

TRANSLATING SCIENCE INTO HIGHLY INNOVATIVE LIFE-CHANGING MEDICINES



Andy Plump MD, PhD

President R&D

Takeda Pharmaceutical Company Limited

New York, NY

November 14, 2019

Better Health, Brighter Future

WHAT YOU WILL HEAR TODAY



1

Our portfolio and pipeline will drive growth and offset key patent expirations

2

We are investing in novel mechanisms and capabilities for a sustainable future

3

We have cultivated an environment of empowerment, accountability and agility

WE ARE POSITIONED TO DELIVER NEAR-TERM & SUSTAINED GROWTH



TARGET APPROVAL	WAVE 1 ¹					WAVE 2 ²				PLATFORMS				
	CLINICAL-STAGE NMEs					FY25 AND BEYOND								
	FY20	FY21	FY22	FY23	FY24									
ONCOLOGY		TAK-788 ³ 2L NSCLC		TAK-007 Hematologic malignancies	TAK-924 AML	TAK-164 GI malignancies	TAK-252 Solid tumors				CELL THERAPY AND IMMUNE ENGAGERS	TARGETED INNATE IMMUNE MODULATION	NEXT-GEN CHECKPOINT MODULATORS	
		TAK-924 ³ HR-MDS		TAK-788 1L NSCLC		TAK-573 R/R MM	TAK-981 Multiple cancers							
RARE DISEASES <i>Immunology Hematology Metabolic</i>		TAK-620 CMV infect. in transplant		TAK-611 MLD (IT)	TAK-607 Complications of prematurity	TAK-079 ⁴ MG, ITP	TAK-754 HemA	TAK-755 ITTP, SCD				GENE THERAPY		
		TAK-609 Hunter CNS (IT)		TAK-755 cTP		TAK-531 Hunter CNS								
NEUROSCIENCE				TAK-935 DEE	Orexin2R-ag (TAK-925/994) Narcolepsy T1	TAK-341 Parkinson's Disease	Orexin2R-ag Sleep Disorders	TAK-041 CIAS NS				GENE THERAPY	OTHER PLATFORMS RNA Modulation Antibody Transport Vehicle	
						TAK-418 Kabuki Syndrome	TAK-653 TRD	TAK-831 CIAS NS						
						WVE-120101 Huntington's Disease	WVE-120102 Huntington's Disease							
GASTRO-ENTEROLOGY	TAK-721 EoE					Kuma062 Celiac Disease	TAK-101 Celiac Disease	TAK-018 Crohn's Disease (post-op and ileitis)	TAK-671 Acute Pancreatitis			GENE THERAPY	MICROBIOME	CELL THERAPY
						TAK-954 POGD	TAK-906 Gastroparesis	TAK-951 Nausea & vomiting						
VACCINES		TAK-003 Dengue Vaccine				TAK-214 Norovirus Vaccine	TAK-426 Zika Vaccine	TAK-021 EV71 vaccine						

1. Projected timing of approvals depending on data read-outs; some of these Wave 1 target approval dates assume accelerated approval
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3. Projected approval date assumes filing on Phase 2 data
4. TAK-079 to be developed in Rare Diseases indications myasthenia gravis (MG) and immune thrombocytopenic purpura (ITP) (FPI projected in each indication in 2H FY19)

Orphan potential in at least one indication
Estimated dates as of November 14, 2019

2019: A WATERSHED YEAR FOR TAKEDA



INTEGRATION OF SHIRE

- 18 assets added to the clinical pipeline*
- Creation of a Rare Diseases Therapeutic Area
- Access to world-class Gene Therapy capabilities



EXPANSION OF OUR GLOBAL BRANDS

- VARSITY study demonstrated head-to-head superiority of Entyvio vs Humira and published in New England Journal of Medicine
- TAKHZYRO indication expansions in bradykinin mediated angioedema
- Expecting >15 approvals in China over the next 5 years



UNPRECEDENTED NMEs


- 17 NMEs in Phase 2 and Phase 3
- Potentially curative novel mechanisms (e.g. TAK-101, Orexin2R-ag, CAR-NK)
- Momentum in Cell Therapies, including new partnership with MD Anderson

* Including approved products with ongoing R&D investment


PATIENT-DRIVEN AND SCIENCE-FIRST IN 3 CORE AREAS




INNOVATIVE BIOPHARMA




ONCOLOGY



RARE DISEASES




NEUROSCIENCE




GASTROENTEROLOGY

PLASMA DERIVED THERAPIES



Complementing our rare disease focus




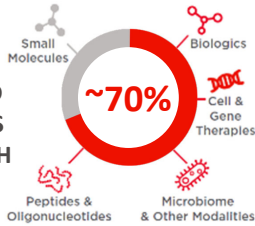


VACCINES BUSINESS UNIT



Differentiated Dengue vaccine

WE ARE DOING MORE FOR OUR PATIENTS



<p style="font-size: 2em; font-weight: bold;">8</p>  <p>POTENTIAL BIC/FIC NMEs IN PIVOTAL STUDIES¹</p>	<p style="font-size: 2em; font-weight: bold;">~40</p>  <p>NEW MOLECULAR ENTITY CLINICAL STAGE ASSETS</p>	<p style="font-size: 2em; font-weight: bold;">~4,500</p>  <p>R&D EMPLOYEES GLOBALLY</p>
<p>DIVERSIFIED MODALITIES IN RESEARCH</p>  <p>~70%</p>	<p>~50%</p>  <p>PIPELINE WITH ORPHAN DRUG DESIGNATION²</p>	<p style="font-size: 2em; font-weight: bold;">200+</p>  <p>ACTIVE PARTNERSHIPS</p>

1. BIC/FIC Best-in-Class/First-in-Class (incl. relugolix). Three NMEs in pivotal studies in 2018
 2. 31 Orphan Drug Designations in at least one indication for assets in Phase 1 through LCM in 2019 versus 15 in 2018

WE ARE TAKING COURAGEOUS RISKS TO MAKE A CRITICAL DIFFERENCE

“There is a considerable need for improved treatments for individuals with NT1, which is caused by the loss of orexin-producing neurons in the brain”

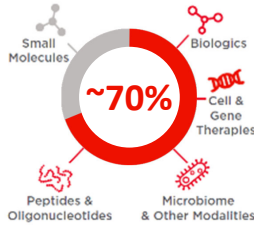


Dr. Makoto Honda, Sleep Disorders Project Leader, Tokyo Metropolitan Institute of Medical Science

Data presented at World Sleep conference

NOVEL TARGET MECHANISMS WITH HUMAN VALIDATION

- Cell Tx
- Gene Tx
- Biologics
- Peptides
- Oligonucleotide
- Microbiome
- Small Molecule



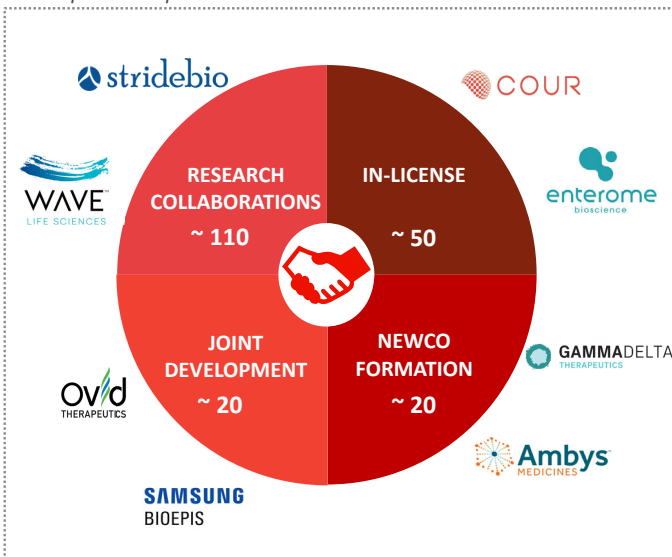
MODALITY DIVERSIFICATION

- 5** Accelerated programs
- 20** NME stage-ups since FY18
- 19** Indications terminated or externalized since FY18

FAST GO / NO-GO DECISION MAKING

WE ARE CULTIVATING THE BEST SCIENCE THROUGH DIFFERENTIATED PARTNERSHIPS...

Select partnerships*

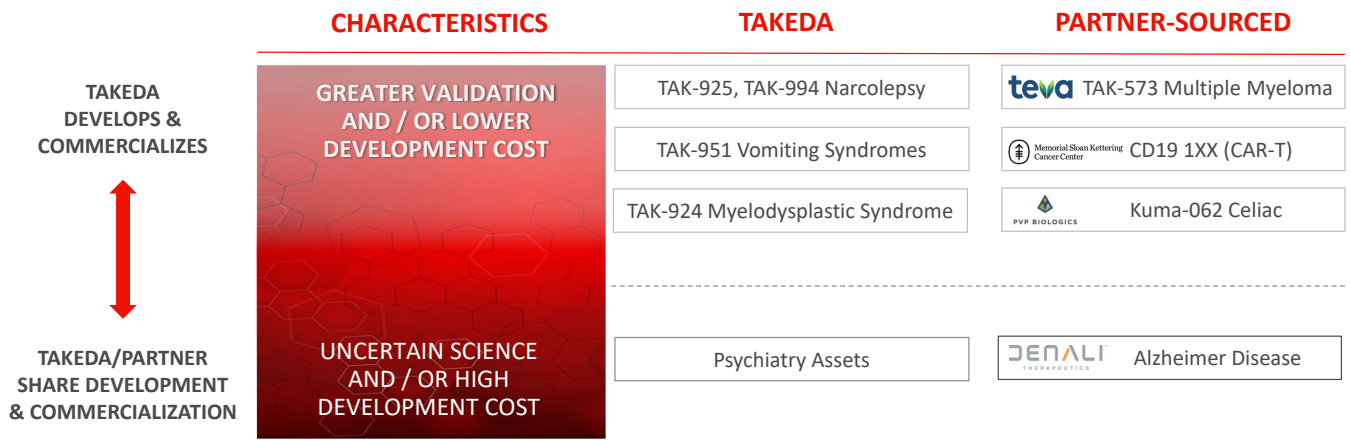


* Externalizations and venture investments are not included

- Access to Innovation
- Risk-Sharing
- Expanding Capacity

Total Value in Public & Private Equity >\$1B

WE ARE NURTURING INNOVATION WHEREVER IT OCCURS



Representative examples only

TO DRIVE HIGHER RETURN ON OUR \$4.5B ANNUAL R&D INVESTMENT



PRIORITIZED R&D PORTFOLIO

FLEXIBLE R&D FUNDING MODEL



BALANCED SPEND

Minimize internal spend and infrastructure



TARGETED POPULATIONS

Smaller trials, lower costs, potential longer exclusivity



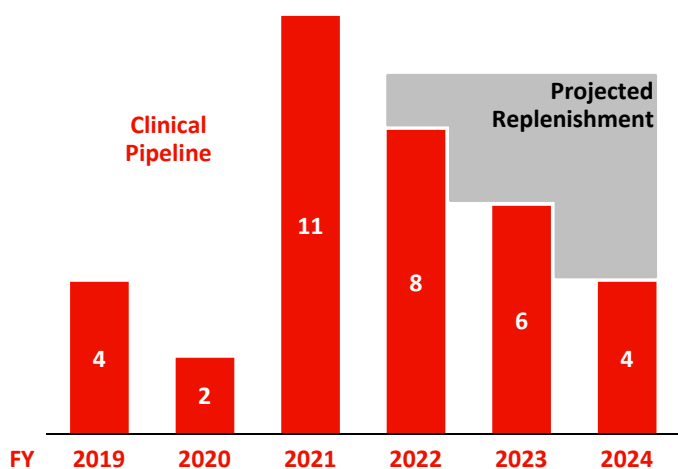
PARTNERSHIP MODEL

Success driven milestone payments

A RESEARCH ENGINE FUELING A SUSTAINABLE PIPELINE



POTENTIAL NME PIVOTAL STUDY STARTS BY YEAR



Note: Projections assume successful data readouts

IMPROVED PRODUCTIVITY

- Research momentum building with a projected ~18 portfolio entries in FY19
- Productivity likely to increase with expansion of cell and gene therapy capabilities
- Leveraging partnerships to access the best clinical or preclinical innovation

PIPELINE INVESTMENTS SUPPORTING NEAR-TERM GROWTH



WAVE 1

INNOVATIVE EXPANSIONS

NEW MOLECULAR ENTITIES

WE ARE DRIVING EXPANSION OF OUR GLOBAL BRANDS



SELECT GLOBAL GROWTH BRANDS

TAU	Therapies	New Indications / Geographic Expansions	Target (FY)
ONC	ALUNBRIG BRIGATINIB	1L Non Small Cell Lung Cancer	2020
	NINLARO (ixazomib) capsules	ND MM Maintenance (non-SCT and post-SCT)	2020 / 2022
Rare	TAKHZYRO (lanadelumab-tylci) injection	Bradykinin Mediated Angioedema	2024
	vonvendi*	Prophylactic Treatment of von Willebrand Disease	2021
GI	Entyvio vedolizumab	Ulcerative Colitis, Crohn's Disease (subcutaneous formulation)	2019 / 2020
	ALOFISEL	Graft versus Host Disease (prophylaxis)	2022
		Complex Perianal Fistulas	2021

SELECT REGIONAL EXPANSIONS

Region	Therapies	Region	Therapies
China	Entyvio vedolizumab ALUNBRIG BRIGATINIB TAKHZYRO (lanadelumab-tylci) injection VPRIV velaglucosidase alfa for injection ADYNOVATE [Antihemophilic Factor (Recombinant), PEGylated]	Japan	Takecab relugolix, cabozantinib, niraparib

ND MM: newly diagnosed multiple myeloma
SCT: stem cell transplant

* VONVENDI is emerging as a global brand
Estimated dates as of November 14, 2019

WAVE 1 NEW MOLECULAR ENTITIES HAVE POTENTIAL TO DELIVER >\$10B AGGREGATE PEAK SALES...



TARGET APPROVAL ¹	FY20	FY21	FY22	FY23	FY24
ONCOLOGY		TAK-788 ² 2L NSCLC		TAK-007 Hematologic malignancies	TAK-924 AML
		TAK-924 ² HR-MDS		TAK-788 1L NSCLC	
RARE DISEASES <i>Immunology Hematology Metabolic</i>		TAK-620 CMV infect. in transplant		TAK-611 MLD (IT)	TAK-607 Complications of prematurity
		TAK-609 Hunter CNS (IT)		TAK-755 cTTP	
NEUROSCIENCE				TAK-935 DEE	Orexin2R-ag (TAK-925/994) Narcolepsy T1
GASTRO-ENTEROLOGY	TAK-721 EoE				
VACCINES		TAK-003 Dengue Vaccine			

14 potential NME launches which represent best-in-class or first-in-class therapies to advance patient standard of care

Peak sale estimate of >\$10B is non-risk adjusted

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2. Projected approval date assumes filing on Phase 2 data

Orphan potential in at least one indication

Estimated dates as of November 14, 2019

...AND ARE EXPECTED TO DELIVER LIFE-CHANGING MEDICINES



POTENTIAL FIRST-IN-CLASS OR BEST-IN-CLASS NMEs

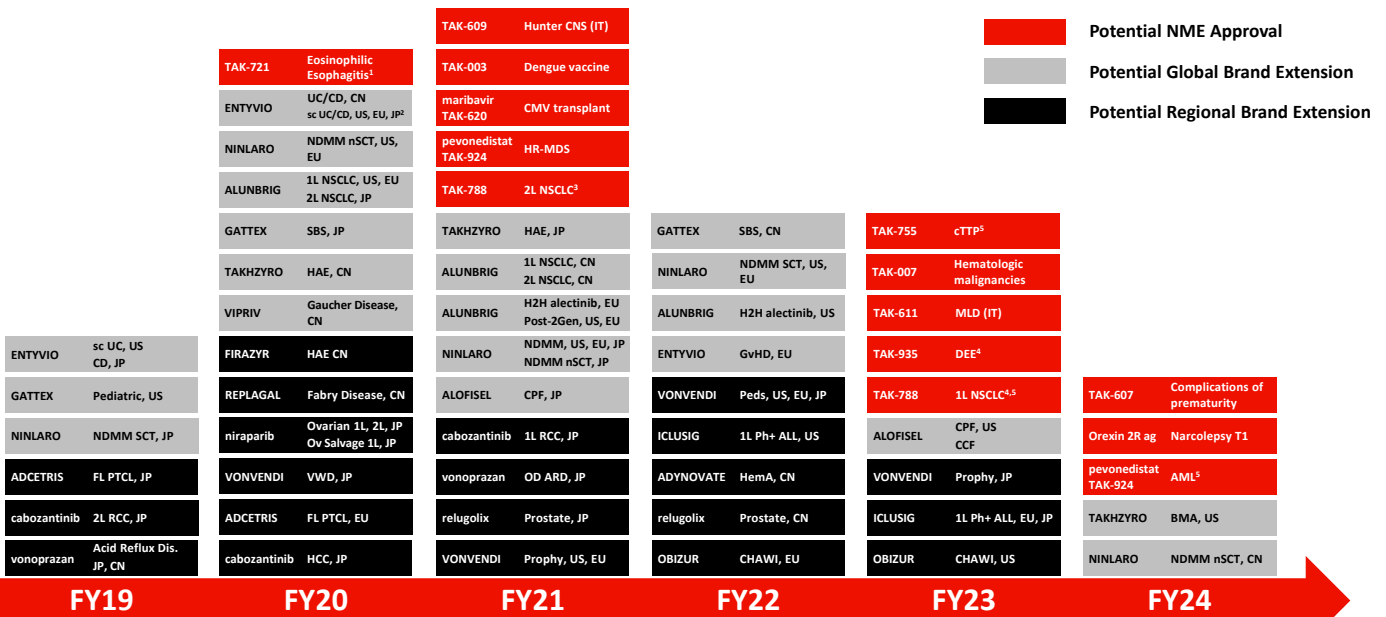
	PRODUCT	MECHANISM	INDICATION	TARGET APPROVAL DATE (FY) ¹	ADDRESSABLE POPULATION (IN US) ²	ADDRESSABLE POPULATION (WW) ^{2,3}
ONCOLOGY	● TAK-788	EGFR inhibitor (exon 20)	NSCLC – 2L / 1L	2021 ⁴ / 2023	~2k	~20 - 30k
	● pevonedistat (TAK-924)	NAE inhibitor	HR-MDS / AML	2021 ⁴ / 2024	~7k / ~12k	15 - 20k / 20 - 25k
	TAK-007	CD19 CAR-NK	Hematologic malignancies	2023	~9k	~15 - 25k
RARE DISEASES <i>Immunology Hematology Metabolic</i>	● TAK-609	ERT / I2S replacement	Hunter CNS (IT)	2021	~250	~1 - 1.5k
	● maribavir (TAK-620)	UL97 kinase inh	CMV infect. in transpl.	2021	~7 - 15k	~25 - 45k
	TAK-607	IGF-1/ IGF1BP3	Complications of prematurity	2024 ⁵	~25k	~80 - 90k
	TAK-611	ERT / arylsulfatase A	MLD (IT)	2023	~350	~1 - 2k
	● TAK-755	ERT/ ADAMTS-13	cTTP / iTTP	2023 / 2025	~500 / ~2k	2 - 6k / 5 - 18k
NEUROSCIENCE	Orexin programs	Orexin 2R agonist	Narcolepsy Type 1	2024	70 - 140k	300k - 1.2M
	TAK-935	CH24H inhibitor	Developmental and Epileptic Encephalopathies (DEE)	2023	~50k	~70 - 90k
GASTRO-ENTEROLOGY	● TAK-721	Oral anti-inflammatory	Eosinophilic Esophagitis	2020	~150k	<i>Under evaluation</i>
VACCINES	● TAK-003	Vaccine	Dengue	2021	~32M	~1.8B

1. Projected timing of approvals depending on data read-outs; some of these target approval dates assume accelerated approval
 2. Estimated number of patients projected to be eligible for treatment in markets where the product is anticipated to be commercialized, subject to regulatory approval
 3. For TAK-788, TAK-924, TAK-007, TAK-607 and TAK-620 the addressable population represent annual incidence

4. Projected approval date assumes filing on Phase 2 data
 5. Currently in a non-pivotal Ph 2; interim stage gates may advance program into pivotal trial for target approval by 2024

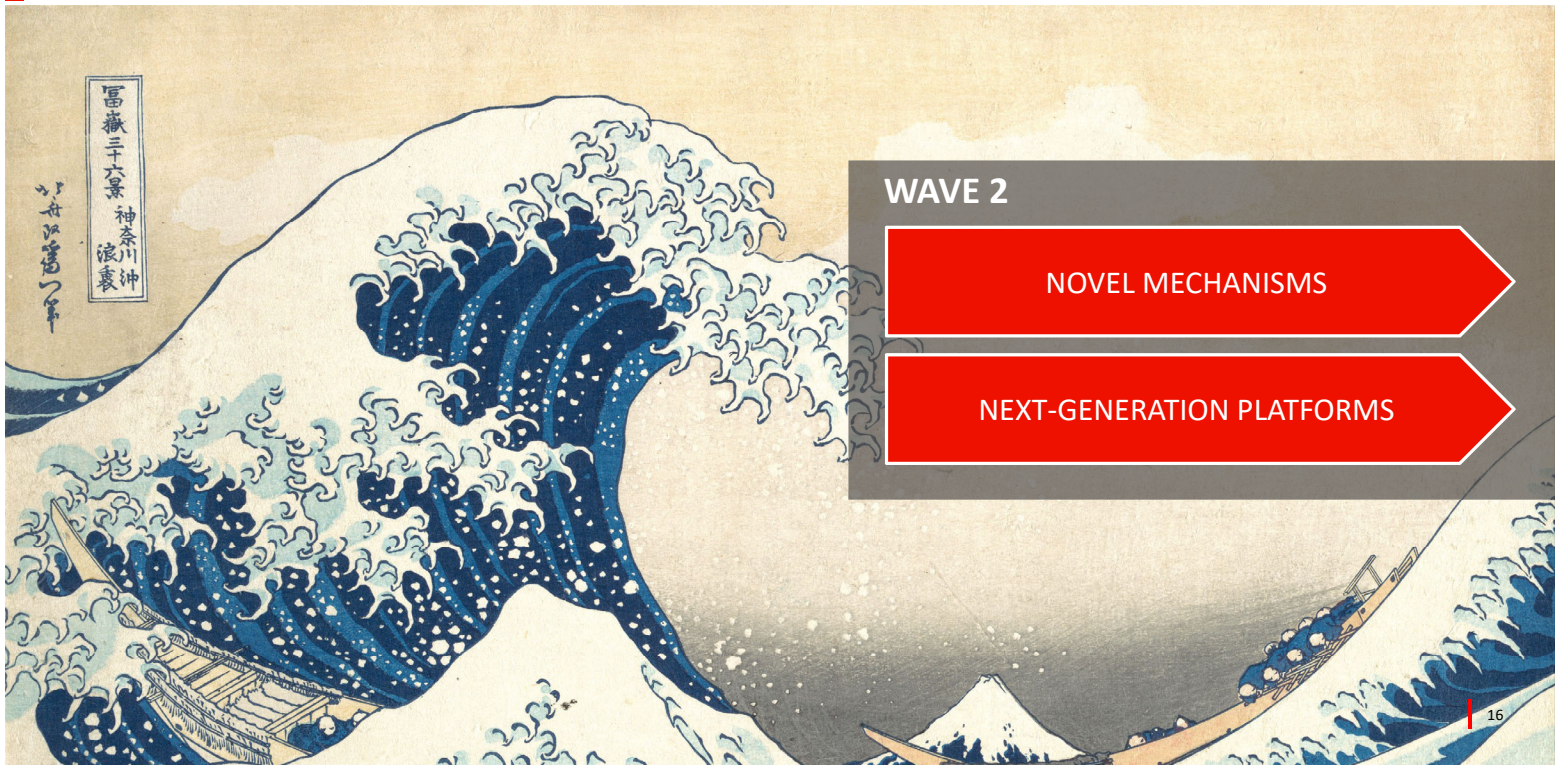
● Currently in pivotal study or potential for registration enabling Ph-2 study (note: table excludes relugolix)

IN SUMMARY: ROBUST NEAR-TERM GROWTH



1. China approval in 2023
 2. US approval for sc CD, EU approval for sc UC & CD, Japan approval for sc CD
 3. Includes approval in China
 4. China approval in 2024
 5. New indication for currently unapproved asset

Potential approvals by fiscal year as of November 14, 2019
 The target dates are estimates based on current data and subject to change



DRIVEN BY A CLINICAL PIPELINE OF NOVEL MECHANISMS...

TARGET APPROVAL ¹	FY25 AND BEYOND			
ONCOLOGY	TAK-164 <i>GI malignancies</i>	TAK-252 <i>Solid tumors</i>		
	TAK-573 <i>R/R MM</i>	TAK-981 <i>Multiple cancers</i>		
RARE DISEASES <i>Immunology Hematology Metabolic</i>	TAK-079 ² <i>MG, ITP</i>	TAK-754 <i>HemA</i>	TAK-755 <i>ITTP, SCD</i>	
	TAK-531 <i>Hunter CNS</i>			
NEUROSCIENCE	TAK-341 <i>Parkinson's Disease</i>	Orexin2R-ag <i>Sleep Disorders</i>	TAK-041 <i>CIAS NS</i>	
	TAK-418 <i>Kabuki Syndrome</i>	TAK-653 <i>TRD</i>	TAK-831 <i>CIAS NS</i>	
	WVE-120101 <i>Huntington's Disease</i>	WVE-120102 <i>Huntington's Disease</i>		
GASTRO-ENTEROLOGY	Kuma062 <i>Celiac Disease</i>	TAK-101 <i>Celiac Disease</i>	TAK-018 <i>Crohn's Disease (post-op and ileitis)</i>	TAK-671 <i>Acute Pancreatitis</i>
	TAK-954 <i>POGD</i>	TAK-906 <i>Gastroparesis</i>	TAK-951 <i>Nausea & vomiting</i>	
VACCINES	TAK-214 <i>Norovirus Vaccine</i>	TAK-426 <i>Zika Vaccine</i>	TAK-021 <i>EV71 Vaccine</i>	

Rich early clinical pipeline of potentially transformative and curative NMEs

1. Some Wave 2 assets could be accelerated into Wave 1 if they have breakthrough data
 2. TAK-079 to be developed in Rare Diseases indications myasthenia gravis (MG) and immune thrombocytopenic purpura (ITP) (FPI projected for 2H FY19)

Orphan potential in at least one indication
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...AND WITH OUR NEXT-GENERATION PLATFORMS



TARGET APPROVAL →

FY25 AND BEYOND

ONCOLOGY	CELL THERAPIES AND IMMUNE ENGAGERS CAR-T <i>MSKCC, Nalle-Immune</i> T-CIRA, Takeda CAR-NK <i>MD Anderson</i> GammaDelta CAR-T <i>GammaDelta Tx</i> Conditional T cell engagers <i>Maverick</i>	TARGETED INNATE IMMUNE MODULATION Attenukine <i>Tevz</i> STING <i>CuraDev, Takeda</i> SUMOylation <i>Takeda</i>	NEXT-GEN CHECKPOINT MODULATORS Agonist-redirected checkpoints <i>Shattuck</i> Humabodies <i>Crescendo</i>	Harnessing the potential of cell and gene therapies and other diverse modalities
	RARE DISEASES <i>Immunology Hematology Metabolic</i>	GENE THERAPY Hemophilia Lysosomal Storage Diseases		
	NEUROSCIENCE	GENE THERAPY Neurodegenerative Diseases <i>StrideBio</i>	OTHER PLATFORMS RNA Modulation <i>Wave, Skyhawk</i> Antibody Transport Vehicle <i>Denali</i>	
	GASTRO-ENTEROLOGY	GENE THERAPY Liver <i>Ambys</i>	MICROBIOME FIN-524 <i>Finch</i> Microbial Consortia <i>NuBiyota</i>	

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Estimated dates as of November 14, 2019

INVESTING IN CAPABILITIES TO POSITION US FOR SUCCESS



	Cell Therapy	<ul style="list-style-type: none"> • 5 clinical programs by end of FY20 • Disruptive platforms, including off-the-shelf cell-therapies 	
	Gene Therapy	<ul style="list-style-type: none"> • World-class gene therapy manufacturing • Accessing innovation through partnerships (e.g. Stridebio, Ambys) 	
	Data Sciences	<ul style="list-style-type: none"> • Accelerate clinical development with real world data (e.g. TAK-788) • Use machine learning to identify rare disease patients 	



LIVING OUR VALUES THROUGHOUT THE INTEGRATION PROCESS


















- December 2018**
Leadership Team and Proposed R&D Operating Model Announced
- April 2019**
Prioritization of Combined Pipeline and Portfolio
- August 2019**
R&D Employees Informed of Employment Status*



* Where legally cleared

STRONG LEADERSHIP EXECUTING ON OUR VISION



 ASIT PARIKH Head, Gastroenterology Therapeutic Area Unit	 PHIL ROWLANDS Head, Oncology Therapeutic Area Unit	 DAN CURRAN Head, Rare Diseases Therapeutic Area Unit	 EMILIANGELO RATTI Head, Neuroscience Therapeutic Area Unit	 SARAH SHEIKH Head, Neuroscience Therapeutic Area Unit*	<p>New hire</p> <p>*Sarah Sheik to succeed Emiliangelo Ratti upon his retirement beginning November 25</p> <p>*includes Regulatory, Global Patient Safety Evaluation, Development Operations, and Clinical Supply Chain</p>
 STEVE HITCHCOCK Head, Research	 NENAD GRMUSA Head, Center for External Innovation	 GEORGIA KERESTY R&D Chief Operating Officer	 ANNE HEATHERINGTON Head, Data Sciences Institute	 WOLFRAM NOTHAFT Chief Medical Officer	
 STEFAN WILDT Head, Pharmaceutical Sciences and Translational Engine, Cell Therapies	 JEREMY CHADWICK Head, Global Development Office†	 WOLFGANG HACKEL Head, Global R&D Finance	 ERIKA MARDER Head, Global R&D Human Resources	 COLLEEN BEAUREGARD Head, Global R&D Communications	

OUR COMMITMENT TO OUR PEOPLE IS BEING RECOGNIZED



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R&D DAY AGENDA – NEW YORK, NOVEMBER 14, 2019



TIME	AGENDA
12:30 – 12:35	Welcome and Opening Remarks <i>Sheelagh Cawley-Knopf, Head R&D Global Portfolio Strategy</i>
12:35 – 12:45	Takeda: A Global Values-Based, R&D-Driven Biopharmaceutical Leader <i>Christophe Weber, President & CEO Takeda</i>
12:45 – 13:20	Translating Science into Highly Innovative, Life-changing Medicines <i>Andy Plump, President R&D</i>
13:20 – 13:45	Oncology and Cell Therapies with Spotlight on CAR-NK <i>Chris Arendt, Head Oncology Drug Discovery Unit</i>
13:45 – 14:05	Spotlight on Oncology Opportunities <ul style="list-style-type: none"> • TAK-788 : <i>Rachael Brake, Global Program Lead</i> • Pevonedistat : <i>Phil Rowlands, Head Oncology Therapeutic Area Unit</i>
14:05 – 14:20	Break
14:20 – 14:45	Rare Diseases & Gene Therapy <i>Dan Curran, Head Rare Disease Therapeutic Area Unit</i>
14:45 – 15:00	Spotlight on Orexin2R agonists <i>Deborah Hartman, Global Program Lead</i>
15:00 – 15:20	Therapeutic Area Focus in GI with Spotlight on Celiac Disease <i>Asit Parikh, Head GI Therapeutic Area Unit</i>
15:20 – 16:00	Panel Q&A Session
16:00	Drinks reception