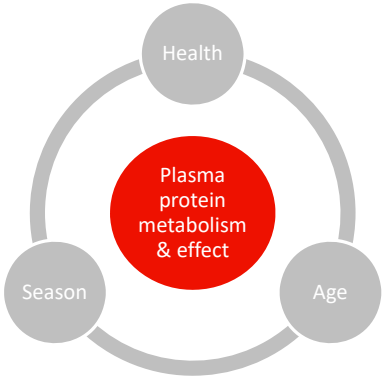
This trend is primarily driven by:

- Greater awareness and increasing rates of diagnosis
- Growing access in emerging markets
- New indications in both immune deficiencies and immune-mediated diseases
- Innovation in formulations and delivery systems

Source: Berman. Plasma Fractionation: The Challenge of Keeping Pace with Global IG Demand / MRB, Evaluate Pharma, PDT Analysis / Chapel H, et al. Front Immunol 2014 Dec 15;5:627. / News release: Shire Launches Paediatric Indication for Immunodeficiency Treatment HyQvia in Europe. 21 July 2016. / News release. Shire Announces FDA Approval for Label Expansion of CINRYZE® for Prevention of Attacks in Pediatric HAE / Jones, et al. Frontiers in Immunology 2018;9:1308.

And plasma still has significant untapped therapeutic potential

Multiple factors influence plasma protein metabolism and effects in individuals



By advancing our understanding of plasma proteins, we can:

- Predict how different patients metabolize plasma proteins, and drive individualization of therapy
- Investigate strategies that allow the plasma protein to more precisely target disease or remain in the body longer
- Extend the benefits of plasma-derived therapies across our portfolio

Source: Ignjatovic V, et al. PLoS One. 2011;6:e17213. / Kakisaka T, et al. J Chromatogr B Analyt Technol Biomed Life Sci. 2007;852:257-267. / Cambras T, et al. Chronobiol Int. 2017;34:1248-1258.

Takeda is now organized – and uniquely positioned - to realize the full potential of plasma-derived therapies

>20
PLASMA-DERIVED THERAPIES

RARE DISEASE LEADER
Deep understanding of patient's needs

GLOBAL PHARMA SCALE & EXPERTISE
Capabilities in digital technology, data analytics, patient insights

75+ YEAR
pioneer legacy in plasma

PLASMA-DERIVED THERAPIES DEDICATED BUSINESS UNIT
Top 3 plasma company, investing to grow

PLASMA-FOCUSED
R&D Team

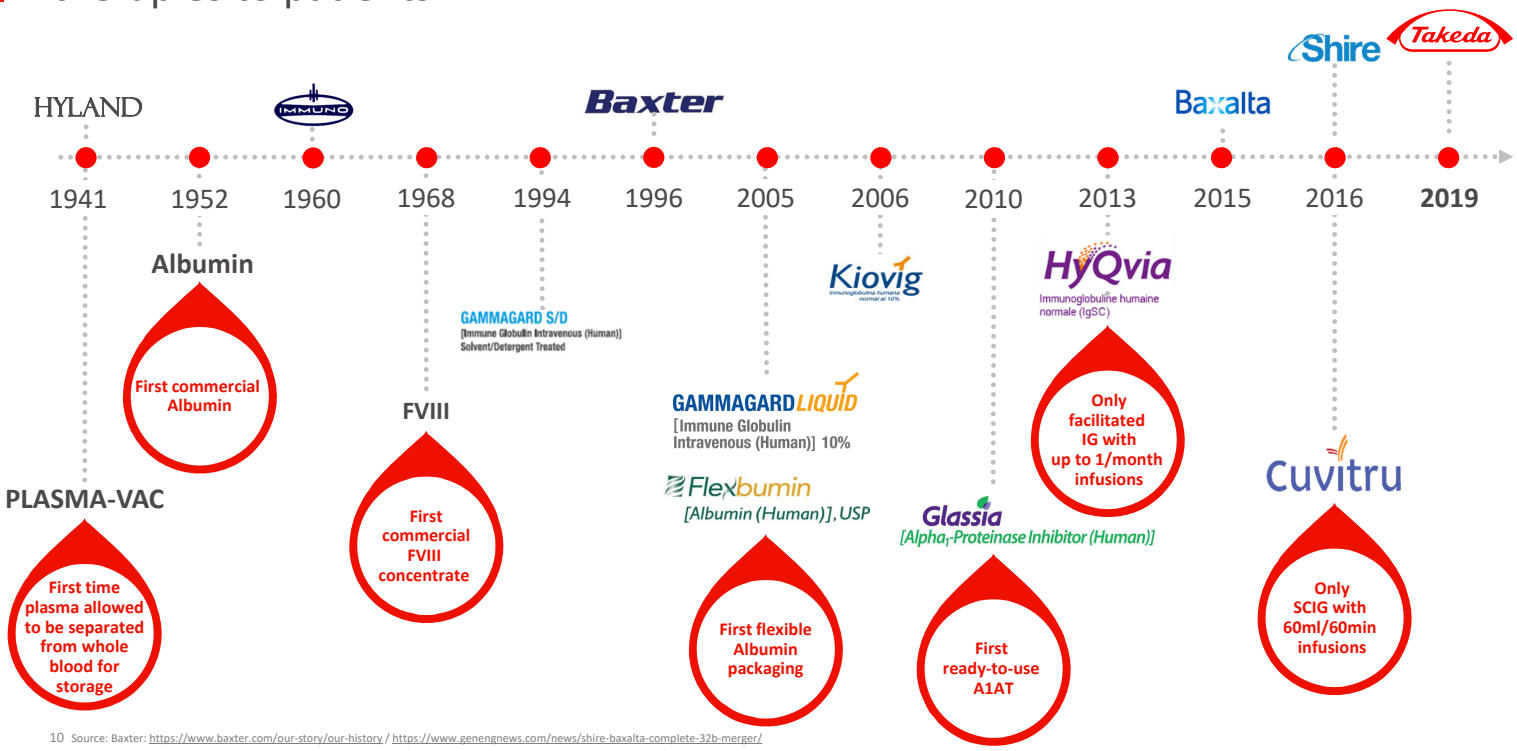
8
MANUFACTURING SITES

140+ PLASMA COLLECTION CENTERS

13,000 EMPLOYEES
worldwide, focused on plasma business

Source: Evaluate Pharma, PDT Analysis. / Takeda internal data

We are building on a long and successful history of bringing innovative therapies to patients



 Source: Baxter: https://www.baxter.com/our-story/our-history / https://www.genengnews.com/news/shire-baxalta-complete-32b-merger/

We've established a dedicated business unit to steer our path, bring focus and harness our end-to-end plasma capabilities

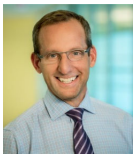
Our PDT BU leadership team draws on, and brings together, Takeda's extensive plasma experience and broader expertise across our business

Julie Kim
Head of Plasma-Derived Therapies BU

Ingrid Hofström
Executive Assistant

Emi Psachoulia
Chief of Staff

Sue Brown
Plasma Sourcing (BioLife)



Christopher Morabito
R&D

Michael Shires
Strategy

Shady AbouZahra
Operations

Annick Deschoolmeester
HR

Ramy Riad
Finance

Luana Banu
Public Affairs

Deborah Hibbett
Communications

Adrian Murphy
Manufacturing

Barbara Glantschnig
Quality

Thomas Kreil
Pathogen Safety

Kasha Witkos
Commercial

Paula Leca
Legal

Gabriele Ricci
IT

Linda Peralta
Ethics & Compliance

Charlie Alexander
Business Development

140 +
combined years of plasma experience

19
team members

11
nationalities

60% Female
40% Male

Our Ambition

Build a respected, sustainable plasma business that reimagines the industry to best serve patients worldwide

We have a singular, dedicated plasma focus and strategy

- Responsibility for end-to-end plasma business
- Dedicated R&D organization and budget

We also benefit from the support of a global, values-based biopharmaceutical company

- Long-term view with commitment to invest as plasma is a key growth driver for Takeda
- Access to Takeda's broader resources, capabilities and expertise, particularly R&D and manufacturing

Our strategy and targeted investments extend across the entire value chain

PLASMA SOURCING | MANUFACTURING | COMMERCIALIZATION




RESEARCH & DEVELOPMENT

PLASMA SOURCING | MANUFACTURING | COMMERCIALIZATION




RESEARCH & DEVELOPMENT

BioLife, part of Takeda's Plasma-Derived Therapies Business Unit, is an industry leader in the sourcing of high-quality plasma

Broad global footprint

- 140+ collection centers across four countries
- Plasma sourced externally from eight countries
- Three dedicated screening labs

Recognized expertise

- Trained medical staff at each center
- Dedicated quality, regulatory and medical employees
- Recognized safety and quality expertise, industry-leading standards

Fully compliant with requirements from: PPTA Plasma Protein Therapeutics Association · FDA U.S. FOOD & DRUG ADMINISTRATION · EUROPEAN MEDICINES AGENCY SCIENCE MEDICINES HEALTH

16 Source: Takeda internal data. / MRB. The plasma protein market in the United States by company, 2018. / Bain & Co. Plasma donor survey 2015. / Takeda. Plasma-Derived Therapeutics. Pathogen Safety Monograph.

Our BioLife centers offer an exceptional donor experience

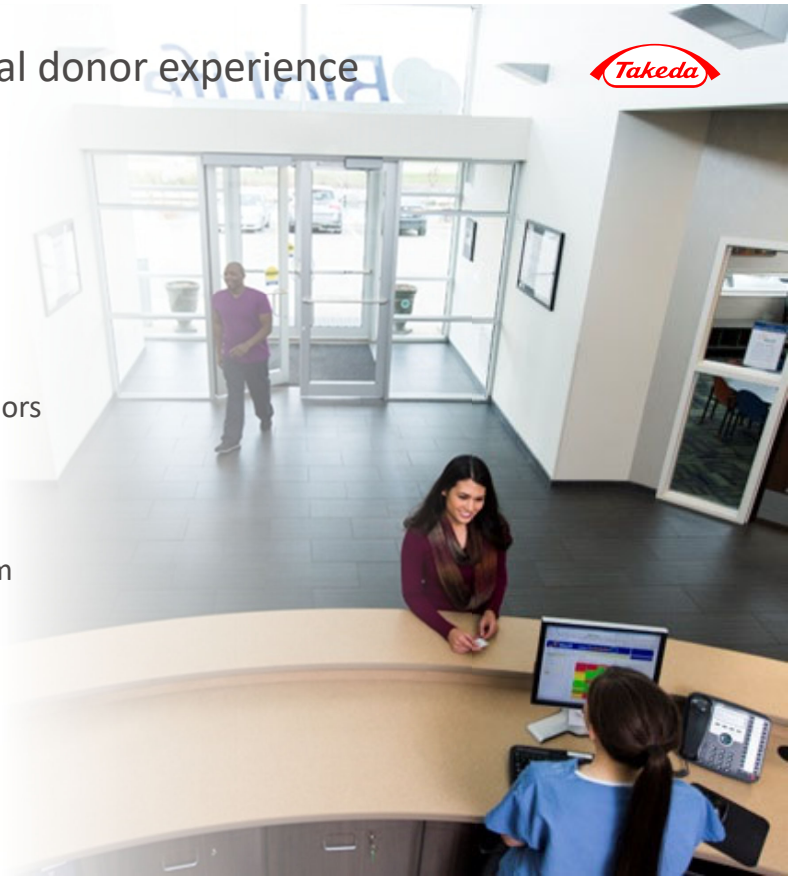
Efficiency & convenience central to our approach

- Repeat donors spend just ~1 hour at the center
- Appointment-based process with digital scheduling

Staff committed to the **well-being** of our donors

Modern, high quality facilities, with free Wi-Fi and supervised children's playroom in certain centers

Facilities designed for **donor comfort** and **regulatory compliance**



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We are accelerating the rate of plasma collection and incrementally increasing overall volume through third parties and acquisition

We are building momentum….

- Increased plasma volumes by approximately 20% in 2018
- Expanded European presence from 7 to 30 collection centers within past 12 months
- Completed 5 acquisitions in the past 12 months in US, Austria, Hungary and Czechia
- Plan on opening a total of 19 additional new collection centers in fiscal year 2019
- Leveraging third party supply through long-term contracts
- Participating in contract agreements with governments

We will continue to focus on operational excellence

- Open collection sites faster
- Increase speed to peak collection volumes
- Create efficiency via new models and approaches

We are accelerating growth with the goal of increasing plasma supply by

>65%

over the next 5 years

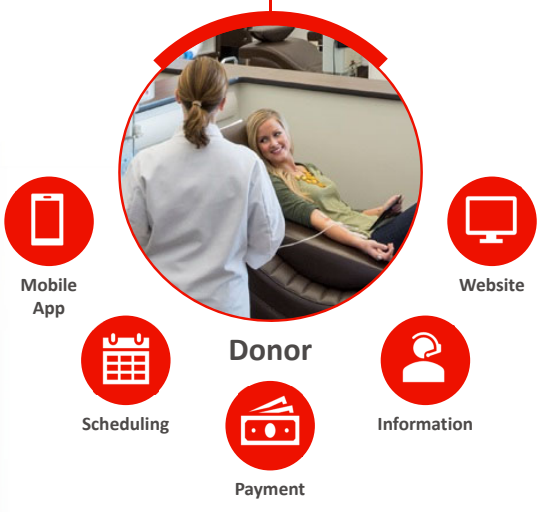
18 Source: Takeda internal data.

We are further enhancing and digitalizing facilities and services to meet growing needs for the future

Attracting new donors in the community

- Reaching new donors
- Increasing community engagement

Improving the **donor experience and improving cost-per-liter** through omnichannel engagement



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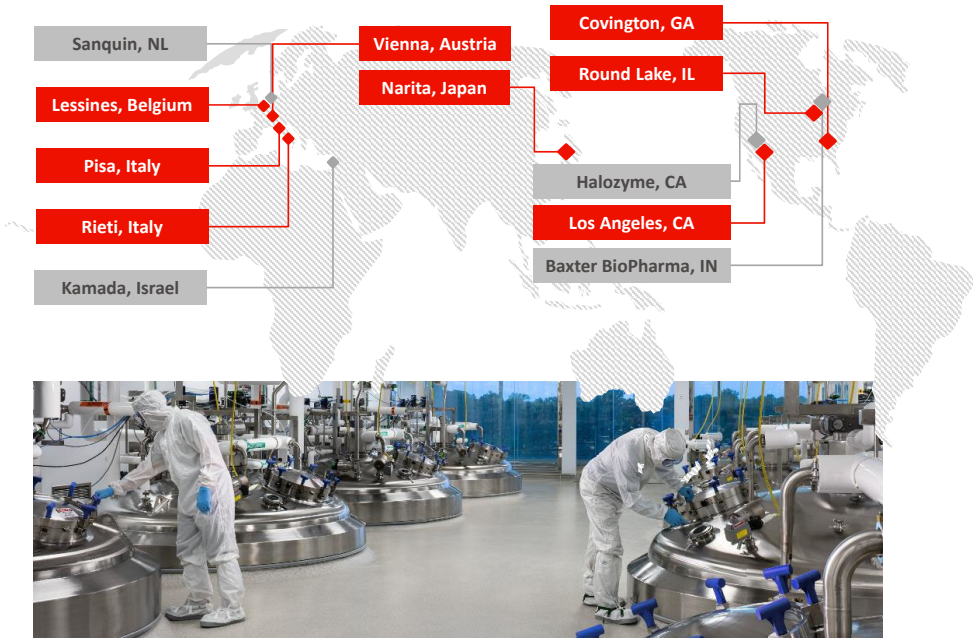
PLASMA SOURCING | MANUFACTURING | COMMERCIALIZATION

RESEARCH & DEVELOPMENT

We have a world-leading plasma-derived therapies manufacturing network in which we continue to significantly invest



Takeda Mfg.

External Mfg.

8 STRATEGIC LOCATIONS

plus four strategic partners, allowing independent yet inter-related manufacturing operations

INNOVATION MINDSET

digitalization and constant drive for excellence to accelerate supply to patients

CONTINUED CAPACITY EXPANSION

to increase production of our portfolio to meet market growth while driving efficiencies

CONTINUALLY INVESTING

in state-of-the-art facilities that meet the highest quality standards

The global network builds on the strengths of each location while leveraging operational excellence across the sites

Mass Capture, Fractionation


Los Angeles, USA


Rieti, Italy


Vienna, Austria


Sanquin, NL


Covington, USA

Downstream Processing


Lessines, Belgium


Covington, USA


Round Lake, USA


Pisa, Italy


Vienna, Austria

We're increasing production capacity by accelerating investment, while further enhancing our quality standards

Investing in manufacturing capacity

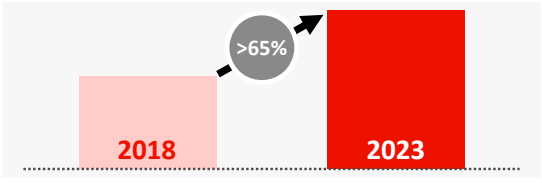
- Continually investing in technologies and processes to **maximize yield**
  - Higher yield, lower cost fractionation techniques
  - Analytics, automation and digitization to optimize network
- **Optimizing plasma efficiency** through the value chain
- **Downstream optimization** within broader Takeda manufacturing network

We plan to increase our manufacturing capacity within our existing network by

>65%

over the next 5 years

Capacity Expansion: 2018 – 2023 (projected)



Takeda has world-class safety capabilities and an unsurpassed reputation in both plasma donation and pathogen safety

Donation safety standards

Strict donation criteria and screening at each visit	Donation frequency management system	Strong inspection record	Plasma screening, inventory hold and look back procedure

Every plasma donation screened for HIV, hepatitis A, B & C, parvo B19

Pathogen safety standards

BioSafety Level 3+ Lab	Process sciences	Virology	Publication / presentation
Purpose-built, state-of-the-art biocontainment laboratory	Qualified models of all bioprocessing steps	Classical & molecular virology expertise and capability	Strong track record

Dedicated virology expertise and capabilities

40+ highly trained staff	**>50%** with specialized education	**>200** years post-graduate experience

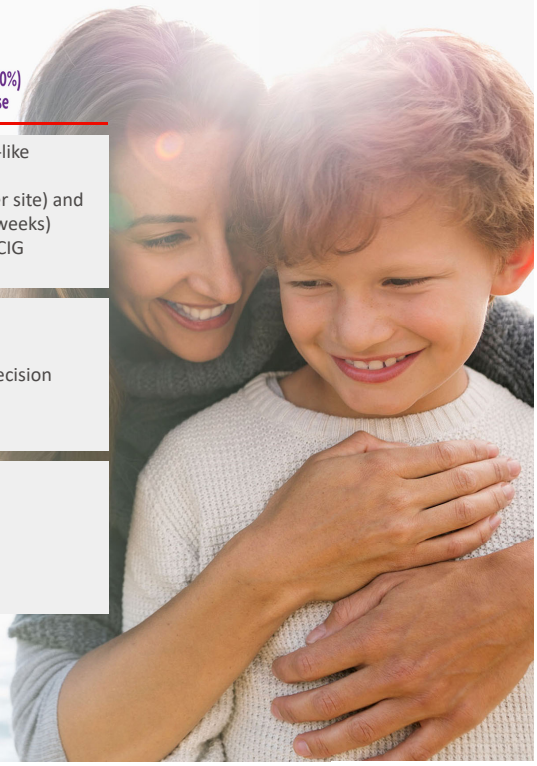
PLASMA SOURCING → MANUFACTURING → COMMERCIALIZATION

RESEARCH & DEVELOPMENT

Our broad and differentiated portfolio of plasma-derived therapies treats rare and complex diseases worldwide

 For illustrative purposes only, geographies and products do not correspond

Our two SCIG brands complement each other and address different patient needs



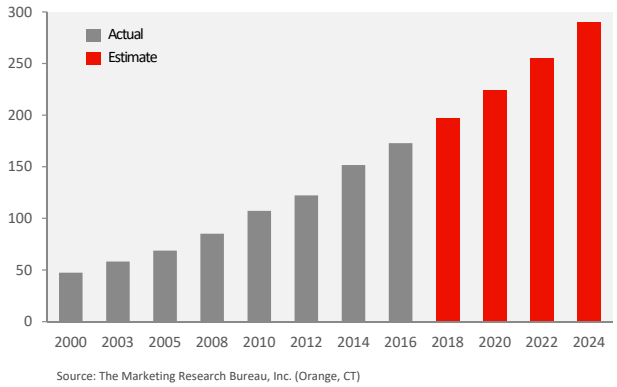
	Cuvitru [Human Normal Immunoglobulin, 20% for subcutaneous administration]	HyQvia Human Normal Immunoglobulin (10%) Recombinant Human Hyaluronidase
Key Features	• Well tolerated • Limited volumes (up to 60ml per site) through frequent infusions • Ease of use/preparation • 2 or 4 infusion sites/needles	• Similar efficacy to IVIG and IV-like administration features • High volumes (up to 600ml per site) and monthly infusions (every 3-4 weeks) • Improved Bioavailability vs cSCIG • 1 or 2 infusion sites/needles
Indications	• PID and SID*	• PID, SID* • CIDP (regulatory approval decision expected in 2023)
For patients who prefer	• Fast, regular infusions • Daily to biweekly • Home setting	• Less frequency, high volume • Monthly to biweekly • Home or hospital setting

Source: Borte, et al., Clin Exp Immunol. 2017 Jan;187(1):146-159. (doi: 10.1111/cei.12866) / Suez, et al., J Clin Immunol. 2016 Oct;36(7):700-12. (doi: 10.1007/s10875-016-0327-9) / CUVITRU SmPC. / Wasserman RL, et.al, J Allergy Clin Immunol. 2012 Oct;130(4):951-7. (doi: 10.1016/j.jaci.2012.06.021) / HyQvia SmPC. / Wasserman RL, et al., J Clin Immunol. 2016 Aug;36(6):571-582. (doi: 10.1007/s10875-016-0298-x) / Clinical trials.gov with published study completion Dec 31 2021

*SID not approved in the US. Only select SIDs are approved for the above-mentioned products: chronic lymphocytic leukemia, multiple myeloma and hematopoietic stem cell transplantation.

Currently, global supply is not keeping up with demand for IG therapies

The Global Polyvalent IG Market (IVIG/SCIG) from 2000 to 2016, with Projected Global Demand Through 2024
Millions of grams



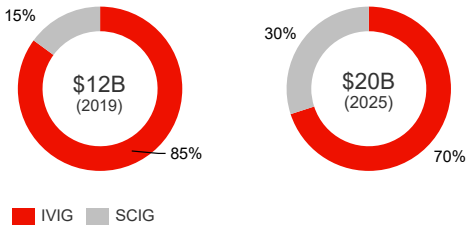
Source: The Marketing Research Bureau, Inc. (Orange, CT)

STRONG & CONTINUED IG DEMAND

IG is increasingly recognized for its diverse therapeutic value, and is expected to grow in approved indications for a range of diseases

MARKED BY SCIG GROWTH RATE

SCIG market continues to drive IG growth at CAGR of 20%



Source: 2016 WW MRB Report, 2017 US MRB Report / Berman. Plasma Fractionation: The Challenge of Keeping Pace with Global IG Demand / Chapel H, et al. Front Immunol 2014 Dec 15;5:627. / Jones G, et al. Front Immunol. 2018 Jul 2;9:1308. / PPTA. The PPTA vision on the plasma protein therapies sector for the next decade in Europe. 10 April 2014

Takeda's commitment during times of supply-demand imbalance is to focus on sustainable patient care

Consider the global community

Support for those with highest need to gain treatment

Focus on existing patients first and responsibly pursue new opportunities

Partner to explore and implement policies and practices that enable sustainable supply

Our goal is to continue to bring personalized, innovative, lifelong care to as many people as possible throughout the patient journey

Diagnosis

- Partnership with large hospital systems in the US to leverage electronic medical records
- Co-chairing the Global Commission to End the Diagnostic Odyssey for Children with Rare Disease
- Awareness campaigns
- Diagnostic test kits

Personalized Care & Support

- Enhanced patient services
- Nurse training to support new patients
- Devices and delivery systems

Access

- Sustainable pricing
- Dedicated access support
- Patient assistance programs
- Broad portfolio of products

We anticipate significant growth opportunities across our portfolio

		Example Takeda products	Takeda revenue (OY, 2018)	Global plasma market size (OY, 2018)
Last Liter	Immunoglobulin	GAMMAGARD LIQUID / Kiovig, Cuvitru, HyQvia, kenketu glovenin-I	~2,870	~12,500
	Albumin	Flexbumin, HUMANALBUMIN, KENKETU ALBUMIN, KENKETU ALBUMINATE	~580	~5,000
First Liter	Hemophilia products	HEMOFIL M, FEIBA, IMMUNINE, IMMUNATE	~890	~2,800
	Other products	Aralast NP, Glassia [Alpha1-Proteinase Inhibitor (Human)], CINRYZE, Ceprotin, Prothromplex NF 600, KENKETU NONTHRON, Antithrombin III	~660	~3,700
			Total ~5,000*	~24,000

*2018 revenue is a pro-forma which adds Legacy Shire's 9 month (April – December 2018) revenue previously reported under US GAAP and conformed to IFRS without material differences and converted to JPY using FY2018 actual rate for the period. 2018 revenue also includes product sales of Nihon Pharmaceutical products, Takeda's consolidated subsidiary.

Source: MRB; EvaluatePharma; Takeda internal data

And we are embarking on a trajectory to improve overall Plasma-Derived Therapies business performance

Key Growth & Margin Drivers for PDT

- Focused **sustainable, value-based commercial strategies**, including tenders
- **Process efficiencies** across the network
- **Capacity increase** across collections and manufacturing
- **R&D investments** across portfolio

Key Financial Aspiration for PDT*

Annual revenues *(CAGR)*

Mid to high single digit

CAPEX *(% of Revenue)*

Mid single digit

* The "Key Financial Aspirations" listed above represent Takeda's goals in the long-term for the PDT business as of the date hereof and are based on certain assumptions. Actual Amounts/results may differ materially and are subject to a number of risks and uncertainties. See "Note Regarding Forward Looking Statements" on Page 1 of this presentation.

Key takeaways

1

At Takeda, plasma is a **long-term strategic focus**, led by a **dedicated business unit investing to grow** across the value chain and leveraging Takeda capabilities

2

Our goal is to **accelerate growth in capacity by >65%** over the next 5 years to bring additional and improved therapies to more people around the world

3

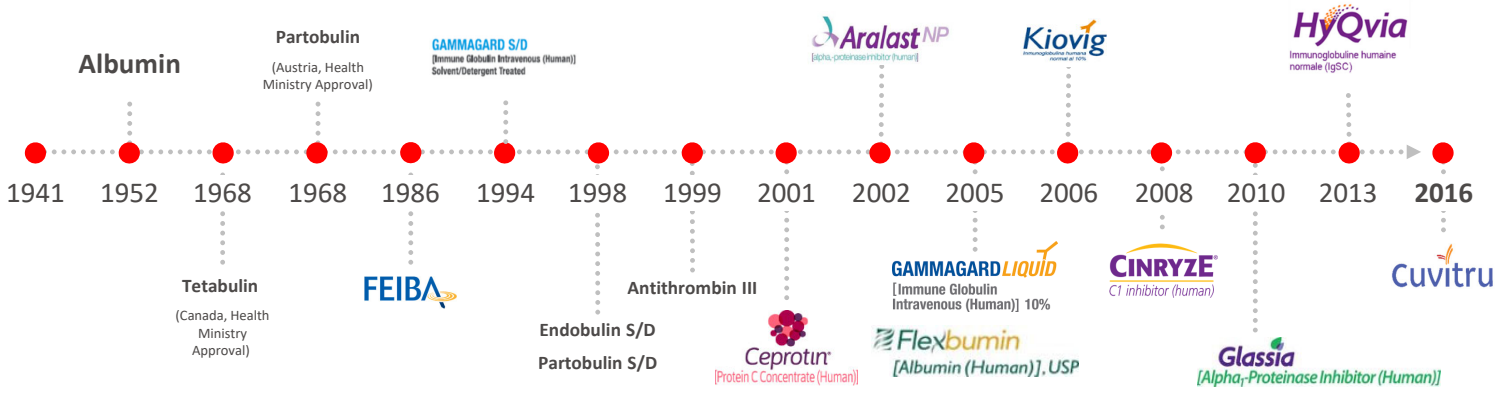
Our **broad and differentiated portfolio** brings **personalized, innovative, lifelong care** and underlines our credentials for **reimagining the industry**

A New Dedicated Focus on Innovative, Sustainable Solutions for Plasma-Derived Therapies

Christopher Morabito, M.D.
Head of R&D, Plasma-Derived Therapies

Better Health, Brighter Future

PDT R&D's credentials and infrastructure are well-established



Pathogen Safety
Global Center of Excellence for Pathogen Safety

Pharmaceutical Science
Strong team connected across the value chain

Pilot Labs
Within Vienna, Los Angeles, Georgia and Lessines sites

Our independence brings focus on plasma and is bolstered by access to broader R&D capabilities and resources

PDT R&D

Global R&D

- Focused entirely on plasma-derived therapies
- Lean and agile team
- Based in Cambridge, MA and Vienna, Austria
- Separate R&D prioritization
- Dedicated budget

- Common Takeda values, patient-focused vision
- Common governance
- Shared resources (e.g. Medical Affairs, Safety, Quality)

These links strengthen Takeda R&D's modality mix, now the broadest among the Top 10 global biopharmaceutical companies

The PDT R&D Leadership Team is well-integrated and brings deep and diverse functional expertise

Christopher Morabito MD
R&D Head
Boston, MA

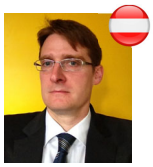
Catherine Parham MD
Program Leadership
Boston, MA

Rory Bukofzer
Program Leadership
Boston, MA

Leman Yel MD
Clinical Medicine
Boston, MA

Chris Tremblay
R&D Operations
Boston, MA

Bagirath Gangadharan PhD
Translational Research
Vienna, Austria



Andreas Liebminger PhD
Pharmaceutical Sciences & Devices
Vienna, Austria/Boston, MA

Sascha Haverfield DPhil
Regulatory Affairs & Development Operations
Boston, MA

Geoffrey Pot PhD
Global Manufacturing External Supply & Plasma Innovation
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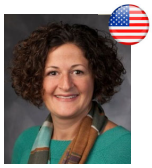

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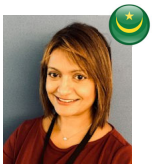

Ambreen Landa
Human Resources
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Julia Ellwanger
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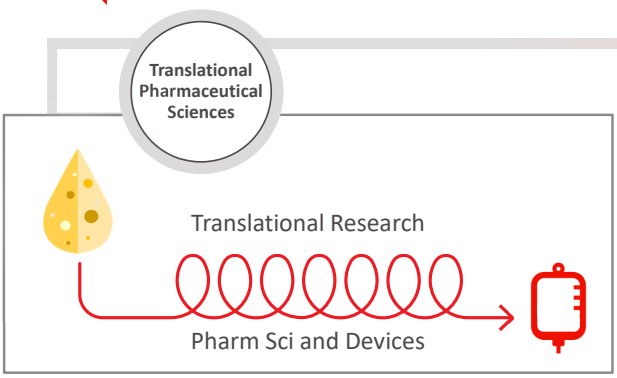
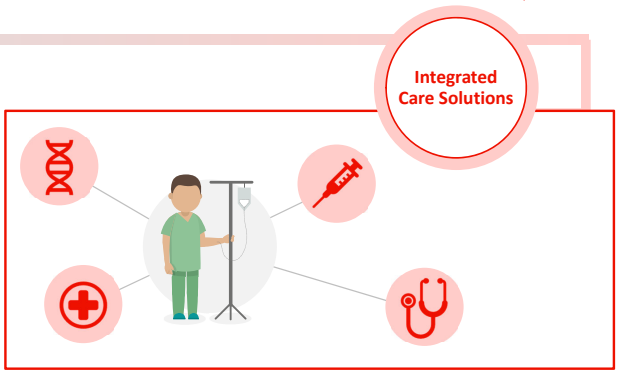
We are driving a culture of innovation through two R&D engines

Research/Early Development **Late Development**



Early Development Innovation Engine



Late Development Innovation Engine

Generate new and improved therapeutics by:

- Investigational new drug candidates
- Mechanisms of action
- Responder populations
- New process development

Improve health outcomes by:

- Diagnostic efficiencies
- Expanded data and devices to support effectiveness
- Point of Care services and drug delivery services
- Data-driven guidelines for acute and chronic management

PDT R&D Strategy

Maximize the therapeutic value of plasma-derived therapies for patients with rare and complex diseases through innovation across the product life cycle

Realize full potential of in-line First and Last Liter products

- Expanded indications and benefit-risk datasets
- Device-driven solutions for diagnosis, management, and long-term follow-up
- Global expansion
- New formulations

Optimize efficiencies of plasma-derived therapy production

- Pharmaceutical science support for manufacturing

Identify and develop new plasma-derived therapies

- New targeted therapies for diverse therapeutic areas

We are prioritizing near-term late development…

	RESEARCH / NON-CLINICAL DEVELOPMENT	LATE DEVELOPMENT	
IMMUNOLOGY	**CUVITRU** Wearable Device	**HYQVIA** ***Halozyme*** US - Pediatric PID	**HYQVIA** ***Halozyme*** EU - Pediatric PID
		HYQVIA ***Halozyme*** Chronic inflammatory demyelinating polyneuropathy (CIDP)	**HYQVIA - HyHub** ***Flextronics*** Delivery Device
		HYQVIA Geographic expansion	**CINRYZE** Geographic expansion
		CUVITRU Geographic expansion	**GLASSIA** ***Kamada*** Immunogenicity/ bronchioalveolar lavage
HEMATOLOGY			**FEIBA** Volume reduction

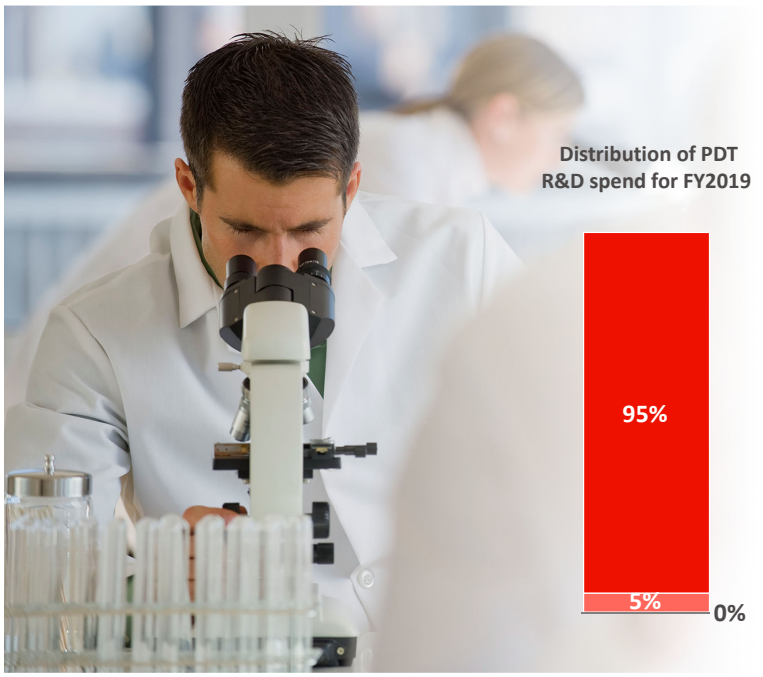
… while enabling discovery of next generation therapeutics

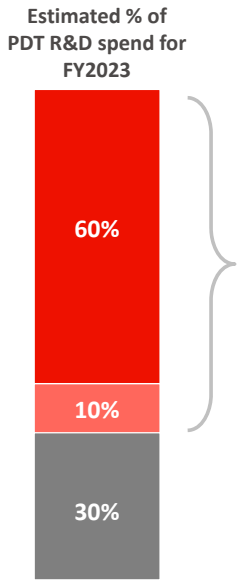
	RESEARCH / NON-CLINICAL DEVELOPMENT		LATE DEVELOPMENT	
IMMUNOLOGY	**CUVITRU** Wearable Device	**TAK 881** **Facilitated 20% SC IgG** ***Halozyme*** Primary Immunodeficiency (PID)	**HYQVIA** ***Halozyme*** US - Pediatric PID	**HYQVIA** ***Halozyme*** EU - Pediatric PID
	TAK 880 **Low IgA-IgG (IV)** Primary Immunodeficiency	**Alpha-1 Antitrypsin (A1AT)** Next generation formulations	**HYQVIA** ***Halozyme*** Chronic inflammatory demyelinating polyneuropathy (CIDP)	**HYQVIA - HyHub** ***Flextronics*** Delivery Device
	Hyper-Immune IG Infectious disease		**HYQVIA** Geographic expansion	**CINRYZE** Geographic expansion
	CINRYZE Ex-HAE indications TBD		**CUVITRU** Geographic expansion	**GLASSIA** ***Kamada*** Immunogenicity/ bronchioalveolar lavage
			GLASSIA ***Kamada*** A1ATD-emphysema*	**CUVITRU** Japan - PID (FPI Q4 2019)
HEMATOLOGY	**PROTHROMPLEX TOTAL** Device and formulation	**Butyryl Cholinesterase** Organophosphate poisoning	**PROTHROMPLEX TOTAL** US - Drug-induced bleeding**	**FEIBA** Volume reduction
			CEPROTIN Geographic expansion	

*Subject to regulatory approval
**Pending FDA Pre-IND consultation and future acceptance of an IND

Programs and projects added since Day 1

Over the next 3 years, we plan to allocate resources to research and early development

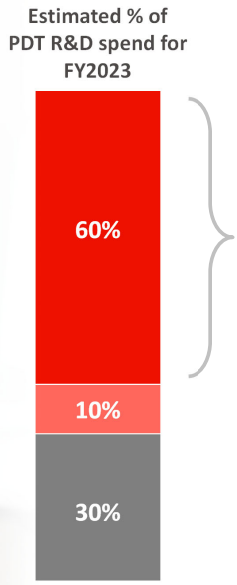




~70% of resources will be allocated to improving in-line products and production efficiencies

- Optimizing value of in-line products
- Plasma production efficiencies
- New plasma-derived therapies

Our goal is to realize the full potential of in-line first and last liter products



- Expanded indications and benefit-risk datasets
- Device-driven solutions for diagnosis, management, and long-term follow-up
- Global expansion
- New formulations

- Optimizing value of in-line products
- Plasma production efficiencies
- New plasma-derived therapies

Immunoglobulins provide the scaffold for PDT innovation

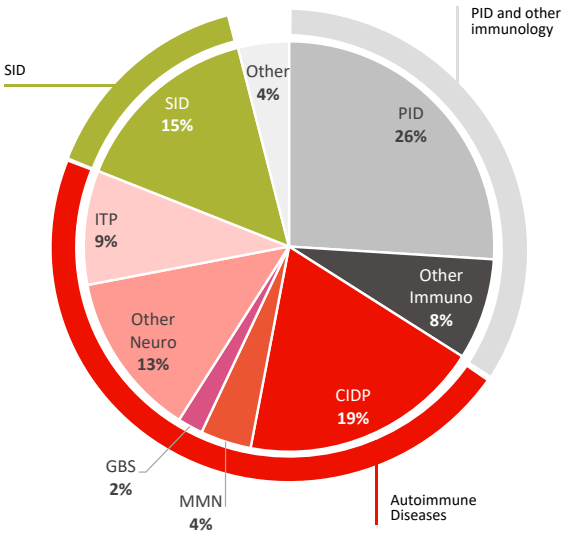
Current State

- Exploring efficacy and safety of HYQVIA in patients with neuro-immune diseases (e.g. CIDP)
- Ongoing delivery device development

Opportunities

- Indications: New neuro-immunology and secondary immunodeficiencies (SID) programs**
- Geographic expansion: CUVITRU-Japan first patient to be enrolled in Q4 FY 2019
- Integrated care solutions:
  - Advance point of care diagnosis of primary immunodeficiency (PID)
  - New delivery and eHealth devices
- Develop f-20% SCIG

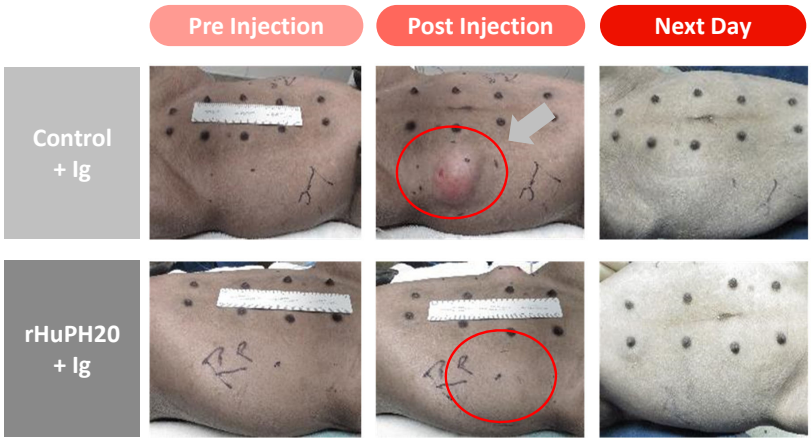
US & EU IgG use by indication*

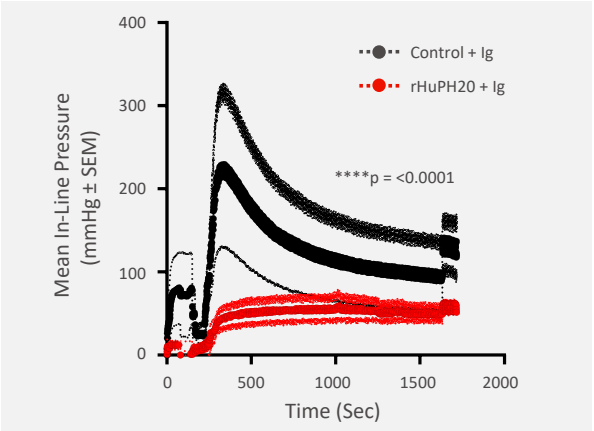


Source: Bain Study (US&EU), Volumes, Estimates based on internal calculations on EU Country Data
*Not all indications are approved for a Takeda product
**Subject to regulatory approval

Facilitated 20% SCIG has the potential to provide further value to patients who require higher volume administrations

Pig model, sequentially administered recombinant human hyaluronidase (rHuPH20) and 20% IgG (CUVITRU)*





Significantly decreased induration and infusion pressure and induration, and improved cutaneous blood flow

* In collaboration with Halozyme
Sequentially administered rHuPH20 and CUVITRU is for investigational use only

PROTHROMPLEX TOTAL can be developed to treat a variety of bleeding disorders

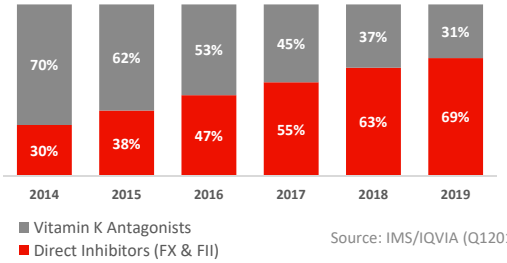
Current State

- Many different mechanisms used for prophylactic and surgical anti-coagulant therapy
- PROTHROMPLEX TOTAL use is limited to Vitamin K antagonists associated bleeding ex-US

Opportunities

- Geographic expansion into the US*
- Broaden indication to include treatment of multiple types of drug-induced bleeding
- Improved use via new formulations and device

Changing Treatment Paradigm
(EU Total Prescriptions)



Source: IMS/IQVIA (Q12019)

*Pending FDA Pre-IND consultation and future acceptance of an IND; Investigational use, subject to regulatory approval

ARALAST & GLASSIA provide opportunities to improve outcomes in patients with alpha-1 antitrypsin deficiency (A1ATD)

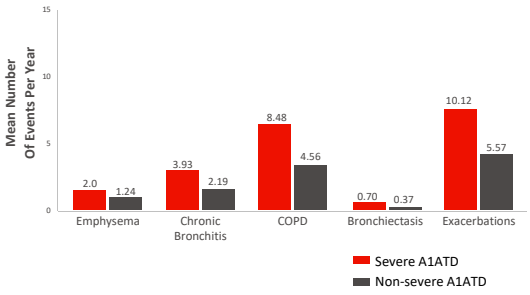
Current State

- Current standard of care does not adequately treat A1ATD

Opportunities

- New clinical study to assess the efficacy of a higher dose of GLASSIA in patient with emphysema related to A1ATD
- Next generation A1AT*: formulation, delivery and management devices
- Explore A1AT as acute phase reactant

Healthcare Resource Utilization in A1ATD-Emphysema



Source: Herrera et al (2019) Chest annual meeting

*Investigational use, subject to regulatory approval

Investigational A1AT-replacement formulations may offer additional value to patients*

Short term

Highly purified post-fractionations pdA1AT-precursor

Concentration
of A1AT by ultra filtration potentially leading to an **extended $t_{1/2}$**

Mid term

Protein Modification
site-specific modification leading to an **extended $t_{1/2}$**

Purification
by ion-exchange chromatography

Formulation Development
Evaluate SC administration

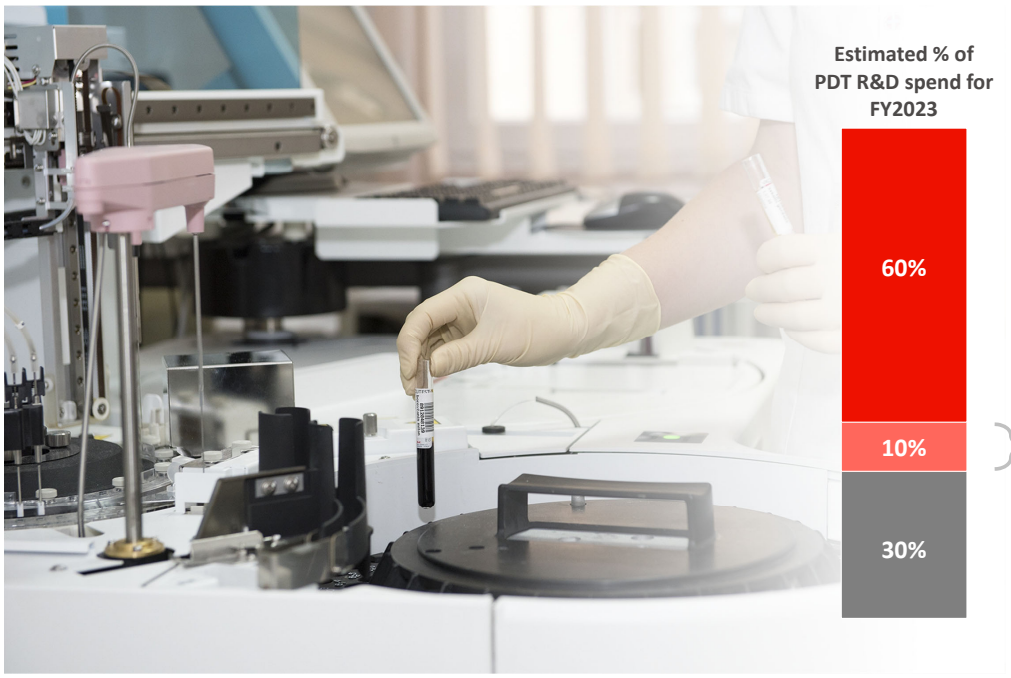
Device Development
Potential to add incremental value for patients

In Vivo Model

- PK parameters for a modified A1AT have been assessed in vivo
- Statistically significant improvement of PK parameters for modified A1AT compared to Aralast

*Subject to regulatory approval

We are optimizing efficiencies of plasma-derived therapy production



Estimated % of PDT R&D spend for FY2023

- Optimizing value of in-line products
- Plasma production efficiencies
- New plasma-derived therapies

- Pharmaceutical science support for manufacturing

We are further improving manufacturing efficiencies to increase yield

High yield high throughput initiatives will improve delivery of last liter products to patients globally

A new high yield & high throughput process:

- Process development to shorten IgG upstream and total albumin cycle times
- Capture of purification waste to isolate proteins for possible new development

Potential benefit of higher yield and increased capacity

Significantly reduced COGS with positive ROI

We are identifying and developing new plasma-derived therapies

Estimated % of PDT R&D spend for FY2023

- Optimizing value of in-line products
- Plasma production efficiencies
- New plasma-derived therapies

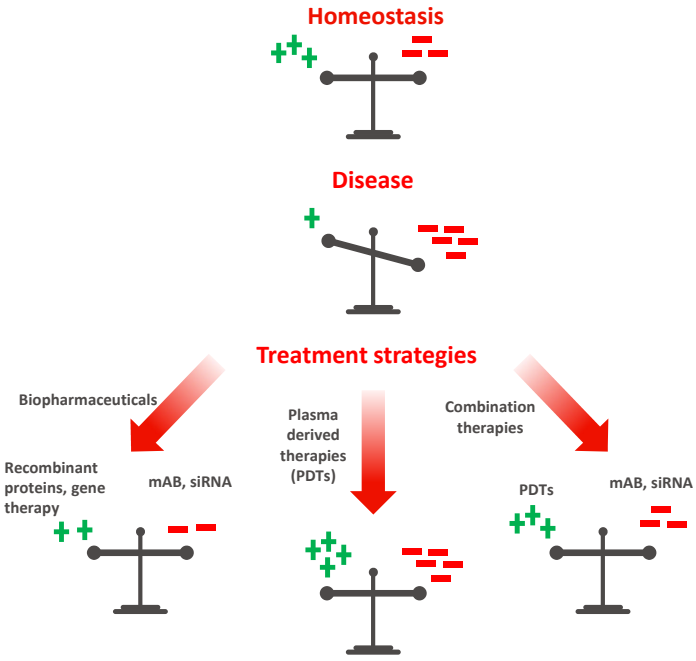
- New targeted therapies for diverse therapeutic areas

We believe there is a tremendous amount of untapped potential in plasma proteins

>3000 plasma proteins control balance, some with health promoting + effects and other with disease associated − effects

Generally, PDTs have been developed to **replace functional deficiencies** in health promoting proteins

We believe PDTs, alone or in combination, **can be developed to address acute and chronic diseases**



We are well-positioned to create near-term and sustainable growth

TARGET APPROVAL FY	NEAR TERM CATALYSTS FY19 – FY22	NEAR TERM CATALYSTS FY23 – FY24	SUSTAINED GROWTH FY25 AND BEYOND	
IMMUNOLOGY	**HYQVIA** *Halozyme* Chronic inflammatory demyelinating polyneuropahty (CIDP)	**CUVITRU** Japan PID (FPI Q4 2019)	**GLASSIA** *Kamada* A1ATD-emphysema*	HYPERIMMUNE IGx GENERATION
	GLASSIA *Kamada* Immunogenicity/bronchioalveolar lavage	**HYQVIA** *Halozyme* EU Pediatric PID	**CINRYZE** Ex-HAE indications TBD	ACUTE PHASE REACTANTS
	HYQVIA - HyHub *Flextronics* Delivery Device	**TAK 880** **Low IgA-IgG (IV)** Primary Immunodeficiency	**CINRYZE** Geographic expansion	NEUROIMMUNOLOGY/OTHER AUTOIMMUNE
	HYQVIA Geographic expansion	**HYQVIA** *Halozyme* US Pediatric PID	**Hyper-Immune IG** Infectious disease	PLASMA-DRUG COMBINATIONS
	CUVITRU Geographic expansion	**CUVITRU** Wearable Device	**Alpha-1 Antitrypsin (A1AT)** Next generation formulations	INTEGRATED CARE: DEVICES AND DIAGNOSTICS
		TAK 881 Facilitated 20% SC IgG *Halozyme* Primary Immunodeficiency (PID)		PLASMA PROTEOMICS for BIOMARKERS and NEW DRUG DISCOVERY
HEMATOLOGY	**CEPROTIN** Geographic expansion	**PROTHROMPLEX TOTAL** Device and formulation	**PROTHROMPLEX TOTAL** US - Drug-induced bleeding **	
	FEIBA Volume reduction	**Butyryl Cholinesterase** Organophosphate poisoning		

Clinical-stage assets | Platforms

*Subject to regulatory approval
**Pending FDA Pre-IND consultation and future acceptance of an IND

Treatment paradigms of rare and complex diseases are dynamic and we are innovating continuously

	Uncertainties	PDT Innovation
	→ Deepening understanding of underlying mechanisms of diseases and co-morbidities	→ Directed most appropriate uses of PDTs → With Takeda Global R&D, investigate plasma-drug combinations
	→ Evolution of Fc- and Fc-Receptor approaches (including anti-FcRn) → Gene therapies and RNAi for specific diseases	→ Focus on primary and secondary immunodeficiencies → Identify IG responders in specific auto-immune diseases → Develop PDTs in conjunction with gene therapies and RNAi (e.g. A1ATD-liver disease)
	→ Perception of lack of plasma product differentiation	→ Integrated care solutions will help to expand therapeutic values and differentiate Takeda products → New formulations may offer new approaches for patients

Key takeaways for Plasma-Derived Therapies R&D

1

Dedicated PDT R&D organization focused on – and investing in – reimagining plasma, while leveraging Takeda's broader R&D resources and capabilities

2

Poised to deliver near-term value by optimizing our in-line portfolio and improving efficiencies throughout the value chain

3

Committed to creating long-term value by unlocking the full potential of plasma to develop innovative, integrated solutions that meaningfully benefit patients globally

Introducing our Covington Manufacturing Facility

Carlos Soto
Covington Site Head

Better Health, Brighter Future

This was our starting place in October 2012

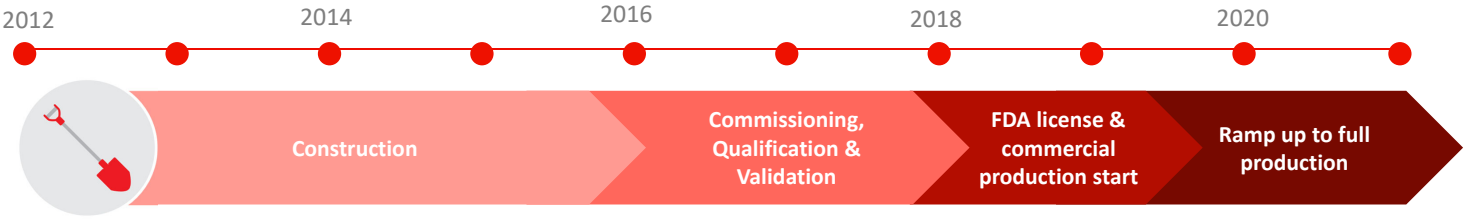
Our vision and plans for Covington enable us to serve more patients as we continue to ramp up our operations

Increases capacity for **PLASMA-DERIVED THERAPIES**

Investment of **$1 BILLION+**

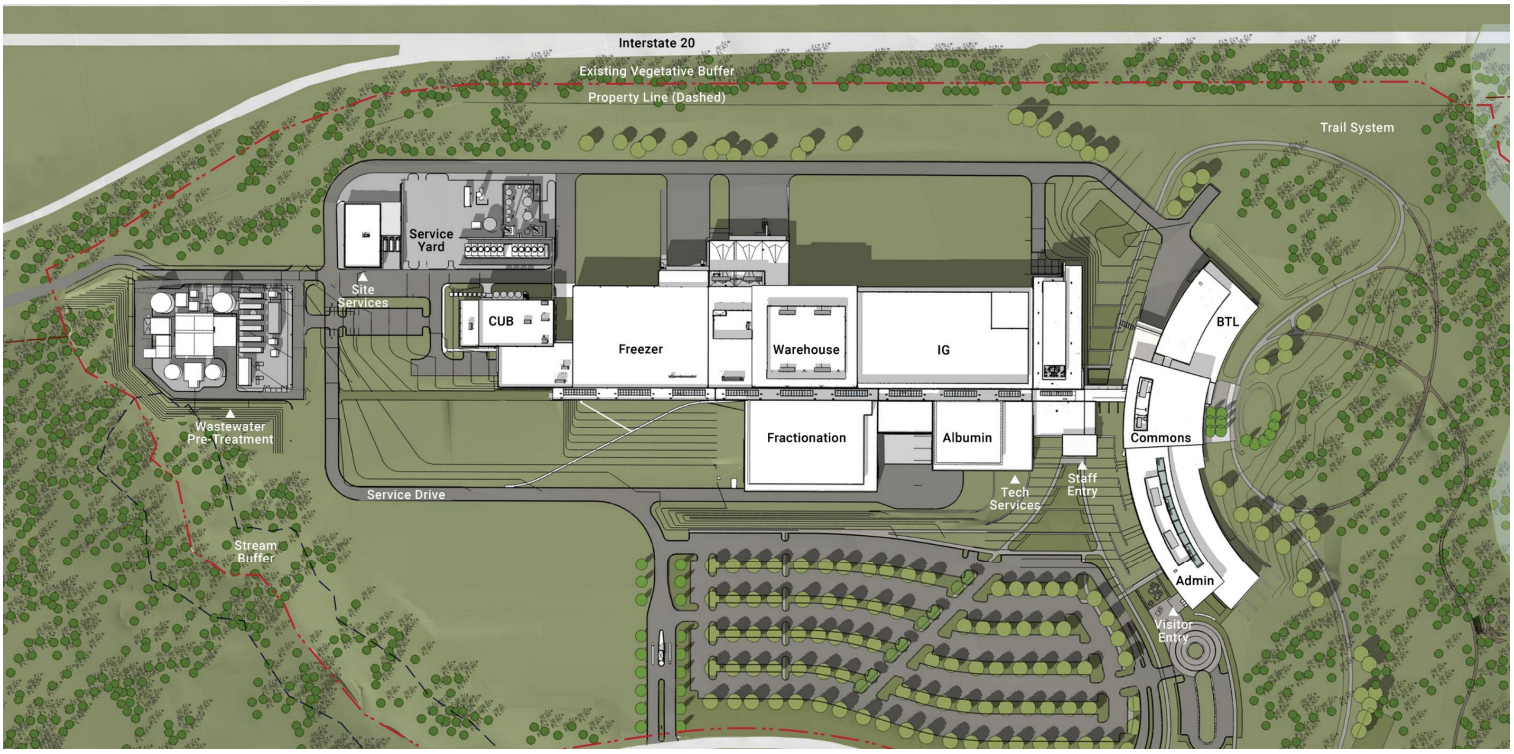
Manufacturing campus covers **1 MILLION+ FT²**

Takeda will employ **~1,500 EMPLOYEES** in Georgia at full ramp up



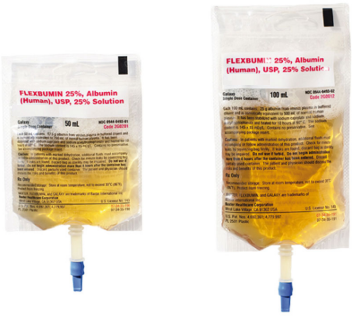
This is how our site looks today - November 2019

Our current footprint allows for further expansion



Today, we manufacture these therapies from plasma proteins

GAMMAGARD Liquid



FLEXBUMIN

Our facility is vertically integrated

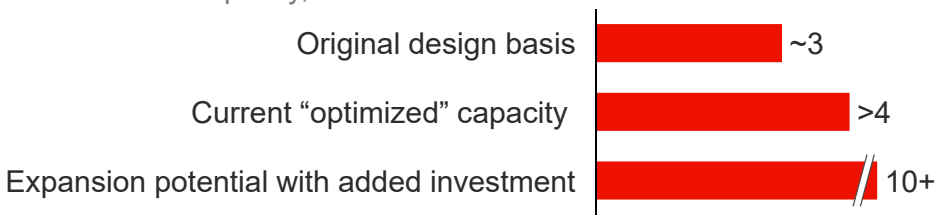
Fully integrated end-to-end production site

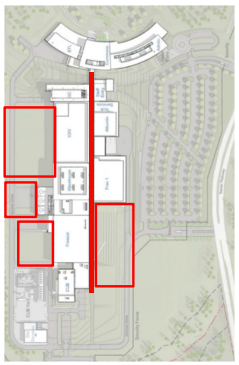
Plasma testing	Fractionation	Purification	Filling	Packaging
BioLife PLASMA SERVICES				

- ~1000 employees today / ramp up plan in place
- Site includes already approved BioLife testing and storage facility

Flexible design for future expansion

Fractionation capacity, million liters





Video of Covington Manufacturing Facility

Creating impact together

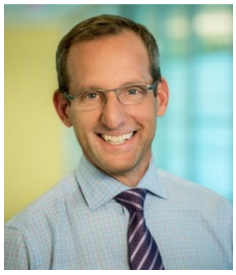
Through a dedicated plasma business unit, we will reimagine the plasma industry and uncover the full potential of plasma-derived therapies to benefit patients worldwide

Sue Brown

Head, Global BioLife Operations

Julie Kim

President, PDT BU



Christopher Morabito

Head R&D, PDT

Adrian Murphy

Head of Plasma Operating Unit, Global Manufacturing & Supply

Costa Saroukos

Chief Financial Officer

Carlos Soto

Covington Site Head