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

 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

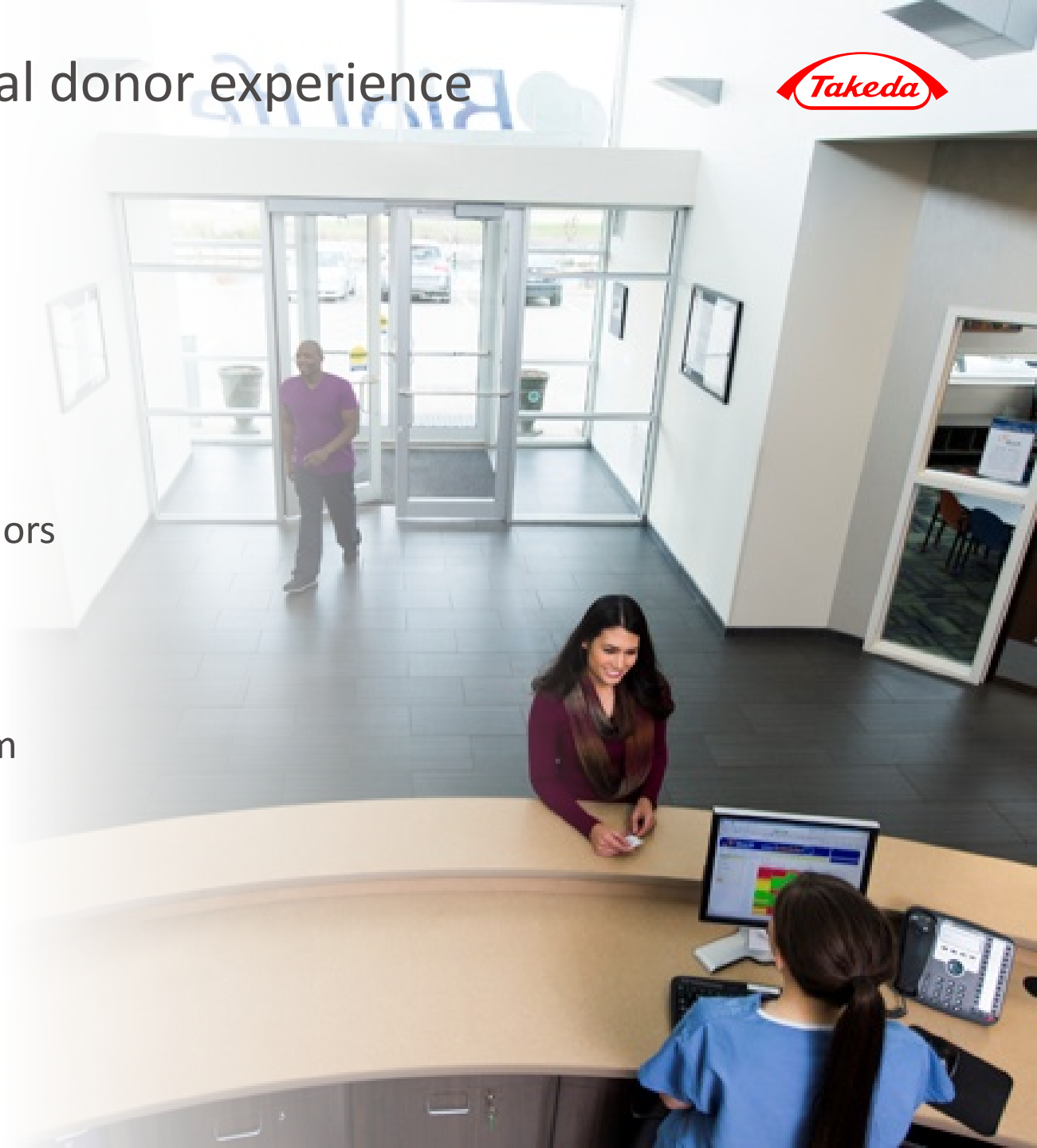
Efficiency & convenience central to our approach

- 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**



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

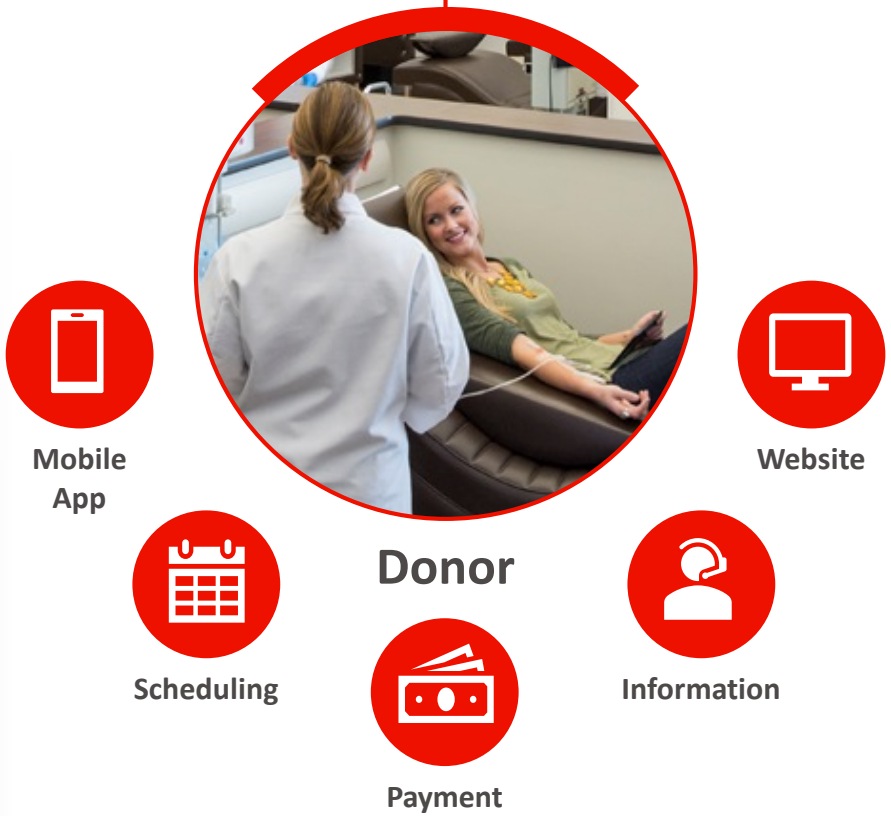
 Source: Takeda internal data.

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



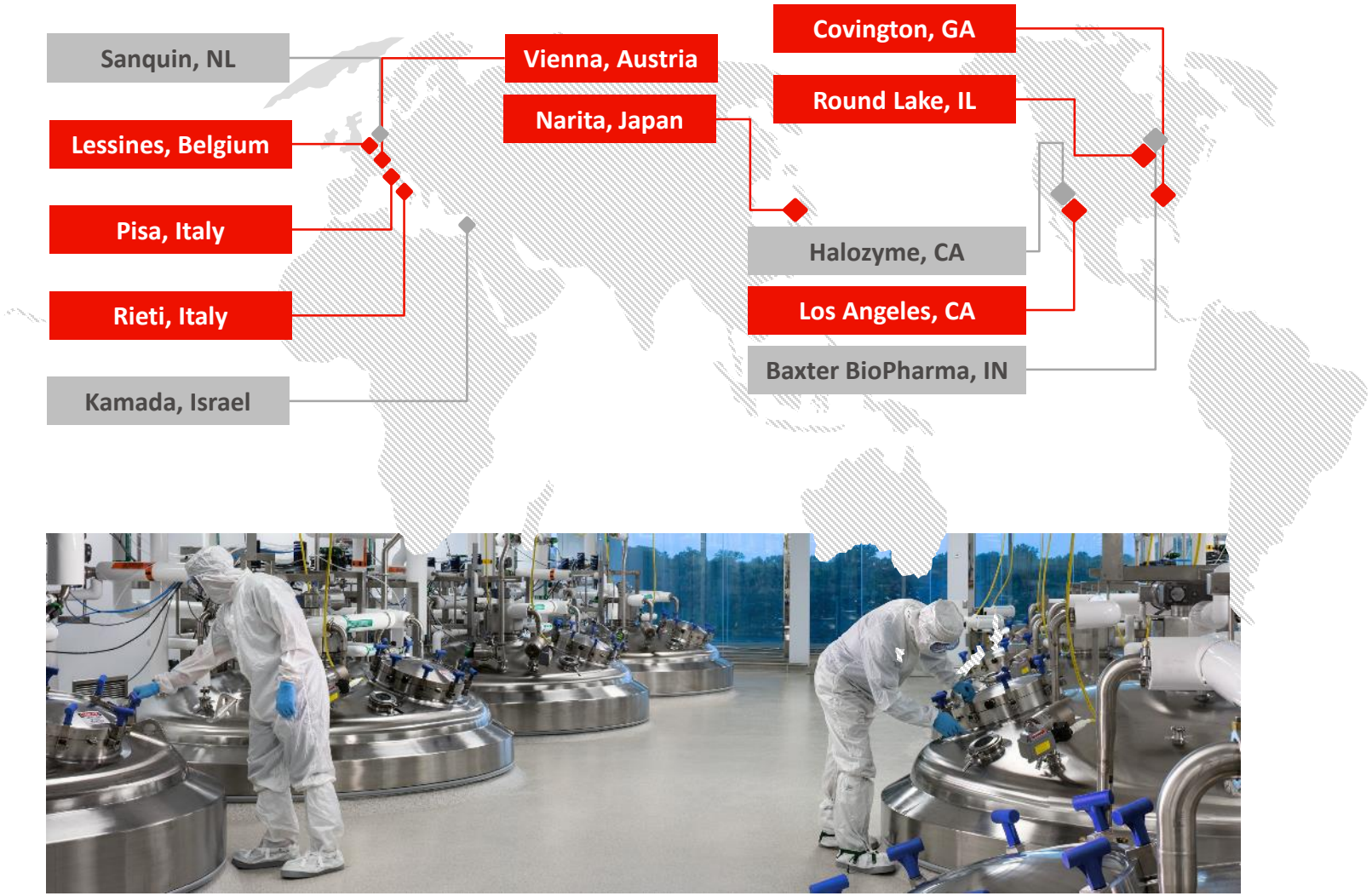
PLASMA SOURCING

MANUFACTURING

COMMERCIALIZATION

RESEARCH & DEVELOPMENT

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



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

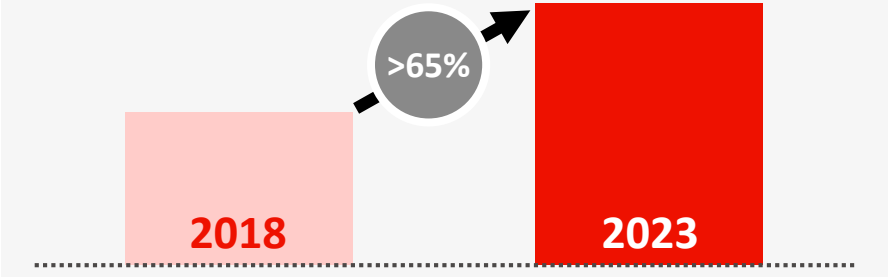

Vienna, Austria

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

Capacity Expansion: 2018 – 2023 (projected)



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

>65%

over the next 5 years

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

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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

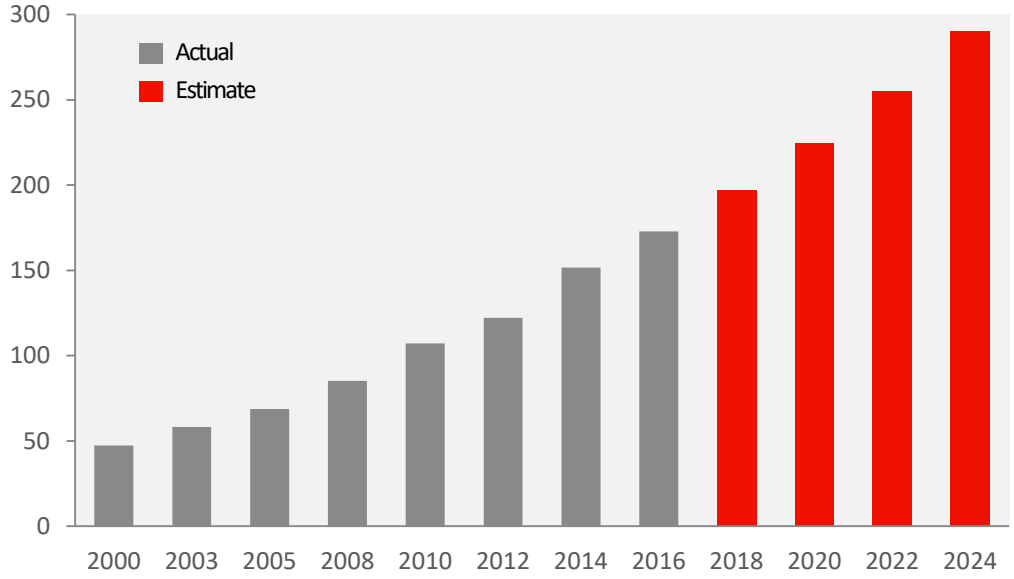
	Cuvitru [Human Normal Immunoglobulin, 20% for subcutaneous administration]	HyQvia Human Normal Immunoglobulin (10%) Recombinant Human Hyaluronidase
Key Features	• Well tolerated • Limited volumes (up to 60ml per site) through frequent infusions • Ease of use/preparation • 2 or 4 infusion sites/needles	• 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



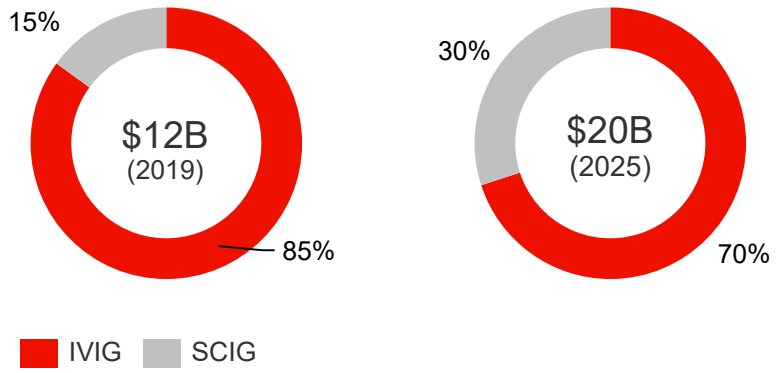
Source: The Marketing Research Bureau, Inc. (Orange, CT)

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

Access

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

Personalized Care & Support

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

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 (Immunoglobuline humaine normale (IgSC)), kenketu glovenin-I	~2,870	~12,500
Last Liter	Albumin	Flexbumin, HUMANALBUMIN, KENKETU ALBUMIN, KENKETU ALBUMINATE	~580	~5,000
First Liter	Hemophilia products	HEMOFIL M, FEIBA, IMMUNINE, IMMUNATE	~890	~2,800
First Liter	Other products	Aralast NP, Glassia (Alpha1-Proteinase Inhibitor (Human)), CINRYZE, Ceprotin (Protein C Concentrate [Human]), 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

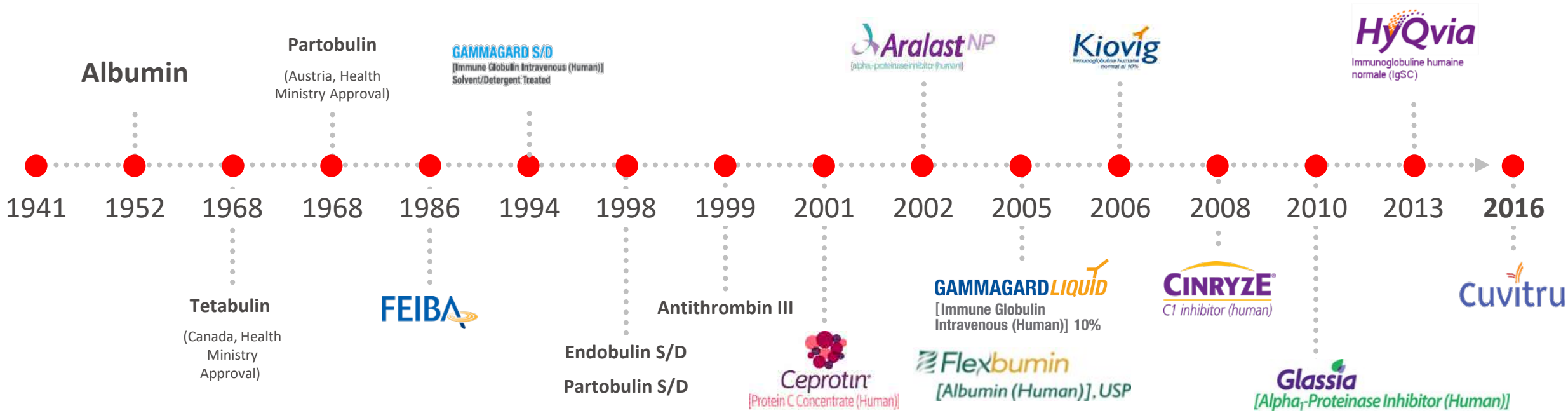
Our **broad and differentiated portfolio** brings **personalized, innovative, lifelong care** and underlines our credentials for **reimagining the industry**

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

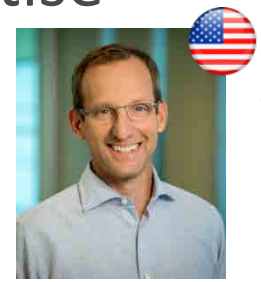
- Focused entirely on plasma-derived therapies
- Lean and agile team
- Based in Cambridge, MA and Vienna, Austria
- Separate R&D prioritization
- Dedicated budget

Global R&D

- 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

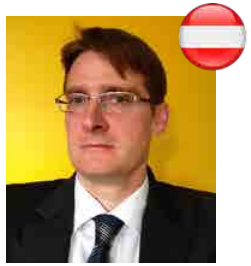
Catherine Parham MD
Program Leadership
Boston, MA

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
Lessines, Belgium

Gabriele Ricci
Digital Technologies
Boston, MA

William Standaert
Legal
Zurich, Switzerland

Cara Laurello
Ethics and Compliance
Boston, MA

Ambreen Landa
Human Resources
Boston, MA

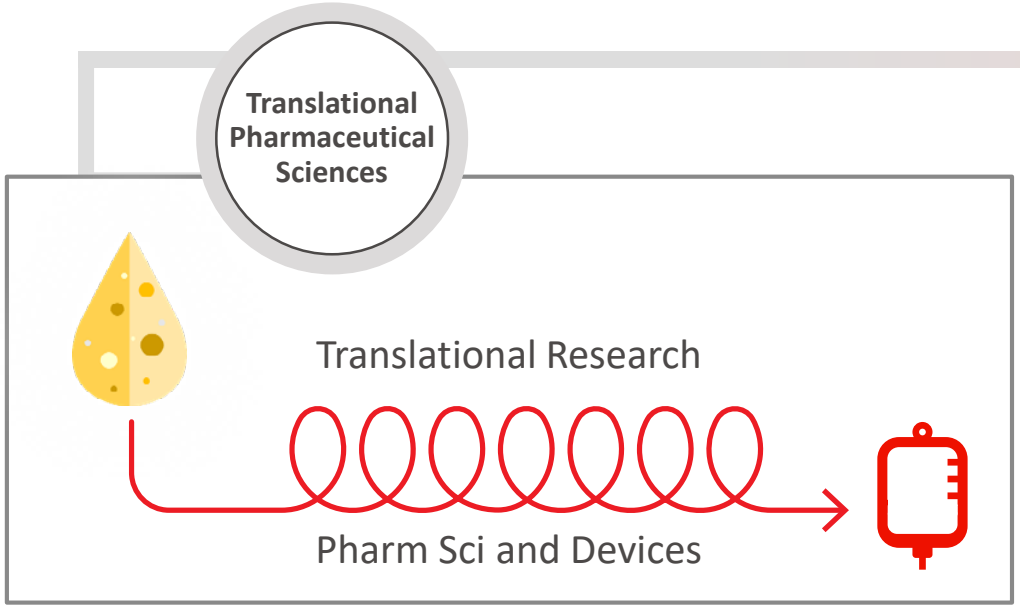
Pritesh Patel
Finance
Boston, MA

Julia Ellwanger
Communications
Bannockburn, IL

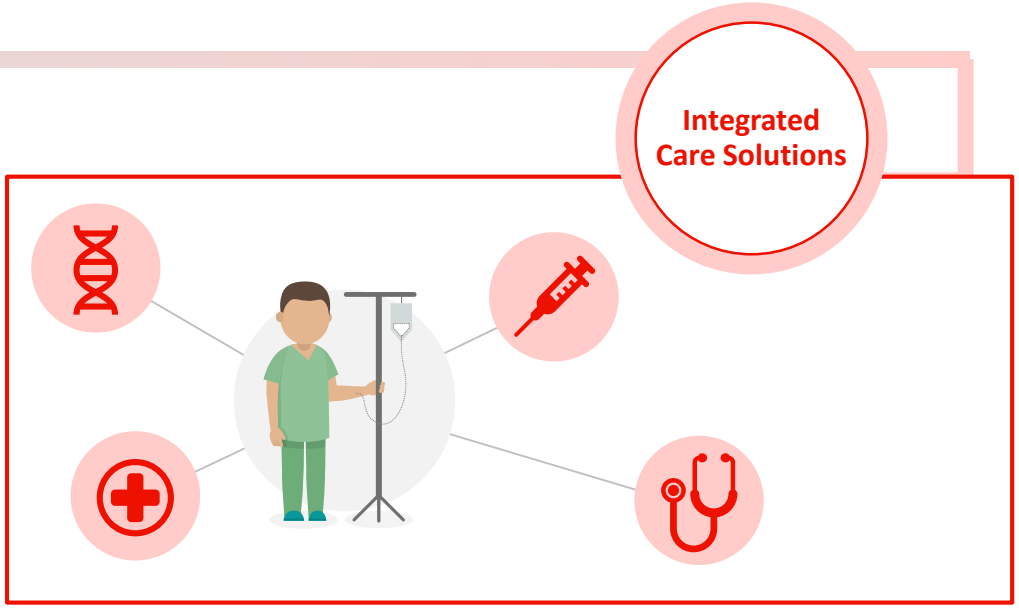
 Flag = country of origin

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

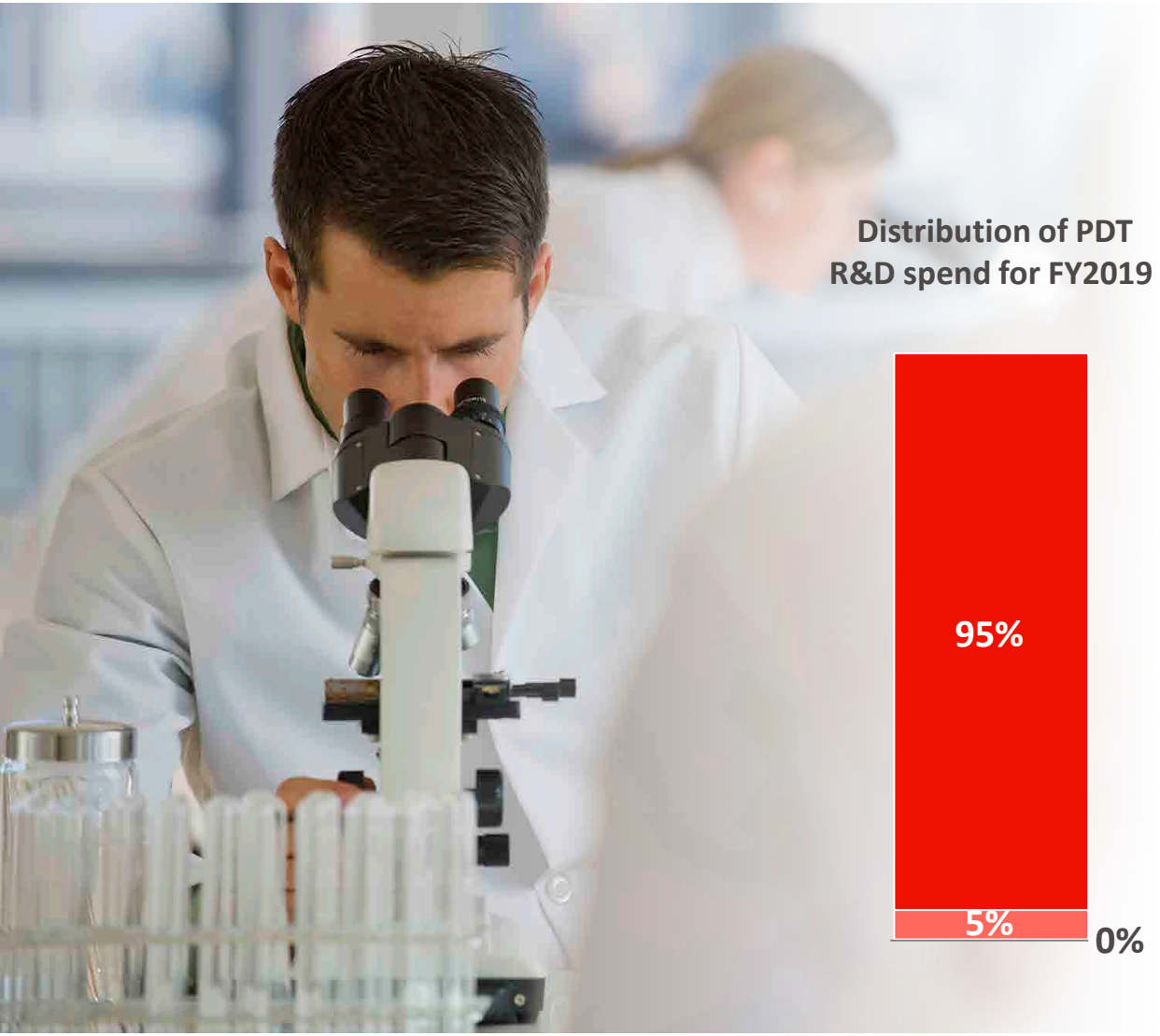
… while enabling discovery of next generation therapeutics

	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

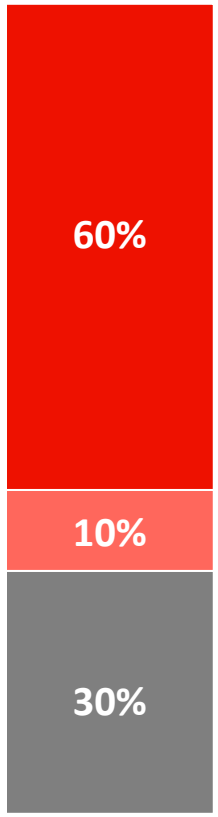
Programs and projects added since Day 1

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



Distribution of PDT R&D spend for FY2019

Estimated % of PDT R&D spend for FY2023



~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