TRANSLATING SCIENCE INTO HIGHLY INNOVATIVE LIFE-CHANGING MEDICINES

Andy Plump MD, PhD
President R&D
Takeda Pharmaceutical Company Limited
Tokyo
November 21, 2019

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
FY20 FY21 FY22 FY23 FY24

ONCOLOGY
TAK-788
CLL, NSCLC
TAK-924
MM-ADS
TAK-788
CLL, NSCLC
TAK-924
AML
TAK-164
GI malignancies
TAK-252
Solid tumours
TAK-573
R/R MM
TAK-981
Multiple cancers

RARE DISEASES
Immunology
Hematology
Metabolic
TAK-620
CMV infect. in transplant
TAK-609
Hunter CNS (IT)
TAK-611
MLD (IT)
TAK-607
Complications of prematurity
TAK-755
cTTP
TAK-079
MG, ITP
TAK-754
HemA
TAK-755
ITP, SCD
TAK-531
Hunter CNS

NEUROSCIENCE
TAK-721
Ref
TAK-935
DFE
TAK-952
(TAK-935/954)
Neurology
TAK-341
Parkinson’s Disease
TAK-418
Kabuki Syndrome
TAK-653
TMD
TAK-831
CNS
WVE-120101
Huntington’s Disease
Huntington’s Disease
WVE-120102

GASTROENTEROLOGY
Kuma062
Celiac Disease
TAK-101
Celiac Disease
TAK-906
Gastropenia
TAK-951
Gastroenterology
TAK-214
Nonnervous
TAK-426
Zika Vaccine
TAK-021
EVT1 Vaccine

VACCINES
TAK-003
Dengue Vaccine

PLATFORMS
CELL THERAPY
TARGETED IMMUNE MODULATORS
NEXT-GEN IMMUNE MODULATORS
GENE THERAPY
OTHER PLATFORMS
MICROBIOME
CELL THERAPY

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 adalimumab 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

Estimated dates as of November 14, 2019
PATIENT-DRIVEN AND SCIENCE-FIRST IN 3 CORE AREAS

PLASMA DERIVED THERAPIES
Complementing our rare disease focus

VACCINES BUSINESS UNIT
Differentiated Dengue vaccine

WE ARE DOING MORE FOR OUR PATIENTS

8
POTENTIAL BIC/FIC NMEs IN PIVotal STUDIES

~40
NEW MOLECULAR ENTITY CLINICAL STAGE ASSETS

~4,500
R&D EMPLOYEES GLOBALLY

~70%
DIVERSIFIED MODALITIES IN RESEARCH

~50%
PIPELINE WITH ORPHAN DRUG DESIGNATION

200+
ACTIVE PARTNERSHIPS

1. BIC/FIC Best-In-Class/First-In-Class (incl. rekaqpho). 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
“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

MODALITY DIVERSIFICATION

~70%

Cell Tx
Gene Tx
Biologics
Peptides
Oligonucleotide
Microbiome
Small Molecule

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*

<table>
<thead>
<tr>
<th>Access to Innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk-Sharing</td>
</tr>
<tr>
<td>Expanding Capacity</td>
</tr>
</tbody>
</table>

Total Value in Public & Private Equity

>$1B

* Externalizations and venture investments are not included
### WE ARE NURTURING INNOVATION WHEREVER IT OCCURS

**Characteristics**

- **Takeda Develops & Commercializes**
  - Greater Validation and/or Lower Development Cost
    - TAK-925, TAK-994 Narcolepsy
    - TAK-951 Vomiting Syndromes
    - TAK-924 Myelodysplastic Syndrome
  - Uncertain Science and/or High Development Cost
    - Psychiatry Assets
- **Partner-Sourced**
  - TAK-573 Multiple Myeloma
  - CD19 1XX (CAR-T)
  - Kuma-062 Celiac
  - Denali Alzheimer Disease

Representative examples only.

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

**Prioritized R&D Portfolio**

- Balanced Spend
  - Minimize internal spend and infrastructure
- Targeted Populations
  - Smaller trials, lower costs, potential longer exclusivity
- Partnership Model
  - Success driven milestone payments

**Flexible R&D Funding Model**
A RESEARCH ENGINE FUELING A SUSTAINABLE PIPELINE

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

PIPERLINE INVESTMENTS SUPPORTING NEAR-TERM GROWTH

WAVE 1
- INNOVATIVE EXPANSIONS
- NEW MOLECULAR ENTITIES
WE ARE DRIVING EXPANSION OF OUR GLOBAL BRANDS

SELECT GLOBAL GROWTH BRANDS

<table>
<thead>
<tr>
<th>TAU</th>
<th>Therapies</th>
<th>New Indications / Geographic Expansions</th>
<th>Target (FY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ONC</td>
<td>Alunbrig</td>
<td>1L Non Small Cell Lung Cancer</td>
<td>2020</td>
</tr>
<tr>
<td></td>
<td>Ninlaro</td>
<td>ND MM Maintenance (non-SCT and post-SCT)</td>
<td>2020 / 2022</td>
</tr>
<tr>
<td>Rare</td>
<td>Entyvio</td>
<td>Bradykinin Mediated Angioedema</td>
<td>2024</td>
</tr>
<tr>
<td></td>
<td>Alofisel</td>
<td>Prophylactic Treatment of von Willebrand Disease</td>
<td>2021</td>
</tr>
<tr>
<td></td>
<td>Takhzyro</td>
<td>Ulcerative Colitis, Crohn’s Disease (subcutaneous formulation)</td>
<td>2019 / 2020</td>
</tr>
<tr>
<td></td>
<td>Venclear</td>
<td>Graft versus Host Disease (prophylaxis)</td>
<td>2022</td>
</tr>
<tr>
<td></td>
<td>Alofisel</td>
<td>Complex Perianal Fistulas</td>
<td>2021</td>
</tr>
</tbody>
</table>

SELECT REGIONAL EXPANSIONS

<table>
<thead>
<tr>
<th>Region</th>
<th>Therapies</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>relugolix, cabozantinib, niraparib</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>TARGET APPROVAL</th>
<th>FY20</th>
<th>FY21</th>
<th>FY22</th>
<th>FY23</th>
<th>FY24</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ONCOLOGY</strong></td>
<td></td>
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<td></td>
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<tr>
<td>TAK-788</td>
<td>2L NSCLC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TAK-924</td>
<td>NR-AML</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>TAK-788</td>
<td>2L NSCLC</td>
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<td>NR-AML</td>
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</tr>
</tbody>
</table>

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
1. Projected timing of approvals depending on data read-outs; some of these Wave 1 target approval dates assume accelerated approval
2. Projected approval date assumes filing on Phase 2 data

Estimated dates as of November 14, 2019

ND MM: newly diagnosed multiple myeloma
SCT: stem cell transplant
* VONVENDI is emerging as a global brand

Estimated dates as of November 14, 2019
...AND ARE EXPECTED TO DELIVER LIFE-CHANGING MEDICINES

## Potential First-in-Class or Best-in-Class NMEs

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>MECHANISM</th>
<th>INDICATION</th>
<th>TARGET APPROVAL DATE <strong>(FY)</strong></th>
<th>ADDRESSABLE POPULATION (IN US)**</th>
<th>ADDRESSABLE POPULATION (WW)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAK-788</td>
<td>EGFR inhibitor (exon 20)</td>
<td>NSCLC – 2L / 1L</td>
<td>2021 / 2023</td>
<td>~2k</td>
<td>~20 – 30k</td>
</tr>
<tr>
<td>Pevonedistat (TAK-924)</td>
<td>NAE inhibitor</td>
<td>HR-MDS / AML</td>
<td>2021 / 2024</td>
<td>~7k / ~12k</td>
<td>15 – 20k / 20 – 25k</td>
</tr>
<tr>
<td>TAK-007</td>
<td>CD19 CAR-NK</td>
<td>Hematologic malignancies</td>
<td>2023</td>
<td>~9k</td>
<td>~15 – 25k</td>
</tr>
<tr>
<td>TAK-609</td>
<td>ERT / I2S replacement</td>
<td>Hunter CNS (IT)</td>
<td>2021</td>
<td>~250</td>
<td>~1 – 1.5k</td>
</tr>
<tr>
<td>maribavir (TAK-620)</td>
<td>UL97 kinase inh</td>
<td>CMV infect. in transplant.</td>
<td>2021</td>
<td>~7 – 15k</td>
<td>~25 – 45k</td>
</tr>
<tr>
<td>TAK-607</td>
<td>IGF-1 / IGFBP3</td>
<td>Complications of prematurity</td>
<td>2024</td>
<td>~25k</td>
<td>~80 – 90k</td>
</tr>
<tr>
<td>TAK-611</td>
<td>ERT / arylsulfatase A</td>
<td>MLD (IT)</td>
<td>2023</td>
<td>~350</td>
<td>~1 – 2k</td>
</tr>
<tr>
<td>TAK-755</td>
<td>ERT / ADAMS-13</td>
<td>cTTP / iTTP</td>
<td>2023 / 2025</td>
<td>~500 / ~2k</td>
<td>2 – 6k / 5 - 18k</td>
</tr>
</tbody>
</table>

### Oncology

- **TAK-788**
  - EGFR inhibitor (exon 20)
  - NSCLC – 2L / 1L
  - 2021 / 2023
  - Addressable Population: ~2k
  - WW: ~20 – 30k

- **TAK-007**
  - CD19 CAR-NK
  - Hematologic malignancies
  - 2023
  - Addressable Population: ~9k
  - WW: ~15 – 25k

### Rare Diseases

- **TAK-609**
  - ERT / I2S replacement
  - Hunter CNS (IT)
  - 2021
  - Addressable Population: ~250
  - WW: ~1 – 1.5k

- **maribavir (TAK-620)**
  - UL97 kinase inh
  - CMV infect. in transplant.
  - 2021
  - Addressable Population: ~7 – 15k
  - WW: ~25 – 45k

- **TAK-607**
  - IGF-1 / IGFBP3
  - Complications of prematurity
  - 2024
  - Addressable Population: ~25k
  - WW: ~80 – 90k

### Neuroscience

- **Orexin programs**
  - Orexin 2R agonist
  - Narcolepsy Type 1
  - 2024
  - Addressable Population: ~150k
  - WW: ~300k – 1.2M

### Gastro-EnteroLOGY

- **TAK-721**
  - Oral anti-inflammatory
  - Eosinophilic Esophagitis
  - 2020
  - Addressable Population: ~150k
  - WW: Under evaluation

### Vaccines

- **TAK-003**
  - Vaccine
  - Dengue
  - 2021
  - Addressable Population: ~32M
  - WW: ~1.8B

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### IN SUMMARY: ROBUST NEAR-TERM GROWTH

**Potential NME Approval**

**Potential Global Brand Extension**

**Potential Regional Brand Extension**

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

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**TAKHZYRO**
- HAE, CN
- 2023
- Addressable Population: ~500
- WW: ~2000

**TAK-924**
- AML
- 2024
- Addressable Population: ~25k
- WW: ~50k

**TAK-607**
- Complications of prematurity
- 2024
- Addressable Population: ~250
- WW: ~500

**TAK-788**
- 2L NSCLC
- 2024
- Addressable Population: ~250
- WW: ~500

**ENTYVIO**
- sc UC, US
- 2020
- Addressable Population: ~150k
- WW: ~300k

**GATTEX**
- Pediatric, US
- 2021
- Addressable Population: ~32M
- WW: ~1.8B

**VACCINES**
- Dengue
- 2021
- Addressable Population: ~32M
- WW: ~1.8B

---

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

---

The target dates are estimates based on current data and subject to change.

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**Potential approvals by fiscal year as of November 14, 2019**

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

---

The target dates are estimates based on current data and subject to change.
SUSTAINED GROWTH BEYOND FY25

WAVE 2

NOVEL MECHANISMS

NEXT-GENERATION PLATFORMS

DRIVEN BY A CLINICAL PIPELINE OF NOVEL MECHANISMS...

<table>
<thead>
<tr>
<th>TARGET APPROVAL</th>
<th>FY25 AND BEYOND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ONCOLOGY</strong></td>
<td>TAK-164 GI malignancies</td>
</tr>
<tr>
<td></td>
<td>TAK-573 A/R MIA</td>
</tr>
<tr>
<td><strong>RARE DISEASE</strong></td>
<td>TAK-079(^2) MG, ITP</td>
</tr>
<tr>
<td></td>
<td>TAK-531 Hunter CNO</td>
</tr>
<tr>
<td><strong>NEUROSCIENCE</strong></td>
<td>TAK-341 Parkinson’s Disease</td>
</tr>
<tr>
<td></td>
<td>TAK-418 Rett’s Syndrome</td>
</tr>
<tr>
<td></td>
<td>WVE-120101 Huntington’s Disease</td>
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<td></td>
<td>WVE-120102 Huntington’s Disease</td>
</tr>
<tr>
<td><strong>GASTRO-ENTEROLOGY</strong></td>
<td>Kuma062 Celiac Disease</td>
</tr>
<tr>
<td></td>
<td>TAK-954 POGD</td>
</tr>
<tr>
<td></td>
<td>TAK-906 Gastrorrexis</td>
</tr>
<tr>
<td><strong>VACCINES</strong></td>
<td>TAK-214 Norovirus Vaccine</td>
</tr>
<tr>
<td></td>
<td>TAK-021 EV71 Vaccine</td>
</tr>
</tbody>
</table>

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) (IPM) projected for 2H FY19

Orphan potential in at least one indication

Estimated dates as of November 14, 2019
...AND WITH OUR NEXT-GENERATION PLATFORMS

TARGET APPROVAL  →  FY25 AND BEYOND

ONCOLOGY
- Cell Therapies and Immune Engagers
  - CAR-T: MSD, Akebia
  - CAR-NK: Cytiva, Abeona
- Targeted Innate Immune Modulation
  - Antibody: CuraDev, Takeda
  - SUMOylation: Takeda
- Next-Gen Checkpoint Modulators
  - Agonist-redirected checkpoints: Shattuck, Humabodies

RARE DISEASES
- Immunology: Hemophilia, Lysosomal Storage Diseases

NEUROSCIENCE
- Gene Therapy: Neurodegenerative Diseases: StrideBio
- Other Platforms: RNA Modulation: Wave, Skyhawk
  - Antibody Transport Vehicle: Denali

GASTRO-ENTEROLOGY
- Gene Therapy: Liver: Ambys
- Microbiome: FIN-524: Finch, Microbiome: Finch
- Cell Therapy: Ambys

Harnessing the potential of cell and gene therapies and other diverse modalities

INVESTING IN CAPABILITIES TO POSITION US FOR SUCCESS

Cell Therapy
- 5 clinical programs by end of FY20
- Disruptive platforms, including off-the-shelf cell-therapies

Gene Therapy
- World-class gene therapy manufacturing
- Accessing innovation through partnerships (e.g. StrideBio, Ambys)

Data Sciences
- Accelerate clinical development with real world data (e.g. TAK-788)
- Use machine learning to identify rare disease patients
COMMITTED TO OUR PEOPLE

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

New hire

Sarah Sheikh to succeed Emiliangelo Ratti upon his retirement beginning November 25

Includes Regulatory, Global Patient Safety Evaluation, Development Operations, and Clinical Supply Chain

OUR COMMITMENT TO OUR PEOPLE IS BEING RECOGNIZED

BOSTON BUSINESS JOURNAL

2019 BEST PLACES TO WORK

WORKING MOTHER

100 BEST COMPANIES 2019

BEST PLACES TO WORK 2019

THE BOSTON GLOBE

TOP PLACES TO WORK 2018

CEO CANCER GOLD STANDARD

Best Workplaces™ in Health Care & Biopharma

Great Place To Work.

USA 2019

BEST PLACES TO WORK

2019 for LGBTQ Equality

100% CORPORATE EQUALITY INDEX
WE ARE POSITIONED TO DELIVER NEAR-TERM & SUSTAINED GROWTH

<table>
<thead>
<tr>
<th>TARGET APPROVAL</th>
<th>WAVE 1</th>
<th>WAVE 2 AND BEYOND</th>
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<tbody>
<tr>
<td>CLINICAL-STAGE NMEs</td>
<td>FY20</td>
<td>FY21</td>
</tr>
<tr>
<td>ONCOLOGY</td>
<td>TAK-788&lt;sup&gt;3&lt;/sup&gt;</td>
<td>TAK-007</td>
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<tr>
<td></td>
<td>3L NSCLC</td>
<td>GI malignancies</td>
</tr>
<tr>
<td>RARE DISEASES</td>
<td>TAK-620</td>
<td>TAK-611</td>
</tr>
<tr>
<td></td>
<td>CMV infect. in immunocompromised</td>
<td>MLD (IT)</td>
</tr>
<tr>
<td>NEUROSCIENCE</td>
<td>TAK-935</td>
<td>TAK-935&lt;sup&gt;2&lt;/sup&gt;</td>
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<tr>
<td></td>
<td>DDEF</td>
<td>Orexin2R-αγ</td>
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<tr>
<td>GASTRO-ENTEROLOGY</td>
<td>Kuma062</td>
<td>Kuma062&lt;sup&gt;2&lt;/sup&gt;</td>
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<td></td>
<td>Crohn’s Disease</td>
<td>Crohn’s Disease, UC</td>
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<tr>
<td>VACCINES</td>
<td>TAK-214</td>
<td>TAK-426</td>
</tr>
<tr>
<td></td>
<td>Nanovax Vaccine</td>
<td>Zika Vaccine</td>
</tr>
</tbody>
</table>

1. Projected timing of approvals depending on data read-outs; some of these Wave 1 target approval dates assume accelerated approval
2. Some Wave 2 assets could be accelerated into Wave 1 if they have breakthrough data
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 thrombocytopenia purpura (ITP) (FPI projected in each indication in 2H FY19)

Estimated dates as of November 14, 2019

Orphan potential in at least one indication