Better Health, Brighter Future

# FY2019 Q1 DATABOOK

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This report includes certain non-IFRS financial measures and targets. Takeda's management evaluates results and makes operating and investment decisions using both IFRS and non-IFRS measures included in this report. Non-IFRS results exclude certain income and cost items which are included in IFRS results. By including these non-IFRS measures, management intends to provide investors with additional information to further analyze Takeda's performance, core results and underlying trends. Non-IFRS results are not prepared in accordance with IFRS and non-IFRS information should be considered a supplement to, and not a substitute for, financial statements prepared in accordance with IFRS. Investors are encouraged to review the reconciliations of non-IFRS financial measures to their most directly comparable IFRS measures, which are on 13-16.

**Medical information**

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**Financial information**

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

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

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

## Contents

# I. Financial Results

## 1. Revenue by Region

■Year To Date

| (Bn JPY) | Reported FY18 Q1 YTD | Reported FY19 Q1 YTD | Reported YOY | | Underlying YOY |
|---|---|---|---|---|---|
| Total revenue | 449.8 | 849.1 | 399.3 | 88.8% | -0.8% |
| Japan | 144.3 | 152.3 | 8.1 | 5.6% | -5.0% |
| % of revenue | 32.1% | 17.9% | △14.1pt | | |
| United States | 161.1 | 415.7 | 254.6 | 158.0% | -3.1% |
| % of revenue | 35.8% | 49.0% | 13.1pt | | |
| Europe and Canada | 79.1 | 165.2 | 86.1 | 108.8% | 3.1% |
| % of revenue | 17.6% | 19.5% | 1.9pt | | |
| Emerging Markets | 65.4 | 115.9 | 50.5 | 77.3% | 8.2% |
| % of revenue | 14.5% | 13.6% | △0.9pt | | |
| Russia/CIS | 14.1 | 19.0 | 4.9 | 34.6% | 12.6% |
| % of revenue | 3.1% | 2.2% | △0.9pt | | |
| Latin America | 18.5 | 37.4 | 18.9 | 102.2% | 7.3% |
| % of revenue | 4.1% | 4.4% | 0.3pt | | |
| Asia | 26.9 | 41.0 | 14.1 | 52.4% | 20.6% |
| % of revenue | 6.0% | 4.8% | △1.2pt | | |
| Other | 5.8 | 18.5 | 12.7 | - | -12.7% |
| % of revenue | 1.3% | 2.2% | 0.9pt | | |
| Of which royalty / service income | 13.0 | 27.1 | 14.1 | 108.5% | |
| Japan | 3.3 | 6.8 | 3.4 | 103.9% | |
| Ex-Japan | 9.7 | 20.3 | 10.7 | 110.0% | |

*1 Revenue amount is classified into countries or regions based on the customer location.

*2 Other region includes Middle East, Oceania and Africa.

## 1. Revenue by Region (continued)

### ◆Quarterly

| | Reported | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FY18 | | | | FY19 | | | | | | | |
| **(Bn JPY)** | Q1 | Q2 | Q3 | Q4 | Q1 | YOY | Q2 | YOY | Q3 | YOY | Q4 | YOY |
| Total revenue | 449.8 | 430.8 | 499.4 | 717.2 | 849.1 | 88.8% | | | | | | |
| Japan | 144.3 | 130.0 | 169.8 | 127.0 | 152.3 | 5.6% | | | | | | |
| % of revenue | 32.1% | 30.2% | 34.0% | 17.7% | 17.9% | | | | | | | |
| United States | 161.1 | 160.0 | 174.3 | 333.6 | 415.7 | 158.0% | | | | | | |
| % of revenue | 35.8% | 37.1% | 34.9% | 46.5% | 49.0% | | | | | | | |
| Europe and Canada | 79.1 | 79.5 | 86.3 | 160.8 | 165.2 | 108.8% | | | | | | |
| % of revenue | 17.6% | 18.5% | 17.3% | 22.4% | 19.5% | | | | | | | |
| Emerging Markets | 65.4 | 61.3 | 69.1 | 95.8 | 115.9 | 77.3% | | | | | | |
| % of revenue | 14.5% | 14.2% | 13.8% | 13.4% | 13.6% | | | | | | | |
| Russia/CIS | 14.1 | 13.4 | 16.8 | 15.4 | 19.0 | 34.6% | | | | | | |
| % of revenue | 3.1% | 3.1% | 3.4% | 2.2% | 2.2% | | | | | | | |
| Latin America | 18.5 | 16.2 | 19.8 | 33.6 | 37.4 | 102.2% | | | | | | |
| % of revenue | 4.1% | 3.8% | 4.0% | 4.7% | 4.4% | | | | | | | |
| Asia | 26.9 | 25.0 | 24.0 | 29.6 | 41.0 | 52.4% | | | | | | |
| % of revenue | 6.0% | 5.8% | 4.8% | 4.1% | 4.8% | | | | | | | |
| Other | 5.8 | 6.8 | 8.5 | 17.2 | 18.5 | - | | | | | | |
| % of revenue | 1.3% | 1.6% | 1.7% | 2.4% | 2.2% | | | | | | | |
| | | | | | | | | | | | | |
| Of which royalty / service income | 13.0 | 11.9 | 21.7 | 24.4 | 27.1 | 108.5% | | | | | | |
| Japan | 3.3 | 3.0 | 10.5 | 4.0 | 6.8 | 103.9% | | | | | | |
| Ex-Japan | 9.7 | 8.9 | 11.2 | 20.4 | 20.3 | 110.0% | | | | | | |

*1 Revenue amount is classified into countries or regions based on the customer location. *2 Other region includes Middle East, Oceania and Africa.

## 2. Product Sales Analysis (vs PY Reported Actual)

(Sales amount includes royalty income and service income)

■Year To Date

| (Bn JPY) | Reported FY18Q1 | Reported FY19Q1 | Reported YOY | US | US YOY | Japan | Japan YOY | EUCAN | EUCAN YOY | Emerging Markets | Emerging Markets YOY | Ex-US | Ex-US YOY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **GI** | **124.0** | **171.6** | **38.4%** | | | | | | | | | | |
| Entyvio | 61.3 | 83.9 | 36.9% | 59.1 | 40.9% | 1.0 | - | 20.6 | 19.7% | 3.2 | 47.5% | | |
| Dexilant | 17.4 | 15.8 | -9.0% | 10.9 | -16.1% | | | 1.8 | 8.5% | 3.1 | 14.0% | | |
| Pantoprazole | 16.2 | 11.6 | -28.5% | 0.3 | -84.9% | | | 5.3 | -26.8% | 6.0 | -14.4% | | |
| Takecab-F | 14.3 | 18.3 | 28.1% | | | 18.2 | 27.7% | | | 0.1 | - | | |
| Gattex/Revestive | | 15.1 | - | | | | | | | | | | |
| Pentasa | | 6.5 | - | | | | | | | | | | |
| Lialda/Mezavan | | 5.6 | - | | | | | | | | | | |
| Amitiza | 7.9 | 7.8 | -0.7% | 7.7 | -1.4% | | | 0.0 | -88.1% | 0.1 | - | | |
| Resolor/Motegrity | | 1.4 | - | | | | | | | | | | |
| Other | 7.0 | 5.6 | -19.4% | | | | | | | | | | |
| **Rare Metabolic** | | **48.9** | **-** | | | | | | | | | | |
| Elaprase | | 18.8 | - | | | | | | | | | | |
| Replagal | | 12.9 | - | | | | | | | | | | |
| Vpriv | | 9.3 | - | | | | | | | | | | |
| Natpara | | 7.9 | - | | | | | | | | | | |
| **Rare Hematology** | | **89.9** | **-** | | | | | | | | | | |
| Advate | | 42.7 | - | | | | | | | | | | |
| Adynovate | | 16.7 | - | | | | | | | | | | |
| FEIBA *1 | | 13.1 | - | | | | | | | | | | |
| Hemofil/Immunate*1 | | 6.6 | - | | | | | | | | | | |
| Other *2 | | 11.0 | - | | | | | | | | | | |
| **Hereditary Angioedema** | | **31.9** | **-** | | | | | | | | | | |
| Firazyr | | 9.0 | - | | | | | | | | | | |
| Takhzyro | | 14.5 | - | | | | | | | | | | |
| Kalbitor | | 1.1 | - | | | | | | | | | | |
| Cinryze *1 | | 7.3 | - | | | | | | | | | | |

*1 PDT products

*2 Includes PDT products

## 2. Product Sales Analysis (vs PY Reported Actual) (continued)

■Year To Date

| (Bn JPY) | Reported FY18Q1 | Reported FY19Q1 | Reported YOY | US | US YOY | Japan | Japan YOY | EUCAN | EUCAN YOY | Emerging Markets | Emerging Markets YOY | Ex-US | Ex-US YOY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PDT Immunology** | **4.2** | **90.2** | **-** | | | | | | | | | | |
| Immunoglobulin *1 | 3.1 | 68.0 | - | | | | | | | | | | |
| Albumin *1 | 1.1 | 22.2 | - | | | | | | | | | | |
| **Oncology** | **98.9** | **106.5** | **7.6%** | | | | | | | | | | |
| Velcade | 31.4 | 31.7 | 1.0% | 28.1 | 7.1% | | | | | | | 3.7 | -29.4% |
| Leuprorelin | 28.6 | 28.4 | -0.9% | 5.3 | -14.5% | 11.0 | 5.1% | 7.8 | -7.6% | 4.2 | 21.4% | | |
| Ninlaro | 14.0 | 18.3 | 30.8% | 12.6 | 13.3% | 1.3 | 14.1% | 2.7 | 74.1% | 1.6 | - | | |
| Adcetris | 11.0 | 12.7 | 16.4% | | | 1.9 | 70.7% | 5.6 | 0.7% | 5.2 | 22.3% | | |
| Iclusig | 7.0 | 7.6 | 9.2% | 6.7 | 7.0% | | | | | | | 0.9 | 28.4% |
| Alunbrig | 1.1 | 1.7 | 52.8% | 1.2 | 12.6% | | | 0.4 | - | 0.1 | - | | |
| Vectibix | 5.4 | 5.6 | 3.5% | | | 5.6 | 3.5% | | | | | | |
| Other | 0.5 | 0.4 | -9.6% | 0.0 | -94.4% | | | 0.3 | -8.8% | 0.2 | 2.7% | | |
| **Neuroscience** | **24.3** | **111.9** | **-** | | | | | | | | | | |
| Vyvanse | | 68.8 | - | | | | | | | | | | |
| Trintellix | 14.1 | 17.4 | 23.4% | 17.4 | 23.4% | | | | | | | | |
| Adderall XR | | 5.7 | - | | | | | | | | | | |
| Rozerem | 5.2 | 5.1 | -1.6% | 2.3 | -16.1% | 2.8 | 14.3% | | | 0.0 | -39.4% | | |
| Reminyl | 4.5 | 4.8 | 6.5% | | | 4.3 | -3.9% | | | | | | |
| Intuniv | | 4.1 | - | | | | | | | | | | |
| Other | 0.5 | 6.0 | - | | | | | | | | | | |
| **Other** | **198.4** | **198.3** | **-0.1%** | | | | | | | | | | |
| Azilva | 19.4 | 20.5 | 5.4% | | | 20.5 | 5.4% | | | | | | |
| Nesina | 14.1 | 14.6 | 3.3% | 1.6 | 37.1% | 7.6 | -2.7% | 2.7 | 4.8% | 2.7 | 4.7% | | |
| Uloric | 14.1 | 12.2 | -13.1% | 11.9 | -13.9% | | | 0.2 | -5.9% | 0.2 | 151.7% | | |
| Colcrys | 9.2 | 7.2 | -22.4% | 7.2 | -22.4% | | | | | | | | |
| Enbrel | 9.9 | 8.7 | -12.1% | | | 8.7 | -12.1% | | | | | | |
| Lotriga | 8.1 | 8.8 | 8.1% | | | 8.8 | 8.1% | | | | | | |

*1 PDT products

*2 Includes PDT products

## 2. Product Sales Analysis (vs PY Reported Actual) (continued)

■Quarterly

| (Bn JPY) | Reported | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FY18 | | | | FY19 | | | | | | | |
| | Q1 | Q2 | Q3 | Q4 | Q1 | YOY | Q2 | YOY | Q3 | YOY | Q4 | YOY |
| **GI** | **124.0** | **128.1** | **140.8** | **146.5** | **171.6** | **38.4%** | | | | | | |
| Entyvio | 61.3 | 67.1 | 72.6 | 68.2 | 83.9 | 36.9% | | | | | | |
| Dexilant | 17.4 | 17.5 | 20.0 | 14.3 | 15.8 | -9.0% | | | | | | |
| Pantoprazole | 16.2 | 14.5 | 16.2 | 14.7 | 11.6 | -28.5% | | | | | | |
| Takecab-F | 14.3 | 13.0 | 17.1 | 13.9 | 18.3 | 28.1% | | | | | | |
| Gattex/Revestive | | | | 12.8 | 15.1 | - | | | | | | |
| Pentasa | | | | 4.7 | 6.5 | - | | | | | | |
| Lialda/Mezavant | | | | 3.3 | 5.6 | - | | | | | | |
| Amitiza | 7.9 | 8.4 | 9.6 | 7.1 | 7.8 | -0.7% | | | | | | |
| Resolor/Motegrity | | | | 0.7 | 1.4 | - | | | | | | |
| Other | 7.0 | 7.6 | 5.2 | 6.8 | 5.6 | -19.4% | | | | | | |
| **Rare Metabolic** | | | | **42.3** | **48.9** | | | | | | | |
| Elaprase | | | | 15.1 | 18.8 | - | | | | | | |
| Replagal | | | | 11.4 | 12.9 | - | | | | | | |
| Vpriv | | | | 8.7 | 9.3 | - | | | | | | |
| Natpara | | | | 7.1 | 7.9 | - | | | | | | |
| **Rare Hematology** | | | | **66.7** | **89.9** | **-** | | | | | | |
| Advate | | | | 32.1 | 42.7 | - | | | | | | |
| Adynovate | | | | 10.7 | 16.7 | - | | | | | | |
| FEIBA *1 | | | | 9.6 | 13.1 | - | | | | | | |
| Hemofil/Immunate*1 | | | | **5.5** | 6.6 | - | | | | | | |
| Other *2 | | | | 8.7 | 11.0 | - | | | | | | |
| **Hereditary Angioedema** | | | | **20.4** | **31.9** | **-** | | | | | | |
| Firazyr | | | | 6.4 | 9.0 | - | | | | | | |
| Takhzyro | | | | 9.7 | 14.5 | - | | | | | | |
| Kalbitor | | | | 1.2 | 1.1 | - | | | | | | |
| Cinryze *1 | | | | 3.1 | 7.3 | - | | | | | | |

*1 PDT products

*2 Includes PDT products

## 2. Product Sales Analysis (vs PY Reported Actual) (continued)

■Quarterly

| (Bn JPY) | Reported | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FY18 | | | | FY19 | | | | | | | |
| | Q1 | Q2 | Q3 | Q4 | Q1 | YOY | Q2 | YOY | Q3 | YOY | Q4 | YOY |
| **PDT Immunology** | **4.2** | 3.8 | 4.5 | 81.0 | **90.2** | **-** | | | | | | |
| Immunoglobulin *1 | 3.1 | 2.8 | 3.2 | 64.3 | 68.0 | - | | | | | | |
| Albumin *1 | 1.1 | 1.0 | 1.3 | 16.7 | 22.2 | - | | | | | | |
| **Oncology** | **98.9** | **99.5** | **108.2** | **92.8** | **106.5** | **7.6%** | | | | | | |
| Velcade | 31.4 | 33.5 | 35.4 | 27.5 | 31.7 | 1.0% | | | | | | |
| Leuprorelin | 28.6 | 26.5 | 29.5 | 25.4 | 28.4 | -0.9% | | | | | | |
| Ninlaro | 14.0 | 15.4 | 17.1 | 15.7 | 18.3 | 30.8% | | | | | | |
| Adcetris | 11.0 | 10.1 | 10.9 | 10.9 | 12.7 | 16.4% | | | | | | |
| Iclusig | 7.0 | 7.2 | 7.4 | 7.1 | 7.6 | 9.2% | | | | | | |
| Alunbrig | 1.1 | 1.2 | 1.5 | 1.4 | 1.7 | 52.8% | | | | | | |
| Vectibix | 5.4 | 5.1 | 5.7 | 4.3 | 5.6 | 3.5% | | | | | | |
| Other | 0.5 | 0.5 | 0.6 | 0.4 | 0.4 | -9.6% | | | | | | |
| **Neuroscience** | **24.3** | **22.1** | **27.3** | **81.0** | **111.9** | **-** | | | | | | |
| Vyvanse | | | | 49.4 | 68.8 | - | | | | | | |
| Trintellix | 14.1 | 13.0 | 17.5 | 12.9 | 17.4 | 23.4% | | | | | | |
| Adderall XR | | | | 5.4 | 5.7 | - | | | | | | |
| Rozerem | 5.2 | 4.9 | 4.8 | 4.2 | 5.1 | -1.6% | | | | | | |
| Reminyl | 4.5 | 3.9 | 4.6 | 3.7 | 4.8 | 6.5% | | | | | | |
| Intuniv | | | | 1.3 | 4.1 | - | | | | | | |
| Other | 0.5 | 0.3 | 0.4 | 4.1 | 6.0 | - | | | | | | |
| **Other** | **198.4** | **177.2** | **218.7** | **188.6** | **198.3** | **-0.1%** | | | | | | |
| Azilva | 19.4 | 15.8 | 20.5 | 15.0 | 20.5 | 5.4% | | | | | | |
| Nesina | 14.1 | 12.7 | 15.6 | 12.3 | 14.6 | 3.3% | | | | | | |
| Uloric | 14.1 | 12.4 | 14.0 | 10.6 | 12.2 | -13.1% | | | | | | |
| Colcrys | 9.2 | 7.1 | 7.3 | 6.4 | 7.2 | -22.4% | | | | | | |
| Enbrel | 9.9 | 8.2 | 9.8 | 7.3 | 8.7 | -12.1% | | | | | | |
| Lotriga | 8.1 | 7.1 | 9.0 | 6.6 | 8.8 | 8.1% | | | | | | |

*1 PDT products

*2 Includes PDT products

## 3. Product Sales Analysis (vs FY2018 Pro-forma)

Pro-forma includes 12-month (April 2018 – March 2019) revenue of legacy Shire as if the acquisition of Shire had occurred on April 1, 2018. This pro-forma revenue may not represents what sales would have been had the acquisition of Shire had occurred on April 1, 2018.

| | FY18 Reported Pro-forma*3 | | | | FY19 Reported (Financial Reported Base) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | YOY | | | YOY | | | YOY | | | YOY | |
| **(Bn JPY)** | Q1 | Q2 | Q3 | Q4 | Q1 | Reported | Underlying | Q2 | Reported | Underlying | Q3 | Reported | Underlying | Q4 | Reported | Underlying |
| **GI** | **159.3** | **160.4** | **176.1** | **146.5** | **171.6** | **7.7%** | **7.9%** | | | | | | | | | |
| Entyvio | 61.3 | 67.1 | 72.6 | 68.2 | 83.9 | 36.9% | 36.8% | | | | | | | | | |
| Dexilant | 17.4 | 17.5 | 20.0 | 14.3 | 15.8 | -9.0% | -9.4% | | | | | | | | | |
| Pantoprazole | 16.2 | 14.5 | 16.2 | 14.7 | 11.6 | -28.5% | -25.0% | | | | | | | | | |
| Takecab-F | 14.3 | 13.0 | 17.1 | 13.9 | 18.3 | 28.1% | 28.1% | | | | | | | | | |
| Gattex/Revestive | 14.5 | 10.8 | 13.9 | 12.8 | 15.1 | 4.5% | 3.3% | | | | | | | | | |
| Pentasa | 8.4 | 7.3 | 9.4 | 4.7 | 6.5 | -22.4% | -23.7% | | | | | | | | | |
| Lialda/Mezavant | 11.7 | 13.6 | 11.2 | 3.3 | 5.6 | -52.5% | -51.7% | | | | | | | | | |
| Amitiza | 7.9 | 8.4 | 9.6 | 7.1 | 7.8 | -0.7% | -3.0% | | | | | | | | | |
| Resolor/Motegrity | 0.7 | 0.6 | 0.8 | 0.7 | 1.4 | 97.4% | 103.8% | | | | | | | | | |
| Other | 7.0 | 7.6 | 5.2 | 6.8 | 5.6 | -19.4% | -18.4% | | | | | | | | | |
| **Rare Metabolic** | **49.4** | **47.9** | **51.0** | **42.3** | **48.9** | **-1.2%** | **3.9%** | | | | | | | | | |
| Elaprase | 19.1 | 18.9 | 19.1 | 15.1 | 18.8 | -1.4% | 3.6% | | | | | | | | | |
| Replagal | 13.6 | 13.6 | 13.4 | 11.4 | 12.9 | -5.3% | 3.5% | | | | | | | | | |
| Vpriv | 9.7 | 9.7 | 10.7 | 8.7 | 9.3 | -4.6% | 0.6% | | | | | | | | | |
| Natpara | 7.0 | 5.7 | 7.9 | 7.1 | 7.9 | 11.8% | 10.2% | | | | | | | | | |
| **Rare Hematology** | **105.2** | **102.1** | **107.6** | **66.7** | **89.9** | **-14.5%** | **-12.6%** | | | | | | | | | |
| Advate | 53.7 | 49.5 | 53.8 | 32.1 | 42.7 | -20.4% | -18.1% | | | | | | | | | |
| Adynovate | 13.2 | 15.4 | 15.4 | 10.7 | 16.7 | 26.4% | 25.9% | | | | | | | | | |
| FEIBA *1 | 21.5 | 17.2 | 16.3 | 9.6 | 13.1 | -39.4% | -36.8% | | | | | | | | | |
| Hemofil/Immunate *1 | 5.5 | 5.7 | 7.2 | 5.5 | 6.6 | 18.3% | 23.0% | | | | | | | | | |
| Other *2 | 11.2 | 14.3 | 14.9 | 8.7 | 11.0 | -2.2% | -3.8% | | | | | | | | | |
| **Hereditary Angioedema** | **39.7** | **36.5** | **32.8** | **20.4** | **31.9** | **-19.8%** | **-19.9%** | | | | | | | | | |
| Firazyr | 23.0 | 15.6 | 24.4 | 6.4 | 9.0 | -61.0% | -60.4% | | | | | | | | | |
| Takhzyro | | 5.7 | 1.2 | 9.7 | 14.5 | - | - | | - | | | | | | | |
| Kalbitor | 1.9 | 2.3 | 2.1 | 1.2 | 1.1 | -41.5% | -42.7% | | | | | | | | | |
| Cinryze *1 | 14.8 | 13.0 | 5.1 | 3.1 | 7.3 | -50.7% | -50.8% | | | | | | | | | |

*1 PDT products
*2 Includes PDT products
*3 Pro-forma based product sales and therapeutic area sales which include Legacy Shire's products. Shire's 12 months (April 2018 - March 2019) revenue under U.S. GAAP, excluding the oncology business which was divested in August 2018, converted to JPY using FY2018 actual rate for the period.

## 3. Product Sales Analysis (vs FY2018 Pro-forma) (continued)

| (Bn JPY) | FY18 Reported Pro-forma*3 Q1 | Q2 | Q3 | Q4 | FY19 Reported (Financial Reported Base) Q1 | YOY Reported | YOY Underlying | Q2 | YOY Reported | YOY Underlying | Q3 | YOY Reported | YOY Underlying | Q4 | YOY Reported | YOY Underlying |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PDT Immunology** | **89.1** | **100.0** | **101.9** | **81.0** | **90.2** | **1.2%** | **1.6%** | | | | | | | | | |
| Immunoglobulin *1 | 69.5 | 75.5 | 77.4 | 64.3 | 68.0 | -2.2% | -1.9% | | | | | | | | | |
| Albumin *1 | 19.6 | 24.5 | 24.5 | 16.7 | 22.2 | 13.3% | 14.1% | | | | | | | | | |
| **Oncology** | **98.9** | **99.5** | **108.2** | **92.8** | **106.5** | **7.6%** | **8.1%** | | | | | | | | | |
| Velcade | 31.4 | 33.5 | 35.4 | 27.5 | 31.7 | 1.0% | -1.3% | | | | | | | | | |
| Leuprorelin | 28.6 | 26.5 | 29.5 | 25.4 | 28.4 | -0.9% | 0.6% | | | | | | | | | |
| Ninlaro | 14.0 | 15.4 | 17.1 | 15.7 | 18.3 | 30.8% | 29.8% | | | | | | | | | |
| Adcetris | 11.0 | 10.1 | 10.9 | 10.9 | 12.7 | 16.4% | 26.6% | | | | | | | | | |
| Iclusig | 7.0 | 7.2 | 7.4 | 7.1 | 7.6 | 9.2% | 6.7% | | | | | | | | | |
| Alunbrig | 1.1 | 1.2 | 1.5 | 1.4 | 1.7 | 52.8% | 51.1% | | | | | | | | | |
| Vectibix | 5.4 | 5.1 | 5.7 | 4.3 | 5.6 | 3.5% | 3.5% | | | | | | | | | |
| Other | 0.5 | 0.5 | 0.6 | 0.4 | 0.4 | -9.6% | 2.5% | | | | | | | | | |
| **Neuroscience** | **100.7** | **104.2** | **118.4** | **81.0** | **111.9** | **11.1%** | **10.1%** | | | | | | | | | |
| Vyvanse | 60.4 | 66.0 | 71.0 | 49.4 | 68.8 | 13.9% | 12.8% | | | | | | | | | |
| Trintellix | 14.1 | 13.0 | 17.5 | 12.9 | 17.4 | 23.4% | 20.7% | | | | | | | | | |
| Adderall XR | 8.8 | 8.6 | 11.3 | 5.4 | 5.7 | -35.6% | -36.6% | | | | | | | | | |
| Rozerem | 5.2 | 4.9 | 4.8 | 4.2 | 5.1 | -1.6% | -2.8% | | | | | | | | | |
| Reminyl | 5.0 | 4.3 | 5.3 | 3.7 | 4.8 | -4.4% | -4.7% | | | | | | | | | |
| Intuniv | 2.6 | 2.9 | 2.9 | 1.3 | 4.1 | 54.2% | 60.2% | | | | | | | | | |
| Other | 4.5 | 4.5 | 5.6 | 4.0 | 6.0 | 33.4% | 34.6% | | | | | | | | | |
| **Other** | | | | | | | | | | | | | | | | |
| Azilva | 19.4 | 15.8 | 20.5 | 15.0 | 20.5 | 5.4% | 5.4% | | | | | | | | | |
| Nesina | 14.1 | 12.7 | 15.6 | 12.3 | 14.6 | 3.3% | 5.0% | | | | | | | | | |
| Uloric | 14.1 | 12.4 | 14.0 | 10.6 | 12.2 | -13.1% | -15.0% | | | | | | | | | |
| Colcrys | 9.2 | 7.1 | 7.3 | 6.4 | 7.2 | -22.4% | -24.1% | | | | | | | | | |
| Enbrel | 9.9 | 8.2 | 9.8 | 7.3 | 8.7 | -12.1% | -12.1% | | | | | | | | | |
| Lotriga | 8.1 | 7.1 | 9.0 | 6.6 | 8.8 | 8.1% | 8.1% | | | | | | | | | |

*1 PDT products
*2 Includes PDT products
*3 Pro-forma based product sales and therapeutic area sales which include Legacy Shire's products. Shire's 12 months (April 2018-March 2019) revenue under U.S. GAAP, excluding the oncology business which was divested in August 2018, converted to JPY using FY2018 actual rate for the period.

## 4. FY2018 Pro-forma and Product Forecasts

Pro-forma includes 12-month (April 2018 – March 2019) revenue of legacy Shire as if the acquisition of Shire had occurred on April 1, 2018. This pro-forma revenue may not represents what sales would have been had the acquisition of Shire had occurred on April 1, 2018.

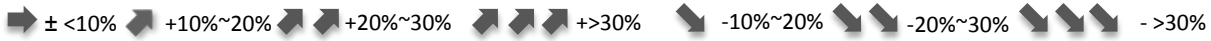
| (Bn JPY) | FY18 Reported Pro-forma*3 Q1 | Q2 | Q3 | Q4 | Annual | FY19 Forecasts*4 Annual |
|---|---|---|---|---|---|---|
| **GI** | **159.3** | **160.4** | **176.1** | **146.5** | **642.3** | |
| Entyvio | 61.3 | 67.1 | 72.6 | 68.2 | 269.2 | |
| Dexilant | 17.4 | 17.5 | 20.0 | 14.3 | 69.2 | |
| Pantoprazole | 16.2 | 14.5 | 16.2 | 14.7 | 61.6 | |
| Takecab-F | 14.3 | 13.0 | 17.1 | 13.9 | 58.2 | |
| Gattex/Revestive | 14.5 | 10.8 | 13.9 | 12.8 | 51.9 | |
| Pentasa | 8.4 | 7.3 | 9.4 | 4.7 | 29.8 | |
| Lialda/Mezavant | 11.7 | 13.6 | 11.2 | 3.3 | 39.9 | |
| Amitiza | 7.9 | 8.4 | 9.6 | 7.1 | 33.0 | |
| Resolor/Motegrity | 0.7 | 0.6 | 0.8 | 0.7 | 2.8 | |
| Other | 7.0 | 7.6 | 5.2 | 6.8 | 26.6 | |
| **Rare Metabolic** | **49.4** | **47.9** | **51.0** | **42.3** | **190.7** | |
| Elaprase | 19.1 | 18.9 | 19.1 | 15.1 | 72.2 | |
| Replagal | 13.6 | 13.6 | 13.4 | 11.4 | 52.0 | |
| Vpriv | 9.7 | 9.7 | 10.7 | 8.7 | 38.8 | |
| Natpara | 7.0 | 5.7 | 7.9 | 7.1 | 27.6 | |
| **Rare Hematology** | **105.2** | **102.1** | **107.6** | **66.7** | **381.6** | |
| Advate | 53.7 | 49.5 | 53.8 | 32.1 | 189.1 | |
| Adynovate | 13.2 | 15.4 | 15.4 | 10.7 | 54.7 | |
| FEIBA *1 | 21.5 | 17.2 | 16.3 | 9.6 | 64.6 | |
| Hemofil/Immunate *1 | 5.5 | 5.7 | 7.2 | 5.5 | 24.0 | |
| Other *2 | 11.2 | 14.3 | 14.9 | 8.7 | 49.1 | |
| **Hereditary Angioedema** | **39.7** | **36.5** | **32.8** | **20.4** | **129.5** | |
| Firazyr | 23.0 | 15.6 | 24.4 | 6.4 | 69.3 | |
| Takhzyro | | 5.7 | 1.2 | 9.7 | 16.7 | |
| Kalbitor | 1.9 | 2.3 | 2.1 | 1.2 | 7.4 | |
| Cinryze *1 | 14.8 | 13.0 | 5.1 | 3.1 | 36.0 | |

*1 PDT products

*2 Includes PDT products

*3 Pro-forma based product sales and therapeutic area sales which include Legacy Shire's products.
Shire's 12 months (April 2018-March 2019) revenue under U.S. GAAP, excluding the oncology business which was divested in August 2018, converted to JPY using FY2018 actual rate for the period.

*4 The respective arrow symbols indicate management's growth rate forecasts as denoted below as compared to FY18 revenue on a pro-forma basis



## 4. FY2018 Pro-forma and Product Forecasts (continued)

| (Bn JPY) | FY18 Reported Pro-forma*3 Q1 | Q2 | Q3 | Q4 | Annual | FY19 Forecasts*4 Annual |
|---|---|---|---|---|---|---|
| **PDT Immunology** | **89.1** | **100.0** | **101.9** | **81.0** | **371.9** | |
| Immunoglobulin *1 | 69.5 | 75.5 | 77.4 | 64.3 | 286.7 | → |
| Albumin *1 | 19.6 | 24.5 | 24.5 | 16.7 | 85.2 | ↗↗ |
| **Oncology** | **98.9** | **99.5** | **108.2** | **92.8** | **399.4** | |
| Velcade | 31.4 | 33.5 | 35.4 | 27.5 | 127.9 | → |
| Leuprorelin | 28.6 | 26.5 | 29.5 | 25.4 | 110.1 | → |
| Ninlaro | 14.0 | 15.4 | 17.1 | 15.7 | 62.2 | ↗↗ |
| Adcetris | 11.0 | 10.1 | 10.9 | 10.9 | 42.9 | ↗ |
| Iclusig | 7.0 | 7.2 | 7.4 | 7.1 | 28.7 | ↗ |
| Alunbrig | 1.1 | 1.2 | 1.5 | 1.4 | 5.2 | ↗↗↗ |
| Vectibix | 5.4 | 5.1 | 5.7 | 4.3 | 20.5 | → |
| Other | 0.5 | 0.5 | 0.6 | 0.4 | 2.0 | → |
| **Neuroscience** | **100.7** | **104.2** | **118.4** | **81.0** | **404.3** | |
| Vyvanse | 60.4 | 66.0 | 71.0 | 49.4 | 246.8 | → |
| Trintellix | 14.1 | 13.0 | 17.5 | 12.9 | 57.6 | ↗ |
| Adderall XR | 8.8 | 8.6 | 11.3 | 5.4 | 34.1 | - |
| Rozerem | 5.2 | 4.9 | 4.8 | 4.2 | 19.1 | ↘↘↘ |
| Reminyl | 5.0 | 4.3 | 5.3 | 3.7 | 18.3 | ↗ |
| Intuniv | 2.6 | 2.9 | 2.9 | 1.3 | 9.8 | ↗↗↗ |
| Other | 4.5 | 4.5 | 5.6 | 4.0 | 18.7 | ↘↘ |
| **Other** | | | | | | |
| Azilva | 19.4 | 15.8 | 20.5 | 15.0 | 70.8 | → |
| Nesina | 14.1 | 12.7 | 15.6 | 12.3 | 54.8 | → |
| Uloric | 14.1 | 12.4 | 14.0 | 10.6 | 51.1 | ↘↘↘ |
| Colcrys | 9.2 | 7.1 | 7.3 | 6.4 | 30.0 | ↘ |
| Enbrel | 9.9 | 8.2 | 9.8 | 7.3 | 35.2 | ↘↘↘ |
| Lotriga | 8.1 | 7.1 | 9.0 | 6.6 | 30.9 | → |

*1 PDT products
*2 Includes PDT products
*3 Pro-forma based product sales and therapeutic area sales which include Legacy Shire's products.
Shire's 12 months (April 2018-March 2019) revenue under U.S. GAAP, excluding the oncology business which was divested in August 2018, converted to JPY using FY2018 actual rate for the period.
*4 The respective arrow symbols indicate management's growth rate forecasts as denoted below as compared to FY18 revenue on a pro-forma basis

→ ± <10% ↗ +10%~20% ↗↗ +20%~30% ↗↗↗ +>30% ↘ -10%~20% ↘↘ -20%~30% ↘↘↘ - >30%

## 5. Exchange Rate

**Average Exchange Rate** (yen)

| | USD | EUR | RUB | BRL |
|---|---|---|---|---|
| FY18Q1 (April-June) | 108 | 130 | 1.8 | 31.0 |
| FY19Q1 (April-June) | 111 | 124 | 1.7 | 28.0 |
| FY19 Assumption | 111 | 124 | 1.7 | 28.4 |

**Impact of 1% depreciation of yen yen from July 2019 to March 2020** (100 million yen)

| | USD | EUR | RUB | BRL |
|---|---|---|---|---|
| Revenue | +130.2 | +32.3 | +4.6 | +4.0 |
| Core Operating Profit | +21.8 | +3.1 | +2.7 | +1.3 |
| Operating Profit | -18.7 | -3.7 | +2.2 | +1.2 |
| Net Profit | -22.3 | -3.6 | +1.5 | +0.8 |

## 6. CAPEX, depreciation and amortization and impairment losses

(Bn JPY)

| | FY18 | FY18Q1 | FY19Q1 | YOY | | FY19 Forecasts |
|---|---|---|---|---|---|---|
| Capital expenditures | 244.6 | | | | | 180.0 ~ 230.0 |
| Tangible assets* | 188.4 | | | | | |
| Intangible assets* | 56.2 | | | | | |
| * Excluding increase due to acquisition. | | | | | | |
| Depreciation and amortization | 271.9 | 38.5 | 176.3 | 137.9 | - | |
| Depreciation of tangible assets* | 63.3 | 12.3 | 38.0 | 25.6 | - | |
| Amortization of intangible assets | 208.6 | 26.1 | 138.4 | 112.2 | - | |
| Amortization associated with products | 194.7 | 23.7 | 132.2 | 108.5 | - | 538.0 |
| * Excluding depreciation for investment assets. | | | | | | |
| Impairment losses | 10.1 | 0.4 | 17.4 | 17.1 | - | |
| Impairment losses associated with products | 8.6 | 0.4 | 16.1 | 15.8 | - | 121.0 |
| Amortization and impairment losses on intangible assets associated with products | 203.4 | 24.0 | 148.3 | 124.2 | - | 659.0 |

## 7. Reconciliation from Reported Revenue to Underlying Revenue

| (BN YEN) | FY2018[*1] Q1 | FY2019 Q1 | vs. PY | |
|---|---|---|---|---|
| **Revenue** | **449.8** | **849.1** | **+399.3** | **+ 88.8%** |
| Shire Revenue | 421.7 | - | | |
| **Pro-forma Revenue** | **871.5** | **849.1** | **-22.4** | **- 2.6%** |
| FX effects[*2] | | | | +1.4pp |
| Divestitures[*3] | | | | +0.4pp |
| Techpool & Multilab | | | | +0.5pp |
| XIIDRA & TACHOSIL | | | | +0.1pp |
| Others | | | | -0.3pp |
| **Underlying Revenue Growth** | | | | **- 0.8%** |

[*1] FY2018 Q1 revenue is a pro-forma based, adding Shire's 3 month (April – June 2018) revenue previously reported under US GAAP has been conformed to IFRS, without material differences, excluding the oncology business which was divested in August 2018, converted to JPY using FY2018 actual rate for the period.

[*2] FX adjustment applies constant FY2018 actual full year average rate to both years (1USD=111 yen, 1EUR=129 yen).

[*3] Major adjustments are FY2018 Q1 revenue of former subsidiaries, Guangdong Techpool Bio-Pharma Co., Ltd., and Multilab Indústria e Comércio de Produtos Farmacêuticos Ltda., both divested in FY2018, and FY2018 Q1 and FY2019 Q1 revenue of XIIDRA of which divestiture completed in July 2019 and TACHOSIL as Takeda agreed in May 2019 to divest this product, with completion of divestiture expected to occur within FY2019.

# 8. Reconciliation from Reported to Core/Underlying Core – FY2019 Q1

**FY2019Q1** (Bn JPY)

| (BN YEN) | REPORTED | REPORTED TO CORE ADJUSTMENTS | | | | | CORE | CORE TO UNDERLYING CORE ADJ. | | UNDERLYING CORE |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Amortization & impairment of intangible assets | Other operating income/ expense | Shire acquisition related costs | Shire purchase accounting adjustments | Others | | FX | Divestitures | |
| Revenue | 849.1 | - | - | - | - | - | 849.1 | 11.7 | -17.2 | |
| Cost of sales | -300.6 | - | - | - | 84.5 | - | -216.1 | -3.0 | 2.0 | |
| Gross Profit | 548.5 | - | - | - | 84.5 | - | 633.0 | 8.7 | -15.2 | |
| SG&A expenses | -239.2 | - | - | 0.8 | 1.1 | - | -237.4 | -3.0 | - | |
| R&D expenses | -116.9 | - | - | 4.3 | -0.1 | - | -112.7 | -0.5 | - | |
| Amortization of intangible assets | -132.2 | 23.0 | - | - | 109.1 | - | - | - | - | |
| Impairment losses on intangible assets | -16.1 | 16.1 | - | - | - | - | - | - | - | |
| Other operating income | 6.7 | - | -6.7 | - | - | - | - | - | - | |
| Other operating expenses | -41.0 | - | 9.4 | 31.6 | - | - | - | - | - | |
| Operating profit | 9.9 | 39.1 | 2.7 | 36.7 | 194.5 | - | 283.0 | 5.1 | -15.2 | |
| Margin | 1.2% | | | | | | 33.3% | | | **32.4%** |
| Financial income/expenses | -37.4 | - | - | - | 4.5 | 0.9 | -32.0 | 0.5 | - | |
| Equity income/loss | 2.3 | - | - | - | - | - | 2.3 | 0.6 | - | |
| Profit before tax | -25.2 | 39.1 | 2.7 | 36.7 | 199.0 | 0.9 | 253.3 | 6.2 | -15.2 | |
| Tax expense | 4.6 | -7.1 | -7.9 | -7.0 | -37.3 | -0.2 | -54.9 | -1.0 | 3.7 | |
| Non-controlling interests | -0.0 | - | - | - | - | - | -0.0 | -0.0 | - | |
| Net profit | -20.7 | 32.0 | -5.2 | 29.7 | 161.8 | 0.7 | 198.4 | 5.2 | -11.5 | |
| EPS (yen) | -13 | | | | | | 128 | 3 | -7 | **124** |
| Number of shares (millions) | 1,556 | | | | | | 1,556 | | | 1,555 |

# 9. Reconciliation from Reported to Core – FY2018 Q1

**FY2018 Q1** (Bn JPY)

| (BN YEN) | REPORTED | REPORTED TO CORE ADJUSTMENTS | | | | | CORE |
|---|---|---|---|---|---|---|---|
| | | Amortization & impairment of intangible assets | Other operating income/ expense | Shire acquisition related costs | Shire purchase accounting adjustments | Others | |
| Revenue | 449.8 | - | - | - | - | - | 449.8 |
| Cost of sales | -120.6 | - | - | - | - | - | -120.6 |
| Gross Profit | 329.2 | - | - | - | - | - | 329.2 |
| SG&A expenses | -145.0 | - | - | 4.6 | - | - | -140.5 |
| R&D expenses | -72.0 | - | - | - | - | - | -72.0 |
| Amortization of intangible assets | -23.7 | 23.7 | - | - | - | - | - |
| Impairment losses on intangible assets | -0.4 | 0.4 | - | - | - | - | - |
| Other operating income | 9.3 | - | -9.3 | - | - | - | - |
| Other operating expenses | 1.4 | - | -1.4 | 0.0 | - | - | - |
| Operating profit | 98.9 | 24.0 | -10.7 | 4.6 | - | - | 116.8 |
| Financial income/expenses | -8.6 | - | - | 6.0 | - | 0.7 | -1.9 |
| Equity income/loss | 3.6 | - | - | - | - | 0.9 | 4.5 |
| Profit before tax | 93.9 | 24.0 | -10.7 | 10.6 | - | 1.6 | 119.4 |
| Tax expense | -15.8 | -5.8 | 3.2 | -2.1 | - | -1.3 | -21.8 |
| Non-controlling interests | 0.2 | - | - | - | - | - | 0.2 |
| Net profit | 78.2 | 18.3 | -7.5 | 8.5 | - | 0.2 | 97.7 |
| EPS (yen) | 100 | | | | | | 125 |
| Number of shares (millions) | 782 | | | | | | 782 |

## 10. Reconciliation from Net Profit to EBITDA/Adjusted EBITDA

| (BN JPY) | FY2019 Q1 | FY2019 LTM[*1] |
|---|---|---|
| Net profit for the year | -20.6 | 10.3 |
| Income tax expenses | -4.6 | -34.5 |
| Depreciation and amortization | 176.3 | 410.2 |
| Interest expense, net | 36.8 | 76.7 |
| EBITDA | 187.9 | 462.8 |
| Impairment losses | 17.4 | 27.5 |
| Other operating expense (income), net, excluding depreciation and amortization | 32.8 | -14.8 |
| Finance expense (income), net, excluding interest income and expense, net | 0.6 | 18.6 |
| Share of loss on investments accounted for under the equity method | -2.3 | 44.8 |
| Other adjustments: | | |
| Impact on profit related to fair value step up of inventory in Shire acquisition | 81.3 | 163.5 |
| Acquisition costs related to Shire | 0.6 | 19.8 |
| Other costs[*2] | 8.8 | 26.6 |
| Adjusted EBITDA | 327.1 | 748.8 |
| Shire's Adjusted EBITDA[*3] | - | 385.3 |
| Pro-forma Adjusted EBITDA | 327.1 | 1,134.1 |

[*1] LTM represents Last Twelve Months (July 2018 – June 2019).

[*2] Includes adjustment for non-cash equity based compensation expense starting from FY2019 Q1.

[*3] Represents Shire's EBITDA based on its financial information converted to IFRS for the corresponding period. There was no significant difference in the definition of and methodology for adjusted EBITDA between Takeda and Shire.

# II. Pipeline

## 1. Clinical Development Activities

- The following table lists the pipeline assets that we are developing as of July 31, 2019. The assets in our pipeline are in various stages of development, and the contents of the pipeline may change as compounds currently under development drop out and new compounds are introduced. Whether the compounds listed below are ever successfully released as products depends on various factors, including the results of pre-clinical and clinical trials, market conditions for various drugs and regulatory approvals.
- This table primarily shows the indications for which we will actively pursue approval. We are also conducting additional studies of certain assets to examine their potential for use in further indications and in additional formulations.
- The listings in this table are limited to the U.S., EU and Japan and China, but we are also actively conducting development activities in other regions, including in Emerging Markets. Country/region in the "Stage" column denote where a clinical study is ongoing or a filing has been made with our specific intention to pursue approval in any of the U.S., EU, Japan or China. 'Global' refers to U.S., EU, Japan and China.
- Brand name and country/region indicate the brand name and country in which the specific asset has already been approved for any indication in any of the U.S., EU, Japan or China and Takeda has commercialization rights for such asset.
- Stage-ups are recognized in the table upon achievement of First Subject In.

### ■ Oncology Pipeline

| Development code <generic name> Brand name (country/region) | Drug Class (administration route) | Indications / additional formulations | | Stage |
|---|---|---|---|---|
| **SGN-35*1 <brentuximab vedotin>** *ADCETRIS* (EU, Japan) | CD30 monoclonal antibody-drug conjugate (injection) | Front line Peripheral T-cell Lymphoma | EU<br>Japan | Filed (June 2019)<br>Filed (March 2019) |
| | | Relapsed/refractory Hodgkin Lymphoma | China | Filed (March 2019) |
| | | Relapsed/refractory systemic Anaplastic large-cell lymphoma | China | Filed (March 2019) |
| **<brigatinib>** *ALUNBRIG* (U.S., EU) | ALK inhibitor (oral) | 1L ALK-positive Non-Small Cell Lung Cancer | EU<br>U.S.<br>China | Filed (June 2019)<br>P-III<br>P-I |
| | | 2L ALK-positive Non-Small Cell Lung Cancer (head-to-head with alectinib) | Global | P-III |
| | | 2L ALK-positive Non-Small Cell Lung Cancer in patients previously treated with ALK inhibitors | Japan<br>China | P-II(a)<br>P-II(a) |
| | | 2L ALK-positive Non-Small Cell Lung Cancer in patients progressed on 2nd generation Tyrosine Kinase Inhibitors | Global | P-II |
| **MLN9708 <ixazomib>** *NINLARO* (Global) | Proteasome inhibitor (oral) | Maintenance therapy in patients with newly diagnosed Multiple Myeloma following autologous stem cell transplant | Japan<br>U.S.<br>EU<br>China | Filed (April 2019)<br>P-III<br>P-III<br>P-III |
| | | Newly diagnosed Multiple Myeloma | Global | P-III |
| | | Maintenance therapy in patients with newly diagnosed Multiple Myeloma not treated with stem cell transplant | Global | P-III |
| | | Relapsed/refractory Multiple Myeloma (doublet regimen with dexamethasone) | U.S.<br>EU<br>Japan | P-III<br>P-III<br>P-III |
| | | Relapsed/refractory Multiple Myeloma (triplet regimen with daratumumab and dexamethasone) | Global | P-II |
| **<cabozantinib>*2** | Multi-targeted kinase inhibitor (oral) | 2L Renal cell carcinoma | Japan | Filed (April 2019) |
| | | 1L Renal cell carcinoma in combination with nivolumab | Japan | P-III |
| | | 2L Hepatocellular carcinoma | Japan | P-II(a) |
| **<ponatinib>** *ICLUSIG* (U.S.) | BCR-ABL inhibitor (oral) | Front line Philadelphia chromosome-positive Acute Lymphoblastic Leukemia | U.S. | P-III |
| | | Dose ranging study for Tyrosine Kinase Inhibitor-resistant patients with chronic-phase Chronic Myeloid Leukemia | U.S. | P-II(b) |
| **TAK-924 <pevonedistat>** | NEDD 8 activating enzyme inhibitor (injection) | High-risk Myelodysplastic Syndromes,<br>Chronic Myelomonocytic Leukemia,<br>Low-blast Acute Myelogenous Leukemia | U.S.<br>EU<br>Japan | P-III<br>P-III<br>P-III |
| **TAK-385 <relugolix>** | LH-RH antagonist (oral) | Prostate cancer | Japan<br>China | P-III<br>P-I |
| **<niraparib>*3** | PARP1/2 inhibitor (oral) | Ovarian cancer – maintenance | Japan | P-II |
| | | Ovarian cancer – salvage | Japan | P-II |
| **TAK-228 <sapanisertib>** | mTORC1/2 inhibitor (oral) | Endometrial cancer | U.S. | P-II(b) |

| | | | | |
|---|---|---|---|---|
| **TAK-788** | EGFR/HER2 exon 20 inhibitor (oral) | Non-Small Cell Lung Cancer with Exon-20 insertion | Global | P-II |
| **TAK-659** | SYK/FLT3 kinase inhibitor (oral) | Diffuse Large B-cell Lymphoma | - | P-II(a) |
| | | Hematologic malignancies | - | P-I |
| **TAK-931** | CDC7 inhibitor (oral) | Squamous esophageal cancer,<br>Squamous Non-Small Cell Lung Cancer | | P-II(a) |
| **TAK-079** | Anti-CD38 monoclonal antibody (injection) | Relapsed/refractory Multiple Myeloma | - | P-I |
| | | Systemic lupus erythematosus | - | P-I |
| **TAK-164** | Anti-guanylyl cyclase C antibody drug conjugate (injection) | GI malignancies | - | P-I |
| **TAK-573*4** | CD38-targeted IgG4 genetically fused with an attenuated IFNα (injection) | Relapsed/refractory Multiple Myeloma | - | P-I |
| **TAK-981** | SUMO inhibitor (injection) | Multiple cancers | - | P-I |
| **TAK-252 / SL-279252*5** | PD-1-Fc-OX40L (injection) | Solid tumors | | P-I |

*1 Partnership with Seattle Genetics, Inc.
*2 Partnership with Exelixis, Inc.
*3 Partnership with GlaxoSmithKline
*4 Partnership with Teva Pharmaceutical Industries Ltd.
*5 Partnership with Shattuck Labs, Inc.
Removals since FY2018 Q4: MLN9708 – Relapsed/refractory primary amyloidosis (Global P-III, discontinued)

## ■ GI Pipeline

| Development code<br><generic name><br>Brand name<br>(country/region) | Drug Class<br>(administration route) | Indications / additional formulations | Stage | |
|---|---|---|---|---|
| **MLN0002**<br>**<vedolizumab>**<br>*ENTYVIO*<br>(U.S., EU, Japan) | Humanized monoclonal antibody against α4β7 integrin (injection) | Crohn's disease | China | Filed (May 2019) |
| | | Ulcerative colitis | China | Filed (May 2019) |
| | | Subcutaneous formulation for ulcerative colitis | U.S.<br>EU<br>Japan | Filed (March 2019)<br>Filed (March 2019)<br>P-III |
| | | Subcutaneous formulation for Crohn's disease | EU<br>U.S.<br>Japan | Filed (March 2019)<br>P-III<br>P-III |
| | | Graft-versus-Host Disease prophylaxis in patients undergoing allogeneic hematopoietic stem cell transplantation | EU | P-III |
| **TAK-438**<br>**<vonoprazan>**<br>*TAKECAB* (Japan) | Potassium-competitive acid blocker (oral) | Acid-related diseases | China | Filed (February 2018) |
| **TAK-633/SHP633**<br>**<teduglutide>**<br>*GATTEX* (U.S.)<br>*REVESTIVE* (EU) | GLP-2 analogue (injection) | Short bowel syndrome (pediatric indication) | Japan | P-III |
| | | Short bowel syndrome (in adults) | Japan | P-III |
| **Cx601**<br>**<darvadstrocel>**<br>*ALOFISEL* (EU) | A suspension of allogeneic expanded adipose-derived stem cells (injection) | Refractory complex perianal fistulas in patients with Crohn's disease | U.S.<br>Japan | P-III<br>P-III |
| **TAK-721/SHP621*1**<br>**<budesonide>** | Glucocorticosteroid (oral) | Eosinophilic esophagitis | U.S. | P-III |
| **TAK-906** | Dopamine D2/D3 receptor antagonist (oral) | Gastroparesis | - | P-II(b) |
| **TAK-954*2** | 5-$HT_4$ - hydroxytryptamine receptor agonist (injection) | Post-operative gastrointestinal dysfunction | - | P-II(b) |
| **TIMP-GLIA*3** | Tolerizing Immune Modifying nanoParticle (TIMP) (injection) | Celiac disease | - | P-II(a) |
| **TAK-951** | Peptide agonist | Nausea and vomiting | - | P-I |
| **TAK-671** | Protease inhibitor (injection) | Acute pancreatitis | - | P-I |
| **TAK-018/EB8018*4** | FimH antagonist (oral) | Crohn's disease | - | P-I |
| **TAK-681** | GLP-2 long-acting analogue (injection) | Short bowel syndrome | | P-I |

| | | | | |
|---|---|---|---|---|
| **Kuma062*5** | Glutenase (oral) | Celiac disease | - | P-I |

*1 Partnership with UCSD and Fortis Advisors
*2 Partnership with Theravance Biopharma, Inc.
*3 Partnership with Cour Pharmaceutical Development Company
*4 Partnership with Enterome Bioscience SA
*5 Partnership with PvP Biologics, Inc. PvP leads Phase 1 development.
Removals since FY2018 Q4: MLN0002 – Crohn's disease (Japan, Approved May 2019)
MLN0002 – Adalinumab head-to-head in patients with ulcerative colitis (trial completed)
TAK-633 - Short bowel syndrome (pediatric indication) (U.S., Approved May 2019)
TAK-438 – Gastro esophageal reflux disease in patients who have a partial response following treatment with a proton pump inhibitor (EU, license granted to Phathom Pharmaceuticals, May 2019)

## ■ Rare Diseases Pipeline

| **Development code <generic name>** Brand name (country/region) | **Drug Class (administration route)** | **Indications / additional formulations** | **Stage** | |
|---|---|---|---|---|
| **TAK-743/SHP643 <lanadelumab>** *TAKHZYRO* (U.S., EU) | Plasma kallikrein inhibitor (injection) | Hereditary angioedema | China | Filed (December 2018) |
| **TAK-577/SHP677** *VONVENDI* (U.S.), *VEYVONDI* (EU) | von Willebrand factor [recombinant] (injection) | von Willebrand disease | Japan | Filed (July 2019) |
| | | Prophylactic treatment of von Willebrand disease | Global | P-III |
| | | Pediatric on-demand treatment of von Willebrand disease | Global | P-III |
| **TAK-672/SHP672*1** *OBIZUR* (U.S., EU) | Antihemophilic factor [recombinant], porcine sequence (injection) | Congenital hemophilia A with inhibitors | U.S.<br>EU | P-III<br>P-III |
| **TAK-660/SHP660** *ADYNOVATE* (U.S.), *ADYNOVI* (EU) | Antihemophilic factor [recombinant], PEGylated (injection) | Pediatric Hemophilia A | EU | P-III |
| **TAK-755/SHP655*2** | Replacement of the deficient-ADAMTS13 enzyme (injection) | Congenital Thrombotic Thrombocytopenic Purpura | U.S.<br>EU | P-III<br>P-III |
| **TAK-620/SHP620*3 <maribavir>** | Benzimidazole riboside inhibitor (oral) | Cytomegalovirus infection in transplant patients | U.S.<br>EU | P-III<br>P-III |
| **TAK-607/SHP607** | Insulin-like Growth Factor / IGF Binding Protein (injection) | Chronic lung disease | - | P-II |
| **TAK-609/SHP609** | Recombinant human iduronate-2-sulfatase for intrathecal administration (injection) | Hunter syndrome CNS | U.S.<br>EU | P-II<br>P-II |
| **TAK-611/SHP611** | Recombinant human arylsulfatase A (injection) | Metachromatic leukodystrophy | - | P-II |
| **TAK-754/SHP654*4** | Gene therapy to restore endogenous FVIII expression | Hemophilia A | - | P-I/II |
| **TAK-531/SHP631*5** | Fusion protein of iduronate-2-sulfatase+antibody (injection) | Hunter syndrome CNS | - | P-I |
| **TAK-834/SHP634** *NATPARA* (U.S.), *NATPAR* (EU) | Parathyroid hormone (injection) | Hypoparathyroidism | Japan | P-I*6 |

*1 Partnership with Ipsen
*2 Partnership with KM Biologics
*3 Partnership with GlaxoSmithKline
*4 Partnership with Asklepios Biopharmaceuticals
*5 Partnership with ArmaGen
*6 NATPARA P-I study in Japan completed; P-III study to start in H2 FY2019

## ■ Neuroscience Pipeline

| Development code <generic name> Brand name (country/region) | Drug Class (administration route) | Indications / additional formulations | | Stage |
|---|---|---|---|---|
| **Lu AA21004**[*1] **<vortioxetine>** *TRINTELLIX* (U.S.) | Multimodal anti-depressant (oral) | Major depressive disorder | Japan | Filed (September 2018) |
| **TAK-815/SHP615 <midazolam>** *BUCCOLAM* (EU) | GABA Allosteric Modulator (oral) | Status epilepticus (seizures) | Japan | P-III |
| **TAK-831** | D-amino acid oxidase (DAAO) inhibitor (oral) | Negative symptoms and/or cognitive impairment associated with schizophrenia | - | P-II(a) |
| **TAK-935**[*2] | CH24H inhibitor (oral) | Rare pediatric epilepsies | - | P-II(a) |
| **WVE-120101**[*3] | mHTT SNP1 antisense oligonucleotide (injection) | Huntington's disease | - | P-I/II |
| **WVE-120102**[*3] | mHTT SNP2 antisense oligonucleotide (injection) | Huntington's disease | - | P-I/II |
| **TAK-041** | GPR139 agonist (oral) | Negative symptoms and/or cognitive impairment associated with schizophrenia | - | P-I |
| **MEDI1341**[*4] | Alpha-synuclein antibody (injection) | Parkinson's disease | - | P-I |
| **TAK-418** | LSD1 inhibitor (oral) | Kabuki syndrome | - | P-I |
| **TAK-653** | AMPA receptor potentiator (oral) | Treatment resistant depression | - | P-I |
| **TAK-925** | Orexin 2R agonist | Narcolepsy | - | P-I |

*1 Partnership with H. Lundbeck A/S
*2 Co-development with Ovid Therapeutics Inc.
*3 50:50 co-development and co-commercialization option with Wave Life Sciences Ltd.
*4 Partnership with AstraZeneca. AstraZeneca leads Phase 1 development

## ■ Plasma-Derived Therapies Pipeline

| Development code <generic name> Brand name (country/region) | Drug Class (administration route) | Indications / additional formulations | | Stage |
|---|---|---|---|---|
| **TAK-616/SHP616** *CINRYZE* (U.S., EU) | C1 esterase inhibitor [human] (injection) | Hereditary angioedema | Japan | P-III |
| **TAK-771/SHP671**[*1] **<IG Infusion 10% (Human) w/ Recombinant Human Hyaluronidase>** *HYQVIA* (U.S., EU) | Immunoglobulin (IgG) + recombinant hyaluronidase replacement therapy (injection) | Pediatric indication for primary immunodeficiency | U.S. | P-III |
| | | Chronic inflammatory demyelinating polyradiculoneuropathy | U.S.<br>EU | P-III<br>P-III |

*1 Partnership with Halozyme

## ■ Vaccines Pipeline

| Development code Brand name (country/region) | Type of vaccine (administration route) | Indications / additional formulations | | Stage |
|---|---|---|---|---|
| **TAK-003** | Tetravalent dengue vaccine (injection) | Prevention of dengue fever caused by dengue virus | - | P-III |
| **TAK-214** | Norovirus vaccine (injection) | Prevention of acute gastroenteritis (AGE) caused by norovirus | - | P-II(b) |
| **TAK-021** | EV71 vaccine (injection) | Prevention of hand, foot and mouth disease caused by enterovirus 71 | - | P-I |
| **TAK-426**[*1] | Zika vaccine (injection) | Prevention of zika virus infection | - | P-I |

*1 Partnership with The Biomedical Advanced Research and Development Authority (BARDA) - U.S. Government

## 2. Recent Progress in stage [Progress in stage disclosed since release of FY2018 results (May 14th, 2019)]

| Development code <generic name> | Indications / additional formulations | Country/Region | Progress in stage |
|---|---|---|---|
| **MLN0002 <vedolizumab>** | Crohn's disease | Japan | Approved (May 2019) |
| **TAK-633/SHP633 <teduglutide>** | Short bowel syndrome (pediatric indication) | U.S. | Approved (May 2019) |
| **MLN0002 <vedolizumab>** | Crohn's disease | China | Filed (May 2019) |
| **MLN0002 <vedolizumab>** | Ulcerative colitis | China | Filed (May 2019) |
| **SGN-35 <brentuximab vedotin>** | Front line Peripheral T-cell Lymphoma | EU | Filed (June 2019) |
| **<brigatinib>** | 1L ALK-positive Non-Small Cell Lung Cancer | EU | Filed (June 2019) |
| **TAK-577 / SHP677** | von Willebrand disease | Japan | Filed (July 2019) |

## 3. Discontinued projects [Update disclosed since release of FY2018 results (May 14th, 2019)]

| Development code <generic name> | Indications (Stage) | Reason |
|---|---|---|
| **MLN9708 <ixazomib>** | Relapsed/refractory primary amyloidosis (Global P-III) | Failed primary endpoint; encouraging secondary endpoint data will be submitted for presentation at an upcoming scientific meeting |

## 4. Exploring Alternative Value Creation [Update disclosed since release of FY2018 results (May 14th, 2019)]

| Development code <generic name> | Indications (Stage) | Reason |
|---|---|---|
| **TAK-438 <vonoprazan>** | Gastro esophageal reflux disease in patients who have a partial response following treatment with a proton pump inhibitor (EU, P-II(b)) | Takeda has granted a license to Phathom Pharmaceuticals for the development and exclusive commercialization rights to vonoprazan in the U.S., Europe and Canada in exchange for upfront cash and equity, as well as future cash milestones and royalties on net sales. |

## 5. Main Research & Development collaborations*

### Oncology

| Partner | Country | Subject |
|---|---|---|
| Adimab | U.S. | Agreement for the discovery, development and commercialization of three mAbs and three CD3 Bi-Specific antibodies for oncology indications. |
| Centre d'Immunologie de Marseille-Luminy | France | Collaboration agreement to bring together expertise and knowledge in innate biology with Takeda's BacTrap capabilities to identify novel targets and pathways in myeloid cells. |
| ASKA Pharmaceutical Co., Ltd | Japan | Takeda granted exclusive commercialization rights for uterine fibroids and exclusive development and commercialization rights for endometriosis for Japan to maximize the product value of relugolix (TAK-385). |
| Crescendo Biologics | U.K. | Collaboration and licensing agreement for the discovery, development and commercialization of Humabody®-based therapeutics for cancer indications. |
| CuraDev‡ | U.K. | Curadev has licensed its novel lead small molecule Stimulator of Interferon Genes (STING) agonist (referred to by Curadev as CRD5500) and associated patents to Takeda. |
| Exelixis, Inc. | U.S. | Exclusive licensing agreement to commercialize and develop novel cancer therapy cabozantinib and all potential future cabozantinib indications in Japan, including advanced renal cell carcinoma and hepatocellular carcinoma. |
| GammaDelta Therapeutics | U.K. | Collaboration agreement to discover and develop new immunotherapies in oncology using GammaDelta Therapeutics' novel T cell platform based on the unique properties of gamma delta T cells derived from human tissues. |
| Haemalogix | Australia | Research collaboration and licensing agreement for the development of new therapeutics to novel antigens in multiple myeloma. |
| Heidelberg Pharma | Germany | Antibody-Drug-Conjugate (ADC) research collaboration on 2 targets and licensing agreement (α-amanitin payload and proprietary linker). |
| ImmunoGen, Inc. | U.S. | Licensing agreement for rights to use ImmunoGen's Inc. ADC technology to develop and commercialize targeted anticancer therapeutics (TAK-164). |
| Maverick Therapeutics | U.S. | Colabboration agreement for the development of Marveric Theraprutics' T-cell engagement platform created specifically to improve the utility of T-cell redirection therapy for the treatment of cancer. Under the agreement, Takeda have the exclusive option to acquire Marverick Therapeutics after 5 years. |
| Memorial Sloan Kettering Cancer Center | U.S. | Alliance to discover and develop novel Chimeric Antigen Receptor T (CAR-T) cell products for the potential treatment of hematological malignancies and solid tumors. |
| Molecular Templates | U.S. | Initial collaboration agreement applied Molecular Templates' engineered toxin bodies (ETBs) technology platform to potential therapeutic targets.<br>The second collaboration agreement is for the joint development of CD38-targeted ETBs for the treatment of patients with diseases such as multiple myeloma.‡ |
| Myovant Sciences | Switzerland | Takeda granted Myovant an exclusive, worldwide license (excluding Japan and certain other Asian countries) to relugolix (TAK-385) and an exclusive, worldwide license to MVT-602 (TAK-448). |
| National Cancer Center of Japan | Japan | Partnership agreement to develop basic research to clinical development by promoting exchanges among researchers, physicians, and others engaged in anti-cancer drug discovery and cancer biology research. |
| Nektar Therapeutics | U.S. | Research collaboration agreement to explore combination cancer therapy with five Takeda oncology compounds and Nektar's lead immuno-oncology candidate, the CD122-biased agonist NKTR-214. |
| Noile-Immune Biotech | Japan | Collaboration agreement for the development of next generation CAR-T cell therapy, developed by Professor Koji Tamada at Yamaguchi University. Takeda has excusive options to obtain licensing rights for the development and commecialization of Noile-Immune Biotech's pipeline and products resulting from this partnership. Due to the success of the collaboration, Takeda licensed NIB-102 and NIB-103. |
| Seattle Genetics | U.S. | Agreement for the joint development of ADCETRIS, an ADC technology which targets CD30 for the treatment of HL. Approved in 67 countries with ongoing clinical trials for additional indications. |
| Shattuck Labs | U.S. | Collaboration agreement to explore and develop checkpoint fusion proteins utilizing Shattuck's unique Agonist Redirected Checkpoint (ARC)™ platform which enables combination immunotherapy with a single product. Takeda will have the option to take an exclusive license to further develop and commercialize TAK-252/SL-279252 |
| GlaxoSmithKline | U.K. | Exclusive licensing agreement to develop and commercialize novel cancer therapy niraparib for the treatment of all tumor types in Japan, and all tumor types excluding prostate cancer in South Korea, Taiwan, Russia and Australia. |
| Teva | Israel | Agreement for worldwide License to TEV-48573 (TAK-573) (CD38-Attenukine) and multi-target discovery collaboration accessing Teva's attenukine platform. |

‡ Executed since April 1, 2019

## Gastroenterology

| Partner | Country | Subject |
|---|---|---|
| Ambys Medicines | U.S. | Collaboration agreement for the application of novel modalities, including cell and gene therapy and gain-of-function drug therapy, to meet the urgent need for treatments that restore liver function and prevent the progression to liver failure across multiple liver diseases. Under the terms of the agreement, Takeda has an option to ex-U.S. commecialization rights for the first 4 products that reach an investigational new drug application. |
| Arcturus | U.S. | Collaboration agreement to develop RNA-based therapeutics for the treatment of non-alcoholic steatohepatitis and other gastrointestinal related disorders using Arcturus' wholly-owned LUNAR™ lipid-mediated delivery systems and UNA Oligomer chemistry. |
| Beacon Discovery | U.S. | Collaboration agreement for the G-protein coupled receptor drug discovery and development program to identify drug candidates for a range of gastrointestinal disorders. The agreement grants Takeda worldwide rights to develop, manufacture and commercialize products resulting from the collaboration. |
| Cour Pharmaceutical Development Company | U.S. | Collaboration agreement to research and develop immune modulating therapies for the potential treatment of celiac disease and other gastrointestinal diseases, utilizing Cour's Tolerizing Immune Modifying nanoParticle (TIMP) platform to co-develop TIMP-Gliadin |
| Enterome | France | Collaboration agreement to research and develop microbiome targets thought to play crucial roles in gastrointestinal disorders, including inflammatory bowel diseases (e.g. ulcerative colitis). The agreement includes a global license and co-development of EB8018/TAK-018 in Crohn's disease. |
| Finch Therapeutics | U.S. | Global agreement to develop FIN-524, a live biotherapeutic product composed of cultured bacterial strains linked to favorable clinical outcomes in studies of microbiota transplantations in inflammatory bowel disease. Under the terms of the agreement, Takeda obtains the exclusive worldwide rights to develop and commercialize FIN-524 and rights to follow-on products in inflammatory bowel diseases. |
| Hemoshear Therapeutics | U.S. | Collaboration agreement for novel target and therapeutic development for liver diseases, including nonalcoholic steatohepatitis using Hemoshear's proprietary REVEAL-Tx drug discovery platform. |
| Janssen | Belgium | Exclusive license agreement to develop and market prucalopride as a treatment for chronic constipation in the U.S. Motegrity, approved in December 2018. |
| NuBiyota | Canada | Agreement for the development of Microbial Ecosystem Therapeutic products for gastroenterology indications. |
| PvP Biologics | U.S. | Global agreement to develop Kuma062, a novel enzyme designed to break down the immune-reactive parts of gluten in the stomach. Under the terms of the agreement, Takeda obtains an exclusive option to acquire PvP Biologics following receipt of a pre-defined data package. |
| Phathom Pharmaceuticals‡ | U.S. | Takeda has granted a license to Phathom Pharmaceuticals for the development and exclusive commercialization rights to vonoprazan in the U.S., Europe and Canada in exchange for upfront cash and equity, as well as future cash milestones and royalties on net sales. |
| Samsung Bioepis | Korea | Strategic collaboration agreement to jointly fund and co-develop multiple novel biologic therapies in unmet disease areas. The program's first therapeutic candidate is TAK-671, which is intended to treat severe acute pancreatitis. |
| Theravance Biopharma | U.S. | Global license, development and commercialization agreement for TAK-954, a selective 5-HT4 receptor agonist for motility disorders. |
| UCSD/Fortis Advisors | U.S. | Technology license for the development of oral budesonide formulation (TAK-721/SHP621) for treatment of eosinophilic esophagitis. |

‡ Executed since April 1, 2019

## Rare Diseases

| Partner | Country | Subject |
|---|---|---|
| AB Biosciences | U.S. | Research collaboration agreement to potentially develop assets for rare disease with pan-receptor interacting molecules targeted for specific immunological conditions with a focus on autoimmune modulated inflammatory diseases |
| ArmaGen | U.S. | Worldwide licensing and collaboration agreement to develop AGT-182 (TAK-531/SHP631), an investigational enzyme replacement therapy for potential treatment of both the central nervous system (CNS) and somatic (body-related) manifestations of Hunter syndrome. |
| Asklepios Biopharmaceuticals | U.S. | Agreement for multiple research and development collaborations using FVIII Gene Therapy for the treatment of Hemophilia A and B. |
| BioMarin | U.S. | Agreement for the in-license of enabling technology for the exogenous replacement of iduronate-2-sulfatase with Idursulfase-IT in patients via direct delivery to the CNS for the long-term treatment of Hunter Syndrome in patients with cognitive impairment in order to slow progression of cognitive impairment (TAK-609/SHP609). |
| GlaxoSmithKline | U.K. | In-license agreement between GSK and University of Michigan for TAK-620/SHP620 (marabivir) in the treatment of human cytomegalovirus. |
| Harrington Discovery Institute at University Hospitals in Cleveland, Ohio | U.S. | Collaboration agreement for the advancement of medicines for rare diseases. |
| IPSEN | France | Purchase agreement for the development of Obizur for the treatment of Acquired Hemophilia A including for patients with Congenital Hemophilia A with inhibitorsindication in elective or emergency surgery. |
| KM Biologics | Japan | Agreement for the development collaboration of TAK-755/SHP655 to overcome the ADAMTS13 deficiency, induce clinical remission thus reducing cTTP and aTTP related morbidity and mortality. |
| NanoMedSyn | France | Pre-clinical research collaboration agreement to evaluate a potential enzyme replacement therapy using NanoMedSyn's proprietary synthetic derivatives named AMFA |
| Novimmune | Switzerland | Agreement for the exclusive worldwide rights to develop and commercialize an innovative, bi-specific antibody in pre-clinical development for the treatment of hemophilia A |

| | | |
|---|---|---|
| Rani Therapeutics | U.S. | Research collaboration agreement to evaluate a micro tablet pill technology for oral delivery of FVIII therapy in hemophilia |
| Ultragenyx | U.S. | Collaboration agreement to develop and commercialize therapies for rare genetic diseases. |
| Xenetic Biosciences | U.S. | Exclusive R & D license agreement for PolyXen delivery technology for hemophilia factors VII, VIII, IX, X. |

### Neuroscience

| Partner | Country | Subject |
|---|---|---|
| AstraZeneca | U.K. | Agreement for the joint development and commercialization of MEDI1341, an alpha-synuclein antibody currently in development as a potential treatment for Parkinson's disease. |
| Denali Therapeutics | U.S. | Strategic option and collaboration agreement to develop and commercialize up to three specified therapeutic product candidates for neurodegenerative diseases, incorporating Denali's ATV platform for increased exposure of biotherapeutic products in the brain. |
| Lundbeck | Denmark | Collaboration agreement to develop and commercialize vortioxetine. |
| Mindstrong Health | U.S. | Agreement to explore development of digital biomarkers for selected mental health conditions, in particular schizophrenia and treatment-resistant depression. |
| Ovid Therapeutics | U.S. | Agreement for the development of TAK-935, an oral CH24H inhibitor for rare pediatric epilepsies. Takeda and Ovid Therapeutics will share in the development and commercialization costs of TAK-935 on a 50/50 basis and, if successful, share in the profits on a 50/50 basis. |
| Skyhawk Therapeutics‡ | U.S. | Collaboration and licensing agreement to develop and commercialize RNA modulation therapies targeting neurodegenerative diseases. |
| StrideBio | U.S. | Collaboration and license agreement to develop *in vivo* AAV based therapies for Friedreich's Ataxia (FA) and two additional undisclosed targets. |
| Wave Life Sciences | Singapore | Research, development and commercial collaboration and multi-program option agreement to develop antisense oligonucleotides for a range of neurological diseases. |

‡ Executed since April 1, 2019

### Plasma Derived Therapies

| Partner | Country | Subject |
|---|---|---|
| Halozyme | U.S. | Agreement for the in-license of Halozyme's proprietary ENHANZE™ platform technology to increase dispersion and absorption of HyQvia. Ongoing development work for a U.S. pediatric indication to treat primary and secondary immunodeficiencies and a Phase 3 indication in Chronic Inflammatory Demyelinating Polyradiculoneuropathy. |
| Kamada | Israel | In-license agreement to develop and commercialize Alpha-1 proteinase inhibitor (Glassia) ; Exclusive supply and distribution of Glassia in the U.S., Canada, Australia and New Zealand; Development of protocol for post market commitment trial ongoing. |

### Vaccines

| Partner | Country | Subject |
|---|---|---|
| Biological E. Limited | India | Takeda agreed to transfer existing measles and acellular pertussis vaccine bulk production technology to develop low-cost combination vaccines for India, China and low- and middle-income countries. |
| U.S. Government - The Biomedical Advanced Research and Development Authority (BARDA) | U.S. | Partnership to develop TAK-426, a Zika vaccine candidate, to support the Zika response in the U.S. and affected regions around the world. |
| Zydus Cadila | India | Partnership to develop TAK-507, a Chikungunya vaccine candidate, to tackle an emerging and neglected infectious disease in the world. |

### Other / Multiple Therapeutic Area

| Partner | Country | Subject |
|---|---|---|
| Bridge Medicines | U.S. | Partnership with Tri-Institutional Therapeutics Discovery Institute, Bay City Capital and Deerfield Management in the establishment of Bridge Medicines. Bridge Medicines will give financial, operational and managerial support to move projects seamlessly from a validating, proof-of-concept study to an in-human clinical trial. |
| Center for iPS Cell Research Application, Kyoto University | Japan | Collaboration agreement for clinical applications of iPS cells in Takeda strategic areas including applications in neurosciences, oncology and GI as well as discovery efforts in additional areas of compelling iPSC translational science. |
| HiFiBio | U.S. | Collaboration agreement for functional therapeutics high-throughput antibody discovery platform that enables identification of antibodies for rare events for discovery of therapeutic antibodies for GI & Oncology therapeutic areas. |
| HitGen | China | Agreement that HitGen will apply its advanced technology platform, based on DNA-encoded library design, synthesis and screening, to discover novel leads which will be licensed exclusively to Takeda. |
| Isogenica | UK | Agreement for the access to a sdAb platform to generate a toolbox of VHH to various immune cells and targets for pathway validation and pipeline development across Oncology and GI portfolio. |
| Numerate | U.S. | Agreement for joint-discovery programs aimed at identifying clinical candidates for use in Takeda's core therapeutic areas: oncology, gastroenterology, and central nervous system disorders, which is using its AI-driven platform, from hit finding and expansion through lead design/optimization and ADME toxicity modeling. |
| Portal Instruments | U.S. | Agreement for the development and commercialization of Portal's jet injector drug delivery device for potential use with Takeda's investigational or approved biologic medicines. |
| Recursion Pharmaceuticals | U.S. | Agreement to provide pre-clinical candidates for Takeda's TAK-celerator™ development pipeline. |
| Schrödinger | U.S. | Agreement for the multi-target research collaboration combining Schrödinger's in silico platform-driven drug discovery capabilities with Takeda's deep therapeutic area knowledge and expertise in structural biology. |
| Seattle Collaboration | U.S. | Agreement for SPRInT (Seattle Partnership for Research on Innovative Therapies) to accelerate the translation of Fred Hutchinson Cancer Research Center's and University of Washington's cutting-edge discoveries into treatments for human disease (focusing on Oncology, GI and Neuroscience). |
| Stanford University | U.S. | Collaboration agreement with Stanford University to form the Stanford Alliance for Innovative Medicines to more effectively develop innovative treatments and therapies. |
| Tri-Institutional Therapeutics Discovery Institute (Tri-I TDI) | U.S. | Agreement for the collaboration of academic institutions and industry to more effectively develop innovative treatments and therapies. |

‡ Executed since April 1, 2019; * List is not inclusive of all Takeda R&D collaborations.

### Completed Partnerships [Update disclosed since release of FY2018 results (May 14th, 2019)]

| Partner | Country | Subject |
|---|---|---|
| Max Planck Institute | Germany | Agreement for the exclusive worldwide license under certain intellectual property to develop and commercialize the licensed products in rare disease field. |
| Bill & Melinda Gates Foundation | U.S. | Partnership to develop TAK-195, a Sabin-strain Inactivated Polio vaccine (sIPV) candidate, to support polio eradication in developing countries. |

## ■ Clinical study protocol summaries

Clinical study protocol summaries are disclosed on the English-language web-site (https://takedaclinicaltrials.com/) and clinical study protocol information in the Japanese-language is disclosed on the Japanese-language web-site (https://www.takeda.com/jp/what-we-do/research-and-development/takeda-clinical-trial-transparency/).

We anticipate that this disclosure will assure transparency of information on Takeda's clinical trials for the benefit of healthcare professionals, their patients and other stakeholders, which we believe will contribute to the appropriate use of Takeda's products worldwide.

Takeda Pharmaceutical Company Limited