



Debt Investor Presentation

November 2018

Updated as of Nov 15

Takeda Pharmaceutical Company Limited



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Takeda presents its results in accordance with International Financial Reporting Standards ("IFRS"), while Shire presents its results in accordance with accounting principles generally accepted in the United States ("U.S. GAAP"). IFRS and U.S. GAAP differ in significant respects, and the results of Takeda and Shire are therefore not directly comparable.

These materials contain non-IFRS financial measures of Takeda, including Adjusted EBITDA and certain non-U.S. GAAP measures of Shire, including non-GAAP EBITDA. These non-IFRS and non-U.S. GAAP financial measures should not be considered in isolation or as a substitute for the most directly comparable financial measures presented in accordance with IFRS or U.S. GAAP, respectively. Furthermore, Takeda and Shire use, define and calculate their respective non-IFRS and non-GAAP measures differently, and the definition and calculation of these measures differ significantly from, and therefore may not be directly comparable to, similarly-titled measures of other companies. Please refer to reconciliation tables for details.

Takeda's results are presented in Japanese yen, while Shire's results are presented in U.S. dollars. Unless otherwise noted, where results of Takeda are presented in U.S. dollars, or where results of Shire are presented in Japanese yen, an exchange rate of \$1.00=¥112.359, the average rate for the 12 months ended December 31, 2017, has been used.

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Offering summary

	Indicative terms and conditions				
Issuer	Takeda Pharmaceutical Company Limited				
Security type	Senior Unsecured Notes				
Offering Size	EUR Benchmark				
Format 144A/Regulation S for life					
Expected ratings Moody's A2 / S&P A- (Both Neg Watch)					
Tenors	2-year FXD/FRN, 4-year FXD/FRN, 8-year FXD, 12-year FXD				
Denomination	€100,000 x €1,000				
Special Mandatory Redemption	101%, if (i) the Shire Acquisition has not been consummated on or prior to the Long Stop Date ¹ or (ii) the Company otherwise publicly announces that the Shire Acquisition will not be consummated				
Optional Redemption	Optional tax redemption; Make-whole call only on fixed rate notes; 1 month par call on 4-year, 3 month par call on 8-year and 12-year notes				
Use of Proceeds To fund a portion of the cash consideration to be paid in connection with the Shire Acquisition					
Listing	Singapore Exchange Securities Trading Limited; Application to be made for Notes sold under Regulation S also to be admitted to trading on Frankfurt Stock Exchange ² (Frankfurter Wertpapierbörse)				
Governing Law	State of New York				
Active Bookrunners	J.P. Morgan, SMBC Nikko, Morgan Stanley, Barclays, BNP Paribas, HSBC				

Notes: ¹The "Long Stop Date" means May 8, 2019, or such later date as may be agreed upon in accordance with the Co-Operation Agreement, dated May 8, 2018, between Takeda Pharmaceutical Company Limited and Shire plc.; provided, however, that any such later date shall not extend beyond May 8, 2020. ² unregulated open-market segment (Freiverkehr)



Acquisition of Shire – Key transaction terms and take-out financing

Key transaction terms¹

- Agreement to acquire Shire for an implied value of £46bn² (\$62bn)
- Shire shareholders entitled to receive, per Shire share:
 - \$30.33 cash; and
 - Either 0.839 new Takeda shares or 1.678 Takeda ADSs

Key transaction process/timeline

- The transaction is subject to 1) Shire and Takeda shareholder approval and 2) certain customary closing conditions, incl. regulatory approvals
 - Shire and Takeda shareholder meetings to approve the transaction will be held on December 5, 2018
 - Anti-trust approvals³
 - Obtained: US, Brazil, China, and Japan, etc.
 - Pending: EU, etc.
- Expected to close on January 8, 2019 or as soon as practicable thereafter following approval from the EC to proceed to completion and sanction of the scheme of arrangement by the court



Bridge Credit Facility Take-out financing

Take-out financing (as of Nov. 8, 2018)

- Takeda already completed financing arrangements for a USD/EUR term loan (\$7.5bn eqv.) and JPY hybrid loan (\$4.5bn eqv.)
- Up to \$14.05 bn equivalent to be raised through issuances of new EUR and USD senior bonds

Notes: ¹The transaction is structured as a Jersey law Scheme of Arrangement. ² Based on the closing price of ¥ 4,923 per Takeda Share and converted using the £:¥ exchange rate of 1:151.51 and £:\$ exchange rate of 1:1.3945 on April 23, 2018 (the day prior to the extension of the Offer Period). ³ The countries shown are listed in 2.7 announcement on May 8 ⁴ Announced the execution of Senior Short Term Loan Facility Agreement ("SSTL") and Subordinated Syndicated Loan Agreement ("JPY Hybrid Loan") on October 26, 2018. The SSTL will finance a portion of the funds necessary for the Shire acquisition and reduce commitments of the bridge facility, and JPY Hybrid Loan will be used to refinance the debt to be borrowed pursuant to the SSTL.



Pro-forma capitalization and maturity ladder

Pro-forma capitalization¹

-	As of March 31, 2018		
	JPYbn	USDmm	
Cash and cash eqv. ²	476.9	4,225	
Existing bonds	2,103.9	18,640	
Takeda	172.9	1,532	
Shire	1,931.0	17,108	
Existing loan	1,054.7	9,344	
Takeda	812.8	7,201	
Shire	241.9	2,143	
Pro-forma adjustment to bonds and loan ³	3,303.4	29,267	
USD/EUR Senior Bond ³	1,576.6	13,968	
Others ^{3, 4}	1,726.8	15,299	
Total debt	6,462.0	57,251	
Net debt⁵	5,985.0	53,026	
Total equity	5,320.6	47,138	
Total Capitalization	11,305.6	100,164	

Pro-forma maturity ladder of existing bonds⁶



- Takeda plans to repay bonds and loans using the ample cashflow of the combined company post Shire acquisition
 - Takeda will accelerate reduction of prepayable loans using excess cash
- Takeda will consider accelerating the deleveraging process by selling selected non-core assets

Notes: ¹ Based off of pro forma balance sheet that combines Takeda as of March 31, 2018 and Shire as of December 31, 2017, converted using the \$/¥ of 1:112.871, the exchange rate as of March 31, 2018. Pro forma balance sheet does not reflect Shire's sale of its oncology business to Servier for \$2.4 bn in August 2018 and \$2.3bn cash tender offer to repurchase certain of its outstanding senior notes in September 2018. ² Includes pro forma adjustment to cash and cash equivalents ³ USD portion of the pro-forma adjustment to bonds and loan is converted using the \$/¥ of 1:112.214, the exchange rate as of October 12, 2018 to prepare pro-forma financials in JPY in the Preliminary Offering Circular. Pro-forma capitalization table in USD above is simply converted from pro-forma capitalization in JPY, using the \$/¥ of 1:112.871, the exchange rate as of March 31, 2018. ⁴ Consists of Term loan, SSTL (JPY Hybrid Loan will be used to refinance the debt to be borrowed pursuant to the SSTL), Remaining bridge financing, less estimated debt issuance costs ⁵ Net debt = total debt – cash & cash equivalent ⁶ Financials converted using the \$/¥ of 1:112.871, the exchange rate as of March 31, 2018.



Preserving balance sheet strength and financial flexibility

- Commitment to maintaining investment grade credit ratings
- Significant combined cash flows to de-lever quickly
- Capital enhancement by hybrid finance to improve credit profile
- Target net debt to adjusted EBITDA ratio of 2.0x within three to five years
- Takeda will consider accelerating the deleveraging process by selling non-core assets

S&P Global (Nov. 8, 2018)

"Downgrade To 'BBB+' Is Likely On Shire Deal We intend to resolve the CreditWatch placements when Takeda's acquisition of Shire closes. We will likely lower our ratings on Takeda only one notch if we determine that large asset sales will be sufficient to ease its financial burden.... We believe Takeda is likely to go through with these asset sales because it has sufficient noncore assets to reduce debt significantly and it has a record of making selective asset sales and repaying debt."

S&P Global (Nov. 8, 2018)

"Even after the company closes and finances the acquisition, we currently do not expect a substantial rise in subordination risk in existing long-term senior debt we rate or new debt issuance, because we do not expect its priority debt (secured debt and debt at subsidiaries, including debt at Shire) to rise much beyond about 30%. Therefore, we equalize the issue rating with our long-term issuer credit rating on Takeda."

Moody's ¹ (Nov. 2, 2018)

"Though still at an early stage without any definitive agreements, the divestment plan is credit positive because the proceeds will accelerate the repayment of acquisition debt following the ¥7 trillion (\$64 billion) Shire plc (Baa3 review for upgrade)deal. The company's progress toward closing this deal so far continues to support our expectation that the ratings review will ultimately result in ratings in the mid to high Baa range"

Notes: ¹ Source: S&P report (Nov. 8, 2018) "Takeda Still On Watch Negative, Downgrade To 'BBB+' Is Likely On Shire Deal; Proposed Euro Notes 'A-', On Watch Negative"; Moody's report (Nov. 2, 2018) "Takeda's potential divestment of non-core businesses is credit positive"; Current Takeda ratings: A2 review for downgrade (Moody's); A- Credit Watch Negative (S&P) Moody's downgraded Takeda in May 2018 and that S&P put Takeda on watch for a downgrade in May 2018.



Takeda / Shire at a glance



No.1 Japanese pharmaceutical player

Takeda is a R&D driven global pharmaceutical company with the highest global Rx sales among Japanese pharmaceutical companies¹

More than **27,000** employees

Operating in more than **70 countries**

Senior management team includes **11** nationalities

Oncology, GI, Neuroscience,

plus Vaccines are core therapeutic areas

3 candidates	3 blockbuster ² drugs	6 candidates	3 blockbuster² drugs	
in Phase 3/Filed	S DIOCKDUSTEI - drugs	in Phase 3/Filed		
JPY 1,771bn	JPY 378bn	JPY 1,703bn	JPY 729bn	
/ USD 15.8bn	/ USD 3.4bn	/ USD 15.2bn	/ USD 6.5bn	
in Revenues	in Adjusted EBITDA	in Revenues	In Non-GAAP EBITDA	

Notes: All data as of March 31, 2018 for Takeda and December 31, 2017 for Shire except the pipeline candidate information, which is as of October 31, 2018 for Takeda and as of September 30, 2018 for Shire; EBITDA of each of the companies are not comparable because EBITDA calculation and accounting standards differ among the companies; Adj. EBITDA and Non-GAAP EBITDA adjust for items not core to their ongoing operations such as the effect of taxes, certain cash and non-cash items. For the full definition and reconciliation of Takeda's Adj. EBITDA, please see Pg 44, 45, for the detailed definition and reconciliation of Shire's Non-GAAP EBITDA, please see Pg 46. ¹ 2017 global prescription drug sales data from EvaluatePharma® November 2018, Evaluate Ltd, www.evaluate.com; data as of Nov. 1² Drugs that generate annual sales of at least JPY 100 billion; Takeda – Velcade, Entyvio, Leuprorelin, Shire – Vyvanse, Gammagard Liquid, combined sales of Advate and Adynovate

Operating in more than

60 countries

Shire

Leading biopharma in rare diseases

Shire is a rare diseases-focused leader committed to

differentiated and high patient-impact medicines

Immunology, Hematology,

Neuroscience, Internal Medicine,

Genetic Diseases, and Ophthalmics

are key therapeutic areas

More than **23,000**

employees



Key post-closing combined company highlights



A global, values-based, R&D-driven biopharmaceutical leader headquartered in Japan



The combined company:

A global, values-based, R&D-driven biopharmaceutical leader

			Key Growth Products	
	Takeda	Shire	Takeda ·	Ninlaro • Trintellix Entyvio • Adcetris Alunbrig • Takecab
Revenue ¹	¥1,771bn 🛛	¥1,703bn		Vyvanse • Takhzyro
	\$15.8bn	\$15.2bn	• • • • •	Immunoglobulin therapies
Adj. EBITDA	Takeda ²	Shire ²	Cost Synergy (by year 3) ²	Expected further growth areas • Key growth products
(Takeda) / Non-GAAP	¥378bn 🛛	¥730bn	¥157bn	 Additional revenue /cost synergies
EBITDA (Shire) ³	\$3.4bn	\$6.5bn	\$1.4bn	Cost control initiatives
	Takeda	Shire		
R&D Spend	¥325bn	¥198bn		
(excl. Synergies)	\$2.9bn	\$1.8bn	Certain r	ationalization
	72.JDII	Υ Τ.ΟΝΠ		

Notes: ¹ the historical revenue figures represent (a) the amount for the 12 months ended on March 31, 2018 for Takeda and December 31, 2017 for Shire, converted using the \$/¥ of 1:112.359, the average rate for the 12 months ended December 31, 2017. These results are historical and do not take into account any divestures or other events that may have occurred since these dates. ² the historical EBITDA figures represent Adjusted / Non-GAAP EBITDA (a) for the 12 month period ended on March 31, 2018 for Takeda and December 31, 2017 for Shire, converted using the \$/¥ of 1:112.359, the average rate for the 12 months ended December 31, 2017; Synergies are expected to be realized by the end of the third year after closing of the Shire Acquisition and have been reported on under Rule 28.1 of the Takeover code; related reports can be found in the Rule 2.7 Announcement made by Takeda on May 8, 2018, as well as information regarding the method of calculation of the synergies and the costs to achieve such synergies. ³ EBITDA of each of the companies; Adj. EBITDA and Non-GAAP EBITDA adjust for items not core to their ongoing operations such as the effect of taxes, profit / loss attributable to equity method affiltes, impairment losses, certain restructuring and transaction costs, financing income and loss and certain other cash and non-cash items. For the full definition and reconciliation of Takeda's Adj. EBITDA, please see Pg 44, 45, for the detailed definition and reconciliation of Shire's Non-GAAP EBITDA , please see Pg 46.

Robust presence in core therapeutic areas



Approx. 75% of total sales concentrated in five areas post acquisition¹



Source: Shire plc Annual Report 2017, Takeda Consolidated Financial statements for the Fiscal Year Ended March 31, 2018 Notes: Percentage calculated using the amount for the 12 month period ended on March 31, 2018 and (b) the amount for the 12 month period ended on December 31 2017 and converted using the \$/¥ 1:112.359, the average rate for the 12 months ended December 31, 2017 ¹Management Data. ² Hereditary Angioedema ³ Drugs that generate annual sales of at least JPY 100 billion ⁴ Based on the combined sales of Advate and Advnovate

Attractive geographic footprint aligned with market opportunities



Attractive geographic footprint aligned with market opportunities

Global prescription drug market by region (2017)¹ Geographic breakdown of Takeda + Shire (2017)²



Source: Shire Annual Report 2017 and management information, Takeda consolidated financial statements for the fiscal year ended March 31, 2017; OC; IQVIA (market data) Notes: Percentages for the combined group are calculated by aggregating the respective revenues of Takeda and Shire by each geographic area ¹Sales data from IQVIA based on calendar year ² Revenue amounts are (a) Takeda's revenue for the 12 months ended on March 31, 2018 and (b) Shire's revenue for the 12 months ended on December 31, 2017 converted using the \$/¥ of 1:112.359, the average rate for the twelve months ended December 31, 2017. Percentages shown for Takeda and Shire do not add up to 100% due to rounding.

Recently launched innovative drugs drive cash generation and growth



Key growth products drive cash generation

	Therapeutic			First lau	unch in key	region	Ρ	roduct sales	
	Area	Product	Key indications	US	JPN	EU	FY2016 ¹	FY2017 ¹	YoY
	Oncology	NINLARO ixazomib capsules	Multiple Myeloma	2015	2017	2016	¥29.4bn /\$262mm	¥46.4bn / \$413mm	58.1%
		ALUNBRIG	Non-small cell lung cancer	2017	-	Not yet launched	-	¥2.8bn / \$25mm	N/A
\frown			Hodgkin's lymphoma	-	2014	2012	¥30.1bn / \$268mm	¥38.5bn / \$343mm	27.8%
Takeda	GI	Vedolizumab	Ulcerative colitis, Crohn's disease	2014	Not yet launched	2014	¥143.2bn / \$1,274mm	¥201.4bn / \$1,792mm	40.6%
		Takecab	Acid-related diseases	-	2015	-	¥34.1bn / \$303mm	¥55.1bn² / \$490mm²	61.7%
	Neuroscience	Vortioxetine seg-stere-zöng tablets	Major depressive disorder	2014	Not yet launched	-	¥31.9bn / \$284mm	¥48.4bn / \$431mm	51.6%
		Vyvanse	ADHD	2007	-	2013	¥226.3bn / \$2,014mm	¥242.8bn / \$2,161mm	7.3%
Shire	HAE		Hereditary angioedema	2018	-	2018	N/A	N/A	N/A
	Plasma derived therapies	Immunoglobulin ³	-	-	-	-	¥212.3bn⁴ / \$1,890mm⁴	¥251.3bn / \$2,237mm	18.4%
						Total	¥707.3bn / \$6,295mm	¥886.7bn / \$7,892mm	25.4%

Notes: ¹Takeda: fiscal year ended March 31, 2018; Shire: fiscal year ended December 31, 2017 ² Effective from the fiscal year ending March 31, 2019, sales of certain products in Japan are disclosed on a net basis, deducting items such as discounts and rebates, in alignment with the global managerial approach applied to individual product sales. Sales of individual product for the fiscal year ended March 31, 2018 and for the six months ended September 30, 2017 have been revised retroactively 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 figures from the prior fiscal years. Figures for the fiscal years ended March 31, 2016 and 2017 have not been reclassified retroactively. ³ Includes various immunoglobulin products including Gammagard Liquid. ⁴ 2016 Immunoglobulin therapies revenue represents Baxalta pro forma product sales. Exchange rate: \$/¥ of 1:112.359, the average rate for the 12 months ended December 31, 2017.

Strengthened pipeline and expanded R&D capacity leveraging Boston and Shonan R&D hubs



Takeda + Shire provides a complementary, robust and modality-diverse pipeline with an expected combined annual R&D spend of \$4bn+¹



Notes: Pipeline as of October 31, 2018 for Takeda and September 30, 2018 for Shire; SHP652 is classified as "other" and not shown here. ¹ The greater than 400bn JPY annual R&D budget is a reference to the combined historic R&D spend for the period ending March 31, 2017 for Takeda and December 31, 2017 for Shire, less the expected R&D cost synergies.



Takeda achieved significant progress since FY2017 with 24 New Molecular Entity (NME) stage-ups



Note: Pipeline as of October 31, 2018; region abbreviations: GL = global (USA, Europe, Japan, China)¹ With active development seeking new or supplemental indications, or approvals in new territories. For glossary of disease abbreviations please refer to appendix on Pg 49.



Takeda accelerates development of innovative R&D projects utilizing collaborations and its strong R&D hubs in Boston and Shonan

c.180 active collaborations with external partners¹

	STRATEGIC FOCUS AREA	DISCOVERY/ PRECLINICAL	PHASE 1	PH2, PH3, FILED, LCM
	Hematology		NEKTAR	OSeattleGenetics
Ъ	Lung Cancer			
ONCOLOGY	Next-gen IO /	Discovery and development of next generation CAR- T assets	teva Anti CD38 Attenukine asset currently in MM trial. Multiple active discovery stage programs	
ONO	Cell Therapy			
	Solid Tumor	MEEtherspeutics Mersana	Mersana immur.gen.	©́ Exelixis' ♥ TESARO'
	IBD		NUBIY@TA	O Portal Instruments
. 6	Motility	BEACON enterome CHIFIBIO		Theravance 💥 Biopharma 🔭
GASTRO- ENTEROLOGY	Celiac		Development agreement for KumaMax PVP BIOLOGICS glutenase and option to acquire company	
GA ENTE	Liver	Liver regeneration using cell therapy, gene therapy, small molecules for advanced liver disease/cirrhosis, acute liver failure, genetic disease		
ENCE	Depression ² Parkinson's		AstraZeneca	<u>↓</u>
D-SCIE	Alzheimer's	Enhancing antibody penetration across BBB for unmet needs in Neurology (Alzheimer, Other)		
NEURO-SCIENCE	Rare Disease	WAVE	Innovative anti-sense oligonucleotide platform for unmet needs in Neurology (Huntington's, ALS, Spinocerebellar Ataxia 3)	

Significant margin expansion opportunities through continuing cost-saving initiatives and further cost savings from integration



Takeda has a clear plan to generate values by realizing synergies from Shire acquisition

Takeda plans to achieve at least \$1.4bn / ¥157bn p.a. in recurring cost synergies¹ by the end of the third fiscal year following completion of the Shire acquisition



Notes: ¹ The Takeda directors expect recurring pre-tax cost synergies for the Combined Group to reach a run-rate of at least \$1.4 billion per annum by the end of the third fiscal year following completion of the Shire acquisition, converted using rate: \$/¥ of 1:112.359. Reported under Rule 28.1 of the Takeover Code, related reports can be found in the Rule 2.7 Announcement made by Takeda on May 8, 2018, as well as information regarding the method of calculation of the synergies and the costs to achieve such synergies



Our Global Opex Initiative has achieved material margin expansion

Activities under Our Global Opex Initiative +3.8% 21.3% Policy and Price guideline rollout management complete 17.5% Pay less initiatives for **Buy less** Significant Procurement all cost Consumption consumption Savings Savings packages in behavior changes place in major spending FY2016 Adj. EBITDA FY2017 areas margin improvement Work Completed cost 27.4% +3.1% package **Better** budgeting Organizational Optimization process (zero-24.3% based) Opportunities for optimization identified; functional transformations initiated FY2017 H1 Adj. EBITDA FY2018 H1 Takeda Business Services formed with HR, Finance and Procurement in scope margin improvement

Adj. EBITDA margin expansion

Notes: Adj. EBITDA adjusts for items not core to their ongoing operations such as the effect of taxes, profit / loss attributable to equity method affiliates, impairment losses, certain restructuring and transaction costs, financing income and loss and certain other cash and non-cash items. For the full definition and reconciliation of Takeda's Adj. EBITDA, please see Pg 44, 45

Diligent financial management policy with a focus on maintaining investment grade credit rating



Diligent financial management policy with a focus on maintaining investment grade credit rating

Generate & unlock cash

- Sustainable profit growth
- Reduce working capital
- Disposal of selected non-core assets
 - Considering potential sizable divestitures
 - Divested Multilab (July 2018) and Guangdong
 Techpool Bio-Pharma (August 2018)
 - Divested real estate
 - Tokyo Takeda building and adjacent property (approx. JPY 50bn / USD 0.5bn) (majority of cash to be received in the 2H of FY2018)
 - Divested marketable securities (approx.
 JPY38.2bn /USD338mm¹ in the 1H of FY2018)

Financial and capital allocation policies

- Internal investment in R&D and product launches
- Committed to an investment grade credit rating
 - Target net debt to adjusted EBITDA² ratio of
 2.0x within three to five years
- 2018 dividends consistent with last 9 years
- Disciplined M&A / BD activities

Notes: ¹ Converted using the \$/¥ of 1:112.871, the spot rate at December 31. 2017 ² Adj. EBITDA adjusts for items not core to their ongoing operations such as the effect of taxes, profit / loss attributable to equity method affiliates, impairment losses, certain restructuring and transaction costs, financing income and loss and certain other cash and non-cash items. For the full definition and reconciliation of Takeda's Adj. EBITDA, please see Pg 44, 45



Our Commitment

- **1** Maintain investment grade credit rating
- **2** Realize early deleveraging
- **3** Deliver synergies from the Shire acquisition
- 4 Generate strong cash flow

Appendix



Transformation momentum is backed by Takeda's values and culture

Value Driven: Takeda-ism

• Patient \rightarrow Trust \rightarrow Reputation \rightarrow Business

Global, Agile and Committed to Innovation

- Created global organization and capabilities
- Driving patient-centricity and local empowerment
- Therapeutic area focus: Oncology, GI, neuroscience, plus Vaccines

World-class Governance & Diverse Leadership

- Majority of BOD external, with Audit & Supervisory committee
- Diverse & experienced Takeda Executive Team
- Comprehensive talent development programs





Takeda: Agile, Global, R&D-driven, Headquartered in Japan

Key summary

	·	Revenue ²
Agile & R&D- Driven Transformation	 Delivering on an ambitious company-wide and R&D-focused transformation Growth through organic transformation and acquisitions Led by a highly experienced and diverse executive team with a proven track record Diverse board with majority of external directors 	¥1,807bn \$16,086mm
Global Footprint	 Presence in 70+ markets More than 27,000 employees worldwide Incorporated and headquartered in Japan Successful global launches of key products (e.g. launch of ENTYVIO, NINLARO and ALUNBRIG) 	2016/3
R&D Engine	 Pipeline progression is accelerating (24 stage-ups since April 2017) toward late stage 180 active partnerships in R&D across Oncology, GI, neuroscience, plus upgeinge 	Adjusted E
	 vaccines Focus on highly innovative medicine: 41 clinical stage assets with active development programs, of which more than one third have orphan drug designation indications 	¥352bn \$3,129mm
Strategy Driving Financial Performance	 Growing through Oncology, GI, and neuroscience growth drivers 311bps adjusted EBITDA margin improvement¹ in FY2018 Q2 Strong underlying business positioned for sustainable growth 	19.5%

7bn 36mm ¥1,771bn \$15,758mm ¥1,732bn \$15,416mm 6/3 2017/3 2018/3

ted EBITDA²



Notes: ¹ Change from 2Q 2017 to 2Q 2018; Adj. EBITDA growth reported in the Takeda Consolidated Financial Statements for the Three Month Period Ended June 30, 2017 and 2018. Adj. EBITDA adjusts for items not core to their ongoing operations such as the effect of taxes, profit / loss attributable to equity method affiliates, impairment losses, certain restructuring and transaction costs, financing income and loss and certain other cash and non-cash items. For the full definition and reconciliation of Takeda's Adj. EBITDA, please see Pg 44, 45² Financials converted using the \$/¥ of 1:112.359, the average rate for calendar year 2017



Shire: Leading biopharma in Rare Diseases

Key summary	/	Revenue		
Rare Diseases Leader	 Innovative, rare diseases-focused leader committed to differentiated and high patient-impact medicines Biotech profile – majority of 2017 sales from rare diseases 	¥721bn \$6,417mm	¥1,281bn \$11,397mm	¥1,703bn \$15,161mm
Strong Portfolio	 5 franchises (immunology, hematology, neuroscience, internal medicine, genetic diseases) deliver \$1bn+ annual revenues¹ for each 			
	 Multiple leading brands in neuroscience and rare diseases 	2015/12	2016/12	2017/12
		Non-GAA	P EBITDA ³	
Late-Stage	Rich, modality-diverse, clinical development pipeline	Non-	GAAP EBITDA	
Pipeline	 One third of programs in late phases of development 	¥329bn	¥529bn	¥730bn \$6,492mm
	• 66% of revenue in U.S. ² and commercial presence in more than 60 countries	\$2,924mm	\$4,710mm	
Geographic Footprint	 Global company headquartered in Ireland with R&D hub in Boston and International hub in Switzerland 	45.6%	41.3%	42.8%
	More than 23,000 employees worldwide	2015/12	2016/12	2017/12

Source: Shire plc Annual Report 2017, Shire plc Third Quarter 2018 Results

Notes: ¹Each of the Immunology, Hematology, Neuroscience, Internal Medicine and Genetic Disease franchises reported revenues in excess of \$1 billion in the 2017 financial year; ² For the nine months ended September 30, 2018; ³Non-GAAP EBITDA adjusts for items not core to their ongoing operations such as the effect of taxes, profit / loss attributable to equity method affiliates, impairment losses, certain restructuring and transaction costs, financing income and loss and certain other cash and non-cash items. For the detailed definition and reconciliation of Shire's Non-GAAP EBITDA, please see Pg 46 Financials converted using the \$/¥ of 1:112.359, the average rate for calendar year 2017



Shire is the Right Transaction for Takeda

Global, values-based, R&D-driven biopharmaceutical leader headquartered in Japan

Attractive geographic footprint and scale

Inspires and enables **people** to collaborate and move Takeda forward, guided by **Takeda's values** and unwavering **patient focus**

Strengthens **GI and neuroscience.** Provides **leading positions in rare diseases and plasma derived therapies** to complement strength in **oncology** and focused efforts in **vaccines**

Highly complementary, robust, modality-diverse pipeline and a strengthened R&D engine

At least \$1.4bn expected annual pre-tax cost synergies¹

ROIC expected to exceed Takeda's cost of capital within first full fiscal year following completion

Well-established dividend policy and investment grade credit rating



Shire

Notes:.¹ The Takeda's Board of Directors expect recurring pre-tax cost synergies for the Combined Group to reach a run-rate of at least \$1.4 billion per annum by the end of the third fiscal year following completion of the Acquisition. Reported under Rule 28.1 of the Takeover Code; related reports can be found in the Rule 2.7 Announcement made by Takeda on May 8, 2018, as well as information regarding the method of calculation of the synergies and the costs to achieve such synergies.



Combined company in global pharmaceutical market



Notes: ¹ Source: EvaluatePharma® November 2018, Evaluate Ltd, www.evaluate.com; data as of Nov. 1, converted using rate: \$/¥ of 1:112.359, RX sales for fiscal year 2017, the average rate for the 12 months ended December 31, 2017. Excludes non-prescription drug sales in each case



Progress since deal announcement

2018

2019





Experienced Board of Directors with a majority of external directors



Notes: Takeda's current Board of Directors structure

Takeda Pharmaceutical Company Limited



A global, diverse and experienced future leadership team





Takeda's Oncology business goals



OUR MISSION

We endeavor to deliver novel medicines to patients with cancer worldwide through our commitment to science, breakthrough innovation and passion for improving the lives of patients.



IMMUNO-ONCOLOGY (I/O)


An innovative pipeline* enhanced with external partnerships in oncology



Takeda Pharmaceutical Company Limited



Takeda's strategy expands the portfolio across core disease areas supported by platform technologies

IBD

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

Motility disorders

• Focus on select high unmet medical need areas including gastroparesis and enteral feeding intolerance



Celiac disease

 Advance approaches for the prevention of immune responses to gluten

Liver diseases

• Target early-stage investments in liver fibrosis

Luminal platforms

- Accelerate microbiome investments
- Invest in selective drug delivery technologies

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

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



Takeda is executing on its strategy through a rich, diversified pipeline* fueled by strong external partnerships in GI



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



Takeda has executed on the roadmap presented in 2016 for neuroscience



KEY COMPONENTS OF ROADMAP

- Differentiate TRINTELLIX
- Advance early pipeline towards POC¹
- Expand in neurology and CNS rare diseases through partnerships



Building an innovative pipeline* enhanced with external partnerships in neuroscience

Discovery/ Phase 1 Phase 2 Phase 3 Approved Preclinical¹ TRINTELLIX **TAK-653** TESD sNDA (US) AMPA PAM Submitted Depression **Treatment Resistant** MDD (JP) Submitted Depression Processing Speed Small Molecule sNDA Approved 2018 **TAK-041 TAK-831 Schizophrenia** GPR139 Agonist, 2xFT DAAO Inhibitor, 2xFT Small Molecule Small Molecule teva Azilect AstraZeneca Parkinson's PD (JP) Launched MEDI1341 2018 Disease a-synuclein mAb Monoclonal Antibody Alzheimer's BACE1/TAU, TREM2, Undisclosed Disease Antibody Transport Vehicle Monóclonal Antibody TAK-925, Narcolepsy, OD **TAK-935** OX2R Agonist Epileptic Small Molecule Ov/d Encephalopathy, OD TAK-418, Kabuki Syndrome, **CH24H** Inhibitor OD Small Molecule LSD1 Inhibitor Rare Disease Small Molecule **TAK-831** WVE-120101: WVE-C9orf72, ATXN3, Friedreich's Ataxia, OD, FT 120102 Multiple targets **DAAO** Inhibitor WAVE Huntington's Disease, OD Stereopure Antisense WAVE Stereopure Antisense Small Molecule Oligonucleotide Oligonucleotide

New partnerships since June 2016

Progress since June 2016

¹Only external collaborations shown, does not include internal programs

FT = Fast Track

OD = *Orphan Designation*

External collaboration

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



Summary of historical Takeda balance sheet

IFRS As of March 31

<u>(Bn yen)</u>

<u>Assets</u>	<u>2017</u>	<u>2018</u>	Liabilities and Net Assets	<u>2017</u>	<u>2018</u>
Current assets	1,260.4	1,078.8	Current liabilities	1,366.3	737.5
Cash and cash equivalents	319.5	294.5	Bonds and loans	545.0	0.0
Trade notes and other receivables	423.4	420.2	Trade and other payables	240.6	240.3
Inventories	226.0	212.9	Other	580.7	497.2
Other	291.5	151.1			
Non-current assets	3,086.4	3,027.7	Non-current liabilities	1,031.5	1,351.5
Property, plant and equipment	527.3	536.8	Bonds and Loans	599.9	985.6
Goodwill	1,019.6	1,029.2	Deferred tax liabilities	153.4	90.7
Intangible assets	1,063.0	1,014.3	Other	278.2	275.2
Investment accounted for using the	126 4	107.0	Equity	1,949.0	2,017.4
equity method Other financial assets	126.4	107.9	Equity attributable to owners of the Company	1,894.3	1,997.4
Other	176.6 173.4	196.4 143.0	Minority interest	54.7	20.0
Total assets	4,346.8	4,106.5	Total liabilities and net assets	4,346.8	4,106.5

Takeda Pharmaceutical Company Limited



Summary of historical Takeda results of operations

	Full	IFRS year ended March	<u>31</u>
(Bn yen)	<u>2016</u>	<u>2017</u>	<u>2018</u>
Revenue	1,807.4	1,732.1	1,770.5
% growth	1.7%	(4.2%)	2.2%
Research and development expenses	(335.8)	(312.3)	(325.4)
Operating Profit	130.8	155.9	241.8
% margin	7.2%	9.0%	13.7%
Adjusted EBITDA ¹	351.6	303.4	377.7
% margin	19.5%	17.5%	21.3%
Net profit for the year	83.5	115.5	186.7
% margin	4.6%	6.7%	10.5%

¹ Adj. EBITDA growth reported in the Takeda Consolidated Financial Statements for the Three Month Period Ended June 30, 2017 and 2018. Adj. EBITDA adjusts for items not core to their ongoing operations such as the effect of taxes, profit / loss attributable to equity method affiliates, impairment losses, certain restructuring and transaction costs, financing income and loss and certain other cash and non-cash items. For the full definition and reconciliation of Takeda's Adj. EBITDA, please see Pg 44, 45



Definition of Takeda's EBITDA / Adjusted EBITDA

We present EBITDA and Adjusted EBITDA because we believe that these measures are useful to investors as they are frequently used by securities analysts, investors and other interested parties in the evaluation of companies in our industry. We further believe that Adjusted EBITDA is helpful to investors in identifying trends in its business that could otherwise be obscured by certain items unrelated to ongoing operations because they are highly variable, difficult to predict, may substantially impact our results of operations and may limit the ability to evaluate our performance from one period to another on a consistent basis.

EBITDA and Adjusted EBITDA should not be considered in isolation or construed as alternatives to operating income, net profit for the year or any other measure of performance presented in accordance with IFRS. These non-IFRS measures may not be comparable to similarly-titled measures presented by other companies.

The usefulness of EBITDA and Adjusted EBITDA to investors has limitations including, but not limited to, (i) they may not be comparable to similarly titled measures used by other companies, including those in our industry, (ii) they exclude financial information and events, such as the effects of an acquisition or amortization of intangible assets, that some may consider important in evaluating our performance, value or prospects for the future, (iii) they exclude items or types of items that may continue to occur from period to period in the future and (iv) they may not exclude all items which investors may consider to be unrelated to our long-term operations, such as the results of businesses divested during a periods. These non-IFRS measures are not, and should not be viewed as, substitutes for IFRS reported net income (loss). We encourage investors to review our historical financial statements in their entirety and caution investors to use IFRS measures as the primary means of evaluating our performance, value and prospects for the future, and EBITDA and Adjusted EBITDA as supplemental measures.

EBITDA and Adjusted EBITDA

We define EBITDA as net profit before income tax expenses, depreciation and amortization and net interest expense. We define Adjusted EBITDA as EBITDA further adjusted to exclude impairment losses, other operating expenses and income (excluding depreciation and amortization), finance expenses and income (excluding net interest expense), our share of loss from investments accounted for under the equity method and other items that management believes are unrelated to our core operations such as purchase accounting effects and transaction related costs.



Reconciliation from net profit to EBITDA / Adjusted EBITDA of Takeda

	Full year ended Mar 31			6 months ended Sep 30	
(Bn yen)	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>	<u>2018</u>
Net profit for the year	83.5	115.5	186.7	172.7	126.5
Income tax expenses	37.1	27.8	30.5	60.3	126.5
Depreciation and amortization	182.2	171.4	182.1	93.4	78.0
Interest expense, net	3.0	5.5	6.8	3.3	3.4
EBITDA	305.8	320.2	406.1	329.7	242.2
Impairment losses	15.2	51.4	13.5	(9.2)	0.7
Other operating expense (income), net, excluding depreciation and amortization	17.0	(78.3)	(61.1)	(105.5)	(17.5)
Finance expense (income), net, excluding interest income and expense, net	7.3	5.4	(14.4)	(1.4)	11.8
Share of loss on investments accounted for under the equity method	0.0	1.5	32.2	(0.5)	(4.0)
Other adjustments:					
Loss on deconsolidation	6.3	-	_	_	-
Transaction costs related to the acquisition of ARIAD	-	3.2	_	_	_
Impact on profit related to fair value step up of inventory in ARIAD acquisition	-	_	1.4	0.8	-
Acquisition costs related to Shire	_	_	_	_	7.9
Adjusted EBITDA ¹	351.6	303.4	377.7	213.8	241.0

¹ Adj. EBITDA growth reported in the Takeda Consolidated Financial Statements for the Three Month Period Ended June 30, 2017 and 2018. Adj. EBITDA adjusts for items not core to their ongoing operations such as the effect of taxes, profit / loss attributable to equity method affiliates, impairment losses, certain restructuring and transaction costs, financing income and loss and certain other cash and non-cash items. For the full definition of Takeda's Adj. EBITDA, please see Pg 44



Reconciliation from U.S. GAAP Net income to Non GAAP EBITDA of Shire

This presentation contains the Non GAAP EBITDA of Shire, which is a financial measure not prepared in accordance with U.S. GAAP. Non GAAP measures exclude the effect of certain cash and non-cash items, which Shire's management believes are not related to the core performance of Shire's business. Shire's Remuneration Committee uses these Non GAAP measures when assessing the performance and compensation of employees, including Shire's Executive Directors. The most directly comparable measure under U.S. GAAP for Non GAAP EBITDA is U.S. GAAP Net income.

	Full yea	9 months ended Sep 30			
(USDmm)	2015	<u>2016</u>	<u>2017</u>	<u>2017</u>	<u>2018</u>
U.S. GAAP Net income	1,303.4	327.4	4,271.5	1,166.1	1,703.3
(Deduct) / add back:					
Loss / (gain) from discontinued operations net of tax	34.1	276.1	(18.0)	(18.6)	—
Equity in losses / (earnings) of equity method investees, net of taxes	2.2	8.7	(2.5)	(0.1)	(11.2)
Income taxes	46.1	(126.1)	(2,357.6)	44.6	371.0
Other expense/(income), net	33.7	476.8	561.8	412.9	417.2
U.S. GAAP Operating income from continuing operations	1,419.5	962.9	2,455.2	1,604.9	2,480.3
Revenue from upfront license fee	_	—	(74.6)	—	—
Expense related to the unwind of inventory fair value					
adjustments	31.1	1,118.0	747.8	688.7	40.9
Inventory write down related to the closure of a facility	—	18.9	—	—	—
One-time employee related costs	—	20.0	(4.0)	—	—
Impairment of acquired intangible assets	643.7	8.9	20.0	20.0	10.0
Costs relating to license arrangements	_	110.0	131.2	123.7	10.0
Legal and litigation costs	9.5	16.3	10.6	8.6	—
Amortization of acquired intangible assets	498.7	1,173.4	1,768.4	1,280.5	1,375.3
Integration and acquisition costs	39.8	883.9	894.5	696.7	512.0
Reorganization costs	97.9	121.4	47.9	24.5	268.9
Gain on sale of product rights	(14.7)	(16.5)	(0.4)	0.4	267.2
Depreciation	138.5	292.9	495.8	363.5	432.8
Costs related to AbbVie's terminated offer	60.1	_	_	_	_
Non GAAP EBITDA	2,924.1	4,710.1	6,492.4	4,806.7	4,866.3



Pro forma organizational / parent guarantee structure: Takeda / Shire / Baxalta / SAIIDAC

- Takeda currently expects to provide a parent guarantee over the Baxalta/SAIIDAC¹ bonds at or soon after the closing of the Shire Acquisition
- Takeda expects that the Baxalta/SAIIDAC bonds will receive ratings no higher than the new Takeda senior bonds



¹ SAIIDAC: Shire Acquisitions Investments Ireland DAC



Existing Baxalta/SAIIDAC bonds

ISIN	Name	Currency	Announce	Maturity	Next Call Date	Coupon	Amt Issued (\$mm)	Amt O/S (\$mm)	Moody's	S&P
US07177MAN39	Baxalta Inc	USD	4/28/2016	6/23/2045	12/23/2044	5.250%	1,000	500	Baa3 *+	BBB- *+
US07177MAB90	Baxalta Inc	USD	4/28/2016	6/23/2025	3/23/2025	4.000%	1,750	800	Baa3 *+	BBB- *+
US07177MAD56	Baxalta Inc	USD	4/28/2016	6/23/2020	5/23/2020	2.875%	1,000	404	Baa3 *+	BBB- *+
US07177MAL72	Baxalta Inc	USD	4/28/2016	6/23/2022	4/23/2022	3.600%	500	219	Baa3 *+	BBB- *+
US82481LAA70	Shire Acquisitions Investments Ireland DAC	USD	9/19/2016	9/23/2019	_	1.900%	3,300	3,300	Baa3 *+	BBB- *+
US82481LAB53	Shire Acquisitions Investments Ireland DAC	USD	9/19/2016	9/23/2021	8/23/2021	2.400%	3,300	3,300	Baa3 *+	BBB- *+
US82481LAD10	Shire Acquisitions Investments Ireland DAC	USD	9/19/2016	9/23/2026	6/23/2026	3.200%	3,000	3,000	Baa3 *+	BBB- *+
US82481LAC37	Shire Acquisitions Investments Ireland DAC	USD	9/19/2016	9/23/2023	7/23/2023	2.875%	2,500	2,500	Baa3 *+	BBB- *+
							21 047	14.026		

21,847 14,026



Abbreviations

ADCattestion deficit hyperactivity disorderLCMlifecycle managementADHDattestion deficit hyperactivity disorderLSDLysine specific demulyase 1ALKanaplastic lymphoma kinasemAbmonocional antibodyALMacute myeloid leukemiaMDDmajor depressive disorderALSamyotrophic lateral sclorosisMMmultiple myelomaARDadid-related diseasesmTORCmammalian target of reparsvic disorderARDadid-related diseasesmTORCmammalian target of reparsvic disorderCAR-Tchimeric antigen receptor-TNAENDDB activating enzymeCDCrohn's diseaseNDAnewly diagnosedCICchronic myeloid leukemiaNDnewrdy diagnosedCICchronic myeloid leukemiaNERDnon-crosive reflux diseaseCMLchronic myeloid leukemiaNERDnon-crosive reflux diseaseCMLchronic myeloid noncytic leukemiaNSnegativeCTCLcutaneous T-cell lymphomaNSnegativeCTGLcutaneous T-cell lymphomaNSnegative serptionDADOD-amino acid oxidaseNSCLnon-small cell lung cancerDIBCLdiffuse large 8-cell lymphomaNSnegative serptionEFIRentertar definit informancePAPpoly (AP-ribose) polymeraseEGFRepidermal growth factor receptorPCA8poton jump inhibitorGCCgastrointestinalRCCrenasitive acid blockerGTGgastrointestinalRCC				
ALManaplastic lymphoma kinaseMAmonoclonal antibodyALMacute myeloid leukemiaMDDmajor depressive disorderALSamyotrophic lateral sclerosisMORmultiple myelomaARDacid-related diseasesmTORCmamualian target of rapamycin complexBBBblood brain barrierMTCLmature T-cell lymphomaCAR-Tchimeric antigen receptor-TNAENEDB activating enzymeCDCrohr's diseaseNASHnon-alcoholic statophepatitisCIAScognitive impairment associated with schizophreniaNDnew dy diagnosedCICchronic myeloid leukemiaNDAnew drug applicationCMLchronic myeloid leukemiaNBEnon-erosive reflux diseaseCMLchronic myeloid neuvous systemNMEnew molecular entityCTCLcutaneous T-cell lymphomaNSCLCnon-smicel lung cancerDDAOD-amino acid oxidaseNSCLCnon-smicel lung cancerDLBCLdiffuse large B-cell lymphomaOICopid induced constipationFFIenteral fedding intolerancePARPpoly (AP-ribose) polymeraseFGGCgastrointestinalRCRrelabed/ refractoryGLRgastrointestinalRCreceptor regione inhibitorGCCgastrointestinalRCRrelabed/ refractoryGLgastrointestinalRCRrelabed/ refractoryGLgastrointestinalSCZsystemic anaplastic large cell lymphomaGCCgastrointestinalRCRrelabed/ ref	ADC	antibody drug conjugate	LCM	lifecycle management
ALMavite myeloid leukemiaMDmajor depressive disorderALSanyotrophic lateral sclerosisMMmultiple myelomaARDacid-related diseasesmTORCmammalian target of rapamycin complexBB8blood brain barrierMTCLmature T-cell lymphomaCAR-Tchimeric antigen receptor-TNAENEDD8 activating enzymeCDCrohn's diseaseNAENEDB3 activating enzymeCIAScognitive impairment associated with schizophreniaNDnewly diagnosedCIALchronic idiopathic constipationNDAnew drug applicationCMLchronic idiopathic constipationNERDnon-erosive reflux diseaseCMLchronic myeloid leukemiaNERDnon-erosive reflux diseaseCMLchronic myeloid leukemiaNERDnon-erosive reflux diseaseCMLchronic myeloid leukemiaNERDnon-erosive reflux diseaseCMLchronic myeloid leukemiaNERDnon-erosive reflux diseaseCMScentral nervous systemNERDnon-erosive reflux diseaseCTCLcutanewics -cell lymphomaOICoplid induced constipationDDAOD-amino acid oxidaseNSCLCnon-smail cell lung cancerDLCLdiffuse large 6-cell lymphomaOICopli (ADP-Those) polymeraseEFRepidermal growth factor receptorPARPpoli (ADP-Those) polymeraseFLesostageal squamous-cell carcinomaRCreceptor tyrosine kinaseGCCgastrointestinalRCCrenatoringG	ADHD	attention deficit hyperactivity disorder	LSD1	Lysine specific demethylase 1
ALSamyotrophic lateral sclerosisMMmultiple myelomaARDacid-related diseasesmTORCmammalian target of rapamycin complexBBBblood brain barrierMTCLmature T-cell lymphomaCAR-Tchimeric antigen receptor-TNACNEDDB activating enzymeCDCrohris diseaseNASHnon-alcoholic steatopheatitisCIAScognitive impairment associated with schizophreniaNDnew drug applicationCIMchronic myeloid leukemiaNPgnegativeCMMLchronic myeloid eukemiaNERDnon-erosive reflux diseaseCMMLchronic myeloid nervous systemNMEnew molecular entityCTCLcutaneous T-cell lymphomaNSnegative symptomsDIAOo-amino acid oxidaseNGCopioid induced constipationDIAOo-amino acid oxidaseOICopioid induced constipationEFIenteral feeding intolerancePARPpoly (ADP-ribose) polymeraseEGFRepidemal growth factor receptorPARPpoly (ADP-ribose) polymeraseEGFRgastroesophageal reflux diseaseR/Rrelapsed / refractoryGCCgastrointestinalROTreceptor trosine kinaseGNDgastroesophageal reflux diseaseSCIreal cell cancerGRHDgastroesophageal reflux diseaseR/Rrelapsed / refractoryGLgastroesophageal reflux diseaseSCIsystemic anaplastic large cell lymphomaGLgastroesophageal reflux diseaseSCIsystemic anaplastic large cell lymph	ALK	anaplastic lymphoma kinase	mAb	monoclonal antibody
ARDacid-related diseasesmTORCmammalian target of rapamycin complexBBBblood brain barrierMTCLmature T-cell iymphomaCAR-Tchimeric antigen receptor-TNAENEDD8 activating enzymeCDCrohn's diseaseNASHnon-alcoholic steatophepatitisCIAScognitive impairment associated with schizophreniaNDnewl y diagnosedCICchronic idiopathic constipationNDAnew drug applicationCMLchronic myeloid leukemiaNgnon-ercosive reflux diseaseCMLchronic myeloid leukemiaNERDnon-ercosive reflux diseaseCMLchronic myelomoncycli leukemiaNSnegativeCTCLcutaneous T-cell lymphomaNSnegative symptomsDDAOD-amino acid oxidaseNSCLCnon-sincobi reflux diseaseDLBCLdiffuse large B-cell lymphomaOICopioid induced constipationEFRenteral feeding intolerancePARpoly (ADP-ribose) polymeraseEGFRepidermal growth factor receptorPCABpotasium competitive acid blockerFLT-3FMS-like tryosine kinase 3PPIproton pump inhibitorGCCgastrocsophageal reflux diseaseRCCrenalesed / refractoryGGRgastrocsophageal reflux diseaseSCICsystemic anaplastic large cell lymphomaGCCgastrocsophageal reflux diseaseSCICsystemic anaplastic large cell lymphomaGCCgastrocsophageal reflux diseaseSCICsystemic anaplastic large cell lymphomaGCCgastroct	ALM	acute myeloid leukemia	MDD	major depressive disorder
BBBblood brain barrierMTCLmature T-cell lymphomaCAR-Tchimeric antigen receptor-TNAENEDD8 activating enzymeCDCrohn's diseaseNASHnon-alcoholic steatophepatitisCIAScognitive impairment associated with schizophreniaNDnewd rug applicationCICchronic idiopathic constipationNDAnew drug applicationCMLchronic myeloid leukemiaNERDnon-erosive reflux diseaseCMMLchronic myeloid eukemiaNERDnon-erosive reflux diseaseCMMLchronic myeloid oukemiaNSnegativeCTCLcutaneous 7-cell lymphomaNSnegative symptomsDDAOD-amino acid oxidaseNSCLCnon-sidl cell lung cancerDBAOD-amino acid oxidaseOICopoid induced constipationEFFenteral feeding intolerancePARPpoly (ADP-ribose) polymeraseEGFRepidermal growth factor receptorPCABpotasium competitive acid blockerFLesophageal squamous-cell carcinomaPH-ALLPhiladelphia chromosome-positive acute lymphoblastic leukemiaFLT-3FMS-like tyrosine kinase 3PPIproton pump inhibitorGCCgastroscophageal reflux diseaseRCCreal cell cancerGRDgastroscophageal reflux diseaseSCTstatemic anaplastic large cell lymphomaGLCusast diseaseSCTstatemic anaplastic large cell lymphomaHAEhereditary angiodemaSCZschizophreniaFLC-3hymetisti diseaseSCTstatemic	ALS	amyotrophic lateral sclerosis	MM	multiple myeloma
CAR-Tchimeric antigen receptor-TNAENEDD8 activating enzymeCDCrohn's diseaseNASHnon-alcoholic steatophepatitisCIAScognitive impairment associated with schizophreniaNDnew drug applicationCICchronic idiopathic constipationNDAnew drug applicationCMLchronic myeloid leukemiaNERDnon-erosive reflux diseaseCMLchronic myeloid leukemiaNERDnon-erosive reflux diseaseCMScentral nervous systemNMEnew molecular entityCTCLcutaneous T-cell lymphomaNSnegative symptomsDDAOD-amino acid oxidaseNSCLCnon-smail cell lung cancerDLBCLdiffuse large B-cell lymphomaOICopioid induced constipationEFIenteral feeding intolerancePARPpoly (ADP-ribose) polymeraseEGFRepidermal growth factor receptorPCABpotassium competitive acid blockerFLT-3FMS-fike tyrosine kinase 3PPIproton pump inhibitorGCCguarbous-cell carcinomaRCCreal sed / refractoryGIgastroesophageal reflux diseaseRCCreal cell cancerGRHAgonadotropin-releasing hormoneSCTstem cancel areal sed / suphomaGVHDgraft versus host diseaseSALCsystemic anaplastic large cell lymphomaHAEhereditary angiodemaSCTstem cell ransplantHT-3graft versus host diseaseSALCsystemic anaplastic large cell lymphomaGERDgastroesophageal reflux diseaseS	ARD	acid-related diseases	mTORC	mammalian target of rapamycin complex
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CIAScognitive impairment associated with schizophreniaNDnewd rug applicationCICchronic idiopathic constipationNDAnew drug applicationCMLchronic myelol dukemiaNegnegativeCMLchronic myelol dukemiaNERDnon-erosive reflux diseaseCNScentral nervous systemNMEnew molecular entityCTCLcutaroous T-cell lymphomaNSnegative symptomsDDAOD-amino acid oxidaseNSCLCnon-anall cell lung cancerDLBCLdiffuse large B-cell lymphomaOICopioid induced constipationEFIenteral feeding intolerancePARPpoly (ADP-ribose) polymeraseEGFRepidermal growth factor receptorPCABpotaspino acid blockerFLesophageal squamous-cell carcinomaPH+ALLPhiladelphia chromosome-positive acute lymphoblastic leukemiaFLT-3FMS-like tyrosine kinase 3PIproton pump inhibitorGCCguandotropin-releasing hormoneRTKreceptor tyrosine kinaseGRHgonadotropin-releasing hormoneSCTstem cell transplantHAEhereditary angiodemaSCTstem cell transplantHAEhereditary angiodemaSCZschipreniaHAEhereditary angiodemaSCZschipreniaHAEhereditary angiodemaSCZschipreniaHAEhereditary angiodemaSCZschipreniaHAEhereditary angiodemaSTstem cell transplantHAEhereditary angiodemaSCZschipr	CAR-T	chimeric antigen receptor-T	NAE	NEDD8 activating enzyme
CICchronic idiopathic constipationNDAnew drug applicationCMLchronic myelomonocytic leukemiaNegneg megativeCMMLchronic myelomonocytic leukemiaNEDnon-erosive reflux diseaseCNScentral nervous systemNMEnew molecular entityCTCLcutaneous T-cell lymphomaNSnegative symptomsDDAOD-amino acid oxidaseNSCLCnon-erosive reflux diseaseDLBCLdiffuse large B-cell lymphomaOICopioid induced constipationEFIenteral feeding intolerancePARPpoly (ADP-ribose) polymeraseEGFRepidermal growth factor receptorPCABpotassium competitive acid blockerFLesophageal squamous-cell carcinomaPh+ALLPhiladelphia chromosome-positive acute lymphoblastic leukemiaFLT-3FMS-like tyrosine kinase 3PPIperioheral T-cell lymphomaGCCguanylyl cyclase CRCCrelapsed / refractoryGGLgastrointestinalRRCrelapsed / refractoryGRHHgonadotropin-releasing hormoneRCCreceptor tyrosine kinaseGvHDgraft versus host diseaseSALCLsystemia anglastic large cell lymphomaHAEhead to beadSCZschizophreniaHCAhead to beadSCZschizophreniaHCAhead to beadSCZschizophreniaHCAhead to beadSCZschizophreniaHCAhead to beadSCZschizophreniaHCAhead tor accrinomaSLEsystemic lupus eryt	CD	Crohn's disease	NASH	non-alcoholic steatophepatitis
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CMMLchronic myelomonocytic leukemiaNERDnon-erosive reflux diseaseCNScentral nervous systemNMEnew molecular entityCTCLcutarous T-cell lymphomaNSnegative symptomsDDAOD-amino acid oxidaseNSCLCnon-small cell lung cancerDIBCLdiffuse large B-cell lymphomaOICopioid induced constipationEFIenteral feeding intolerancePARPpoly (ADP-ritose) polymeraseEGFRepidermal growth factor receptorPCABpotassium competitive acid blockerFLesophageal squamous-cell carcinomaPh4LLPhiladelphia chromosome-positive acute lymphoblastic leukemiaFLT-3FMS-like tyrosine kinase 3PTCLperipheral T-cell lymphomaGCCgastroesophageal reflux diseaseR/Rrelapsed / refractoryGIgastroesophageal reflux diseaseR/Rrelapsed / refractoryGRNgonadotropin-releasing hormoneRTKreceptor tyrosine kinaseGVHDgraft versus host diseaseSCTsystemic anaplastic large cell lymphomaH2Lheeditary angiodemaSCZsystemic lupus erythematosusH2Lhead to headSCZsystemic lupus erythematosusH2Rhuman epidermal growth factor receptor 2SRstencil erractoryH2Lhead to headSCZsystemic lupus erythematosusH2Rhuman epidermal growth factor receptor 2SRstencil eractoryH2Rhuman epidermal growth factor receptor 2SRstencil eractoryH3Dinflammato	CIC	chronic idiopathic constipation	NDA	new drug application
CMMLchronic myelomonocytic leukemiaNERDnon-erosive reflux diseaseCNScentral nervous systemNMEnew molecular entityCTCLcutarous T-cell lymphomaNSnegative symptomsDDAOD-amino acid oxidaseNSCLCnon-small cell lung cancerDIBCLdiffuse large B-cell lymphomaOICopioid induced constipationEFIenteral feeding intolerancePARPpoly (ADP-ritose) polymeraseEGFRepidermal growth factor receptorPCABpotassium competitive acid blockerFLesophageal squamous-cell carcinomaPh4LLPhiladelphia chromosome-positive acute lymphoblastic leukemiaFLT-3FMS-like tyrosine kinase 3PTCLperipheral T-cell lymphomaGCCgastroesophageal reflux diseaseR/Rrelapsed / refractoryGIgastroesophageal reflux diseaseR/Rrelapsed / refractoryGRNgonadotropin-releasing hormoneRTKreceptor tyrosine kinaseGVHDgraft versus host diseaseSCTsystemic anaplastic large cell lymphomaH2Lheeditary angiodemaSCZsystemic lupus erythematosusH2Lhead to headSCZsystemic lupus erythematosusH2Rhuman epidermal growth factor receptor 2SRstencil erractoryH2Lhead to headSCZsystemic lupus erythematosusH2Rhuman epidermal growth factor receptor 2SRstencil eractoryH2Rhuman epidermal growth factor receptor 2SRstencil eractoryH3Dinflammato	CML	chronic myeloid leukemia	Neg	negative
CTCLcutaneous T-cell lymphomaNSnegative symptomsDDAOD-amino acid oxidaseNSCLCnon-small cell lung cancerDLBCLdiffuse large B-cell lymphomaOICopioid induced constipationEFIenteral feeding intolerancePARPpoly (ADP-ribose) polymeraseEGFRepidermal growth factor receptorPCABpotassium competitive acid blockerFLesophageal squamous-cell carcinomaPh+ALLPhiladelphia chromosome-positive acute lymphoblastic leukemiaFLT-3FMS-like tyrosine kinase 3PP1proton pump inhibitorGCCguanylyl cyclase CPTCLperipheral T-cell lymphomaGERDgastroesophageal reflux diseaseR/Rrelapsed / refractoryGIgastroinestinalRCCrenal cell cancerGNHgondotropin-releasing hormoneRTKreceptor tyrosine kinaseHAEhereditary angiodemaSCTstem cell transplantHAEhereditary angiodemaSCZschizophreniaHCChepatocellular carcinomaSLEsystemic lupus erythematosusHER2human epidermal growth factor receptor 2SRsteroid refractoryHLHodgkin's lymphomaSYKspleen tyrosine kinaseHRMDShigh-risk myelodysplastic syndromesTESDtreatment emergent sexual dysfunctionIBDinflammatory bowel diseaseTRDtreatment resistant depressionIBDinflammatory bowel diseaseTRDtreatment resistant depressionIBDinflammatory bowel diseaseTRD<	CMML	chronic myelomonocytic leukemia		non-erosive reflux disease
DDAOD-amino acid oxidaseNSCLCnon-small cell lung cancerDLBCLdiffuse large B-cell lymphomaOICopioid induced constipationEFIenteral feeding intolerancePARPpoly (ADP-ribose) polymeraseEGFRepidermal growth factor receptorPCABpotassium competitive acid blockerFLesophageal squamous-cell carcinomaPh+ALLPhiladelphia chromosome-positive acute lymphoblastic leukemiaFLT-3FMS-like tyrosine kinase 3PPIporton pump inhibitorGCCguanylyl cyclase CPTCLperipheral T-cell lymphomaGERDgastroesophageal reflux diseaseR/Rrelapsed / refractoryGIgastrointestinalRCCrenal cell cancerGNHgonadotropin-releasing hormoneRTKreceptor tyrosine kinaseGVHDgraft versus host diseaseSCTstemic anaplastic large cell lymphomaHAEhereditary angiodemaSCTstemic anaplastic large cell lymphomaHZLhuman epidermal growth factor receptor 2SRsteroid refractoryHER2human epidermal growth factor receptor 2SRsteroid refractoryHLHodgkin's lymphomaSYKspleen tyrosine kinaseHRMDShigh-risk myelodysplastic syndromesTESDtreatment mergent sexual dysfunctionIBDinflammatory bowel diseaseTRDtreatment resistant depressionIBDinflammatory bowel diseaseTRDtreatment receptorIBDimflamotory bowel diseaseTRDtreatment receptorIBD<	CNS	central nervous system	NME	new molecular entity
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EGFRepidermal growth factor receptorPCABpotassium competitive acid blockerFLesophageal squamous-cell carcinomaPh-ALLPhiladelphia chromosome-positive acute lymphoblastic leukemiaFLT-3FMS-like tyrosine kinase 3PPIporton pump inhibitorGCCguanylyl cyclase CPTCLperipheral T-cell lymphomaGERDgastroesophageal reflux diseaseR/Rrelapsed / refractoryGIgastroitestinalRCCrenal cell cancerGNRHgonadotropin-releasing hormoneRTKreceptor tyrosine kinaseGVHDgraft versus host diseaseSALCLsystemic anaplastic large cell lymphomaHAEhereditary angiodemaSCTstemicell transplantH2Hhead to headSCZschizophreniaHER2human epidermal growth factor receptor 2SRsteroid refractoryHLHodgkin's lymphomaSVKspleen tyrosine kinaseHRMDShigh-risk myelodysplastic syndromesTESDtreatment emergent sexual dysfunctionIBDinflammatory bowel diseaseTRDtreatment emergent sexual dysfunctionIBDimmuno-oncologyVEGFRvascular endothelial growth factor receptor	DLBCL	diffuse large B-cell lymphoma	OIC	opioid induced constipation
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FLT-3FMS-like tyrosine kinase 3PPIproton pump inhibitorGCCguanylyl cyclase CPTCLperipheral T-cell lymphomaGERDgastroesophageal reflux diseaseR/Rrelapsed / refractoryGIgastrointestinalRCCrenal cell cancerGnRHgonadotropin-releasing hormoneRTKreceptor tyrosine kinaseGVHDgraft versus host diseasesALCLsystemic anaplastic large cell lymphomaHAEhereditary angiodemaSCTstem cell transplantH2Hhead to headSCZschizophreniaHCChepatocellular carcinomaSLEsystemic lupus erythematosusHER2human epidermal growth factor receptor 2SRsteroid refractoryHR MDShigh-risk myelodysplastic syndromesTESDtreatment resistant depressionIBDinflammatory bowel diseaseTRDtreatment resistant depressionIBS-Cirritable bowel syndrome with constipationUCulcerative colitisIOimmuno-oncologyVEGFRvascular endothelial growth factor receptor	FL	esophageal squamous-cell carcinoma	Ph+ALL	Philadelphia chromosome-positive acute lymphoblastic leukemia
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GIgastrointestinalRCCrenal cell cancerGnRHgonadotropin-releasing hormoneRTKreceptor tyrosine kinaseGvHDgraft versus host diseasesALCLsystemic anaplastic large cell lymphomaHAEhereditary angiodemaSCTstem cell transplantH2Hhead to headSCZschizophreniaHCChepatocellular carcinomaSLEsystemic lupus erythematosusHER2human epidermal growth factor receptor 2SRsteroid refractoryHLHodgkin's lymphomaSYKspleen tyrosine kinaseIBDinflammatory bowel diseaseTRDtreatment resistant depressionIBS-Cirritable bowel syndrome with constipationUCulcerative colitisIOimmuno-oncologyVEGFRvascular endothelial growth factor receptor	GCC	guanylyl cyclase C	PTCL	peripheral T-cell lymphoma
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GvHDgraft versus host diseasesALCLsystemic anaplastic large cell lymphomaHAEhereditary angiodemaSCTstem cell transplantH2Hhead to headSCZschizophreniaHCChepatocellular carcinomaSLEsystemic lupus erythematosusHER2human epidermal growth factor receptor 2SRsteroid refractoryHLHodgkin's lymphomaSYKspleen tyrosine kinaseHR MDShigh-risk myelodysplastic syndromesTESDtreatment emergent sexual dysfunctionIBDinflammatory bowel diseaseTRDtreatment resistant depressionIBS-Cirritable bowel syndrome with constipationVEGFRvascular endothelial growth factor receptor	GI	gastrointestinal	RCC	renal cell cancer
GvHDgraft versus host diseasesALCLsystemic anaplastic large cell lymphomaHAEhereditary angiodemaSCTstem cell transplantH2Hhead to headSCZschizophreniaHCChepatocellular carcinomaSLEsystemic lupus erythematosusHER2human epidermal growth factor receptor 2SRsteroid refractoryHLHodgkin's lymphomaSYKspleen tyrosine kinaseHR MDShigh-risk myelodysplastic syndromesTESDtreatment emergent sexual dysfunctionIBDinflammatory bowel diseaseTRDtreatment resistant depressionIBS-Cirritable bowel syndrome with constipationVEGFRvascular endothelial growth factor receptor	GnRH	gonadotropin-releasing hormone	RTK	receptor tyrosine kinase
H2Hhead to headSCZschizophreniaHCChepatocellular carcinomaSLEsystemic lupus erythematosusHER2human epidermal growth factor receptor 2SRsteroid refractoryHLHodgkin's lymphomaSYKspleen tyrosine kinaseHR MDShigh-risk myelodysplastic syndromesTESDtreatment emergent sexual dysfunctionIBDinflammatory bowel diseaseTRDtreatment resistant depressionIBS-Cirritable bowel syndrome with constipationUCulcerative colitisIOimmuno-oncologyVEGFRvascular endothelial growth factor receptor	GvHD		sALCL	systemic anaplastic large cell lymphoma
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HER2human epidermal growth factor receptor 2SRsteroid refractoryHLHodgkin's lymphomaSYKspleen tyrosine kinaseHR MDShigh-risk myelodysplastic syndromesTESDtreatment emergent sexual dysfunctionIBDinflammatory bowel diseaseTRDtreatment resistant depressionIBS-Cirritable bowel syndrome with constipationUCulcerative colitisIOimmuno-oncologyVEGFRvascular endothelial growth factor receptor	H2H	head to head	SCZ	schizophrenia
HER2human epidermal growth factor receptor 2SRsteroid refractoryHLHodgkin's lymphomaSYKspleen tyrosine kinaseHR MDShigh-risk myelodysplastic syndromesTESDtreatment emergent sexual dysfunctionIBDinflammatory bowel diseaseTRDtreatment resistant depressionIBS-Cirritable bowel syndrome with constipationUCulcerative colitisIOimmuno-oncologyVEGFRvascular endothelial growth factor receptor	HCC	hepatocellular carcinoma	SLE	systemic lupus erythematosus
HLHodgkin's lymphomaSYKspleen tyrosine kinaseHR MDShigh-risk myelodysplastic syndromesTESDtreatment emergent sexual dysfunctionIBDinflammatory bowel diseaseTRDtreatment resistant depressionIBS-Cirritable bowel syndrome with constipationUCulcerative colitisIOimmuno-oncologyVEGFRvascular endothelial growth factor receptor	HER2	human epidermal growth factor receptor 2	SR	
IBDinflammatory bowel diseaseTRDtreatment resistant depressionIBS-Cirritable bowel syndrome with constipationUCulcerative colitisIOimmuno-oncologyVEGFRvascular endothelial growth factor receptor	HL	Hodgkin's lymphoma	SYK	
IBS-Cirritable bowel syndrome with constipationUCulcerative colitisIOimmuno-oncologyVEGFRvascular endothelial growth factor receptor	HR MDS	high-risk myelodysplastic syndromes	TESD	treatment emergent sexual dysfunction
IO immuno-oncology VEGFR vascular endothelial growth factor receptor	IBD	inflammatory bowel disease	TRD	treatment resistant depression
IO immuno-oncology VEGFR vascular endothelial growth factor receptor	IBS-C		UC	ulcerative colitis
	10		VEGFR	vascular endothelial growth factor receptor
	LB AML	Low-Blast Acute Myeloid Leukemia		