



Better Health, Brighter Future

# FY2018 2nd Quarter DATA BOOK

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<https://www.takeda.com/>

Quarterly Announcements / Presentations

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# I. Financial Results

## 1. Revenue by Region

### ◆ Consolidated Revenue

(Billion JPY)

	FY15	FY16	FY17	FY17 Q2 YTD	FY18 Q2 YTD	YOY	
Total revenue	1,807.4	1,732.1	1,770.5	881.4	880.6	Δ0.8	-0.1%
Japan	688.1	655.3	580.3	295.0	274.2	-20.7	-7.0%
<% of revenue>	<38.1%>	<37.8%>	<32.8%>	<33.5%>	<31.1%>	<-2.3pt>	
United States	514.4	520.2	598.3	301.8	321.1	19.3	6.4%
<% of revenue>	<28.5%>	<30.0%>	<33.8%>	<34.2%>	<36.5%>	<2.2pt>	
Europe and Canada	309.3	279.7	313.7	148.9	158.6	9.7	6.5%
<% of revenue>	<17.1%>	<16.1%>	<17.7%>	<16.9%>	<18.0%>	<1.1pt>	
Emerging Markets	295.6	276.9	278.1	135.7	126.7	-9.0	-6.6%
<% of revenue>	<16.4%>	<16.0%>	<15.7%>	<15.4%>	<14.4%>	<-1.0pt>	
Russia/CIS	61.8	57.5	68.2	35.1	27.5	-7.6	-21.7%
<% of revenue>	<3.4%>	<3.3%>	<3.9%>	<4.0%>	<3.1%>	<-0.9pt>	
Latin America	68.4	72.5	75.7	36.1	34.7	-1.4	-3.8%
<% of revenue>	<3.8%>	<4.2%>	<4.3%>	<4.1%>	<3.9%>	<-0.2pt>	
Asia	126.0	112.8	104.0	49.2	51.9	2.7	5.5%
<% of revenue>	<7.0%>	<6.5%>	<5.9%>	<5.6%>	<5.9%>	<0.3pt>	
Other	39.4	34.0	30.2	15.3	12.6	-2.7	-17.8%
<% of revenue>	<2.2%>	<2.0%>	<1.7%>	<1.7%>	<1.4%>	<-0.3pt>	
Of which royalty / service income	56.5	60.1	76.7	43.2	24.9	-18.3	-42.3%

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

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

### ◆ Consolidated Prescription Drugs Revenue

(Billion JPY)

	FY15	FY16	FY17	FY17 Q2 YTD	FY18 Q2 YTD	YOY		Underlying Growth
Total prescription drugs revenue	1,648.7	1,568.9	1,691.5	838.4	848.1	9.7	1.2%	5.7%
Japan	541.7	504.7	501.4	252.0	241.8	-10.2	-4.1%	4.1%
United States	511.0	516.7	598.3	301.8	321.1	19.3	6.4%	9.2%
Europe and Canada	305.6	276.0	313.7	148.9	158.6	9.7	6.5%	4.3%
Emerging Markets	290.4	271.5	278.1	135.7	126.7	-9.1	-6.7%	2.4%
Russia/CIS	61.8	57.5	68.2	35.1	27.5	-7.6	-21.7%	-15.4%
Russia	43.5	41.9	51.3	26.3	20.7	-5.6	-21.1%	-13.4%
Latin America	68.2	72.5	75.7	36.1	34.7	-1.4	-3.9%	18.4%
Brazil	38.1	39.0	46.2	21.9	21.9	-0.0	-0.1%	26.3%
Asia	121.2	107.8	104.0	49.2	51.9	2.7	5.5%	10.3%
China	66.0	57.6	49.6	22.7	26.0	3.3	14.8%	33.4%
Other	39.2	33.7	30.2	15.3	12.6	-2.7	-17.8%	-11.5%
Of which royalty / service income	55.8	59.5	76.2	42.9	24.6	-18.2	-42.6%	-0.9%
Japan	6.6	18.7	31.3	20.6	6.1	-14.5	-70.4%	-2.1%
Overseas	49.3	40.9	44.9	22.3	18.5	-3.8	-16.9%	-0.5%
Ratio of overseas prescription drugs revenue	67.1%	67.8%	70.4%	69.9%	71.5%	1.5pt		

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

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

◆ Consolidated Revenue (Quarterly)

(Billion JPY)

	FY17				FY18							
	Q1	Q2	Q3	Q4	Q1	YOY	Q2	YOY	Q3	YOY	Q4	YOY
Total revenue	448.2	433.2	488.2	401.0	449.8	0.4%	430.8	-0.6%				
Japan	160.3	134.7	168.2	117.1	144.3	-10.0%	130.0	-3.5%				
<% of revenue>	<35.8%>	<31.1%>	<34.5%>	<29.2%>	<32.1%>		<30.2%>					
United States	148.6	153.2	161.3	135.3	161.1	8.4%	160.0	4.4%				
<% of revenue>	<33.1%>	<35.4%>	<33.0%>	<33.7%>	<35.8%>		<37.1%>					
Europe and Canada	73.6	75.4	84.8	80.0	79.1	7.5%	79.5	5.5%				
<% of revenue>	<16.4%>	<17.4%>	<17.4%>	<19.9%>	<17.6%>		<18.5%>					
Emerging Markets	65.8	69.9	73.9	68.5	65.4	-0.7%	61.3	-12.3%				
<% of revenue>	<14.7%>	<16.1%>	<15.1%>	<17.1%>	<14.5%>		<14.2%>					
Russia/CIS	17.0	18.1	20.9	12.3	14.1	-17.1%	13.4	-26.1%				
<% of revenue>	<3.8%>	<4.2%>	<4.3%>	<3.1%>	<3.1%>		<3.1%>					
Latin America	17.0	19.1	20.0	19.6	18.5	9.2%	16.2	-15.3%				
<% of revenue>	<3.8%>	<4.4%>	<4.1%>	<4.9%>	<4.1%>		<3.8%>					
Asia	25.2	24.0	28.1	26.7	26.9	6.9%	25.0	4.1%				
<% of revenue>	<5.6%>	<5.5%>	<5.8%>	<6.7%>	<6.0%>		<5.8%>					
Other	6.6	8.7	4.9	10.0	5.8	-12.1%	6.8	-22.2%				
<% of revenue>	<1.5%>	<2.0%>	<1.0%>	<2.5%>	<1.3%>		<1.6%>					
Of which royalty income and service income	30.3	12.8	17.9	15.7	13.0	-57.1%	11.9	-7.4%				

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

◆ Consolidated Prescription Drugs Revenue (Quarterly)

(Billion JPY)

	FY17				FY18							
	Q1	Q2	Q3	Q4	Q1	YOY	Q2	YOY	Q3	YOY	Q4	YOY
Total prescription drugs revenue	427.2	411.2	467.4	385.7	434.5	1.7%	413.6	0.6%				
Japan	139.3	112.7	147.5	101.9	129.0	-7.4%	112.8	0.1%				
United States	148.6	153.2	161.3	135.3	161.1	8.4%	160.0	4.4%				
Europe and Canada	73.6	75.4	84.8	80.0	79.1	7.5%	79.5	5.5%				
Emerging Markets	65.8	69.9	73.9	68.5	65.4	-0.7%	61.3	-12.3%				
Russia/CIS	17.0	18.1	20.9	12.3	14.1	-17.1%	13.4	-26.1%				
Russia	12.5	13.8	16.3	8.8	10.5	-16.3%	10.3	-25.5%				
Latin America	17.0	19.1	20.0	19.6	18.5	9.2%	16.1	-15.5%				
Brazil	10.0	12.0	12.1	12.2	11.8	18.5%	10.1	-15.6%				
Asia	25.2	24.0	28.1	26.7	26.9	6.9%	25.0	4.1%				
China	12.3	10.3	14.2	12.7	14.0	13.4%	12.0	16.4%				
Other	6.6	8.7	4.9	10.0	5.8	-12.0%	6.8	-22.2%				
Of which royalty income and service income	30.2	12.7	17.7	15.6	12.9	-57.3%	11.7	-7.6%				
Japan	18.1	2.5	3.7	7.0	3.2	-82.3%	2.9	16.7%				
Overseas	12.1	10.2	14.0	8.6	9.7	-19.8%	8.9	-13.4%				
Ratio of overseas prescription drugs revenue	67.4%	72.6%	68.4%	73.6%	70.3%		72.7%					

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

◆ Prescription Drugs: Global major products' sales \*1

(Billion JPY)

		Gross basis		Net basis					FY18 Forecasts*3	FY18Q2 YTD Underlying Growth
		FY15	FY16	FY17	FY17 Q2 YTD	FY18 Q2 YTD	YOY			
Entyvio	U.S.	63.1	99.6	133.6	65.8	87.3	21.6	32.8%		34.7%
	EUCAN	21.9	39.5	60.2	27.9	36.3	8.4	30.2%		27.7%
	EM	1.3	4.0	7.5	3.3	4.7	1.4	42.3%		52.0%
	Total	86.2	143.2	201.4	97.0	128.4	31.4	32.4%	↗↗↗	33.1%
Velcade	U.S.	131.6	112.9	113.7	60.2	53.3	-6.9	-11.5%		-10.1%
	Other than U.S.	30.4	24.7	23.6	11.8	11.6	-0.2	-2.0%		-0.7%
	Total	162.0	137.6	137.3	72.0	64.9	-7.2	-10.0%	↘	-8.5%
Leuprorelin	Japan	53.8	48.6	41.2	20.8	20.1	-0.6	-3.0%		-3.0%
	U.S.	17.3	18.3	19.7	9.3	11.1	1.8	19.4%		19.7%
	EUCAN	35.3	31.1	34.5	16.7	16.8	0.1	0.6%		-1.9%
	EM	18.0	16.3	12.7	6.2	7.1	0.9	14.4%		13.3%
	Total	124.4	114.2	108.1	52.9	55.1	2.2	4.1%	→	3.2%
Azilva	Japan	59.0	66.9	64.0	31.4	35.2	3.8	12.0%		12.0%
	Total	59.0	66.9	64.0	31.4	35.2	3.8	12.0%	↗	12.0%
Pantoprazole	U.S.	13.6	10.1	7.2	4.0	3.4	-0.6	-16.0%		-14.9%
	EUCAN	43.4	30.5	30.6	15.1	13.7	-1.4	-9.1%		-11.5%
	EM	43.7	33.7	28.0	15.4	13.6	-1.8	-11.9%		-9.1%
	Total	100.8	74.2	65.8	34.5	30.7	-3.8	-11.1%	→	-10.8%
Dexilant	U.S.	64.0	49.7	49.5	26.1	25.6	-0.5	-1.9%		-0.5%
	EUCAN	5.4	5.7	6.4	3.0	3.5	0.5	16.7%		17.4%
	EM	5.7	7.3	9.9	4.4	5.9	1.5	34.1%		43.4%
	Total	75.1	62.6	65.7	33.4	34.9	1.5	4.5%	→	7.0%
Takecab	Japan	8.4	34.1	48.5	22.3	27.2	4.9	21.8%		21.8%
	Total	8.4	34.1	48.5	22.3	27.2	4.9	22.1%	↗	22.1%
Nesina	Japan	36.9	32.9	26.6	13.5	14.3	0.8	6.1%		6.1%
	U.S.	5.3	5.2	6.0	2.8	2.8	-0.1	-3.1%		-1.8%
	EUCAN	3.5	6.1	9.0	4.0	5.1	1.1	27.4%		23.4%
	EM	3.3	4.9	8.6	3.5	4.7	1.1	32.3%		39.6%
	Total	48.9	49.1	50.2	23.9	26.8	3.0	12.5%	↗	13.2%
Trintellix	U.S.	24.5	31.9	48.4	23.4	27.1	3.7	15.8%		17.5%
	Total	24.5	31.9	48.4	23.4	27.1	3.7	15.8%	↗↗	17.5%
Uloric	U.S.	41.8	41.4	45.8	22.5	25.9	3.4	15.3%		17.2%
	EUCAN	0.7	0.7	0.8	0.4	0.4	0.0	3.0%		3.8%
	EM	-	0.1	0.3	0.1	0.2	0.0	24.0%		31.2%
	Total	42.5	42.2	46.8	23.0	26.5	3.5	15.1%	↗	17.0%
Ninlaro	Japan	-	-	2.5	0.9	2.1	1.2	132.7%		132.7%
	U.S.	4.0	29.1	39.4	19.1	22.8	3.7	19.3%		21.2%
	EUCAN	-	0.2	4.0	1.5	3.5	1.9	126.5%		123.3%
	EM	0.0	0.1	0.6	0.2	1.0	0.9	-		-
	Total	4.1	29.4	46.4	21.7	29.4	7.7	35.3%	↗↗↗	38.0%
Colcrys	U.S.	46.5	38.9	40.3	19.9	16.3	-3.6	-18.2%		-16.8%
	Total	46.5	38.9	40.3	19.9	16.3	-3.6	-18.2%	↘↘	-16.8%
Adcetris	Japan	3.1	3.3	3.8	1.9	2.2	0.3	15.0%		15.0%
	Europe	17.4	17.5	20.1	9.9	10.8	0.8	8.3%		5.7%
	EM	7.2	9.3	14.3	7.0	8.1	1.1	16.1%		34.5%
	Total	27.6	30.1	38.5	19.0	21.1	2.1	10.8%	→	15.7%
Lansoprazole	Japan *2	41.3	8.1	4.6	2.5	1.6	-0.9	-35.7%		-17.4%
	U.S.	27.5	20.0	15.2	7.4	4.9	-2.5	-33.3%		-32.3%
	EUCAN	10.5	7.1	7.2	3.8	3.3	-0.4	-11.8%		-14.2%
	EM	10.2	9.2	9.7	4.8	4.7	-0.1	-2.4%		-2.8%
	Total	89.5	44.4	36.8	18.5	14.6	-3.9	-21.2%	↘↘	-18.6%
Amitiza	U.S.	37.2	33.7	33.7	17.4	16.2	-1.2	-6.8%		-5.5%
	EUCAN	0.1	0.1	0.1	0.0	0.0	0.0	4.4%		3.4%
	EM	-	0.0	0.0	0.0	0.0	0.0	68.7%		72.4%
	Total	37.3	33.8	33.8	17.5	16.3	-1.2	-6.8%	→	-5.4%
Iclusig	U.S.	-	2.7	20.4	9.6	12.7	3.0	31.5%		33.7%
	Other than U.S.	-	0.2	2.7	1.2	1.5	0.3	22.1%		23.7%
	Total	-	2.9	23.1	10.9	14.2	3.3	30.4%	↗	32.6%
Alunbrig	U.S.	-	-	2.8	0.8	2.2	1.4	171.6%		174.9%
	Total	-	-	2.8	0.8	2.3	1.4	175.6%	↗↗↗	179.1%

U.S.: United States, EUCAN: Europe and Canada, EM: Emerging Markets

\*1 Sales amount includes royalty income and service income.

\*2 Products were transferred to the Joint Venture with Teva in Japan (monotherapy in April 2016 and fixed dose combinations in May 2017).

Supply sales of these products to the JV is currently recognized.

\*3 See page 6 for the profit forecast disclaimer.

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

\*4 Effective from FY2018, sales of certain products in Japan are now disclosed on a net basis, deducting items such as discounts and rebates, in alignment with the global managerial approach applied to individual product sales. The change in disclosure of individual product sales has been revised retrospectively, with prior year figures reclassified on a net basis to enable year-on-year comparisons. This reclassification has no impact on Takeda's financial statements and does not represent a correction of prior year figures.

Gross basis: discounts and rebates are not deducted (except FY2016 Oncology products in Japan are on net basis)

Net basis: discounts and rebates are deducted

◆ Prescription Drugs: Global major products' sales \*1 (Quarterly)

(Billion JPY)

		FY17 (Net basis)			
		Q1	Q2	Q3	Q4
Entyvio	U.S.	31.0	34.8	34.8	33.1
	EUCAN	13.5	14.4	15.7	16.6
	EM	1.4	1.9	2.0	2.2
	Total	45.9	51.1	52.6	51.8
Velcade	U.S.	30.7	29.5	28.7	24.8
	Other than U.S.	5.5	6.3	7.2	4.6
	Total	36.2	35.8	35.8	29.4
Leuprorelin	Japan	11.0	9.7	12.3	8.2
	U.S.	5.2	4.1	5.8	4.6
	EUCAN	8.1	8.6	8.8	8.9
	EM	3.0	3.2	3.3	3.2
	Total	27.3	25.6	30.2	24.9
Azilva	Japan	16.8	14.6	19.0	13.5
	Total	16.8	14.6	19.0	13.5
Pantoprazole	U.S.	1.9	2.2	2.1	1.2
	EUCAN	7.9	7.2	8.1	7.3
	EM	7.0	8.4	4.8	7.8
	Total	16.7	17.8	15.0	16.3
Dexilant	U.S.	12.8	13.3	14.1	9.3
	EUCAN	1.4	1.6	1.8	1.6
	EM	2.1	2.3	2.8	2.7
	Total	16.3	17.1	18.7	13.7
Takecab	Japan	11.3	11.0	15.1	11.0
	Total	11.3	11.0	15.1	11.0
Nesina	Japan	7.3	6.2	8.0	5.1
	U.S.	1.2	1.6	1.9	1.2
	EUCAN	2.0	2.0	2.5	2.6
	EM	1.4	2.1	2.2	2.9
	Total	11.9	11.9	14.6	11.8
Trintellix	U.S.	11.2	12.2	14.1	10.8
	Total	11.2	12.2	14.1	10.8
Uloric	U.S.	11.2	11.3	11.7	11.6
	EUCAN	0.2	0.2	0.2	0.2
	EM	0.1	0.1	0.1	0.1
	Total	11.4	11.6	12.0	11.8
Ninlaro	Japan	0.2	0.6	0.9	0.7
	U.S.	9.0	10.1	10.7	9.6
	EUCAN	0.6	0.9	1.1	1.3
	EM	0.1	0.1	0.1	0.3
	Total	10.0	11.7	12.8	11.9
Colcrys	U.S.	9.6	10.3	12.2	8.2
	Total	9.6	10.3	12.2	8.2
Adcetris	Japan	1.0	0.9	1.0	0.9
	Europe	4.7	5.2	5.4	4.8
	EM	3.6	3.4	3.5	3.7
	Total	9.3	9.7	9.9	9.6
Lansoprazole	Japan *2	1.5	1.0	1.1	1.0
	U.S.	3.8	3.7	4.7	3.1
	EUCAN	1.9	1.8	1.8	1.7
	EM	2.5	2.4	2.4	2.5
	Total	9.7	8.8	9.9	8.3
Amitiza	U.S.	8.6	8.8	9.4	6.9
	EUCAN	0.0	0.0	0.0	0.0
	EM	0.0	0.0	0.0	0.0
	Total	8.6	8.8	9.5	6.9
Iclusig	U.S.	4.7	5.0	5.8	5.0
	Other than U.S.	0.5	0.7	0.7	0.8
	Total	5.2	5.7	6.4	5.8
Alunbrig	U.S.	0.2	0.6	0.7	1.3
	Total	0.2	0.6	0.7	1.3

U.S.: United States, EUCAN: Europe and Canada, EM: Emerging Markets

\*1 Sales amount includes royalty income and service income.

\*2 Products were transferred to the Joint Venture with Teva in Japan (monotherapy in April 2016 and fixed dose combinations in May 2017). Supply sales of these products to the JV is currently recognized.

\*3 Effective from FY2018, sales of certain products in Japan are now disclosed on a net basis, deducting items such as discounts and rebates, in alignment with the global managerial approach applied to individual product sales. The change in disclosure of individual product sales has been revised retrospectively, with prior year figures reclassified on a net basis to enable year-on-year comparisons. This reclassification has no impact on Takeda's financial statements and does not represent a correction of prior year figures.

Net basis: discounts and rebates are deducted

		FY18 (Net basis)							
		Q1	YOY	Q2	YOY	Q3	YOY	Q4	YOY
Entyvio	U.S.	41.9	35.5%	45.4	30.4%				
	EUCAN	17.2	27.5%	19.1	32.7%				
	EM	2.2	50.4%	2.6	36.1%				
	Total	61.3	33.6%	67.1	31.3%				
Velcade	U.S.	26.2	-14.7%	27.1	-8.2%				
	Other than U.S.	5.2	-6.1%	6.4	1.5%				
	Total	31.4	-13.4%	33.5	-6.5%				
Leuprorelin	Japan	10.5	-4.7%	9.6	-1.1%				
	U.S.	6.2	19.3%	4.9	19.6%				
	EUCAN	8.4	4.7%	8.3	-3.2%				
	EM	3.5	14.2%	3.6	14.7%				
	Total	28.6	4.7%	26.5	3.5%				
Azilva	Japan	19.4	15.5%	15.8	8.0%				
	Total	19.4	15.5%	15.8	8.0%				
Pantoprazole	U.S.	2.0	6.8%	1.4	-35.4%				
	EUCAN	7.2	-8.0%	6.5	-10.2%				
	EM	7.0	-0.1%	6.6	-21.7%				
	Total	16.2	-3.1%	14.5	-18.7%				
Dexilant	U.S.	13.0	1.4%	12.6	-5.0%				
	EUCAN	1.7	18.7%	1.8	14.7%				
	EM	2.7	30.4%	3.1	37.4%				
	Total	17.4	6.6%	17.5	2.4%				
Takecab	Japan	14.2	26.4%	12.9	17.1%				
	Total	14.3	26.5%	13.0	17.6%				
Nesina	Japan	7.8	6.8%	6.5	5.4%				
	U.S.	1.2	-6.9%	1.6	-0.1%				
	EUCAN	2.6	28.7%	2.5	26.1%				
	EM	2.6	84.3%	2.1	-2.1%				
	Total	14.1	18.2%	12.7	6.8%				
Trintellix	U.S.	14.1	25.8%	13.0	6.6%				
	Total	14.1	25.8%	13.0	6.6%				
Uloric	U.S.	13.8	23.4%	12.1	7.2%				
	EUCAN	0.2	4.2%	0.2	1.9%				
	EM	0.1	17.1%	0.1	28.9%				
	Total	14.1	23.1%	12.4	7.2%				
Ninlaro	Japan	1.2	-	0.9	42.5%				
	U.S.	11.1	23.1%	11.7	15.8%				
	EUCAN	1.6	147.5%	1.9	111.9%				
	EM	0.1	39.7%	0.9	-				
	Total	14.0	39.6%	15.4	31.7%				
Colcrys	U.S.	9.2	-4.3%	7.1	-31.2%				
	Total	9.2	-4.3%	7.1	-31.2%				
Adcetris	Japan	1.1	10.8%	1.1	19.8%				
	Europe	5.5	17.7%	5.2	-0.1%				
	EM	4.3	20.0%	3.9	12.1%				
	Total	11.0	17.8%	10.1	4.1%				
Lansoprazole	Japan *2	0.9	-42.2%	0.7	-25.6%				
	U.S.	2.0	-46.1%	2.9	-20.2%				
	EUCAN	1.7	-10.5%	1.6	-13.2%				
	EM	2.4	-4.5%	2.4	-0.1%				
	Total	7.0	-27.7%	7.6	-14.0%				
Amitiza	U.S.	7.8	-8.9%	8.4	-4.8%				
	EUCAN	0.0	5.7%	0.0	3.0%				
	EM	0.0	-38.8%	0.0	-				
	Total	7.9	-8.9%	8.4	-4.7%				
Iclusig	U.S.	6.3	34.2%	6.4	29.0%				
	Other than U.S.	0.7	43.9%	0.8	6.4%				
	Total	7.0	35.1%	7.2	26.2%				
Alunbrig	U.S.	1.1	-	1.2	102.3%				
	Total	1.1	-	1.2	105.1%				

U.S.: United States, EUCAN: Europe and Canada, EM: Emerging Markets

\*1 Sales amount includes royalty income and service income.

\*2 Products were transferred to the Joint Venture with Teva in Japan (monotherapy in April 2016 and fixed dose combinations in May 2017). Supply sales of these products to the JV is currently recognized.

\*3 Effective from FY2018, sales of certain products in Japan are now disclosed on a net basis, deducting items such as discounts and rebates, in alignment with the global managerial approach applied to individual product sales. The change in disclosure of individual product sales has been revised retrospectively, with prior year figures reclassified on a net basis to enable year-on-year comparisons. This reclassification has no impact on Takeda's financial statements and does not represent a correction of prior year figures.

Net basis: discounts and rebates are deducted

## 2. Exchange Rate

Average Exchange Rate	(yen)			
	USD	EUR	RUB	BRL
FY15	121	132	1.9	34.1
FY16	109	120	1.7	32.9
FY17	111	129	1.9	34.5
FY17Q2YTD (April-September)	111	126	1.9	34.8
FY18Q2YTD (April-September)	110	130	1.8	29.7
FY18 Assumption	110	130	1.7	28.2

Impact of 1% depreciation of yen yen from Oct 18 to Mar 19 (100 million yen)	(100 million yen)			
	USD	EUR	RUB	BRL
Revenue	+31.6	+10.4	+2.3	+1.7
Core Earnings	+6.3	-1.2	+1.2	+0.4
Operating Profit	+1.3	-3.5	+0.9	+0.3
Net Profit	-0.8	-2.4	+0.6	+0.2

[Profit Forecast for Takeda for the year ending March 31, 2019]

Takeda is currently in an offer period (as defined in the City Code on Takeovers and Mergers (the “Code”)) with respect to Shire plc. Pursuant to Rule 28 of the Code, statements made regarding Takeda’s guidance for FY2018 (including statements regarding forecasts for FY2018 revenue, Core Earnings, Operating profit, Profit before income taxes, Net profit attributable to owners of the company, Basic earnings per share, R&D expenses, Amortisation and impairment and other income/expense, Underlying Revenue, Underlying Core Earnings and Underlying Core EPS) constitute a profit forecast for the year ending March 31, 2019 (the “Takeda Profit Forecast”).

For additional information regarding the Takeda Profit Forecast and the required statement by its Directors that such profit forecast is valid and has been properly compiled on the basis of the assumptions stated and that the basis of accounting used is consistent with Takeda’s accounting policies, please see page 9 of Takeda's Summary of Financial Statements (Tanshin) for the Six Months Period Ended September 30, 2018.



## II. Pipeline

### 1. Development activities

- 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 US, EU and Japan and China, but we are also actively conducting development activities in other regions, including in Emerging Markets. Country/region is shown in the "Stage" column to denote where a clinical study is ongoing or a filing has been made with our specific intention to pursue approval in any of the US, EU, Japan or China.
- 'Global' refers to US, EU, Japan and China
- Brand name is shown to indicate the brand name and country in which the specific asset has already been approved for any indication in any of the US, 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

Development code <generic name> BRAND NAME	Drug Class (administration route)	Indications / additional formulations	Stage	
<brigatinib> ALUNBRIG® (US)	ALK inhibitor (oral)	2L ALK-positive metastatic Non-Small Cell Lung Cancer in patients previously treated with crizotinib	EU CN	Filed (Feb '17) P-I
		1L ALK-positive Non-Small Cell Lung Cancer	US EU CN	P-III P-III P-I
		2L ALK-positive Non-Small Cell Lung Cancer in Japanese patients previously treated with ALK inhibitors	Jpn	P-II(a)
SGN-35 <brentuximab vedotin> ADCETRIS® (EU, Jpn)	CD30 monoclonal antibody-drug conjugate (injection)	Front line Hodgkin Lymphoma	EU	Filed (Nov '17)
		Front line Peripheral T-cell Lymphoma (PTCL)	EU Jpn	P-III P-III
		Relapsed/refractory Hodgkin Lymphoma	CN	P-II
		Relapsed/refractory systemic Anaplastic large-cell lymphoma (sALCL)	CN	P-II
MLN9708 <ixazomib> NINLARO® (Global)	Proteasome inhibitor (oral)	Newly diagnosed Multiple Myeloma	US EU Jpn CN	P-III P-III P-III P-I
		Maintenance therapy in patients with newly diagnosed Multiple Myeloma following autologous stem cell transplant	US EU Jpn CN	P-III P-III P-III P-I
		Maintenance therapy in patients with newly diagnosed Multiple Myeloma not treated with stem cell transplant	Global	P-III
		Relapsed/refractory primary amyloidosis	US EU CN	P-III P-III P-III
		Relapsed/refractory Multiple Myeloma (doublet regimen with dexamethasone)	US EU Jpn	P-III P-III P-III
		Relapsed/refractory Multiple Myeloma (triplet regimen with daratumumab and dexamethasone)	Global	P-II
		Philadelphia chromosome-positive Acute Lymphoblastic Leukemia	US EU Jpn	P-III P-III P-III
<ponatinib> ICLUSIG® (US)	BCR-ABL inhibitor (oral)	Dose ranging study for second-line patients with chronic-phase Chronic Myeloid Leukemia	US	P-II(b)
		High-Risk Myelodysplastic Syndromes, Chronic Myelomonocytic Leukemia, Low-blast Acute Myelogenous Leukemia	US EU	P-III P-III
TAK-924 <pevonedistat>	NEDD 8 activating enzyme inhibitor (injection)		US EU	P-III P-III
TAK-385 <relugolix>	LH-RH antagonist (oral)	Prostate cancer	Jpn CN	P-III P-I
TAK-228 <sapanisertib>	mTORC1/2 inhibitor (oral)	Endometrial cancer	US	P-II(b)
TAK-659 <- ->	SYK/FLT3 kinase inhibitor (oral)	Diffuse Large B-cell Lymphoma	-	P-II(a)
		Solid tumors, Hematologic malignancies	-	P-I
TAK-931 <- ->	CDC7 inhibitor (oral)	Metastatic colorectal cancer, Esophageal squamous cancer, Squamous Non Small Cell Lung Cancer	-	P-II(a)
<cabozantinib>	Multi-targeted kinase inhibitor (oral)	2L Renal cell carcinoma	Jpn	P-II(a)
		2L Hepatocellular carcinoma	Jpn	P-II(a)
TAK-079 <- ->	Anti-CD38 monoclonal antibody (injection)	Relapsed/refractory Multiple Myeloma	-	P-I
		Systemic lupus erythematosus	-	P-I

<b>TAK-164</b> < - >	Anti-guanlyl cyclase C antibody drug conjugate (injection)	GI Malignancies	-	P-I
<b>TAK-522 / XMT-1522*1</b> < - >	HER2 dolaflexin antibody-drug conjugate (injection)	HER2 positive solid tumors	-	P-I
<b>TAK-573</b> < - >	CD38-targeted IgG4 genetically fused with an attenuated IFN $\alpha$ (injection)	Relapsed/refractory Multiple Myeloma	-	P-I
<b>TAK-788</b> < - >	EGFR/HER2 inhibitor (oral)	Non-Small Cell Lung Cancer	-	P-I
<b>TAK-981</b> < - >	SUMO inhibitor (injection)	Multiple cancers	-	P-I
<b>&lt;niraparib&gt;</b>	PARP1/2 inhibitor (oral)	Multiple cancers	Jpn	P-I

\*1 Takeda and Mersana Therapeutics, Inc. will co-develop XMT-1522, and Mersana will lead execution of the Phase 1 trial.

Additions since 2018 Q1: Cabozantinib – Hepatocellular carcinoma (P-IIa)

TAK-981 – Multiple cancers (P-I)

Removals since 2018 Q1: SGN-35 - Front line Hodgkin Lymphoma (Japan; approved Sept '18)

## ■ Gastroenterology

Development code <generic name> BRAND NAME	Drug Class (administration route)	Indications / additional formulations	Stage	
<b>MLN0002</b> <vedolizumab> ENTYVIO® (US, EU, Jpn)	Humanized monoclonal antibody against $\alpha 4\beta 7$ integrin (injection)	Crohn's disease	Jpn	Filed (Jul '18)
		Ulcerative colitis	CN	P-III
		Subcutaneous formulation (for Ulcerative colitis, Crohn's disease)	US	P-III
		Adalimumab head-to-head in patients with ulcerative colitis	EU	P-III
		Adalimumab head-to-head in patients with ulcerative colitis	Jpn	P-III
Graft-versus-Host Disease prophylaxis in patients undergoing allogeneic hematopoietic stem cell transplantation	Global	P-III		
<b>TAK-438</b> <vonoprazan> TAKECAB® (Jpn)	Potassium-competitive acid blocker (oral)	Acid-related diseases	-	P-II(a)
		Non-Erosive Reflux Disease in patients with Gastro-esophageal Reflux Disease	CN	Filed (Feb '18)
		Gastro-esophageal Reflux Disease in patients who have a partial response following treatment with a proton pump inhibitor	Jpn	P-III
<b>Cx601</b> <darvadstrocel> ALOFISEL® (EU)	A suspension of allogeneic expanded adipose-derived stem cells (injection)	Refractory complex perianal fistulas in patients with Crohn's disease	EU	P-II(b)
<b>TAK-954</b> < - >	5-HT4 receptor agonist (injection)	Enteral feeding intolerance	US	P-III
<b>TAK-906</b> < - >	Dopamine D2/D3 receptor antagonist (oral)	Gastroparesis	-	P-II(b)
<b>TAK-671</b> < - >	Protease inhibitor (injection)	Acute pancreatitis	-	P-II(a)
<b>EB8018*2</b> < - >	FimH antagonist (oral)	Acute pancreatitis	-	P-I
<b>TIMP-GLIA*3</b> < - >	Tolerizing Immune Modifying nanoParticle (TIMP) (injection)	Celiac Disease	-	P-I
<b>Kuma062*4</b> < - >	Glutenase (oral)	Celiac Disease	-	P-I

\*2 Partnership with Enterome

\*3 Partnership with Cour Pharmaceuticals; Cour lead Phase 1 development.

\*4 Partnership with PVP Biologics; PVP lead Phase 1 development.

Additions since 2018 Q1: TAK-671 – Acute pancreatitis (P-I)

EB8018 – Crohn's disease (P-I)

Removals since 2018 Q1: MLN0002 – Graft-versus-Host Disease steroid refractory (P-II (a))

SPI 0211 – New formulation initially for CIC and OIC (US, P-III)

## ■ Neuroscience

Development code <generic name> BRAND NAME	Drug Class (administration route)	Indications / additional formulations	Stage	
<b>Lu AA21004</b> <vortioxetine> TRINTELLIX* (US)	Multimodal anti-depressant (oral)	Major depressive disorder	Jpn	Filed (Sep '18)
<b>TAK-831</b> <->	D-amino acid oxidase (DAAO) inhibitor (oral)	Friedreich's ataxia	-	P-II(a)
		Negative symptoms and/or cognitive impairment associated with schizophrenia	-	P-II(a)
<b>TAK-935</b> * <sup>5</sup> <->	CH24H inhibitor (oral)	Rare pediatric epilepsies	-	P-II(a)
<b>WVE-120101</b> * <sup>6</sup> <->	mHTT SNP1 antisense oligonucleotide (injection)	Huntington's disease	-	P-I/II
<b>WVE-120102</b> * <sup>6</sup> <->	mHTT SNP2 antisense oligonucleotide (injection)	Huntington's disease	-	P-I/II
<b>TAK-041</b> <->	GPR139 agonist (oral)	Negative symptoms and/or cognitive impairment associated with schizophrenia	-	P-I
<b>TAK-341 / MEDI-1341</b> * <sup>7</sup>	Alpha-synuclein antibody (injection)	Parkinson's Disease	-	P-I
<b>TAK-418</b> <->	LSD1 inhibitor (oral)	Kabuki syndrome	-	P-I
<b>TAK-653</b> <->	AMPA receptor potentiator (oral)	Treatment resistant depression	-	P-I
<b>TAK-925</b> <->	Orexin 2R agonist (injection)	Narcolepsy	-	P-I

\*5 Co-development with Ovid Therapeutics

\*6 50:50 co-development and co-commercialization option with Wave Life Sciences

\*7 Partnership with AstraZeneca; AstraZeneca lead Phase 1 development

Additions since 2018 Q1: WVE-120101 – Huntington's disease (P-I/II); WVE-120102 – Huntington's disease (P-I/II)

Removals since 2018 Q1: Lu AA21004 – Treatment Emergent Sexual Dysfunction (US; Data added to labeling Oct '18)

## ■ Vaccines

Development code BRAND NAME	Type of vaccine (administration route)	Indications / additional formulations	Stage	
<b>TAK-003</b>	Tetravalent dengue vaccine (injection)	Prevention of dengue fever caused by dengue virus	-	P-III
<b>TAK-214</b>	Norovirus vaccine (injection)	Prevention of acute gastroenteritis (AGE) caused by norovirus	-	P-II(b)
<b>TAK-195</b>	Sabin inactivated polio vaccine (injection)	Prevention of poliomyelitis	-	P-I/II
<b>TAK-021</b>	EV71 vaccine (injection)	Prevention of hand, foot and mouth disease caused by enterovirus 71	-	P-I
<b>TAK-426</b>	Zika vaccine (injection)	Prevention of zika virus infection	-	P-I

## 2. Recent progress in stage [Progress in stage disclosed since release of FY2017 results (May 14th, 2018)]

Development code <generic name>	Indications / additional formulations	Country/Region	Progress in stage
<b>MLN0002</b> <vedolizumab>	Ulcerative colitis	Jpn	Approved (Jul '18)
<b>MLN0002</b> <vedolizumab>	Crohn's disease	Jpn	Filed (Jul '18)
<b>MLN0002</b> <vedolizumab>	Graft-versus-Host Disease prophylaxis in patients undergoing allogeneic hematopoietic stem cell transplantation	-	P-II(a)
<b>MLN9708</b> <ixazomib>	Relapsed/refractory Multiple Myeloma (triplet regimen with daratumumab and dexamethasone)	Global	P-II
<b>Kuma062</b> <->	Celiac Disease	-	P-I
<b>TAK-164</b> <->	GI Malignancies	-	P-I
<b>SGN-35</b> <brentixumab vedotin>	Front line Hodgkin Lymphoma	Jpn	Approved (Sep '18)
<b>Lu AA21004</b> <vortioxetine>	Data added to labeling that demonstrated superiority over escitalopram in improving SSRI-induced sexual dysfunction in patients with Major Depressive Disorder	US	Approved (Oct '18)
<b>Lu AA21004</b> <vortioxetine>	Major depressive disorder	Jpn	Filed (Sep '18)
<b>&lt;ponatinib&gt;</b>	Philadelphia chromosome-positive Acute Lymphoblastic Leukemia	US, EU, Jpn	P-III
<b>&lt;cabozantinib&gt;</b>	2L hepatocellular carcinoma	Jpn	P-II(a)
<b>WVE-120101</b> <->	Huntington's disease	-	P-I/II
<b>WVE-120102</b> <->	Huntington's disease	-	P-I/II
<b>TAK-671</b> <->	Acute pancreatitis	-	P-I
<b>TAK-981</b> <->	Multiple cancers	-	P-I
<b>EB8018</b> <->	Crohn's disease	-	P-I

Progress in stage disclosed since the announcement of FY2018 Q1 results (July 31, 2018) are listed under the bold dividing line

## 3. Discontinued projects [Update disclosed since release of FY2017 results (May 14th, 2018)]

Development code <generic name>	Indications (Stage)	Reason
<b>MLN0002</b> <vedolizumab>	Graft-versus-Host Disease steroid refractory (P-II(a))	Co-morbidities in steroid-refractory acute Graft-versus-Host Disease patients impair ability to demonstrate efficacy to justify continued development.
<b>SPI 0211</b> <lubiprostone>	New formulation (US, P-III)	The P-III study to evaluate the bioequivalence of sprinkle and capsule formulations of lubiprostone compared to placebo in adult subjects with chronic idiopathic constipation (CIC) did not achieve bioequivalence.

## 4. Exploring Alternative Value Creation [Update disclosed since release of FY2017 results (May 14th, 2018)]

Development code <generic name>	Indications (Stage)	Reason
<b>TAK-385</b> <relugolix>	Uterine fibroids (Japan Filed) Endometriosis (Japan P-II(b))	Out-licensed to ASKA Pharmaceutical Co., Ltd., which has a strong presence in the gynecology therapeutic area in Japan, to maximize product value and to deliver relugolix to as many patients as possible.

## Externalized assets in which Takeda retains a financial interest

Partner	Nature of Partnership	
ASKA Pharmaceutical Co., Ltd <sup>‡</sup>	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).	
Biological E. Limited	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.	
Cardurion Pharmaceuticals	Takeda provided a 12-person cardiovascular research team from its Shonan (Japan) site, including fully equipped laboratory space, development resources and licenses to a portfolio of preclinical-stage cardiovascular drug programs.	
Cerevance	Takeda provided a 25-person neuroscience research team from its Cambridge (UK) site, fully equipped laboratory space, and licenses to a portfolio of undisclosed preclinical and clinical stage drug programs.	
Izana Biosciences	Takeda granted Izana Biosciences an exclusive, worldwide license to develop, manufacture and commercialise namilumab in all indications. As part of the licence agreement, Takeda has taken a strategic equity stake in Izana.	
Myovant Sciences	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).	
Rhythm	Exclusive, worldwide rights from Takeda to develop and commercialize T-3525770 (now RM-853). RM-853 is a potent, orally available ghrelin o-acyltransferase (GOAT) inhibitor currently in preclinical development for Prader-Willi Syndrome.	
Scohia Pharma	Takeda granted Scohia Pharma exclusive rights for the research, development, manufacture, marketing, etc. of eight of Takeda's R&D projects, including TAK-272, TAK-792 and TAK-094.	
Samsung Bioepis	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.	
Stargazer <sup>‡</sup>	Takeda outlicensed own asset to Stargazer Pharmaceuticals.	
Entrepreneurial Venture Programs (EVPs)	Aikomi	Developing a new digital therapy for persons with dementia.
	ChromaJean	Established unique chromatography algorithm/software platform.
	Chordia Therapeutics	Takeda provided a 6-person oncology research team from its Shonan (Japan) site, fully equipped laboratory space, development resources and licenses to a portfolio of preclinical-stage oncology drug programs including CDC like kinase inhibitors.
	Fimecs	A drug discovery biotech creating a new class of drugs based on protein degradation.
	GenAhead Bio	Through providing two technologies; nucleic acid delivery on specific cell types as well as efficient genome editing, fee for service and/or collaboration in cell/gene therapies are delivered.
	GEXVal	Drug discovery for orphan disease (eg. PAH etc.) using Takeda's late research & early clinical assets.
	Reborna Biosciences	Developing small molecules that modulate RNA degeneration associated with genetic disease.
	Seedsupply	Provides HTS FFS using novel binder selection technology and Takeda's compound library. Provides target identification FFS using novel binder selection technology and own protein library.
	ARTham <sup>‡</sup>	Focus on clinical and preclinical development of high quality assets identified via drug repurposing approach.

<sup>‡</sup> Executed since April 1, 2018

## 5. Main Research & Development collaborations

### Oncology

Partner	Country	Subject
Adimab <sup>‡</sup>	US	The discovery, development and commercialization of three mAbs and three CD3 Bi-Specific antibodies for oncology indications.
Centre d'Immunologie de Marseille-Luminy	France	The collaboration will bring together expertise and knowledge in innate biology with Takeda's BacTrap capabilities to identify novel targets and pathways in myeloid cells.
Crescendo Biologics	UK	The discovery, development and commercialization of Humabody <sup>®</sup> -based therapeutics for cancer indications.
Exelixis, Inc.	US	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	UK	Novel T cell platform, based on the unique properties of gamma delta ( $\gamma\delta$ ) T cells derived from human tissues, to discover and develop new immunotherapies in oncology.
Haemalogix <sup>‡</sup>	Australia	A research collaboration and licensing agreement for the development of new therapeutics to novel antigens in multiple myeloma.
Heidelberg Pharma	Germany	ADC Research Collaboration on 2 Targets and Licensing Agreement ( $\alpha$ -amanitin payload and proprietary linker).
ImmunoGen, Inc.	US	Use ImmunoGen's Inc. ADC technology to develop and commercialize targeted anticancer therapeutics for up to two targets, including development of TAK-164.
Maverick Therapeutics	US	T-cell engagement platform created specifically to improve the utility of T-cell redirection therapy for the treatment of cancer.
Memorial Sloan Kettering Cancer Center <sup>‡</sup>	US	Discover and develop novel CAR-T cell products for the potential treatment of hematological malignancies and solid tumors.
Mersana Therapeutics	US	Develop cancer treatments based on Mersana's ADC technology. Ongoing development of XMT-1522, an ADC therapy that targets HER-2 expressing tumors, including breast, gastric and NSCLC.
Molecular Templates	US	Initial collaboration applied MTEM's engineered toxin bodies (ETB) technology platform to potential therapeutic targets. The second collaboration is for the joint development of CD38-targeted engineered toxin bodies (ETBs) for the treatment of patients with diseases such as multiple myeloma. <sup>‡</sup>
Nektar Therapeutics	US	Research collaboration 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	The development of next generation chimeric antigen receptor T cell therapy (CAR-T), developed by Professor Koji Tamada at Yamaguchi University.
Seattle Genetics	US	Joint development of ADCETRIS, an Antibody-Drug Conjugate technology which targets CD30 for the treatment of HL. Approved in 67 countries with ongoing clinical trials for additional indications.
Shattuck Labs	US	Explore and develop checkpoint fusion proteins utilizing Shattuck's unique Agonist Redirected Checkpoint (ARC) <sup>™</sup> platform which enables combination immunotherapy with a single product.
Tesaro	US	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	Worldwide License to TEV-48573 (TAK-573) (CD38-Attenukine) and multi-target discovery collaboration accessing Teva's attenukine platform.

<sup>‡</sup> Executed since April 1, 2018

### Gastroenterology

Partner	Country	Subject
Ambys Medicines <sup>‡</sup>	US	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.
Arcturus	US	Collaboration to develop RNA-based therapeutics for the treatment of non-alcoholic steatohepatitis (NASH) and other gastrointestinal (GI) related disorders using Arcturus's wholly-owned LUNAR <sup>™</sup> lipid-mediated delivery systems and UNA Oligomer chemistry.
Beacon Discovery	US	G-protein coupled receptor drug discovery and development program to identify drug candidates for a range of gastrointestinal disorders.
Cour Pharmaceutical Development Company	US	Immune modulating therapies for the potential treatment of celiac disease and other gastrointestinal diseases, utilizing Cour's Tolerizing Immune Modifying nanoParticle (TIMP) platform.
Emulate Bio	US	Drug discovery in inflammatory bowel disease using organ-on-chip microengineered cell models.
enGene	Canada	Discover, develop and commercialize novel therapies for specialty gastrointestinal (GI) diseases using enGene's "Gene Pill" gene delivery platform.
Enterome	France	Research and develop microbiome targets thought to play crucial roles in gastrointestinal disorders, including inflammatory bowel diseases (e.g. ulcerative colitis) and motility disorders (e.g. irritable bowel syndrome). Global license and co-development of EB8018 in Crohn's disease.
Finch Therapeutics	US	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.
Hemoshear Therapeutics	US	Novel target and therapeutic development for liver diseases, including nonalcoholic steatohepatitis (NASH) using Hemoshear's proprietary REVEAL-Tx drug discovery platform.
Karolinska Institutet & Structural Genomics Consortium	Sweden	Proprietary collaboration to discover and validate new potential intervention points for the treatment of inflammatory bowel disease.
NuBiyota	Canada	Development of Microbial Ecosystem Therapeutic products for gastroenterology indications.
PvP Biologics	US	Global agreement to develop Kuma062, a novel enzyme designed to break down the immune-reactive parts of gluten in the stomach.
Theravance Biopharma	US	Global agreement for TAK-954, a selective 5-HT4 receptor agonist for motility disorders.

## Neuroscience

Partner	Country	Subject
Affilogic	France	Research collaboration to explore Affilogic's proprietary Nanofitins <sup>®</sup> platform in therapies targeting the central nervous system.
AstraZeneca	UK	Joint development and commercialization of MEDI1341, an alpha-synuclein antibody currently in development as a potential treatment for Parkinson's disease.
Cerevance	US, UK	Discovery and development of novel therapeutics for neurological and psychiatric disorders.
Denali Therapeutics	US	A 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 to develop and commercialize vortioxetine.
Mindstrong Health	US	Explore development of digital biomarkers for selected mental health conditions, in particular schizophrenia and treatment-resistant depression.
Ovid Therapeutics	US	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.
Teva	Israel	Collaboration to develop and commercialize Rasagiline.
Wave Life Sciences	US	Research, development and commercial collaboration and multi-program option agreement to develop antisense oligonucleotides for a range of neurological diseases.

## Vaccines

Partner	Country	Subject
U.S. Government - The Biomedical Advanced Research and Development Authority (BARDA)	US	Partnership to develop TAK-426, a Zika vaccine candidate, to support the Zika response in the US and affected regions around the world.
Bill & Melinda Gates Foundation	US	Partnership to develop TAK-195, a Sabin-strain Inactivated Polio vaccine (sIPV) candidate, to support polio eradication in developing countries.
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
AMED	Japan	Development of a novel drug for hypertrophic cardiomyopathy using iPS cells-derived cardiomyocytes with disease-causing mutations induced by gene-editing technology (CiCLE: Cyclic Innovation for Clinical Empowerment by AEMD).
Arix Bioscience	UK	Value creation through venture and biotech partnerships with focus on oncology and gastroenterology.
Arcellx	US	Investment to develop format for T cell-mediated anti-tumor therapy.
ArmaGen <sup>†</sup>	US	Investment in ArmaGen whose proprietary technology platform takes advantage of the body's natural system to non-invasively deliver therapeutics to the brain.
Atlas Ventures	US	Fund XI Limited Partner to drive venture investments.
BioMotiv	US	Strategic investment in therapeutic accelerator to identify and develop pioneering medical innovations specifically in the therapeutic areas of immunology & inflammation and cardio-metabolic diseases.
BiomX	Israel	Investment in BiomX who discovered and validated proprietary bacterial targets, and develop rationally designed phage therapies that seek and destroy harmful bacteria in microbiome-related diseases such as inflammatory bowel disease (IBD) and cancer.
BioSurfaces, Inc.	US	Research program designed to develop innovative medical devices to treat patients with GI diseases using BioSurfaces' proprietary nanomaterial technology.
Bridge Medicines	US	Building upon Tri-I TDI, 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	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.
Cortexyme	US	Investment in Cortexyme who is developing therapeutics based on data supporting a new theory of the cause of Alzheimer's and other degenerative disorders.
Dementia Discovery Fund (DDF)	UK	New global investment fund to support discovery and development of novel dementia treatments.
Emendo	Israel	Investment in Emendo who is at the forefront of cutting-edge genetic medicine, developing genome editing technology that can repair and eliminate genetic mutations in living cells that cause serious diseases or disorders.
Fujifilm	Japan	Collaboration to develop regenerative medicine therapies using cardiomyocytes derived from iPSC for the treatment of heart failure.
FutuRx	Israel	Investment in Israel seed stage venture fund/biotech accelerator to access innovation in Israel; de-risked through pre-formed syndication.
Harrington Discovery Institute at University Hospitals in Cleveland, Ohio	US	Collaboration for the advancement of medicines for rare diseases.

HITGen	China	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.
HiFiBio	US	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.
Hookipa Biotech	Austria	Value creation through venture and biotech partnership investments.
Isogenica	UK	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.
National Cancer Center of Japan	Japan	A partnership 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.
Numerate	US	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.
OrphoMed	US	Investment in OrphoMed, a clinical-stage biotechnology company with a proprietary dimer therapeutics platform. The company is focused on developing best-in class treatments for patients with gastrointestinal disorders.
Obsidian Therapeutics	US	Investment in Obsidian, who is developing next-generation cell and gene therapies with pharmacologic operating systems.
Presage	US	Investment in Presage, who uses CIVO <sup>®</sup> , a platform that enables assessment of multiple early stage agents simultaneously and directly in the context in which they were meant to be used—the human patient.
Portal Instruments	US	The development and commercialization of Portal's needle-free drug delivery device for potential use with Takeda's investigational or approved biologic medicines.
Recursion Pharmaceuticals	US	Provide pre-clinical candidates for Takeda's TAK-celerator™ development pipeline.
Ribon Therapeutics	US	Investment in Ribon Therapeutics, who is pioneering the discovery and development of monoPARP (mono ADP-ribose polymerase) inhibitors to block cancer cells' fundamental ability to survive under stress.
Schrödinger	US	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	US	SPRInT (Seattle Partnership for Research on Innovative Therapies): 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	US	Collaboration with Stanford University to form the Stanford Alliance for Innovative Medicines (Stanford AIM) to more effectively develop innovative treatments and therapies.
Stride Bio <sup>‡</sup>	US	Investment in StrideBio, who develops engineered viral vectors for gene therapy for the treatment of rare diseases. StrideBio's technology engine utilizes structure-inspired design to engineer AAV vectors which can escape pre-existing neutralizing antibodies (NAbs).
Trianni, Inc.	US	Trianni's transgenic mouse platform to identify fully human monoclonal antibodies against disease targets in all therapeutic areas.
Tri-Institutional Therapeutics Discovery Institute (Tri-I TDI)	US	Collaboration of academic institutions and industry to more effectively develop innovative treatments and therapies.
Ultragenyx	US	Collaboration to develop and commercialize therapies for rare genetic diseases.
Univercells	Belgium	Univercells is a technology company delivering novel biomanufacturing platforms, aiming at making biologics available & affordable to all.
VelosBio	US	Investment in VelosBio, a preclinical stage company developing antibody drug conjugates (ADCs).
VHsquared	UK	VHsquared is a clinical stage company developing transformational therapies – Vorabodies™ – for inflammatory bowel disease. (Note: A Vorabody is an oral domain antibody).
Whiz Partners <sup>‡</sup>	Japan	Joint investment fund aimed at promoting a drug discovery ecosystem in Japan.

‡ Executed since April 1, 2018;

List is not inclusive of all Takeda R&D collaborations

## Completed Partnerships

Partner	Country	Subject
Genzia LLC	US	Mitochondrial Associated Glucocorticoid Receptors (MAGR) agonists for potential use primarily in hematological and inflammatory diseases.
Prana Biotechnology Ltd.	Australia	Collaboration with Takeda to study ability of Prana's pbt434, to slow or prevent neurodegeneration of gastrointestinal system.
TiGenix	Belgium	Ex-U.S. rights to Cx601 for complex perianal fistulas in Crohn's disease.
Keio University, Niigata University, Kyoto University	Japan	The search for and functional analysis of disease-related RNA-binding proteins, that may lead to treatments in the areas such as neuroscience and oncology.
Astellas, Daiichi Sankyo	Japan	Fundamental biomarker data on healthy adult volunteers in order to optimize and accelerate the development of innovative medicines.

## ■ 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.



## Appendix

### ◆ Prescription Drugs: US major products' sales (in US\$) <sup>\*1</sup> (Million US\$)

	Net basis						YOY
	FY15	FY16	FY17	FY17 Q2 YTD	FY18 Q2 YTD		
Entyvio	524	913	1,202	592	797	205	34.7%
Velcade	1,059	1,000	995	526	471	-56	-10.6%
Trintellix	203	294	435	211	248	37	17.5%
Uloric	347	380	411	202	237	35	17.2%
Dexilant	530	457	445	234	233	-1	-0.5%
Ninlaro	34	267	354	172	209	36	21.2%
Colcrys	386	358	362	179	149	-30	-16.8%
Amitiza	308	310	303	157	148	-9	-5.5%
Iclusig	-	22	171	82	106	25	30.0%
Prevacid (lansoprazole)	222	179	132	64	43	-21	-33.4%
Alunbrig	-	-	25	7	20	13	174.9%

\*1 Product sales (royalty income and service income are excluded).

Net basis: discounts and rebates are deducted

◆ Prescription Drugs: US major products' sales (in US\$) \*<sup>1</sup> (Quarterly)

(Million US\$)

	FY17 (Net basis)				FY18 (Net basis)							
	Q1	Q2	Q3	Q4	Q1	YOY	Q2	YOY	Q3	YOY	Q4	YOY
Entyvio	278	314	309	301	387	39.3%	410	30.6%				
Velcade	268	259	249	219	235	-12.1%	235	-9.1%				
Trintellix	101	110	126	98	130	29.4%	117	6.7%				
Uloric	101	102	104	105	128	27.1%	109	7.3%				
Dexilant	115	120	126	85	120	4.2%	114	-5.0%				
Ninlaro	81	91	95	87	103	26.8%	106	16.2%				
Colcrys	87	93	109	74	85	-1.6%	64	-31.0%				
Amitiza	77	80	84	63	72	-6.2%	76	-4.7%				
Iclusig	40	42	49	41	55	37.8%	51	22.5%				
Prevacid (lansoprazole)	33	31	40	28	18	-46.0%	25	-20.1%				
Alunbrig	2	5	6	12	10	-	10	102.4%				

\*1 Product sales (royalty income and service income are excluded).

Net basis: discounts and rebates are deducted

◆ Prescription Drugs: Japan major products' sales

(Billion JPY)

	Launched	Therapeutic Class	Gross basis		Net basis				
			FY15	FY16	FY17	FY17 Q2 YTD	FY18 Q2 YTD	YOY	
Azilva * <sup>1</sup>	(12. 5)	Hypertension	59.0	66.9	64.0	31.4	35.2	3.8	12.0%
Takecab * <sup>1</sup>	(15. 2)	Acid-related Diseases	8.4	34.1	48.5	22.3	27.2	4.9	21.8%
Leuplin (leuprorelin)	(92. 9)	Prostate cancer, breast cancer and endometriosis	53.8	48.6	41.2	20.8	20.1	-0.6	-3.0%
Enbrel	(05. 3)	Rheumatoid arthritis	40.8	40.4	37.1	19.0	18.1	-0.9	-4.8%
Lotriga	(13. 1)	Hyperlipidemia	22.3	27.5	28.5	13.9	15.2	1.3	9.7%
Nesina * <sup>1</sup>	(10. 6)	Diabetes	36.9	32.9	26.6	13.5	14.3	0.8	6.1%
Vectibix	(10. 6)	Colorectal cancer	18.4	18.8	18.9	9.7	10.5	0.8	8.5%
Reminyl	(11. 3)	Alzheimer-type dementia	16.0	17.4	16.1	8.2	8.4	0.2	2.7%
Rozerem	(10. 7)	Insomnia	7.4	8.1	8.0	4.0	4.7	0.7	18.7%
Benet	(02. 5)	Osteoporosis	9.7	8.3	6.8	3.5	3.2	-0.4	-10.7%
Adcetris	(14. 4)	Malignant Lymphoma	3.1	3.3	3.8	1.9	2.2	0.3	15.0%
Ninlaro	(17. 5)	Multiple Myeloma	-	-	2.5	0.9	2.1	1.2	132.7%
Azilect	(18. 6)	Parkinson's disease	-	-	-	-	0.3	0.3	-

\*1 The figures include the amounts of fixed dose combinations and blister packs.

\*2 Effective from FY2018, sales of certain products in Japan are now disclosed on a net basis, deducting items such as discounts and rebates, in alignment with the global managerial approach applied to individual product sales. The change in disclosure of individual product sales has been revised retrospectively, with prior year figures reclassified on a net basis to enable year-on-year comparisons. This reclassification has no impact on Takeda's financial statements and does not represent a correction of prior year figures.

Gross basis: discounts and rebates are not deducted (except FY2016 Oncology products in Japan are on net basis)  
Net basis: discounts and rebates are deducted

◆ Prescription Drugs: Japan major products' sales (Quarterly)

(Billion JPY)

Launched	Therapeutic Class	FY17 (Net basis)				FY18 (Net basis)								
		Q1	Q2	Q3	Q4	Q1	YOY	Q2	YOY	Q3	YOY	Q4	YOY	
Azilva *	(12. 5)	Hypertension	16.8	14.6	19.0	13.5	19.4	15.5%	15.8	8.0%				
Takecab *1	(15. 2)	Acid-related Diseases	11.3	11.0	15.1	11.0	14.2	26.4%	12.9	17.1%				
Leuplin (leuprorelin)	(92. 9)	Prostate cancer, breast cancer and endometriosis	11.0	9.7	12.3	8.2	10.5	-4.7%	9.6	-1.1%				
Enbrel	(05. 3)	Rheumatoid arthritis	9.9	9.1	10.5	7.6	9.9	-0.0%	8.2	-10.1%				
Lotriga	(13. 1)	Hyperlipidemia	7.2	6.7	8.5	6.1	8.1	13.2%	7.1	6.1%				
Nesina *1	(10. 6)	Diabetes	7.3	6.2	8.0	5.1	7.8	6.8%	6.5	5.4%				
Vectibix	(10. 6)	Colorectal cancer	5.0	4.7	5.3	4.0	5.4	8.0%	5.1	9.0%				
Reminyl	(11. 3)	Alzheimer-type dementia	4.3	3.9	4.7	3.3	4.5	4.7%	3.9	0.5%				
Rozerem	(10. 7)	Insomnia	2.1	1.9	2.3	1.7	2.5	19.4%	2.2	17.9%				
Benet	(02. 5)	Osteoporosis	1.9	1.6	1.9	1.3	1.7	-10.2%	1.5	-11.3%				
Adcetris	(14. 4)	Malignant Lymphoma	1.0	0.9	1.0	0.9	1.1	10.8%	1.1	19.8%				
Ninlaro	(17. 5)	Multiple Myeloma	0.2	0.6	0.9	0.7	1.2	-	0.9	42.5%				
Azilect	(18. 6)	Parkinson's disease	-	-	-	-	0.3	-	0.1	-				

\*1 The figures include the amounts of fixed dose combinations and blister packs.

\*2 Effective from FY2018, sales of certain products in Japan are now disclosed on a net basis, deducting items such as discounts and rebates, in alignment with the global managerial approach applied to individual product sales. The change in disclosure of individual product sales has been revised retrospectively, with prior year figures reclassified on a net basis to enable year-on-year comparisons. This reclassification has no impact on Takeda's financial statements and does not represent a correction of prior year figures.

Net basis: discounts and rebates are deducted

◆ Consumer Healthcare: Japan major products' sales

(Billion JPY)

	Gross basis		Net basis				
	FY15	FY16	FY17	FY17 Q2 YTD	FY18 Q2 YTD	YOY	
Alinamin tablet	25.2	24.1	23.5	12.6	11.1	-1.5	-12.1%
Alinamin drink	14.9	16.1	11.5	6.2	6.2	0.0	0.1%
Benza	9.8	10.0	7.1	4.1	4.2	0.1	1.6%
Borraginol	4.5	4.5	4.4	2.1	2.1	0.0	1.0%
Mytear	4.2	3.9	3.7	1.5	1.8	0.2	15.3%
Midori-no-Shukan	1.1	2.7	3.2	1.6	1.4	-0.1	-8.8%

\*1 This table shows sales amount of Takeda Consumer Healthcare Company Limited (TCHC) in Japan. TCHC succeeded the business of Takeda's Japan Consumer Healthcare Business Unit (JCHBU), and started its business on April 1, 2017 as the new company.

\*2 Effective from FY2018, sales of certain products in Japan are now disclosed on a net basis, deducting items such as discounts and rebates, in alignment with the global managerial approach applied to individual product sales. The change in disclosure of individual product sales has been revised retrospectively, with prior year figures reclassified on a net basis to enable year-on-year comparisons. Regarding the products shown on this page, the sales figures of FY2017 and FY2018Q1 disclosed at the FY2018Q1 earnings announcement have been reclassified again, due to the change in deduction method implemented in FY2018Q2. This reclassification has no impact on Takeda's financial statements and does not represent a correction of prior year figures.

Gross basis: discounts and rebates are not deducted

Net basis: discounts and rebates are deducted

◆ Consumer Healthcare: Japan major products' sales (Quarterly)

(Billion JPY)

	FY17 (Net basis)				FY18 (Net basis)							
	Q1	Q2	Q3	Q4	Q1	YOY	Q2	YOY	Q3	YOY	Q4	YOY
Alinamin tablet	6.9	5.7	6.4	4.5	5.7	-17.5%	5.4	-5.6%				
Alinamin drink	3.1	3.1	3.2	2.1	3.1	2.3%	3.1	-2.0%				
Benza	1.0	3.1	2.1	0.9	1.0	-3.8%	3.2	3.3%				
Borraginol	1.0	1.0	1.3	1.0	1.0	0.5%	1.0	1.5%				
Mytear	0.8	0.8	0.8	1.4	0.9	16.2%	0.9	14.4%				
Midori-no-Shukan	0.8	0.8	0.8	0.8	0.7	-6.9%	0.7	-10.7%				

\*1 This table shows sales amount of Takeda Consumer Healthcare Company Limited (TCHC) in Japan.

TCHC succeeded the business of Takeda's Japan Consumer Healthcare Business Unit (JCHBU), and started its business on April 1, 2017 as the new company.

\*2 Effective from FY2018, sales of certain products in Japan are now disclosed on a net basis, deducting items such as discounts and rebates, in alignment with the global managerial approach applied to individual product sales. The change in disclosure of individual product sales has been revised retrospectively, with prior year figures reclassified on a net basis to enable year-on-year comparisons. Regarding the products shown on this page, the sales figures of FY2017 and FY2018Q1 disclosed at the FY2018Q1 earnings announcement have been reclassified again, due to the change in deduction method implemented in FY2018Q2. This reclassification has no impact on Takeda's financial statements and does not represent a correction of prior year figures.

Net basis: discounts and rebates are deducted



**Takeda Pharmaceutical Company Limited**