# R&D DAY AGENDA – CAMBRIDGE, OCTOBER 11, 2018

<table>
<thead>
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<th>Time</th>
<th>Agenda</th>
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<tr>
<td>12:00 – 12:30</td>
<td>Registration and Lunch</td>
</tr>
<tr>
<td>12:30 – 13:10</td>
<td>R&amp;D Transformation, Progress To Date, Future Outlook</td>
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<tr>
<td></td>
<td>Andy Plump</td>
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<tr>
<td>13:10 – 13:45</td>
<td>Oncology</td>
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<td>Phil Rowlands</td>
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<td>13:45 – 14:05</td>
<td>Gastroenterology</td>
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<td></td>
<td>Asit Parikh</td>
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<tr>
<td>14:05 – 14:20</td>
<td>Break</td>
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<td>14:20 – 14:40</td>
<td>Neuroscience</td>
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<td>Emiliangelo Ratti</td>
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<td>14:40 – 15:00</td>
<td>Vaccines</td>
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<td>Rajeev Venkayya</td>
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<td>15:00 – 16:05</td>
<td>Looking Ahead</td>
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<td></td>
<td>Andy Plump</td>
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<td></td>
<td>Panel Q&amp;A Session</td>
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<tr>
<td>16:10 – 17:30</td>
<td>Reception</td>
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DELIVERING ON OUR R&D VISION

CAMBRIDGE, MASSACHUSETTS

ANDY PLUMP MD, PHD
Chief Medical and Scientific Officer
October 11, 2018
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OUTLINE FOR TODAY

• Overview of Takeda, our R&D transformation and progress to date

• Deep dive by Therapeutic Area (Oncology, Gastroenterology, Neuroscience plus Vaccines) and how each is contributing to unlock innovation and deliver meaningful value

• Recurring themes:
  - Focus
  - Robust research engine and capabilities
  - New modalities
  - Differentiated, global partnership approach
  - High-performing teams

• Review Shire acquisition and how it accelerates our R&D momentum
DOING MORE FOR OUR PATIENTS

HISTORY, VALUES & PRIORITIES

R&D TRANSFORMATION

WHAT WE’VE DELIVERED

WHAT’S NEXT
HISTORY, VALUES & PRIORITIES

Takeda-ism & Our Priorities
WHO WE ARE

PUTTING PATIENTS FIRST FOR OVER TWO CENTURIES

Takeda is a patient-centric, innovation-driven global pharmaceutical company that builds on a distinguished 237-year history, aspiring to bring better health and a brighter future for people worldwide.

Better Health, Brighter Future
Established by our founding spirit and integral to every part of our business, Takeda-ism and our priorities guide us in our efforts to achieve our Vision 2025.

We make decisions and take actions by focusing on our four priorities in this order:

1. Putting the patient at the center
2. Building trust with society
3. Reinforcing our reputation
4. Developing the business
R&D LEGACY: THE CASE FOR CHANGE WAS ABSOLUTE

Period of poor productivity following approval of pioglitazone in 1999

- Fragmented R&D footprint
- Lack of therapeutic area focus
- Inwardly facing
- Regional teams, regional mindset
- Pipeline >85% small molecule

<table>
<thead>
<tr>
<th>Internal (4)</th>
<th>Acquisition (8)</th>
<th>Licensed (10)</th>
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<tbody>
<tr>
<td>DEXILANT</td>
<td>NESINA</td>
<td>ADCETRIS</td>
</tr>
<tr>
<td>EDARBI / AZILVA¹</td>
<td>COLCRYS²</td>
<td>AMITIZA</td>
</tr>
<tr>
<td>ROZEREM</td>
<td>DAXAS³</td>
<td>AZILECT</td>
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<tr>
<td>TAKECAB</td>
<td>ENTYVIO</td>
<td>BRINTELLIX / TRINTELLIX</td>
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<tr>
<td>NINLARO</td>
<td>CONTRAVE³⁴</td>
<td></td>
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<tr>
<td>REVESTIVE³</td>
<td>COPAXONE</td>
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<td>ZAFATEK</td>
<td>REMINYL</td>
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<td>MEPACT</td>
<td>VECTIBIX</td>
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<tr>
<td>MEPACT</td>
<td>XELJANZ³</td>
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<td>ULCORIC</td>
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</table>

1. For purposes of NME counts, Edarbi and Azilva are combined.
2. Colcrys is counted as an NME, although the product was on-market in generic form.
3. Daxas, Revestive, Contrave, and Xeljanz have since been divested or returned to partner.
4. Contrave counts as an NME, although it is composed of two on-market compounds.
WHAT WE COMMITTED TO

Reinventing R&D
BUILDING AN AGILE R&D ORGANIZATION DRIVEN BY INNOVATIVE SCIENCE

THERAPEUTIC AREA FOCUS
Oncology, Gastroenterology, Neuroscience plus Vaccines

PARTNERSHIPS & CAPABILITIES

TRANSFORM OUR CULTURE

R&D TRANSFORMATION KEY IMPERATIVES

• Agile and lean
• Dynamic and sustainable research and early development engine
• Transformative advances via reciprocally advantageous partnerships
• Laser-focused on purposeful execution
WHAT R&D TRANSFORMATION MEANT...

A STRATEGIC, TECHNICAL, SKILL-SET, STRUCTURAL, GEOGRAPHIC AND CULTURAL CHANGE THAT IMPACTED NEARLY ALL R&D EMPLOYEES.
STRENGTH LEADERSHIP DRIVING CHANGE

ANDY PLUMP
CMSO

PHIL ROWLANDS
Oncology TAU

ASIT PARIKH
Gastroenterology TAU

EMILIANGELO RATTI
Neuroscience TAU

STEVE HITCHCOCK
Research

RAJEEV VENKAYYA
Vaccines Business Unit

DAN CURRAN
Center for External Innovation

NENAD GRMUSA
R&D Portfolio Strategy & Investment Mgmt

HIRED IN THE LAST 12 MONTHS

PHIL ROWLANDS
Oncology TAU

EMILIANGELO RATTI
Neuroscience TAU

RAJEEV VENKAYYA
Vaccines Business Unit

NENAD GRMUSA
R&D Portfolio Strategy & Investment Mgmt

HIRED IN THE LAST 12 MONTHS

STEFAN WILDIT
Pharmaceutical Sciences

COLLEEN BEAUREGARD
R&D Communications

ERIKA MARDER
R&D Human Resources

GEORGIA KERESTY
Medical Sciences & Development Operations

TOSHIRO FUJIMOTO
iPark

TAU: Therapeutic Area Unit
WHAT WE’VE DELIVERED

Our innovations are transforming our business and the lives of patients.
TWO YEARS INTO A FIVE-YEAR R&D TRANSFORMATION JOURNEY

Focused (3+1) therapeutic area strategy and lean operating model

A pipeline that’s delivering
- Fueled by a robust research engine and a rich, global partner ecosystem

Culture: engaged and empowered teams
WE’VE FOCUSED OUR THERAPEUTIC AREAS

ALL IN: 3+1

ONCOLOGY

GASTROENTEROLOGY

VACCINES

NEUROSCIENCE

RESEARCH, DIVERSE MODALITIES AND PARTNERSHIPS
WE’VE STREAMLINED OUR GLOBAL FOOTPRINT

BOSTON, MA
R&D Center
Oncology, GI Research

SHONAN, JAPAN
Neuroscience Research,
T-CiRA, iPark

SAN DIEGO, CA
Specialized drug
discovery technologies,
GI and Neuroscience
WE’VE REDIRECTED RESOURCES TO HIGHLY INNOVATIVE MEDICINES

FOCUS AND PRIORITIZATION

• Reduced Drug Discovery Units from 6 to 3
• Changed research from “pipe” to “funnel” along stage-gates*
• Aggressive resourcing of focused portfolio

FOCUS ON EXECUTION

Established a research KPI in FY18 to achieve industry leading cycle-times for candidate selection

On track to achieve 11 planned candidate selections in FY18 of which 5 are non small molecules

* Beginning June 2016
RESEARCH & EARLY CLINICAL ENGINE: KEY CAPABILITIES

THE RIGHT TARGET
- Leveraging human-derived data
- Potential for game-changing patient impact
- Testable translational hypotheses
- First-in-class or best-in-class

THE RIGHT MODALITY
- Patient -> Biology -> Modality
- Embrace innovative platforms
- Expand internal capabilities through partnerships
- Invest in innovative biologics and cell therapies

FLAWLESS EXECUTION
- Human early POC is a key performance indicator
- Optimized partnership model
- Operational effectiveness incentives
- Specialized Pharmaceutical Sciences capabilities
### SELECT PARTNERSHIPS

<table>
<thead>
<tr>
<th>STRATEGIC FOCUS AREA</th>
<th>DISCOVERY/ PRECLINICAL</th>
<th>PHASE 1</th>
<th>PH2, PH3, FILED, LCM</th>
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<tbody>
<tr>
<td><strong>ONCOLOGY</strong></td>
<td></td>
<td></td>
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<tr>
<td>Hematologic Malignancies</td>
<td>Molecular Templates, Adimab, Heidelberg, Haemalogix, HiFiBio</td>
<td>Nektar</td>
<td>Seattle Genetics</td>
</tr>
<tr>
<td>Lung Cancer</td>
<td>Crescendo Biologics, Shattuck Labs</td>
<td>Teva</td>
<td></td>
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<tr>
<td>Next-gen IO / Cell Therapy</td>
<td>Discovery and development of next generation CAR-T assets (Key Academic Collaborations)</td>
<td>Anti-CD38 Attenuneke asset currently in MM trial. Multiple active discovery stage programs.</td>
<td></td>
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<tr>
<td>Solid Tumor</td>
<td>NBE Therapeutics, Mersana</td>
<td>ImmunoGen</td>
<td>Exelixis, Tesaro</td>
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<td><strong>GASTRO-ENTEROLOGY</strong></td>
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<tr>
<td>IBD</td>
<td>Beacon Discovery, Finch Therapeutics, Emulate, Enterome, EnGene</td>
<td>Nulyaota</td>
<td>Portal Instruments</td>
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<tr>
<td>Motility</td>
<td>Beacon Discovery, Enterome, HiFiBio Therapeutics</td>
<td>Theravance Biopharma</td>
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<tr>
<td>Celiac</td>
<td>Beckman Coulter, Ambsys Medicine</td>
<td>Development agreement for KumaMax glutenase and option to acquire company</td>
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<tr>
<td>Liver</td>
<td>Arcturus, Hemoshear Therapeutics</td>
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<tr>
<td><strong>NEURO-SCIENCE</strong></td>
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<tr>
<td>Depression *</td>
<td>Wave LifeSciences</td>
<td>AstraZeneca</td>
<td>Lundbeck</td>
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<td>Parkinson’s</td>
<td>Denali Therapeutics</td>
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<td>Alzheimer’s</td>
<td>Denali Therapeutics</td>
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<tr>
<td>Rare Disease</td>
<td>Wave LifeSciences</td>
<td>Innovative anti-sense oligonucleotide platform for unmet needs in Neurology (Huntington’s)</td>
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</tbody>
</table>

Not inclusive of all partnerships

* Depression – Focus on MDD (major depressive disorder) and TRD (treatment-resistant depression)
WITH OUR PARTNERS, WE’RE AT THE FOREFRONT OF INNOVATION

Diversity of modalities in the research pipeline*

<table>
<thead>
<tr>
<th>41 programs in Lead Generation</th>
<th>9 programs in Lead Optimization</th>
<th>11 Candidates</th>
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<tbody>
<tr>
<td>34%</td>
<td>22%</td>
<td>64%</td>
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<tr>
<td>39%</td>
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<td>12%</td>
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<td>10%</td>
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<tr>
<td>5%</td>
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</table>

Over 60% of research pipeline non small molecules

* As of August 28, 2018, Biologics include proteins, enzymes, antibodies, peptides. Other Modalities include microbiome, drug delivery systems, vaccine.
INVESTING IN THE TRANSFORMATIVE POTENTIAL OF CELL THERAPIES

“We’re at a key point when it comes to cell and gene therapy...for a long time, they were largely theoretical constructs. Now they are a therapeutic reality.”

SCOTT GOTTLIEB, M.D.
Alliance for Regenerative Medicine Annual Meeting | May 22, 2018

RESEARCH

2019: Differentiated CAR-Ts in Phase I
2020+: Other Hematologic/Solid Tumor CAR-Ts

APPROVED*

* EU launch 2018
WE’VE BUILT A COMPREHENSIVE, DIFFERENTIATED PARTNERSHIP MODEL

- Integrated into the innovation system; access to promising, potentially revolutionary platforms prior to validation
- Close alignment of interests/incentives with many engagement mechanisms including: co-creation, in-licensing, out-licensing, Takeda financing, capabilities support, etc.
- Flexibility and optionality in partnership structure with clear two-way accountability

CENTER FOR EXTERNAL INNOVATION (CEI)
WE EXECUTED 56 PARTNERSHIPS IN FY17

THERAPEUTIC AREA FOCUSED

ONCOLOGY

GASTROENTEROLOGY

NEUROSCIENCE

NOVEL PLATFORMS, NEW CAPABILITIES

External Value Creation

Companies Created

New Capabilities

Rare Disease Initiatives

Strategic Academic Alliances

Takeda Ventures

Slide is not all-inclusive of 56 deals. Only includes disclosed partnerships / collaborations. All trademarks and registered trademarks are the property of their respective owners.
AND OUR APPROACH TO EXTERNAL INNOVATION IS GLOBAL

Number of ongoing partnerships by region:

- **San Diego (California)**: 99 partnerships
- **Boston (Massachusetts)**: 37 partnerships
- **Shonan (Japan)**: 31 partnerships
- **Others**: 10 partnerships

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...RESULTING IN A DYNAMIC AND RE-INVIGORATED PIPELINE

### ONCOLOGY
- **TAK-573**
  - Tere
  - Anti-CD20 + Calentrap
  - TEIR GA
- **TAK-184**
  - G021884
  - Anti-HER2 ADC
  - LC-2GA

### GASTRO-ENTEROLOGY
- **Kumu062**
  - IGP
  - Pancreatic Cancer
  - TEIR OA
- **TIMP-Glidan**
  - Pancreatic Cancer
  - TEIR OA
- **TAK-871**
  - Exendin-4
  - Acute Pancreatitis

### NEURO-SCIENCE
- **TAK-418**
  - LGR7
  - Kaposi Sarcoma
- **TAK-925**
  - Diabet-21
  - Neuroinflammation
- **WVE-120101**
  - Rv20
  - Anti-HIV-1 AGO
  - Huntington’s Disease
- **WVE-120102**
  - Rv20
  - Anti-HIV-1 AGO
  - Huntington’s Disease

### VACCINES
- **TAK-021**
  - EV71 Vaccine
- **TAK-426**
  - MRI
- **TAK-195**
  - Soman immunotherapeutic polo vaccine
- **TAK-214**
  - Norovirus vaccine
- **TAK-003**
  - Dengue vaccine

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**Pipeline as of September 23, 2018. Please refer to glossary for disease abbreviations.**

- **30 pipeline assets progressed since the start of FY2016**
- **45% of pipeline is partnered**
- **80% of pipeline with global development plans/rights**
- **38% of pipeline has orphan drug designation**

Orphan Drug Designation

*(in any region / indication for a given asset)*

Assets shown in Phases 1–3 explicitly refer to new molecular entities

- With active development seeking new or supplemental indications, or approvals in new territories
WE’LL CONTINUE TO FOCUS ON CORE THERAPEUTIC AREAS

ALL IN: 4+2

ONCOLOGY

GASTROENTEROLOGY

VACCINES

NEUROSCIENCE

RARE DISEASES

PLASMA DERIVED THERAPIES

RESEARCH, DIVERSE MODALITIES AND PARTNERSHIPS
WITH THE POTENTIAL TO DELIVER MORE VALUE IN THE FUTURE

<table>
<thead>
<tr>
<th>PHASE 1</th>
<th>PHASE 2</th>
<th>PHASE 3/FILED</th>
<th>APPROVED*</th>
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<tbody>
<tr>
<td><strong>ONCOLOGY</strong></td>
<td><strong>GASTRO-ENTEROLOGY</strong></td>
<td><strong>NEURO-SCIENCE</strong></td>
<td><strong>VACCINES</strong></td>
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<tr>
<td>TAK-573</td>
<td>TAK-653</td>
<td>TAK-648</td>
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<td>SHP612</td>
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<td>TAK-954</td>
<td>SHP647</td>
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<tr>
<td><strong>PLASMA-DERIVED THERAPIES</strong></td>
<td><strong>RARE DISEASES</strong></td>
<td><strong>OPHTHALMOLOGY</strong></td>
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<td>SHP631</td>
<td>SHP607</td>
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<tr>
<td>Shire</td>
<td>Alpha-Syn mAb</td>
<td>EMD Serono, Inc.</td>
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<td><strong>HYPOPHYSIOTROPIC</strong></td>
<td><strong>NEUROSCIENCE</strong></td>
<td><strong>OPHTHALMOLOGY</strong></td>
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<td>SHP654</td>
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Note: SHP652 and Natpara classified as “other” and not shown here  | *With ongoing clinical development activities. Pipeline as of February 1, 2018
CENTRAL TO EVERYTHING, WE’VE EVOLVED OUR CULTURE AND THE WAY WE WORK

SELECT INITIATIVES

Co-location

Patient-centric activities and touchpoints

Transparency and engagement around Key Performance Indicators (KPIs)

METRICS

R&D Voluntary Turnover

0.9% VS. 3.4% Pharma industry benchmark*

Engagement

84% ** VS. 74% in 2017 **

Alignment

83% ** of Takeda R&D employees understand how their work contributes to Takeda’s success

R&D ALIGNMENT AROUND BIG IMPORTANT VALUE INFLECTIONS (BIVIs) FOR R&D FY18

1. **Trintellix:**
   - Approval of processing speed (important aspect of cognitive function) in U.S. label

2. **Alunbrig:**
   - a) ALTA-1L interim analysis
   - b) EU approval for 2nd line in ALK+ non-small cell lung cancer

3. **Ninlaro:**
   - a) Interim analysis
   - b) Submission for both newly diagnosed multiple myeloma and maintenance post-transplant

4. **Entyvio:**
   - Ulcerative colitis subcutaneous submission

5. **Dengue vaccine:**
   - Successful primary endpoint of Ph3 trial

6. **STING agonists:**
   - Achieve in vivo POC for a drug delivery system

Internal R&D KPIs established in April 2018
WHAT’S NEXT

Looking Ahead
WHAT WE STILL NEED TO DELIVER

Maximize the value of our current portfolio

Progress our research and early pipeline

Implement improvements to our clinical trial operating model

Develop enhanced capabilities to support rare disease portfolio growth
PROMISING PIVOTAL PROGRAMS

NEAR-TERM PIVOTAL RESULTS

Pevonedistat NAE inhibitor

Phase 1b study of pevonedistat with azacytidine\(^1\)

Bar length reflects duration of response

Registration-enabling results expected in FY19

TAK-003 Dengue vaccine

Antibody-mediated immune response in dengue naïve population\(^2\)

Participants responding to:
- 3 or more serotypes
- All 4 serotypes

Phase 3 results expected in FY18

\(^1\) Blood. 2018;131(13):1415-1424

\(^2\) Lancet Infect Dis 2018; 18: 162–70 Published Online November 6, 2017 http://dx.doi.org/10.1016/S1473-3099(17)30632-1

NEXT PIVOTAL INITIATION

TAK-788 EGFR/HER2 inhibitor

Antitumor activity in all patients treated with TAK-788 at a total daily dose of ≥80–160 mg

Registration-enabling trial start expected in FY18

Neal et al., WCLC 2018
CHINA IS AN IMPORTANT PART OF OUR GLOBAL GROWTH STRATEGY

6 NEW PRODUCTS, 14 NEW INDICATIONS ANTICIPATED BY 2020

- **VOCiNTi** (EE H)
- **ADCETRIS®** (RR HL, sALCL)
- **NINLARO®** (RR MM)
- **edarbi** (Hypertension)
- **Nesina Met®** (Type2 DM)
- **VOCiNTi** (EE M, GU, DU)
- **Entyvio®** (UC, CD)
- **NINLARO®** (NDMM; Maint. MM NSCT & PSCT; Amyloidosis)

**Approved**

- RR MM

**Selected for NDA filing with global data package***

- NDMM; Maint. MM NSCT & PSCT; Amyloidosis

**Committed to parallel China development for all programs**

- EE H
- EE M, GU, DU

---

* On Aug 8th 2018, a total of 48 products marketed outside of China were selected by the Center Drug Evaluation based on urgent medical needs, companies are encouraged to apply for NDA with overseas data including data demonstrating lack of ethnic differences. Priority review/approval process will be applied.

Projected timelines as of September 23, 2018 and subject to change. Please refer to glossary for disease abbreviations.
### SUSTAINED VALUE CREATION

#### FY 2018
- **ALUNBRIG, 2L ALK+ NSCLC post-2nd Gen** (US, EU, JP, CN)
- **ADCETRIS, PTCL**
- **ENTYvio, UC H2H** vs. adalimumab
- **ADCETRIS, PTCL**
- **ALUNBRIG, 2L post-2nd Gen**
- **TAK-003 Dengue Vaccine**
- **TAK-218, NSCLC Phase 2**
- **ALUNBRIG, 2L post-2nd Gen**

#### FY 2019
- **NINLARO MM maint. post-SCT** (US, EU, JP, CN)
- **ENTYvio, CD (JP)**
- **ADCETRIS, PTCL** (EU)
- **NINLARO, ND MM**
- **ICLUSIG, Ph+ ALL 1st interim analysis**
- **Entyvio SC CD**
- **Alofisel, fistulizing CD**
- **TAK-079 R/R MM EPOC results**
- **TAK-659 Lymphoma EPOC results**
- **TAK-573 MM EPOC results**
- **TAK-931 GI Cancers EPOC results**
- **TAK-925 preliminary NT1 efficacy data**
- **Kuma062 Celiac EPOC results**
- **Wave, Huntington’s Ph1b/2a results**
- **TAK-831, Friedreich Ataxia Ph2 results**

#### FY 2020
- **NINLARO, ND MM (US, JP, CN)**
- **ENTYvio, SC UC**
- **ADCETRIS, sALCL** (CN)
- **TAK-003, Dengue Vaccine (EM)**
- **ALUNBRIG, 2L H2H vs. alectinib**
- **ALUNBRIG, 2L post-2nd Gen**
- **TAK-164, GI Cancers EPOC results**
- **TAK-906, gastroparesis Ph2b results**

---

**Projected timelines as of September 23, 2018, subject to change**

Please refer to glossary for disease abbreviations.
<p>| 1 | Distinct R&amp;D strategy based on TA focus, sustainable research and partnership engine |
| 2 | Delivering an innovative and compelling pipeline with near-term, data-driven inflections across each therapeutic area |
| 3 | With the successful execution of R&amp;D transformation complete, we’re now ready to effectively integrate Shire |</p>
<table>
<thead>
<tr>
<th>Time</th>
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TAKEDA ONCOLOGY
WE ASPIRE TO CURE CANCER

PHILIP ROWLANDS, PHD
Head, Oncology Therapeutic Area
ORIENTATION TO OUR ONCOLOGY R&D OVERVIEW

Focused Oncology R&D Strategy
- Building on foundational expertise in hematologic malignancies and a growing portfolio in lung cancer

Novel Discovery Strategy in Immuno-Oncology (I/O) and Advance in Cell Therapies
- Pursuing novel I/O targets and next-generation platforms with world class external partners
- Next-generation cell therapies will bring transformative potential to patients with cancer

Near Term Inflections
- FY2018-FY2020 will be highlighted by several submissions, approvals, pivotal trial starts, and novel assets entering clinical trials
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**Near Term Inflections**

- FY2018-FY2020 will be highlighted by several submissions, approvals, pivotal trial starts, and novel assets entering clinical trials
WE ASPIRE TO CURE CANCER

OUR MISSION
We endeavor to deliver novel medicines to patients with cancer worldwide through our commitment to science, breakthrough innovation, and passion for improving the lives of patients.
BUILDING ON THE TAKEDA ONCOLOGY FOUNDATION IN HEMATOLOGIC MALIGNANCIES

GROWING LEADERSHIP POSITION IN HEMATOLOGIC MALIGNANCIES

Next Generation I/O
TAK-573  TAK-981

MDS
Phase 3
pevonedistat

AML
Phase 3
alisertib

Lymphoma
Chronic Myeloid Leukemia

Improving Patient Outcomes in Multiple Myeloma

ADCETRIS®
brentuximab vedotin  for injection

ICLUSIG®
(ponatinib) tablets

VELCADE®
(bortezomib)

NINLARO®
(lxazomib) capsules

Improving Patient Outcomes in Multiple Myeloma
**RECENT PROGRESS AND NEXT STEPS**

**Current Status**
- Approved in 59 countries for Relapsed/Refractory Multiple Myeloma
- First Phase 3 maintenance readout (post-transplant)

**Looking Forward**
- 2019 Data Inflections:
  - MM2 (newly diagnosed)
  - MM4 (non-transplant maintenance)
  - AL1 (amyloidosis)
- Evolution of real world evidence

**Ideal Maintenance Therapies in Multiple Myeloma:**
- Easy to administer
- Minimal toxicity
- Maintain response

---

**Graph: Continuous Therapy**
- M-Protein (g/L)
- MGUS or smoldering Myeloma
- Active Myeloma
- Plateau remission
- First-line therapy may include ASCT
- Second-line therapy
- Third-line therapy
- Intensification and/or maintenance
- Refractory Relapse
- 1. Relapse
- 2. Relapse
ADVANCE CD38 BIOLOGY FOR REFRACTORY MULTIPLE MYELOMA

<table>
<thead>
<tr>
<th>TAK-079</th>
<th>TAK-573</th>
<th>TAK-169</th>
</tr>
</thead>
<tbody>
<tr>
<td>• A fully human, anti-CD38 cytolytic IgG1lambda antibody</td>
<td>• Novel immuno-cytokine approach</td>
<td>• 2nd generation Molecular Templates platform</td>
</tr>
<tr>
<td>• Potent and selective reduction of plasmablasts and NK cells</td>
<td>• Potential to overcome toxicity of unmodified interferon α and realize the true benefit in oncology</td>
<td>• pM activity against CD38+ cells plus activity in daratumumab-resistant cells</td>
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<tr>
<td>• Potential for convenient subcutaneous delivery</td>
<td>• Compelling pre-clinical data; Phase 1 enrolling for patients with refractory multiple myeloma</td>
<td>• IND planned in 2019</td>
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<tr>
<td>• Currently in Phase 1 for refractory multiple myeloma</td>
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</tbody>
</table>
TAK-079: IMPROVING UPON FIRST GENERATION ANTI-CD38 mAb FOR REFRACTORY MULTIPLE MYELOMA PATIENTS

A potent anti-CD38 mAb administered as a low volume subcutaneous (SC) injection

* After a single SC injection of 0.6 mg/kg into healthy volunteers (n=6)

Novel pharmacokinetic properties enhance potency and enable convenient administration
BRINGING NOVEL THERAPIES TO MDS AND AML

PEVONEDISTAT IN HR-MDS

1 in 3 MDS patients will progress to AML

Overall survival 1-1.5 years in the relapse setting

No new therapies in the last decade

Phase 3 trial initiated in 2018

ALISERTIB IN AML

AML: Current 5 year survival ~30%

Transplant remains only curative option

American Society of Hematology
ASH 2018: Phase 2 Data Submitted

• Alisertib is a novel, first in class mechanism for front-line AML in combination with chemotherapy

• Exploring initiation of Phase 3 registration enabling study in frontline AML in 2019

Unmet Need

Clinical Status

Next Steps

DUAL STRATEGY IN LUNG CANCER: TARGETING DRIVER MUTATIONS AND NEXT-GENERATION I/O

Molecularly-Targeted Precision Therapy

CURRENT PORTFOLIO

TAK-788

EMERGING ASSETS

Sapanisertib (TAK-228)

Next-generation kinase inhibitors

Tumor Mutational Burden

NEXT GENERATION TARGETS AND PLATFORM
ALUNBRIG ALTA 1L— POTENTIAL BEST-IN-CLASS PROFILE IN ALK+ NSCLC

Primary endpoint hazard ratio compelling relative to competition

Risk/benefit profile consistent with the expectations of a best-in-class therapy

Camidge R., WCLC 2018
TAK-788: ADDRESSING UNMET NEED IN EGFR EXON20 MUTATIONS

RESPONSE TO CURRENT EGFR TKIs in EXON 20 INSERTIONS

Median PFS
- EGFR Ex20 insertion (N=9) 2 months
- Classical EGFR mut (N=129) 14 months

Overall survival <6 months for exon 20 insertions
Current therapies ineffective for these mutations

ANTITUMOR ACTIVITY IN ALL PATIENTS TREATED WITH TAK-788 AT A TOTAL DAILY DOSE OF ≥80−160 mg

Robichaux et al. WCLC 2016
Neal et al., WCLC 2018

Expected to begin registration-enabling Phase 2 trial in FY2018
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- Near Term Inflections
  - FY2018-FY2020 will be highlighted by several submissions, approvals, pivotal trial starts, and novel assets entering clinical trials
WORLD CLASS PARTNERS FUELING THE I/O PIPELINE

Key Academic Collaborations in CAR-T

- 2018: Memorial Sloan Kettering Cancer Center
- 2017: HaemaLogix
- 2016: Shattuck Labs Heidelberg Pharma

Re-directed immunity

- NOILE-IMMUNE BIOTECH
- GAMMADELTA
- MAVERICK
- NOILE-IMMUNE BIOTECH

Targeted payloads

- Heidelberg PHARMA
- Mersana Therapeutics
- Crescendo Biologics
- Mersana Therapeutics

Tumor micro-environment

- Teva
- Gamma Delta Therapeutics
- Maverick Therapeutics

Correlation of Tumor micro-environment with Targeted payloads and Re-directed immunity
TAK-573: BRINGING A NOVEL IMMUNO-CYTOKINE APPROACH TO MULTIPLE MYELOMA

Targeted delivery of attenuated interferon α to CD38 - a known target in multiple myeloma

Binds to CD38

Human IgG4 Fc

Attenuated IFNα2b with 2 point mutations

NCI-H929 Myeloma Model

Highly compelling pre-clinical data with TAK-573 in a core area of our clinical development expertise in multiple myeloma

Ph 1 currently enrolling for patients with refractory multiple myeloma

Pogue et al. PLOS ONE 2016
Takeda Oncology Aims to Become a Leader in Cell Therapies

Transformative Potential Utilizing Next Generation Cell Therapy Platforms

Key Academic Collaborations in CAR-T

Cell Therapy Engine for Takeda R&D

FY2019: Differentiated CAR-Ts in Phase I
FY2020+: Other Hematologic Malignancy and Solid Tumor CAR-Ts
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### AN INNOVATIVE PIPELINE ENHANCED WITH EXTERNAL PARTNERSHIPS

**External collaboration*** In pivotal trial for Japan approval

#### Discovery/preclinical*

<table>
<thead>
<tr>
<th>Discovery/preclinical</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Approved**</th>
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</thead>
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<td><strong>Hematologic Malignancies</strong></td>
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<tr>
<td>TAK-169 CD38 SLTA</td>
<td>TAK-079 RR MM, SLE CD38 mAB</td>
<td>TAK-659 Lymphoma SYK, FLT-3 Small Molecule Alisertib AML AURORA A Small Molecule</td>
<td>Pevonedistat HR-MDS/AML NEDD 8 Small Molecule</td>
<td>NINLARO Amyloidosis, ND MM, R/R MM daral combo, R/R MM Niraparib, dex., Maint. MM post-SCT PROTEASOME Small Molecule</td>
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<tr>
<td><strong>Lung Cancer</strong></td>
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<tr>
<td>TAK-788 NSCLC Exon 20 EGFR/HER2 Small Molecule</td>
<td>Sapanisertib Endometrial Cancer Lung Cancer mTORC1/2 Small Molecule</td>
<td>ALUNBRTIG 2L post-crizotinib ALK+NSCLC (EU, JP, CN), FL ALK+ NSCLC ALK Small Molecule</td>
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<td>SHATTUCK PD-1/OX40L</td>
<td>TAK-573 RR MM CD38 Attenukine mAB Fusion Protein</td>
<td>TAK-931 Solid Tumors CDC7 Small Molecule</td>
<td>relugolix Prostate Cancer (JP) GnRH antagonist Small Molecule</td>
<td>niraparib*** Ovarian Cancer, PARP 1/2 Small Molecule</td>
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<td><strong>Solid Tumors</strong></td>
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<td>Mersana TAK-164 Solid Tumors CD38 mAB ADC</td>
<td>TAK-164 Solid Tumors CDC7 Small Molecule</td>
<td>nibrutinib*** 1L/2L RCC, 2L HCC Multi-RTK Small Molecule</td>
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* Assets shown in discovery/preclinical and Phases 1-3 explicitly refer to new molecular entities
** With active development seeking new or supplemental indications, or approvals in new territories
*** In pivotal trial for Japan approval

Pipeline as of September 23, 2018

Note: Takeda holds the right to develop and commercialize Adcetris in ex-US/Canada. For Niraparib and Cabozantinib, Takeda holds the right to develop and commercialize in Japan and selected Emerging Markets.
## Expected Key Oncology Portfolio Inflection and Milestones

Dates in fiscal year (FY) starting April 1st

<table>
<thead>
<tr>
<th>ALUNBRIG EU Approval (2L)</th>
<th>NINLARO Maintenance Post-Transplant US Approval</th>
<th>ALUNBRIG US Approval (1L)</th>
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<tr>
<td>ICLUSIG – Ph+ ALL pivotal start</td>
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<td>Alisertib – AML pivotal start</td>
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<tr>
<td>TAK-788 – EGFR Exon 20 pivotal start</td>
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<tr>
<td>ALUNBRIG 2L Head-to-Head pivotal start</td>
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<td>ALUNBRIG 2L Post-2nd Generation TKI pivotal start</td>
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<td>Cabozantinib 2L HCC pivotal start (JP)</td>
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<td>Cabozantinib 1L RCC pivotal start (JP)</td>
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<td>Niraparib Ovarian Cancer pivotal start (JP)</td>
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</table>

**Anticipated Pivotal Trial Start**

- ALUNBRIG JP APPROVAL
- NINLARO non-transplant maintenance US APPROVAL
- NINLARO newly diagnosed US/EU APPROVAL
- Pevonedistat US APPROVAL
- Niraparib JP APPROVAL
- Cabozantinib JP APPROVAL

**Anticipated Approval**

- ALUNBRIG EU APPROVAL (2L)
- ADCETRIS EU/JP APPROVAL (FL)
- NINLARO non-transplant maintenance US APPROVAL
- NINLARO newly diagnosed US/EU APPROVAL
- Pevonedistat US APPROVAL
- Niraparib JP APPROVAL
- Cabozantinib JP APPROVAL

Projected timelines as of September 23, 2018, subject to change.
1 Focused on delivering the next approvals for NINLARO, ALUNBRIG, and pevonedistat

2 Expanding transformative treatment options in our focus areas of hematologic malignancies and lung cancer with alisertib, TAK-788 and novel CD38 targeted mechanisms

3 Harnessing the power of external innovation with a diverse set of world-class partnerships, accelerating novel therapies into the clinic
# R&D Day Agenda – Cambridge, October 11, 2018

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WE ARE A LEADING GI COMPANY

GASTROENTEROLOGY

OUR VISION
Restore Life to Living for patients suffering with GI and liver diseases

OUR MISSION
Deliver innovative, life-changing therapeutics for patients with GI and liver diseases
OUR STRATEGY EXPANDS THE PORTFOLIO ACROSS CORE DISEASE AREAS SUPPORTED BY PLATFORM TECHNOLOGIES

**IBD**
- Build upon success of Entyvio with new formulations
- Expand treatment options with Alofisel

**Celiac disease**
- Advance approaches for the prevention of immune responses to gluten

**Motility disorders**
- Focus on select high unmet medical need areas including gastroparesis and enteral feeding intolerance

**Liver diseases**
- Target early-stage investments in liver fibrosis

**Luminal platforms**
- Accelerate microbiome investments
- Invest in selective drug delivery technologies

Acid related diseases franchise will continued to be supported, but new pipeline investment will be deprioritized relative to above disease areas.

Abbreviations: IBD, Inflammatory Bowel Disease e.g., Ulcerative Colitis, Crohn’s disease
WE ARE EXECUTING ON OUR STRATEGY THROUGH A RICH, DIVERSIFIED PIPELINE FUELED BY STRONG EXTERNAL PARTNERSHIPS

<table>
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<tr>
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<tr>
<td>Multiple targets in IBD</td>
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<tr>
<td>Microbial consortia</td>
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<td><strong>Celiac</strong></td>
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<td><strong>Liver</strong></td>
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<tr>
<td><strong>Acid disease/Other</strong></td>
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</table>

**External collaboration**  **Platform**

**Abbreviations:** IBD, Inflammatory Bowel Disease e.g., Ulcerative Colitis (UC), Crohn’s disease (CD); SC, Subcutaneous; PPI, Proton pump inhibitor

**Pipeline as of September 23, 2018**

* Assets shown in discovery/preclinical and Phases 1–3 explicitly refer to new molecular entities

** With active development seeking new or supplemental indications, or approvals in new territories
WE ARE BUILDING ON THE SUCCESS OF ENTYVIO TO ADDRESS CONTINUED UNMET NEED IN IBD PATIENTS

1. Geographic expansion
2. New formulations
3. Expanded patient populations
4. New evidence generation

Abbreviations: IBD, Inflammatory Bowel Disease e.g., Ulcerative Colitis, Crohn’s disease

First and only biologic specifically targeting gut inflammation

First-in-class mesenchymal stem cell therapy for fistulizing Crohn’s disease
WE ARE CONTINUOUSLY IMPROVING THE VALUE OF ENTYVIO FOR PATIENTS

GEOGRAPHIC EXPANSION

- Japan NDA approval for UC
- Potential China approval in FY2020*
- Approved in 58 countries**
- Nearly 90,000*** IBD patients treated

NEW FORMULATIONS

ENTYVIO SUBCUTANEOUS

- Positive topline results from VISIBLE UC trial; filing Q4 FY2018 in US for UC, and in EU for both UC and CD
- Anticipate readout in H2 FY2019 from VISIBLE CD

EXPANDED PATIENT POPULATIONS

- GvHD prophylaxis Ph3 first patient expected Dec 2018
- GvHD prophylaxis Ph3 readout expected H1 FY2021

Phase 1b data (N = 21): 6 month incidence of intestinal aGvHD*

** The safety profile of Entyvio in the GvHD patient population remains unchanged and is consistent with the approved US labelling
** Adjusted for patient population including allogenic stem cell transplant characteristics with similar conditioning regimen

* On Aug 8th 2018, a total of 48 products marketed outside of China were selected by the CDE based on urgent medical needs, companies are encouraged to apply for NDA with overseas data including data demonstrating lack of ethnic differences. Priority review/approval process will be applied.
** As of April 2018
*** For FY 2017

Abbreviations: IBD, Inflammatory Bowel Disease e.g., Ulcerative Colitis (UC), Crohn's disease (CD); aGvHD, Acute Graft vs. Host Disease

14% 28%
33% stage 2
67% stage 1
70% stage 2-4

Prefilled syringe  Autoinjector pen  Portal needle-free

14% 70%
33% stage 2
67% stage 1
70% stage 2-4
NEW EVIDENCE GENERATION

MUCOSAL HEALING IN CROHN’S DISEASE – PREVIOUSLY A GAP FOR ENTYVIO

Complete mucosal healing (absence of ulceration)

<table>
<thead>
<tr>
<th>Patients, %</th>
<th>N=101</th>
<th>N=46</th>
<th>N=55</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>15%</td>
<td>24%</td>
<td>7%</td>
</tr>
<tr>
<td>Anti-TNFα naïve</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-TNFα failure</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Vedolizumab can induce endoscopic remission and complete mucosal healing over 26 weeks of treatment\(^1\) at levels comparable to other biologic therapies

3 References for the Victory Consortium Studies:
   Bohm et al—CD propensity; [https://academic.oup.com/ecco-jcc/article/12/supplement_1/S018/4807655](https://academic.oup.com/ecco-jcc/article/12/supplement_1/S018/4807655)
   Faleck et al—UC propensity; [https://academic.oup.com/ecco-jcc/article/12/supplement_1/S019/4807661](https://academic.oup.com/ecco-jcc/article/12/supplement_1/S019/4807661)

Abbreviations: SES-CD, Simple Endoscopic Score for CD; TNFα, tumor necrosis factor alpha.
ALOFISEL: FIRST AND ONLY APPROVED (EU) MESENCHYMAL STEM CELL THERAPY FOR FISTULIZING CROHN’S DISEASE

ADDRESSES THE HIGHEST UNMET NEED IN IBD, PERIANAL CROHN’S

- ~5% of Crohn’s patients experience perianal fistulas, resulting in drainage, pain, and multiple surgeries
- Biologic therapies do not address the depth of unmet need
- Patients experience an average of 4 medical treatments and 5.4 surgeries with >50% failure rate and risk of permanent fecal incontinence
- Patient anxiety regarding maintenance of bodily function, shame, fear of unknown and depression
- ADMIRE-2 Phase 3 study for US registration ongoing in EU/Israel, first US patient expected Q1 FY2019

CX601 MEANINGFULLY IMPROVES STANDARD OF CARE IN ACHIEVING REMISSION (52 WK)*

<table>
<thead>
<tr>
<th></th>
<th>COMBINED** REMISSION</th>
<th>CLINICAL REMISSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control group (Placebo + SOC; n=101)</td>
<td>38.6% (95% CI): 17.7% (4.2-31.2)p=0.010</td>
<td>41.6% (95% CI): 17.6% (4.1-31.1)p=0.013</td>
</tr>
<tr>
<td>Cx601 group (Cx601 + SOC; n=103)</td>
<td>56.30%</td>
<td>59.20%</td>
</tr>
</tbody>
</table>

20.4% of patients in the Cx601 group vs. 26.5% in the control group experienced treatment related adverse events

* Panés J, et al., Gastroenterology. Published online 18th December 2017.
** Combined = clinical + radiologic
Abbreviations: SOC, Standard of care
TAK-906: DISTINCTIVE MECHANISM OF ACTION (ORAL D2/D3 RECEPTOR ANTAGONIST) THAT FILLS A LARGE UNMET NEED IN GASTROPARESIS

CURRENT THERAPIES DO NOT MEET THE SIGNIFICANT UNMET NEED IN GASTROPARESIS

- Gastroparesis affects ~45M people globally
- Key symptoms are nausea, vomiting
- No drug approved in the US to treat all forms of gastroparesis, inadequate options elsewhere

TAK-906: PHASE 2A STUDY DEMONSTRATES TARGET ENGAGEMENT AND ENABLES DOSE SELECTION

- No QTc prolongation in Healthy Volunteer study
- No QTc prolongation or drug-related neurological AEs in Phase 2a study in GP patients*
- Phase 2b dose-range finding study expected to initiate in Q4 2018

Abbreviations: AE, Adverse event; HV, healthy volunteer; GP, Gastroparesis

* Other AEs observed in Phase 2a study not related to TAK-906 administration included a case of tremor in a subject with history of depression, anxiety, T2DM and Neurontin use. Also, acute kidney insufficiency in a patient with urinary tract infection and in a patient with prior chronic renal failure.
KUMA062: A HIGHLY POTENT ORAL GLUTENASE THAT COULD CHANGE THE STANDARD OF CARE IN CELIAC DISEASE

CELIAC DISEASE

- Affects ~1% of the population\(^1\), rising prevalence
- Triggered by exposure to omnipresent gluten peptides
- Manifests via immune reaction in gut causing distressing symptoms
- Only existing treatment is a gluten free diet (GFD)

\(^1\) Pooled global prevalence; Clin Gastroenterol Hepatol. 2018 Jun;16(6):823-836

Abbreviations: POM, Proof of mechanism

As little as 50-100mg of gluten exposure per day can trigger celiac disease

![Graph showing gluten recovery from rat stomachs 30 mins after digestion of a high-gluten bread slurry]

- Kuma062 is a computationally engineered super glutenase
- Proof-of-mechanism (POM) study enabling go/no-go decision initiated July 2018, readout anticipated H1 FY2019
WE HAVE STRENGTHENED OUR COMMITMENT TO ADDRESSING LIVER DISEASES THROUGH EARLY RESEARCH PARTNERSHIPS

TARGETING LIVER FIBROSIS PREVENTION AND REVERSAL THROUGH NEW PLATFORMS, NEW PROJECTS AND BUSINESS DEVELOPMENT FOCUSED ON PERI-IND OPPORTUNITIES

Abbreviations: MOA, Mechanism of action

HEMOSHEAR THERAPEUTICS

Human cell system for new target identification and validation for liver fibrosis

ARCTURUS THERAPEUTICS

Liver-targeted delivery of nucleotide therapeutics with anti-fibrotic MOAs

Ambys MEDICINES

Takeda co-founded with Third Rock Ventures to focus on cell and gene therapy for end-stage liver diseases

Series A announced August 2018
EXPECTED KEY GI PORTFOLIO INFLECTIONS AND MILESTONES
Dates in fiscal year (FY) starting April 1st

Abbreviations: FSI, First subject in; SC, Subcutaneous; IV, Intravenous; UC, Ulcerative colitis; CD, Crohn’s disease; GvHD, Graft vs. host disease; POM, Proof of mechanism; EFI, Enteral feeding intolerance; H2H, head to head.

PROJECTED TIMELINES AS OF SEPTEMBER 23, 2018, SUBJECT TO CHANGE

Abbreviations: FSI, First subject in; SC, Subcutaneous; IV, Intravenous; UC, Ulcerative colitis; CD, Crohn’s disease; GvHD, Graft vs. host disease; POM, Proof of mechanism; EFI, Enteral feeding intolerance; H2H, head to head.
CONCLUSION

1. Maximizing the potential of ENTYVIO and delivering ALOFISEL to global markets

2. Progressing several early to mid-stage assets including TAK-906 for gastroparesis and KUMA062 for celiac disease

3. Continuing to capture opportunities early through industry-leading scientific talent, sophisticated in-house evaluation capabilities and rapid decision-making
<table>
<thead>
<tr>
<th>Time</th>
<th>Agenda</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:00 – 12:30</td>
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<td>Oncology</td>
</tr>
<tr>
<td></td>
<td>Phil Rowlands</td>
</tr>
<tr>
<td>13:45 – 14:05</td>
<td>Gastroenterology</td>
</tr>
<tr>
<td></td>
<td>Asit Parikh</td>
</tr>
<tr>
<td>14:05 – 14:20</td>
<td>Break</td>
</tr>
<tr>
<td>14:20 – 14:40</td>
<td>Neuroscience</td>
</tr>
<tr>
<td></td>
<td>Emiliangelo Ratti</td>
</tr>
<tr>
<td>14:40 – 15:00</td>
<td>Vaccines</td>
</tr>
<tr>
<td></td>
<td>Rajeev Venkayya</td>
</tr>
<tr>
<td>15:00 – 16:05</td>
<td>Looking Ahead</td>
</tr>
<tr>
<td></td>
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<tr>
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</tr>
<tr>
<td>16:10 – 17:30</td>
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TAKEDA NEUROSCIENCE
BRINGING INNOVATIVE MEDICINES TO PATIENTS FOR WHOM THERE ARE NO TREATMENTS AVAILABLE

EMILIANGELO RATTI, PHD
Head, Neuroscience Therapeutic Area
WE HAVE TAKEN ON THE CHALLENGE TO ALLEVIATE THE IMMENSE PATIENT NEED IN NEUROSCIENCE

MISSION

To bring innovative medicines to patients suffering from neurologic and psychiatric diseases for *whom there are no treatments available*

FOCUS

- Treatment Resistant Depression
- Schizophrenia Negative Symptoms & CIAS
- *Selected rare CNS diseases*
- Alzheimer’s Disease
- Parkinson’s Disease

CIAS: Cognitive Impairment Associated with Schizophrenia
WE HAVE EXECUTED ON THE ROADMAP DEScribed IN 2016

FROM 2016 R&D DAY

We are committed to being a global player in CNS

Long-Term
Innovation-driven growth

Near / Mid-Term
Expand psychiatry/ build neurology

TRINTELLIX innovation

Psychiatry
• Expand TRINTELLIX
• Progress early psychiatry pipeline

Neurology
• Partnership/co-development
• Create anchor in Neurology

KEY COMPONENTS OF ROADMAP

• Differentiate TRINTELLIX
• Advance early pipeline towards POC
• Further expand in neurology and rare CNS diseases through partnerships
**BUILDING AN INNOVATIVE PIPELINE ENHANCED WITH EXTERNAL PARTNERSHIPS**

<table>
<thead>
<tr>
<th>Discovery/Preclinical</th>
<th>Phase 1*</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Approved**</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Depression</strong></td>
<td>TAK-653</td>
<td>TAK-041</td>
<td>TAK-831</td>
<td><strong>TRINTELLIX</strong></td>
</tr>
<tr>
<td></td>
<td>AMPA PAM</td>
<td>GPR139</td>
<td>DAAO Inhibitor</td>
<td>Processing Speed sNDA Approved 2018</td>
</tr>
<tr>
<td></td>
<td>Treatment Resistant Depression</td>
<td>2xFT</td>
<td>2xFT</td>
<td><strong>TESD sNDA (US) Submitted</strong></td>
</tr>
<tr>
<td></td>
<td>Small Molecule</td>
<td>Small Molecule</td>
<td>Small Molecule</td>
<td>MDD (JP) Submitted</td>
</tr>
<tr>
<td><strong>Schizophrenia</strong></td>
<td>TAK-952</td>
<td>TAK-831</td>
<td><strong>AZILECT</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Narcolepsy, OD</td>
<td>DAAO Inhibitor, 2xFT</td>
<td>PD (JP) Launched 2018</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OX2R Agonist</td>
<td>Small Molecule</td>
<td>Small Molecule</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Small Molecule</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Parkinson’s Disease</strong></td>
<td>TAK-418, Kabuki Syndrome, OD</td>
<td><strong>TAK-935</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LSD1 Inhibitor</td>
<td>Epileptic Encephalopathy, OD</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Small Molecule</td>
<td>CH24H Inhibitor</td>
<td>Small Molecule</td>
<td></td>
</tr>
<tr>
<td><strong>Alzheimer’s Disease</strong></td>
<td>TAK-831</td>
<td><strong>TAK-935</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Friedreich’s Ataxia, OD, FT</td>
<td>Epileptic Encephalopathy, OD</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DAAO Inhibitor</td>
<td>CH24H Inhibitor</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Small Molecule</td>
<td>Small Molecule</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rare CNS Diseases</strong></td>
<td>TAK-831</td>
<td><strong>TAK-935</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Friedreich’s Ataxia, OD</td>
<td>Epileptic Encephalopathy, OD</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DAAO Inhibitor</td>
<td>CH24H Inhibitor</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Small Molecule</td>
<td>Small Molecule</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Assets shown in discovery/preclinical and Phases 1–3 explicitly refer to new molecular entities.**
- **With active development seeking new or supplemental indications, or approvals in new territories.**

---

**Notes:**

1. Discovery/preclinical phase: Only external collaborations shown, does not include internal programs.
WE HAVE BUILT OUR PORTFOLIO THROUGH THREE MAIN LEVERS

EXECUTED ON OPPORTUNITIES WITH LATE-STAGE ASSETS
• Successful differentiation of TRINTELLIX
• Launched AZILECT in Japan

ADVANCED EARLY STAGE PIPELINE TOWARDS POC
• TAK-925 Narcolepsy
• TAK-831 Schizophrenia, Friedreich’s Ataxia
• TAK-935 Epileptic Encephalopathy

EXPANDED IN NEURODEGENERATION AND RARE DISEASE WITH WORLD CLASS PARTNERS
• Denali Therapeutics partnership to address extracellular targets with highly brain penetrant monoclonal antibodies
• Wave Life Sciences partnership to address intracellular targets with stereopure oligonucleotides
• AstraZeneca partnership to treat Parkinson’s Disease
TRINTELLIX SHOWS BENEFITS IN PROCESSING SPEED, AN IMPORTANT ASPECT OF COGNITION, AND TREATMENT EMERGENT SEXUAL DYSFUNCTION FOR PATIENTS WITH MDD

COGNITIVE FUNCTION (PROCESSING SPEED)
Digit Symbol Substitution Test (DSST) after 8 weeks of treatment

Total number of correct symbols; mean score with standard deviation

- In May 2018, FDA approved sNDA that includes DSST, which most specifically measures processing speed, an important aspect of cognition
- TRINTELLIX® is the first MDD treatment labelled for improvement of processing speed, an important aspect of cognitive function

TREATMENT EMERGENT SEXUAL DYSFUNCTION
Changes in Sexual Functioning Questionnaire (CSFQ-14) after 8 weeks of treatment

Change from baseline in CSFQ-14 total score; least squares mean, standard error

- TRINTELLIX showed statistical superiority to escitalopram in improving sexual dysfunction while maintaining efficacy in MDD patients with SSRI-induced sexual dysfunction
- Submitted sNDA to include TESD recovery data in label; FDA decision expected in 4Q 2018
- Overall, the safety profile of vortioxetine in these studies was consistent with that in the approved vortioxetine label

* Statistically superior to escitalopram; p<0.05

In collaboration with Lundbeck
WE HAVE BUILT OUR PORTFOLIO THROUGH THREE MAIN LEVERS

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DESPITE CURRENT TREATMENTS, PATIENTS WITH NARCOLEPSY TYPE 1 (NT1) SUFFER FROM A RANGE OF DEBILITATING SYMPTOMS

NARCOLEPSY TYPE 1

• Affects ~100K patients in US (~400K in G-7), with typical disease onset from 7-25 years old¹

• Symptoms characterized by:
  – Excessive daytime sleepiness
  – Sleep/wake fragmentation
  – Cataplexy

• Current treatments are only partially effective and only provide benefit for some disease symptoms

“We take our current meds to **survive**. We want new medications to help us **live**.”

¹ Longstreth. Sleep. 2007;30(1):13

Narcolepsy patient advisor
Patient Advisory Board sponsored by Takeda
NARCOLEPSY TYPE 1 IS CAUSED BY LOSS OF OREXIN PRODUCING NEURONS

OREXIN mRNA LABELLING OF POSTMORTEM HYPOTHALAMIC SECTIONS¹

- Orexin mRNA transcripts are detected in control but not in Narcolepsy Type 1 patients

- Orexin receptors may remain functional in Narcolepsy Type 1 patients

LEADING RESEARCH TO SUPPORT THE OREXIN HYPOTHESIS

An orexin 2 receptor agonist may mimic the missing endogenous peptide (orexin) and address the neurotransmitter deficiency of Narcolepsy Type 1 leading to reduction in disease specific symptoms

¹ Nature Medicine 2000 Vol 6 p 991-997
TAK-925 IS A SELECTIVE OX2R AGONIST SHOWING REDUCTION IN NARCOLEPSY-LIKE SYMPTOMS IN A MOUSE MODEL

**TAK-925 FULLY RESTORED WAKEFULNESS**

Wakefulness time of NT1 mouse model in active phase for one hour

*Minutes awake*

**TAK-925 ELIMINATED SLEEP / WAKE TRANSITIONS**

Hypnogram of sleep/wake transitions in NT1 mouse model

*EEG recordings*

**TAK-925 ABOLISHED CATAPLEXY-LIKE EPISODES**

Cataplexy-like episodes in NT1 mouse model for three hours after chocolate

*Count*

---

Phase I clinical studies are ongoing to evaluate safety and efficacy of TAK-925

*p<0.05, **p<0.01 vs placebo*
WE HAVE BUILT OUR PORTFOLIO THROUGH THREE MAIN LEVERS

EXECUTED ON OPPORTUNITIES WITH LATE-STAGE ASSETS
• Successful differentiation of TRINTELLIX
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MANY NEURODEGENERATIVE DISEASES CAN BE ADDRESSED WITH ALTERNATIVE MODALITIES TARGETED TO PATHOGENIC PROTEINS

Antisense oligonucleotides can reduce *intracellular* expression of toxic proteins

Monoclonal antibodies can clear pathogenic *extracellular* proteins

ASOs and mAbs could be combined for greater efficacy

Pathogenic protein monomers, oligomers, and fibrils can spread from neuron to neuron and propagate the disease
PARTNERSHIP WITH DENALI HAS REINFORCED OUR ALZHEIMER’S DISEASE PORTFOLIO WITH HIGHLY BRAIN PENETRANT MONOCLONAL ANTIBODIES

Antibody Transport Vehicles (ATVs) enable up to > 20X higher brain penetration of monoclonal antibodies than the same antibody without ATV.¹

Collaboration agreement to co-develop three named programs

- ATV: BACE1 / TAU
- ATV: TREM2
- Additional undisclosed program

¹ Denali Therapeutics S-1/A
PARTNERSHIP WITH WAVE LIFE SCIENCES ENABLES TARGETED THERAPIES TO RARE CNS DISEASES WITH STEREOPURE ANTI-SENSE OLIGONUCLEOTIDES

SYNTHESIS OF STEREOPURE OLIGONUCLEOTIDES: A SIGNIFICANT IMPROVEMENT IN THE FIELD

STANDARD OLIGONUCLEOTIDE APPROACHES
Racemic mixture up to >500,000 molecules per sequence

WAVE RATIONAL DESIGN
Selection of 1 stereopure molecule per sequence allows a proper optimization of desired drug properties

STEREOPURE APPROACH ENABLES ALLELE-SPECIFIC TARGETING OF DISEASE GENES

PARTNERSHIP PROVIDES:
• Option to co-develop and co-commercialize programs for rare CNS diseases (Huntington’s Disease, Amyotrophic Lateral Sclerosis, Frontotemporal Dementia and Spinocerebellar Ataxia Type 3)
• Exclusive license to research, develop, and commercialize multiple additional programs for CNS indications

Courtesy of Wave Life Sciences
EXPECTED KEY NEUROSCIENCE PORTFOLIO INFLECTIONS AND MILESTONES

Dates in fiscal year (FY) starting April 1st

TRINTELLIX PDUFA
Treatment Emergent Sexual Dysfunction sNDA

TAK-831 Friedreich’s Ataxia Phase II

TAK-925 preliminary NT1 efficacy data

TAK-831 Schizophrenia Phase II

2H FY 2018

1H FY 2019

2H FY 2019

FY 2020

TRINTELLIX JNDA Submission
Major Depressive Disorder

WVE-120101, WVE-120102
Phase Ib/Ila top line data

TRINTELLIX JNDA Decision
Major Depressive Disorder

MEDI1341
Proof of Mechanism

TAK-935 Pediatric POC in epileptic encephalopathy

Projected timelines as of September 23, 2018, subject to change

Regulatory Filing or Anticipated Approval
<table>
<thead>
<tr>
<th>Number</th>
<th>Progress</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Successful differentiation of TRINTELLIX in processing speed, an important aspect of cognitive function, and treatment emergent sexual dysfunction in MDD</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Progressed TAK-925, the first OX2R agonist, as potential transformative therapy for Narcolepsy Type 1</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Expanded in neurodegeneration and CNS rare disease with world-class partners (exemplified by Wave and Denali partnerships)</td>
<td></td>
</tr>
</tbody>
</table>
# R&D Day Agenda – Cambridge, October 11, 2018

<table>
<thead>
<tr>
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<th>Agenda</th>
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<tr>
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<tr>
<td>16:10 – 17:30</td>
<td>Reception</td>
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</table>
TAKEDA VACCINES
INNOVATION FOR GLOBAL IMPACT

RAJEEV VENKAYYA, M.D
President, Global Vaccine Business Unit
OUR MISSION

Develop and deliver innovative vaccines that tackle the toughest problems in public health and improve the lives of people around the world.
WE HAVE BUILT A GLOBAL VACCINE BUSINESS UPON A STRONG FOUNDATION IN JAPAN

Japan vaccine business established

1946

Global vaccine business established

2012

Japan vaccine business
established

1946

Multiple vaccine products manufactured internally and marketed in Japan

2010

Partnered with Japan government to develop and supply pandemic influenza vaccines for people in Japan

2014

Global pivotal Phase 3 clinical trial of dengue vaccine candidate initiated: 20,100 participants in 8 countries in 2 regions

2016

Global vaccine business established

2012

ACQUISITIONS

Dengue vaccine candidate

Norovirus vaccine candidate

2016

PARTNERSHIPS

Bill & Melinda Gates Foundation

U.S. Government- BARDA

Polio vaccine candidate

Zika vaccine candidate

1947

1st Takeda manufactured vaccine

2010

Multiple vaccine products manufactured internally and marketed in Japan

2014

Partnered with Japan government to develop and supply pandemic influenza vaccines for people in Japan

2018

Phase 3 clinical trial results of dengue vaccine candidate is expected in H2 FY18

2018
THE VACCINE MARKET IS AN ATTRACTIVE PLACE FOR INVESTMENT

Vaccine sales growth projected at 7.1% between 2017 and 2024, reaching $44.6 billions in 2024\(^1\)

Durability in sales with limited impact of patent expiry

Blockbuster potential in newly launched vaccines

Threat of emerging and existing infectious diseases with epidemic potential

\(^1\) Evaluate Pharma report 2018
OUR STRATEGY

Develop vaccines with global relevance and business potential

BUILD A GLOBAL PIPELINE

TACKLE UNMET NEED

LEVERAGE PARTNERSHIPS

Target the greatest opportunity in infectious diseases

Partner to de-risk and drive vaccine development
### OUR PIPELINE

<table>
<thead>
<tr>
<th>Discovery/preclinical</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Japan Marketed Vaccines</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>DENGUE VACCINE (TAK-003)</td>
<td>EGG-BASED SEASONAL FLU DENKA &amp; KM BIOLOGICS</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>NORO VIRUS VACCINE (TAK-214)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>MEASLES RUBELLA^</td>
<td>VARICELLA^ BIKEN</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>SABIN INACTIVATED POLIOVIRUS VACCINE (TAK-195)</td>
<td>MUMPS JAPANESE ENCEPHALITIS BIKEN</td>
</tr>
<tr>
<td>BARDA ZIKA VACCINE (TAK-426)</td>
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<tr>
<td>ENTEROVIRUS 71 VACCINE (TAK-021)</td>
<td></td>
<td></td>
<td>DIPHTHERIA TETANUS TOXOID‡</td>
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<tr>
<td>CHIKUNGUNYA VACCINE (TAK-507)</td>
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<td>Pipeline as of September 23, 2018</td>
<td></td>
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</tbody>
</table>

+ Takeda has a measles-rubella combined vaccine, a measles vaccine and a rubella vaccine on the Japanese market.
‡ Takeda has a diphtheria-tetanus combined toxoid vaccine and a tetanus-toxoid vaccine on the Japanese market.
^ Takeda’s varicella vaccine has been approved for an additional indication preventing herpes-zoster.
DENGUE THREATENS HALF OF THE WORLD’S POPULATION

<table>
<thead>
<tr>
<th>Endemic in more than 120 countries¹</th>
<th>Causes an estimated 390M infections¹</th>
<th>Causes more than 20K deaths each year²</th>
<th>In 2015, &gt;85 M US, Canada, and Japan travelers to endemic countries³</th>
</tr>
</thead>
</table>

Without safe and effective dengue vaccine

>3.9 BILLION people around the globe are at risk of dengue⁴

---

A SAFE AND EFFECTIVE DENGUE VACCINE SHOULD BE DESIGNED TO
PROTECT AGAINST ALL FOUR STRAINS OF THE VIRUS

- Dengue is a mosquito-borne disease that can be caused by each of the four strains of the dengue virus (DENV) 1-4.

- In people previously exposed to dengue, a subsequent infection with a different strain could lead to more severe disease.

- A dengue vaccine must provide broad protection against all four strains of dengue, particularly in persons who have never been exposed to the virus ("naïve").
TAK-003 IS MODELED ON THE COMPLETE DENGUE VIRUS AND ACTIVATES MULTIPLE ARMS OF THE IMMUNE SYSTEM

- Live attenuated dengue vaccine based on the complete DENV-2 genome
- Vaccine virus stimulates robust immune response without causing illness
- Components of immune response that are activated include:
  - Neutralizing antibodies
  - Cell-mediated immunity
  - Antibodies to the NS1 protein (NS1 is implicated in severe disease)
TAK-003 TRIGGERS BOTH ANTIBODY AND CELL-MEDIATED IMMUNE RESPONSES

Antibody-mediated immune response in dengue naïve population

- High and sustained antibody response to multiple serotypes after 2 doses (0, 3 month), in participants without prior exposure to dengue

DENV-2 cell-mediated immune response

- >90% of TAK-003 vaccinated participants demonstrate a Dengue-specific T-cell response
- Comparable response between seronegative and seropositive participants at baseline
- Demonstrated cross-reactivity to DENV-1, -3, and -4
TAK-003 TRIGGERS NS1 ANTIBODIES THAT PREVENT VASCULAR LEAKAGE IN THE LABORATORY\(^1\)

- Severe dengue is characterized by vascular leakage in the lungs and abdomen.
- This vascular leakage is thought to be mediated by the dengue virus non-structural protein 1 (NS1).
- TAK-003-induced NS1 antibodies block NS1-induced vascular leakage in human pulmonary tissue models.

---

\(^1\) 6th Pan-American Dengue Research Network Meeting; results from DEN-203, a Phase 2 study.
HPMEC = Human Pulmonary Microvascular Endothelial Cells
TAK-003 was generally safe and reduced the incidence of dengue in children in a recent Phase 2 study.

**INCIDENCE OF SYMPTOMATIC DENGUE WAS SIGNIFICANTLY LOWER IN VACCINE RECIPIENTS OVER 18 MONTHS**

<table>
<thead>
<tr>
<th>Dengue Incidence</th>
<th>Relative risk of dengue in vaccines (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAK-003 (%)</td>
<td>Placebo (%)</td>
</tr>
<tr>
<td>1.3</td>
<td>4.5</td>
</tr>
</tbody>
</table>

**STUDY FEATURES**
- 1,800 participants received either TAK-003 (1 dose; 2 doses at 0, 3 months; or 2 doses at 0, 12 months) or placebo
- Mean age 7.3 years, range 2 – 17 years
- Approximately 45% of participants were dengue naïve

**These proof-of-concept findings require confirmation in our ongoing phase 3 efficacy study.**

---

1 Lancet Infect Dis 2018; 18: 162–70 Published Online November 6, 2017 http://dx.doi.org/10.1016/S1473-3099(17)30632-1; results from DEN-204, a Phase 2 study in children living in 3 dengue endemic countries.
OUR PHASE 3 PIVOTAL TRIAL IS DESIGNED TO ANSWER THE MOST IMPORTANT QUESTIONS ABOUT SAFETY AND EFFICACY OF OUR DENGUE VACCINE CANDIDATE

STUDY DESIGN
- **20,100 participants, aged 4 – 16 years old**
  - Age range ensures a mix of dengue exposed and naïve participants
- **Blood sample in all participants at baseline**
  - Enables identification of seronegative subjects
- **8 countries in 2 regions**
  - Brazil, Colombia, Dominican Republic, Nicaragua, Panama, Philippines, Sri Lanka, Thailand
  + Assesses the safety and efficacy of TAK-003 in diverse populations and epidemiological scenarios

TIME (MONTHS)

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>3</th>
<th>4</th>
<th>9</th>
<th>15</th>
<th>21</th>
</tr>
</thead>
</table>

PRIMARY ENDPOINT ANALYSIS: OVERALL VACCINE EFFICACY AGAINST ANY DENGUE FEVER
SECONDARY ENDPOINT ANALYSIS: VACCINE EFFICACY IN SERONEGATIVES AND BY SEROTYPE

Collected blood sample from all participants to determine baseline dengue infection status

PRIMARY ENDPOINT RESULTS EXPECTED IN H2 FY18 FOLLOWED BY REGULATORY FILING IN FY19
Takeda has the most advanced norovirus vaccine candidate (TAK-214) and recently completed Phase 2B study

**Challenges**
- Leading cause of acute gastroenteritis
  - 600M infections per year
- No vaccine available

**Our Path**
- Most advanced vaccine in development
- Completed Phase 2b study
- Phase 3 preparations underway

**Our Goal**
- Potential for first and best vaccine
- Impact in all markets
TAKEDA HAS PARTNERED WITH THE U.S. GOVERNMENT TO DEVELOP THE FIRST ZIKA VACCINE (TAK-426)

CHALLENGE

• Devastating impact on newborns
• Potential for recurrent outbreaks
• No vaccine available

OUR PATH

• Largest Zika investment by U.S. government
• Proven platform
• Fast track designation

OUR GOAL

• Deliver the first Zika vaccine to market
1 STRONG FOUNDATION AND TOP TALENT
   • Over 70 years of vaccine manufacturing experience
   • Top talent in vaccine development
   • Built a high impact global pipeline

2 BEST-IN-CLASS AND FIRST-IN-CLASS POTENTIAL
   • Dengue vaccine (TAK-003) in Phase 3
   • Norovirus vaccine (TAK-214) in Phase 2b
   • Zika vaccine (TAK-426) in Phase 1

3 A PARTNER OF CHOICE FOR VACCINES
   • U.S. Government
   • Japan Government
   • Bill & Melinda Gates Foundation
   • Industry Partners
“If you want to save and improve lives around the world, vaccines are a fantastic investment.”

- Bill Gates
## R&D DAY AGENDA – CAMBRIDGE, OCTOBER 11, 2018

<table>
<thead>
<tr>
<th>Time</th>
<th>Agenda</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:00 – 12:30</td>
<td>Registration and Lunch</td>
</tr>
<tr>
<td>12:30 – 13:10</td>
<td>R&amp;D Transformation, Progress To Date, Future Outlook</td>
</tr>
<tr>
<td></td>
<td>Andy Plump</td>
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<tr>
<td>13:10 – 13:45</td>
<td>Oncology</td>
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<td></td>
<td>Phil Rowlands</td>
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<tr>
<td>13:45 – 14:05</td>
<td>Gastroenterology</td>
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<td></td>
<td>Asit Parikh</td>
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<tr>
<td>14:05 – 14:20</td>
<td>Break</td>
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<tr>
<td>14:20 – 14:40</td>
<td>Neuroscience</td>
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<td>Emiliangelo Ratti</td>
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<td>14:40 – 15:00</td>
<td>Vaccines</td>
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<td></td>
<td>Rajeev Venkayya</td>
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<tr>
<td>15:00 – 16:05</td>
<td>Looking Ahead</td>
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<tr>
<td></td>
<td>Andy Plump</td>
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<tr>
<td></td>
<td>Panel Q&amp;A Session</td>
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<tr>
<td>16:10 – 17:30</td>
<td>Reception</td>
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</tbody>
</table>
LOOKING AHEAD

Shire
RECOMMENDED OFFER FOR SHIRE – TRANSACTION UPDATE

PROGRESS TO DATE

- $7.5 billion term loan agreed with leading global financial institutions
- Regulatory review process commenced
  - U.S. Federal Trade Commission (FTC) clearance received
  - Chinese State Administration for Market Regulation (SAMR) clearance received
  - Brazilian Administrative Council for Economic Defense (CADE) clearance received
- Integration planning underway

KEY NEXT STEPS

- Detailed functional integration planning kicked off; consistent with Takeda’s core values, leveraging both companies’ knowledge and expertise
- Remaining regulatory approvals pending (including EU and Japan)
- Expected to close in first half of calendar year 2019
PENDING ACQUISITION AND INTEGRATION OF SHIRE WILL ACCELERATE TAKEDA R&D

• Increase cash flow and strengthen R&D functions
• Continue our TA focus, partnership model
• Extend and elevate our rare disease expertise
• Deliver consistent, breakthrough innovation
• Reinforce patient-centric, science driven culture
Q&A PANEL CAMBRIDGE

ANDY PLUMP
CMSO

PHIL ROWLANDS
Oncology TAU

ASIT PARIKH
Gastroenterology TAU

EMILIANGELO RATTI
Neuroscience TAU

RAJEEV VENKAYYA
Vaccine Business Unit

CHRIS MORABITO
R&D Shire Integration