
Roche

Roche

2018 results

London, 31 January 2019

This presentation contains certain forward-looking statements. These forward-looking statements may be identified by words such as ‘believes’, ‘expects’, ‘anticipates’, ‘projects’, ‘intends’, ‘should’, ‘seeks’, ‘estimates’, ‘future’ or similar expressions or by discussion of, among other things, strategy, goals, plans or intentions. Various factors may cause actual results to differ materially in the future from those reflected in forward-looking statements contained in this presentation, among others:

1 pricing and product initiatives of competitors;
2 legislative and regulatory developments and economic conditions;
3 delay or inability in obtaining regulatory approvals or bringing products to market;
4 fluctuations in currency exchange rates and general financial market conditions;
5 uncertainties in the discovery, development or marketing of new products or new uses of existing products, including without limitation negative results of clinical trials or research projects, unexpected side-effects of pipeline or marketed products;
6 increased government pricing pressures;
7 interruptions in production;
8 loss of or inability to obtain adequate protection for intellectual property rights;
9 litigation;
10 loss of key executives or other employees; and
11 adverse publicity and news coverage.

Any statements regarding earnings per share growth is not a profit forecast and should not be interpreted to mean that Roche’s earnings or earnings per share for this year or any subsequent period will necessarily match or exceed the historical published earnings or earnings per share of Roche.

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Group

Severin Schwan
Chief Executive Officer

2018 performance

Outlook

2018: Targets fully achieved

Targets for 2018		2018	
Group sales growth[1]	Mid-single digit (raised at HY)	**+7%**	✓
Core EPS growth[1]	Broadly in line with sales growth, excl. US tax reform benefit Mid teens incl. US tax reform (raised at HY)	**+8%** **+19%**	✓
Dividend outlook	Further increase dividend in Swiss francs[2]	**CHF 8.70**	✓

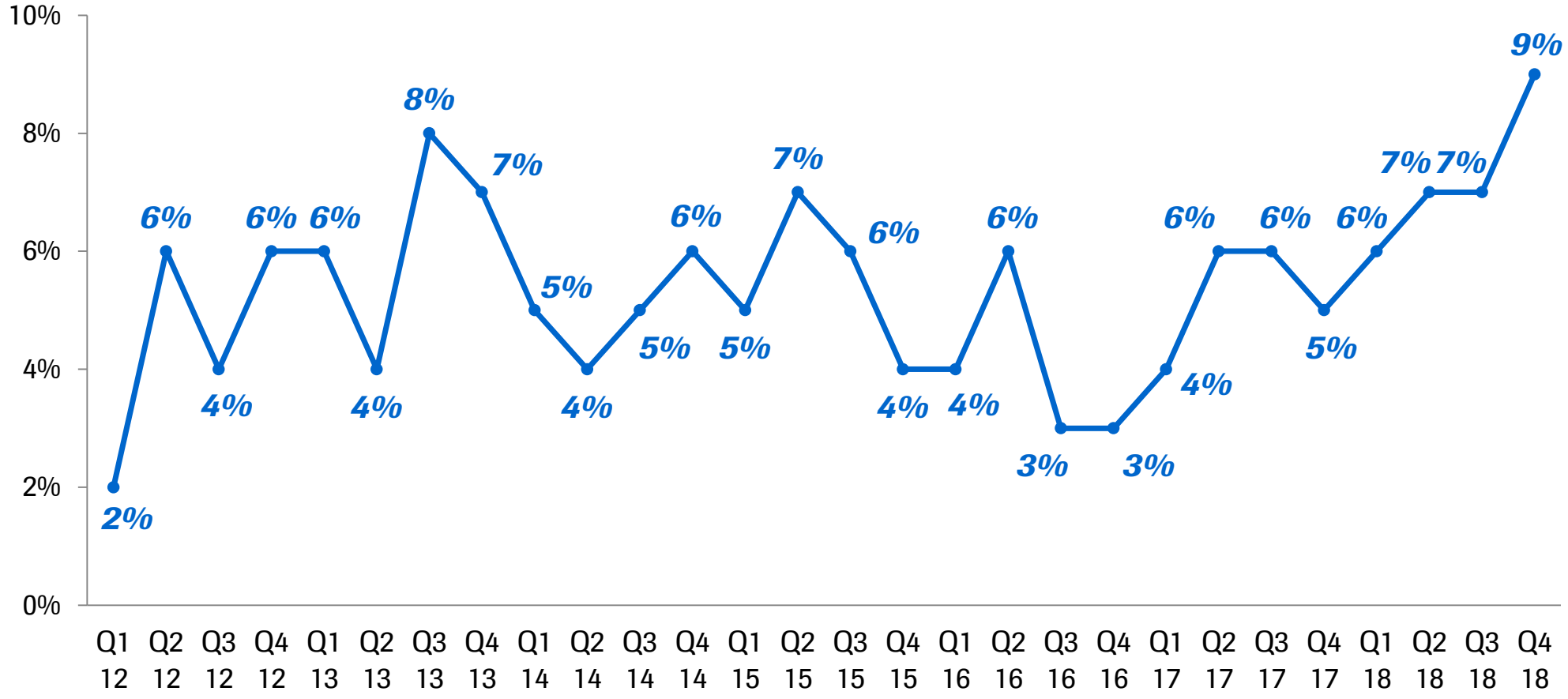
[1] At constant exchange rates (CER); [2] 2018 dividend as proposed by the Board of Directors

2018: Strong sales growth in both divisions

	2018 CHFbn	2017 CHFbn	Change in % CHF	Change in % CER
Pharmaceuticals Division	**44.0**	41.2	**7**	**7**
Diagnostics Division	**12.9**	12.1	**7**	**7**
Roche Group	**56.8**	53.3	**7**	**7**

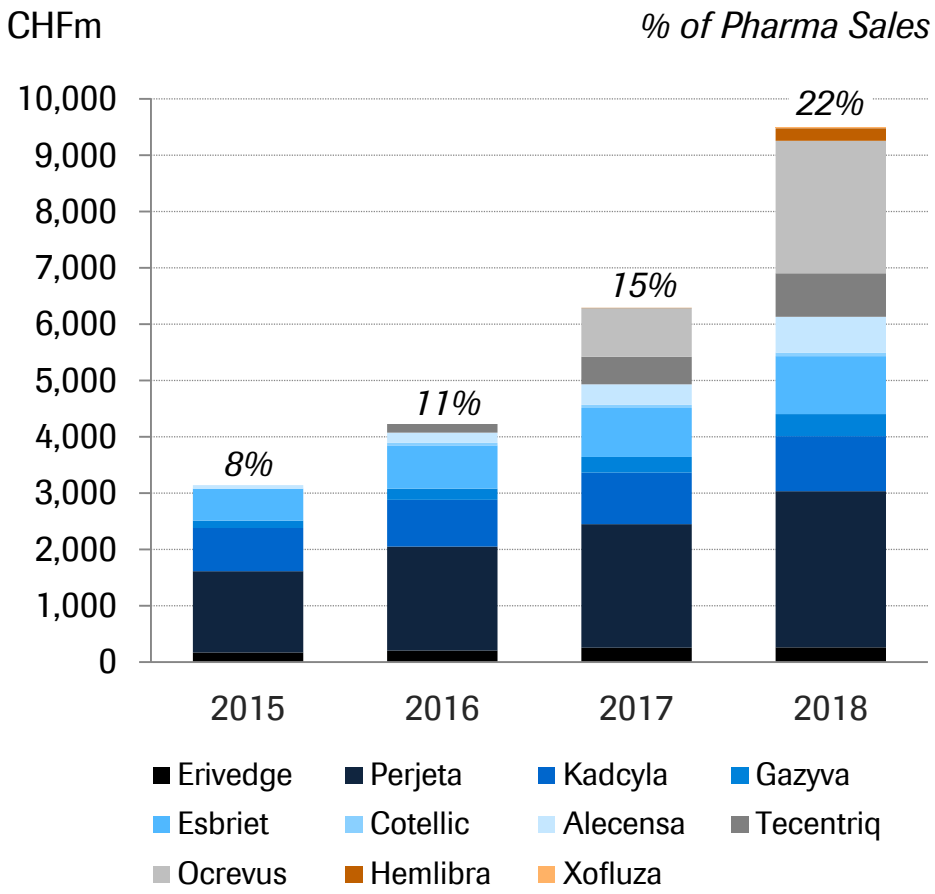
CER=Constant Exchange Rates

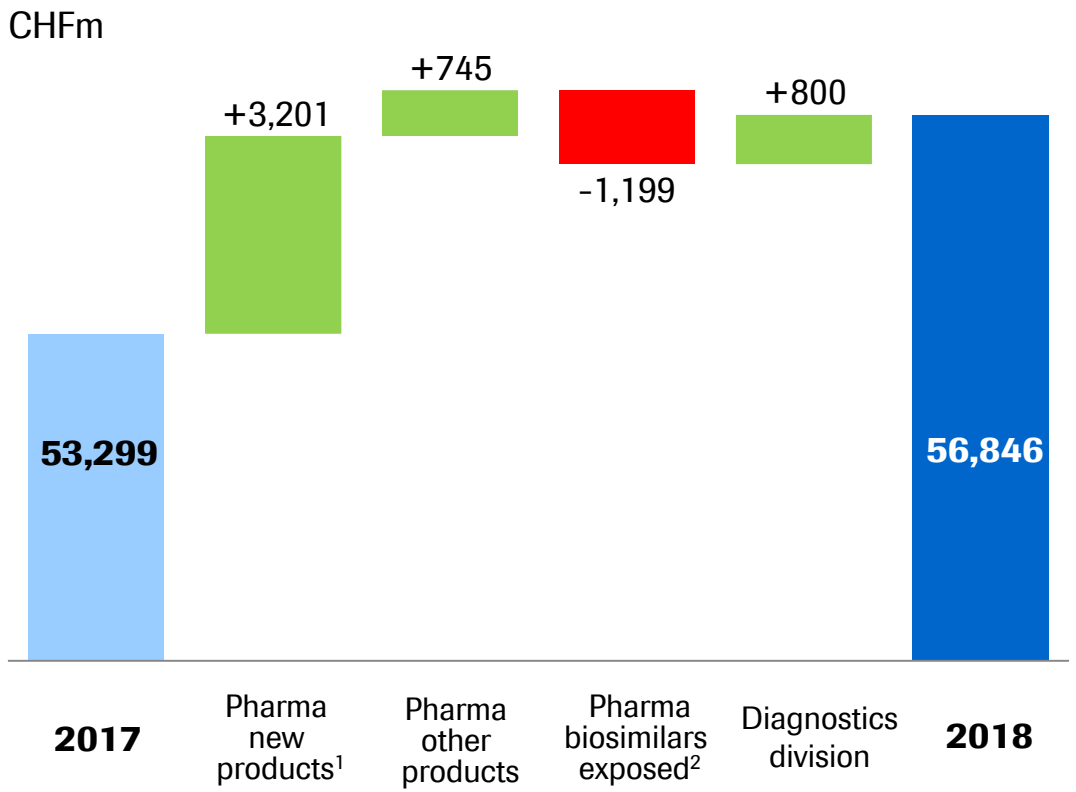
2018: Sales growth for the seventh consecutive year



All growth rates at Constant Exchange Rates (CER)

New products with strong momentum offsetting biosimilars impact



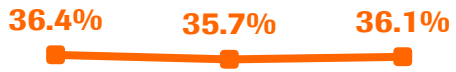


All absolute values are presented in CHFm reported; [1] Erivedge, Perjeta, Kadcyla, Gazyva, Esbriet, Cotellic, Alecensa, Tecentriq, Ocrevus, Hemlibra, and Xofluza; [2] MabThera and Herceptin in Europe and Japan

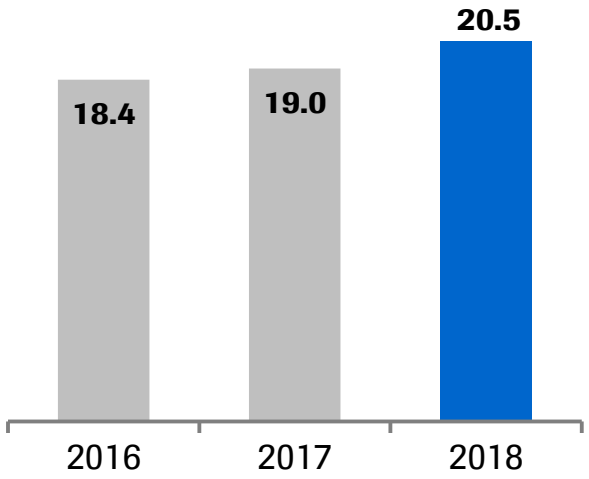
2018: Strong Core results, significant operating free cash flow

Core operating profit

% of sales

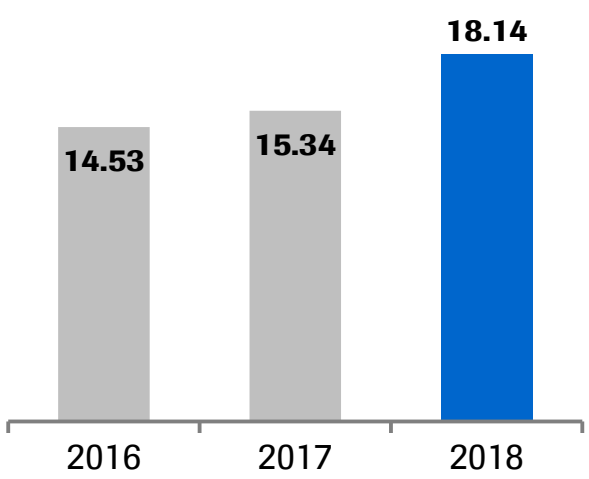


CHFbn

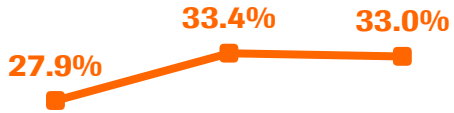


Core EPS

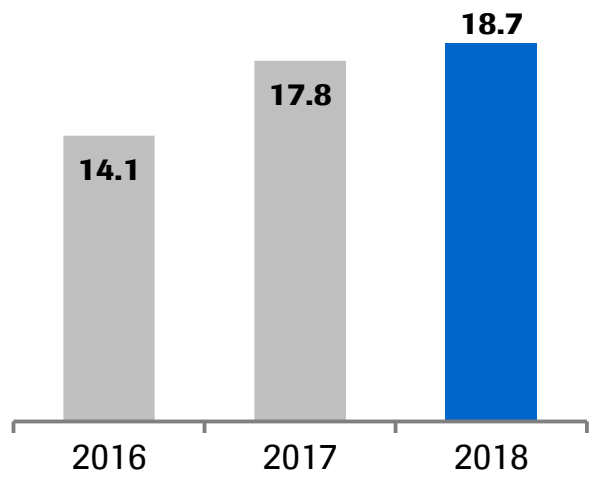
CHF



Operating free cash flow



CHFbn



CER=Constant Exchange Rates; [1]+8% at CER excl. US tax reform

Roche significantly advancing patient care

BTD's and BDD's reflecting the quality of our research

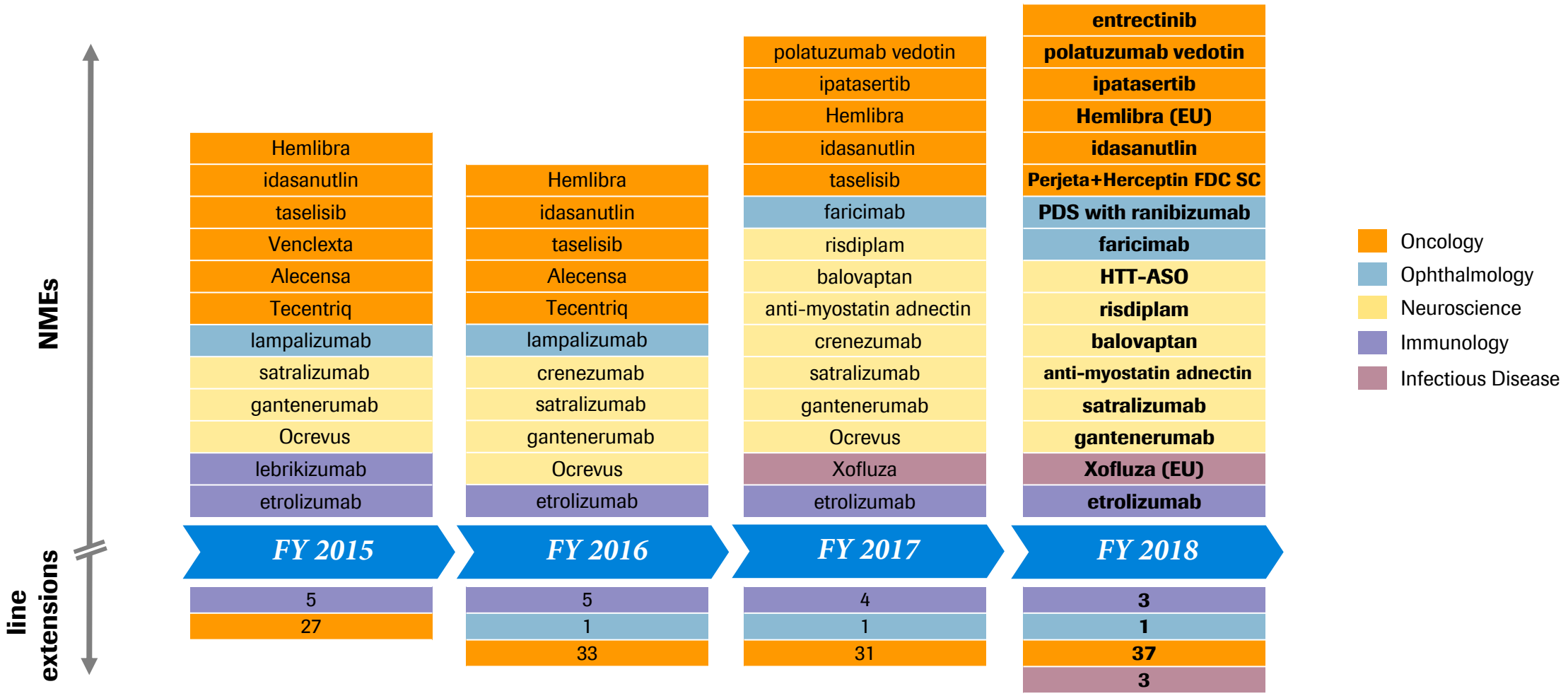
25 *Breakthrough Therapy Designations (BTD)*

Year	Molecule	Indication
2019	**Kadcyla**	Adjuvant HER2+ BC
2018	**satralizumab**	NMOSD
	Xolair	Food allergies
	Tecentriq + Avastin	HCC
	Hemlibra	Hemophilia A non-inhibitors
	entrectinib	NTRK+ solid tumors
	balovaptan	Autism spectrum disorders
2017	**polatuzumab vedotin + BR**	R/R DLBCL
	Venclexta + LDAC	1L unfit AML
	Zelboraf	BRAF-mutated ECD
	Rituxan	Pemphigus vulgaris
2016	**Actemra**	Giant cell arteritis
	Alecensa	1L ALK+ NSCLC
	Ocrevus	PPMS
	Venclexta + HMA	1L unfit AML
	Venclexta + Rituxan	R/R CLL
2015	**Actemra**	Systemic sclerosis
	Tecentriq	NSCLC
	Venclexta	R/R CLL 17p del
	Hemlibra	Hemophilia A inhibitors
2014	**Esbriet**	IPF
	Lucentis	Diabetic retinopathy
	Tecentriq	Bladder
2013	**Alecensa**	2L ALK+ NSCLC
	Gazyva	1L CLL

7 *Breakthrough Device Designations (BDD)*

Year	Device	Intended use
2018	**Elecsys β-Amyloid + p-Tau Cerebro Spinal Fluid assays**	AD: PET concordance AD: Progression
	sFlt + PLGF	Preeclampsia: rule-out within 1w
	FACT CDx (liquid biopsy assay)	70 oncogenes + MSI + bTMB
	cobas EBV	EBV in transplant patients
	cobas BKV	BKV in transplant patients
	CoaguChek Direct-X	Patients on Factor Xa

2018: Record number of NMEs at pivotal stage



NME=new molecular entities; risdiplam (SMN2 splicer); FDC=Fixed dose combination; SC=Subcutaneous; PDS=Port delivery system; For details on the indications and line extensions please consult the pipeline appendix

Replace and extend the business: Excellent progress in 2018

Replace/extend existing businesses

MabThera/Rituxan	Gazyva, Venclexta, polatuzumab vedotin, mosunetuzumab, aCD20/CD3 TCB
Herceptin	Perjeta, Kadcyla, Herceptin + Perjeta SC
Avastin	Tecentriq, Alecensa, entrectinib
Lucentis	faricimab Port delivery system (PDS)
Tamiflu	Xofluza

Entering new franchises

MS:
Ocrevus
satralizumab

Hemophilia A:
Hemlibra

CNS:
SMA, Autism, Huntington's, Alzheimer's, NMOSD

Achievements 2018
Approvals and major read-outs

Entering new franchises

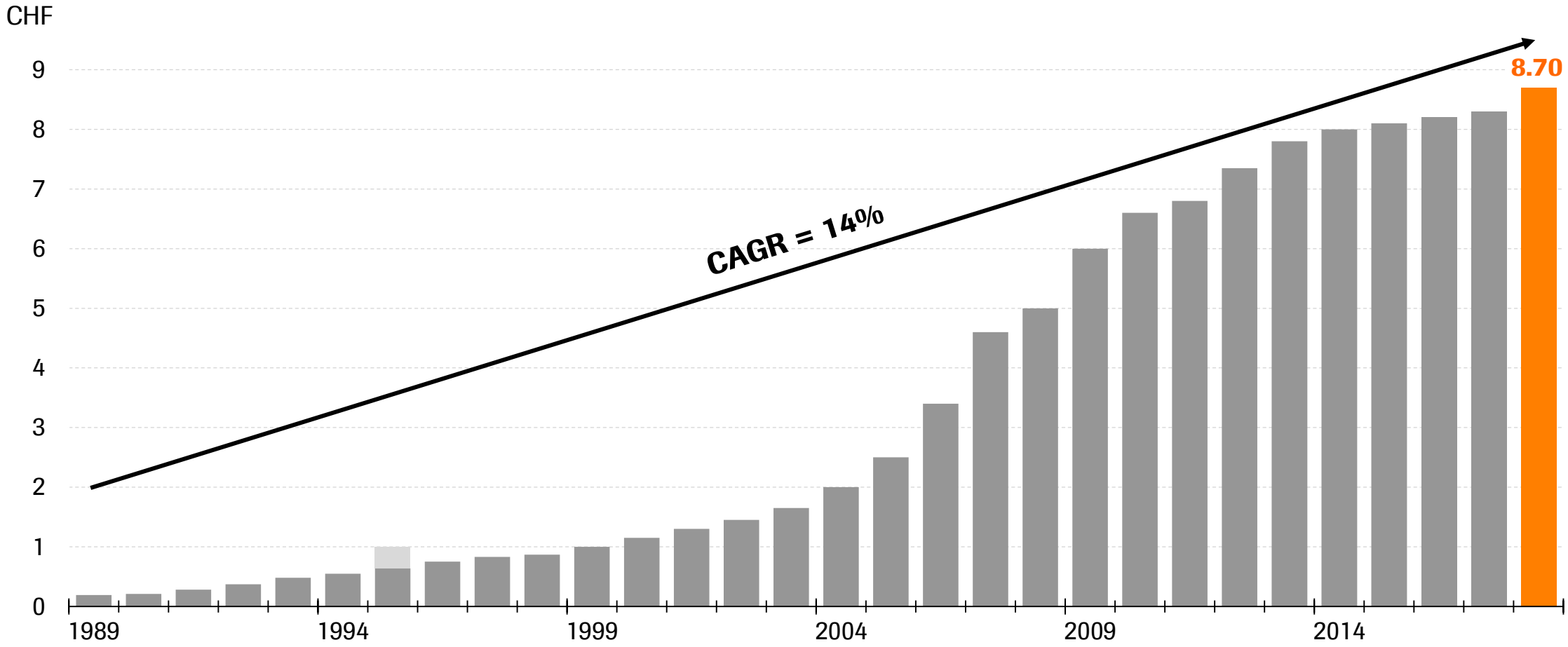
Ocrevus:	EU approval in RMS/PPMS
satralizumab:	2 positive Ph III in NMOSD
Hemlibra:	US/EU/Japan launch in Hemophilia A
Venclexta:	US approval in R/R CLL & 1L AML
risdiplam:	Positive preliminary Ph II in SMA
balovaptan:	Start of Ph III in adults with autism

Replace/extend existing businesses

Gazyva+Ven:	Positive Ph III in 1L CLL
Kadcyla:	Positive Ph III in adjuvant HER2+ BC
Tecentriq:	US approval in 1L non-sq NSCLC; US/EU filing in 1L SCLC & TNBC
entrectinib:	US/EU filing ROS1+ NSCLC & NTRK+ tumors
faricimab:	Positive Ph II in nAMD and DME
PDS:	Positive Ph II in nAMD
Xofluza:	US approval in Influenza A and B

SMA=spinal muscular atrophy; NMOSD=neuromyelitis optica spectrum disorder; RMS=relapsing MS; PPMS=primary progressive MS; R/R CLL=relapsed/refractory chronic lymphocytic leukemia; AML=acute myeloid leukemia; BC=breast cancer; NSCLC=non-small cell lung cancer; SCLC=small cell lung cancer; TNBC=triple-negative BC; nAMD=neovascular age-related macular degeneration; DME=diabetic macular edema

2018: 32nd consecutive annual dividend increase



2018 dividend as proposed by the Board of Directors; Note: For 1995, a special dividend was paid out to mark F. Hoffmann-La Roche's 100th anniversary in 1996

2018 performance

Outlook

2019: Roche significantly advancing patient care

Another strong year expected

3	**NME launches**	• Xofluza (baloxavir marboxil) • entrectinib in ROS1+ and NTRK+ tumors* • polatuzumab vedotin in R/R DLBCL*
7	**Major line extension launches**	• Hemlibra (non-inhibitor) in EU • Kadcyla in adj HER2+ BC • Venclexta in 1L AML and 1L CLL • Tecentriq in 1L TNBC, 1L SCLC, 1L NSCLC
2	**Major NME filings**	• satralizumab in NMOSD • risdiplam in SMA
1	**Diagnostics platform**	• Further roll-out of cobas pro integrated solutions

*filed end of 2018; NME=new molecular entities; R/R CLL=relapsed/refractory diffuse large B-cell lymphoma; AML=acute myeloid leukemia; CLL= chronic lymphocytic leukemia; TNBC=triple-negative BC; SCLC=small cell lung cancer; NSCLC=non-small cell lung cancer; NMOSD=neuromyelitis optica spectrum disorder; SMA=spinal muscular atrophy

2019 outlook

Group sales growth[1]	• Low-to mid-single digit
Core EPS growth[1]	• Broadly in line with sales
Dividend outlook	• Further increase dividend in Swiss francs

[1] At Constant Exchange Rates (CER)

Pharmaceuticals Division

Bill Anderson
CEO Roche Pharmaceuticals

2018: Pharma Division sales

Strong growth in US due to new products

	2018 CHFm	2017 CHFm	Change in % CHF	Change in % CER
Pharmaceuticals Division	**43,967**	**41,220**	**7**	**7**
United States	23,233	20,496	13	14
Europe	8,693	9,051	-4	-7
Japan	3,701	3,713	0	-1
International	8,340	7,960	5	10

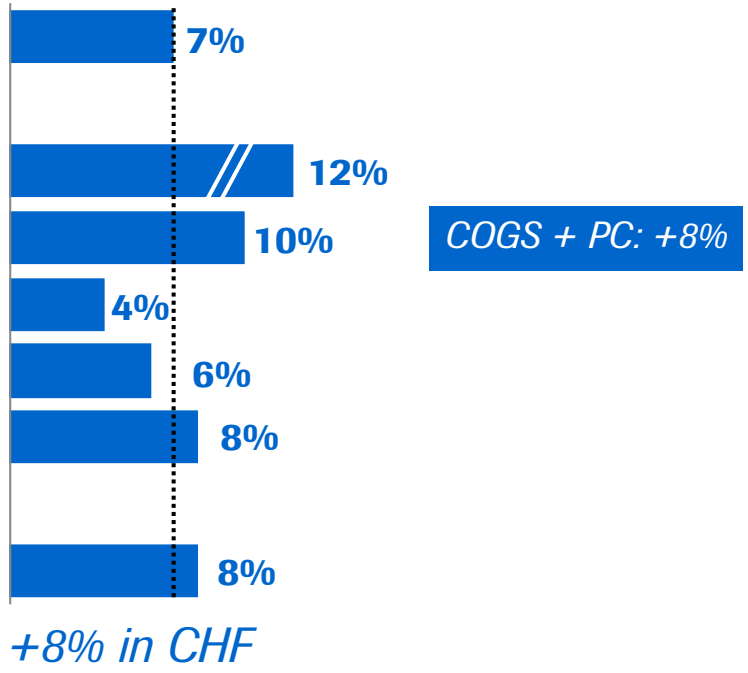
CER=Constant Exchange Rates

2018: Pharma Division

Core operating profit outgrowing sales

	2018 CHFm	2018 % sales
Sales	**43,967**	**100.0**
Royalties & other op. inc.	2,553	5.8
Cost of sales	-9,504	-21.6
M & D	-6,939	-15.8
R & D	-9,586	-21.8
G & A	-1,549	-3.5
Core operating profit	**18,942**	**43.1**

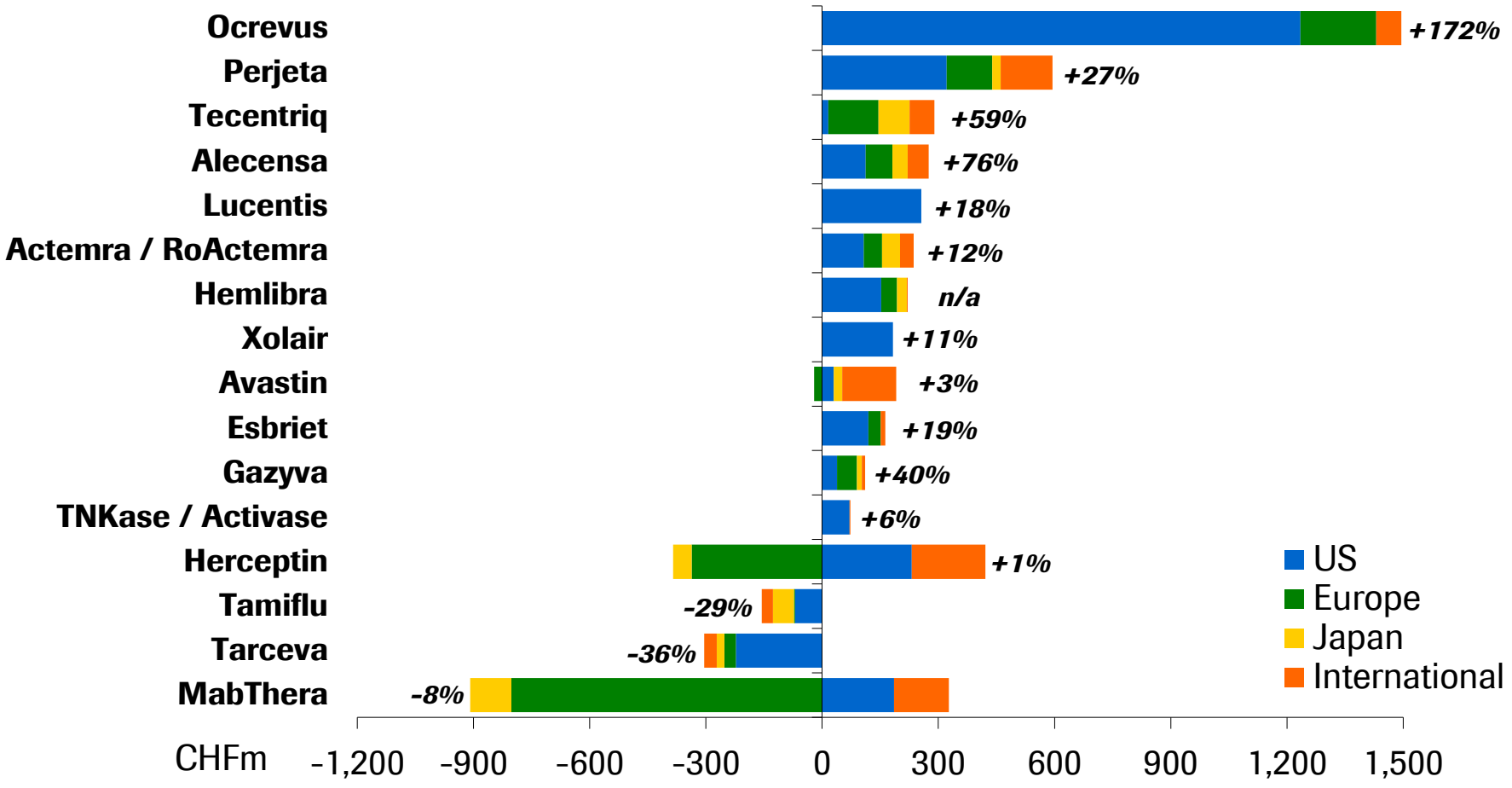
2018 vs. 2017
CER growth



CER=Constant Exchange Rates; COGS=costs of goods sold; PC=period costs

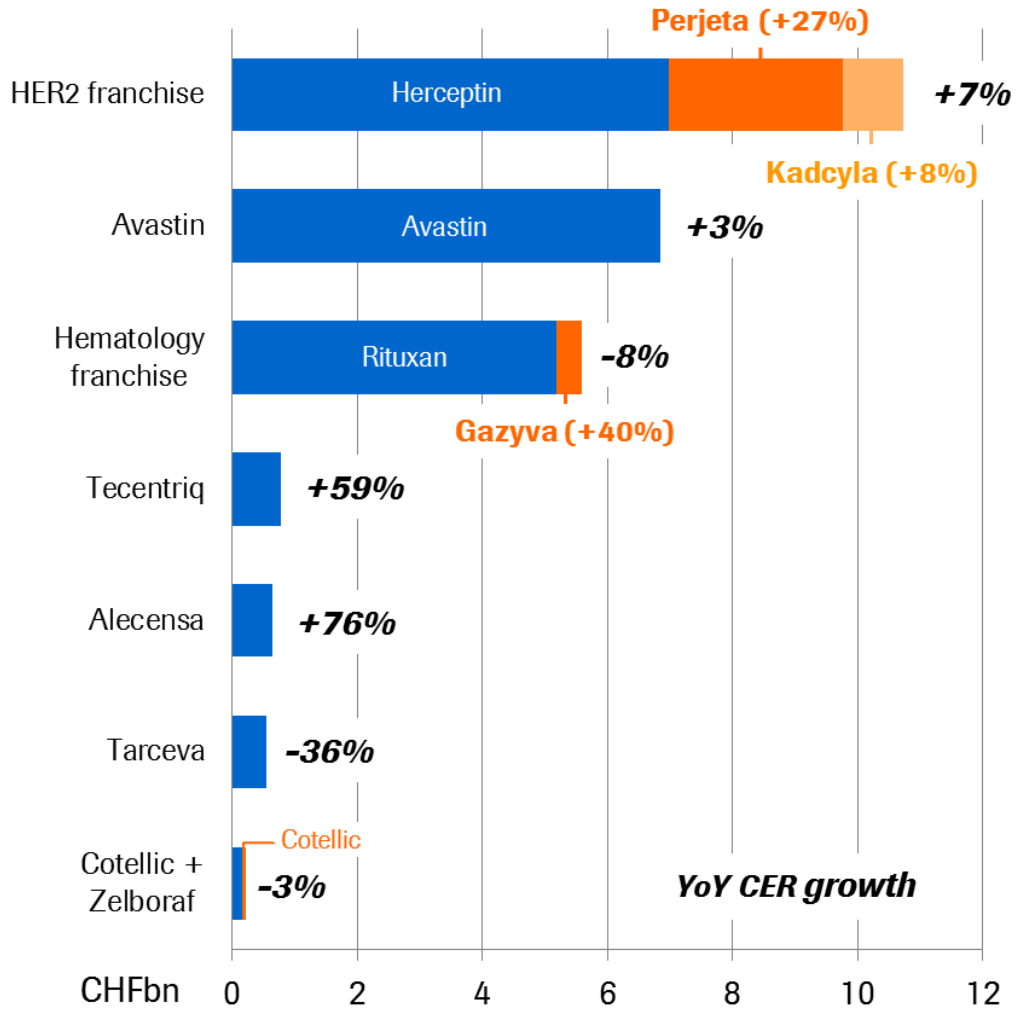
2018: Portfolio rejuvenation in full swing

Growth exclusively driven by new products



Absolute values and growth rates at Constant Exchange Rates (CER)

2018: Oncology grows +2% with new products offsetting biosimilars



Oncology Q4 update

HER2

- Perjeta: Accelerated growth driven by eBC (APHINITY)
- Herceptin: Impact from biosimilars in EU as expected

Hematology

- Venclexta*: Accelerated momentum due to strong 1L AML launch
- Gazyva: Growth remains driven by 1L FL
- MabThera/Rituxan: Biosimilar erosion rate stabilizing in EU

Tecentriq

- Sales momentum in all geographies, upcoming new launches

Alecensa

- Strong 1L launch momentum in all key markets

* **Venclexta sales of USDm 344 (+177% YoY)** are booked by partner AbbVie and therefore not included; 2018 Oncology sales: CHF 26.2bn; CER growth +2%; CER=Constant Exchange Rates; eBC=early breast cancer; AML=acute myeloid leukemia; FL=follicular lymphoma

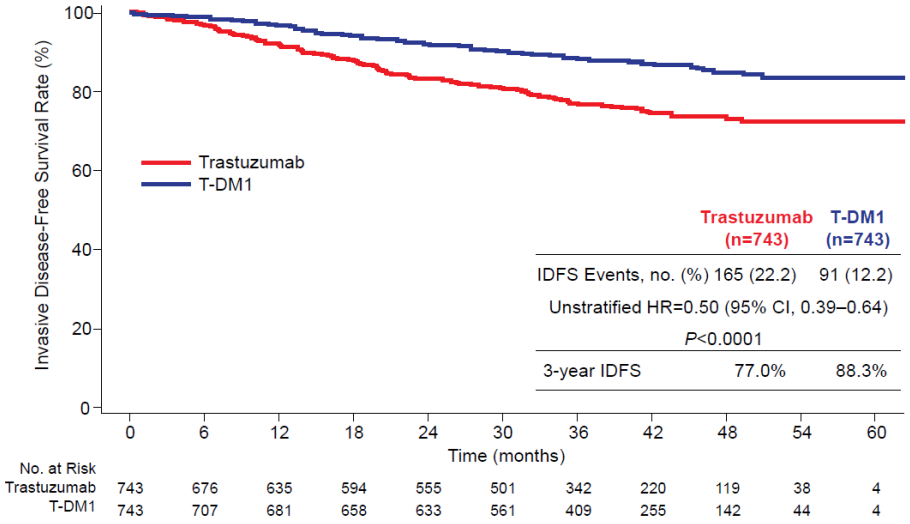
HER2 franchise

Kadcyla in adjuvant HER2+ eBC for patients with residual disease

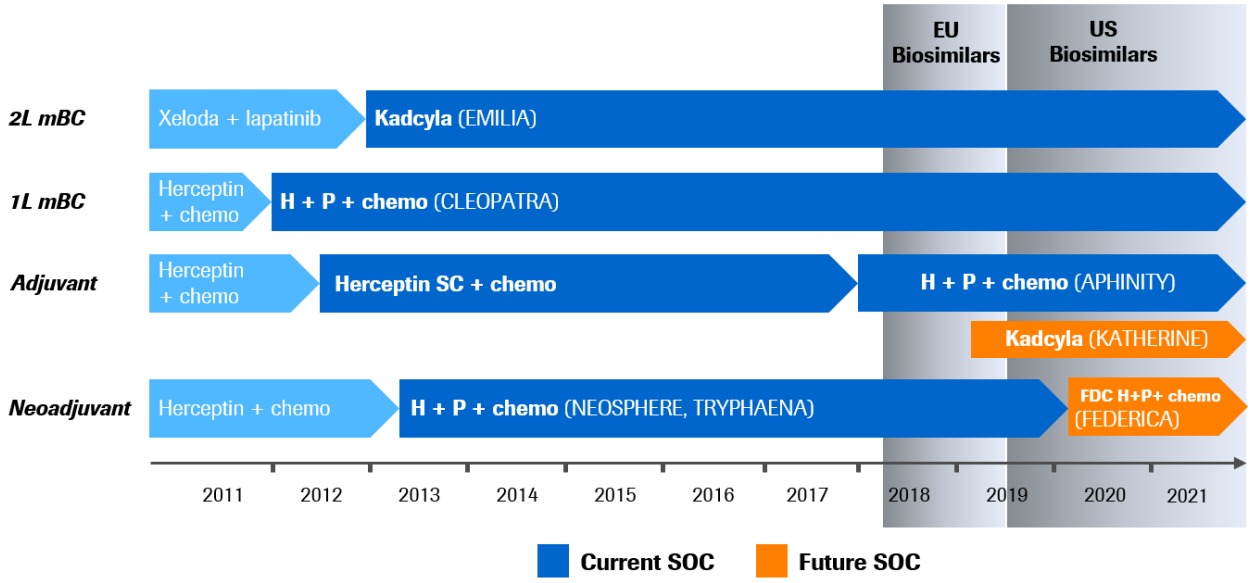
Kadcyla: Ph III (KATHERINE) results

Invasive disease free survival

FDA BTD



Standard of care (SOC) evolution



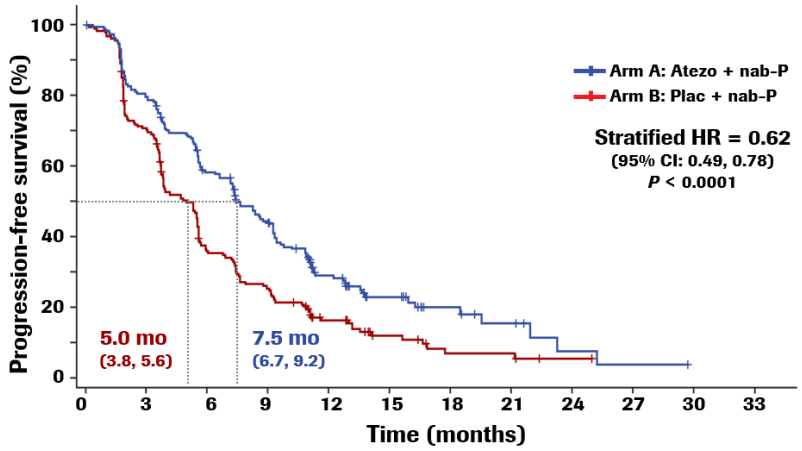
- New SOC in patients with residual invasive disease after neoadjuvant chemo and HER2 targeted therapy
- Increased use of neoadjuvant therapy in HER2-positive eBC expected
- BTD granted; US/EU filing and US approval expected in 2019

Geyer E.C. et al., SABCS 2018; eBC=eary breast cancer; HR=hazard ratio; OS=overall survival; H+P=Herceptin+Perjeta; FDC=fixed dose combination; Kadcyla=trastuzumab emtansine (T-DM1)

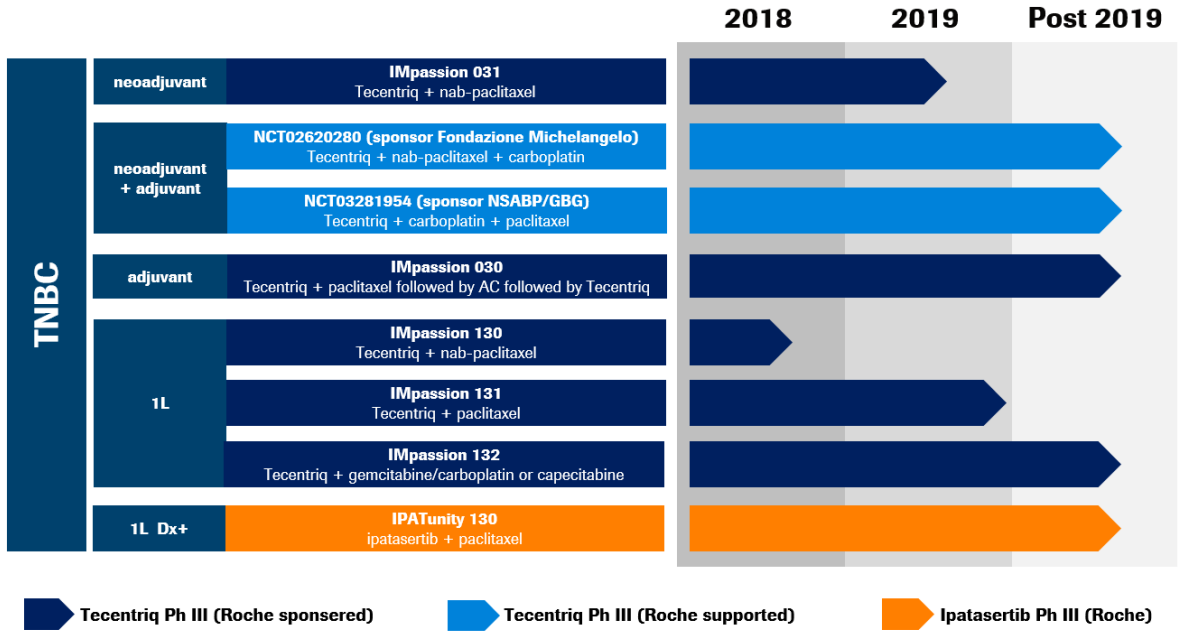
Emerging triple negative breast cancer (TNBC) franchise

Tecentriq + chemo new SOC in 1L PDL1+ patients

Tecentriq+nab-pac: Ph III (IMpassion130)



TNBC program covering all lines of treatment*

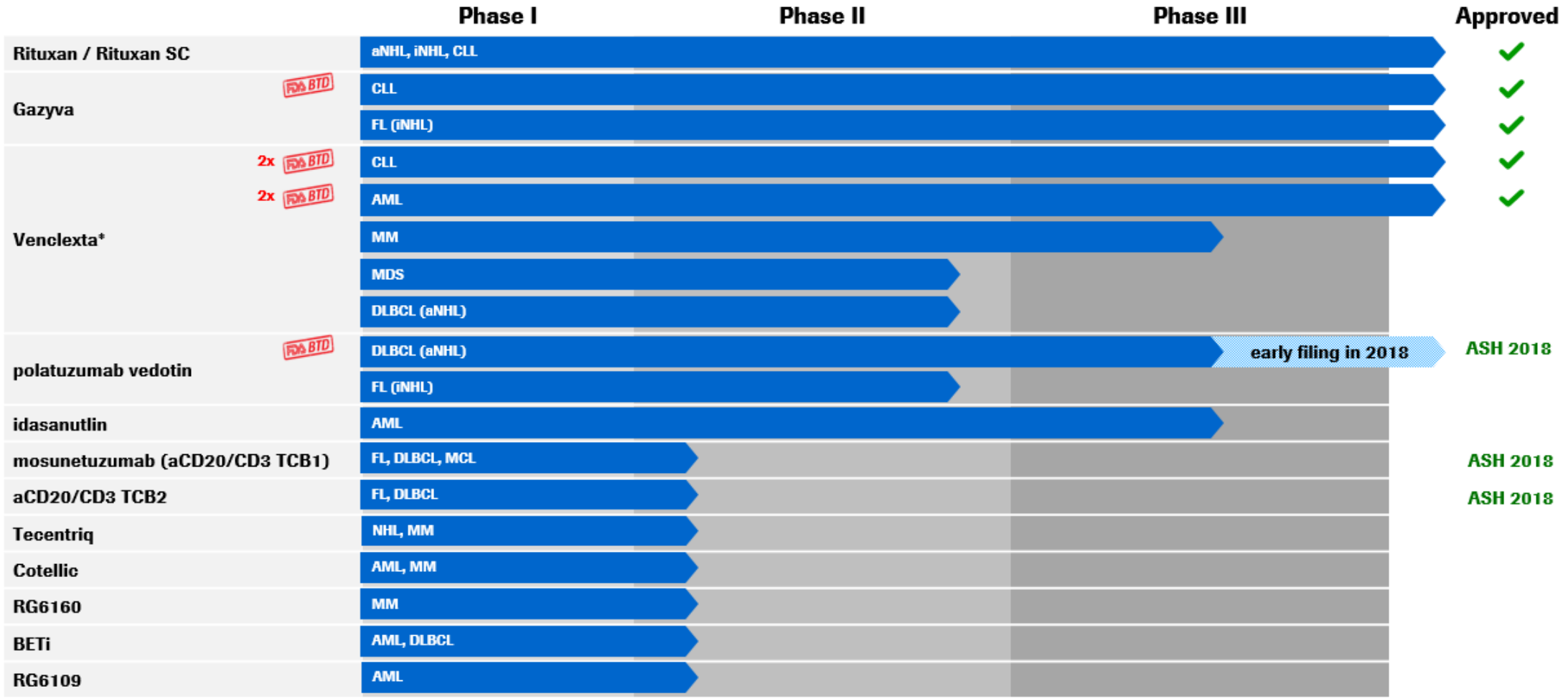


- PFS in ITT (HR=0.80) and PD-L1+ patients (HR=0.62); Interim OS with clinically meaningful improvement in PD-L1+ patients (HR=0.62) with mOS improvement from 15.5m to 25.0m
- US/EU filing completed (PDUFA March 12)

Schmid P, et al. ESMO 2018 (Data cutoff: 17 April 2018); TNBC=triple negative breast cancer; nab-pac=nab-paclitaxel (Abraxane); ITT=intent to treat; HR=hazard ratio; OS=overall survival;
*Outcome studies are event-driven: timelines may change

Hematology franchise

Broadest portfolio with 12 assets in combination trials



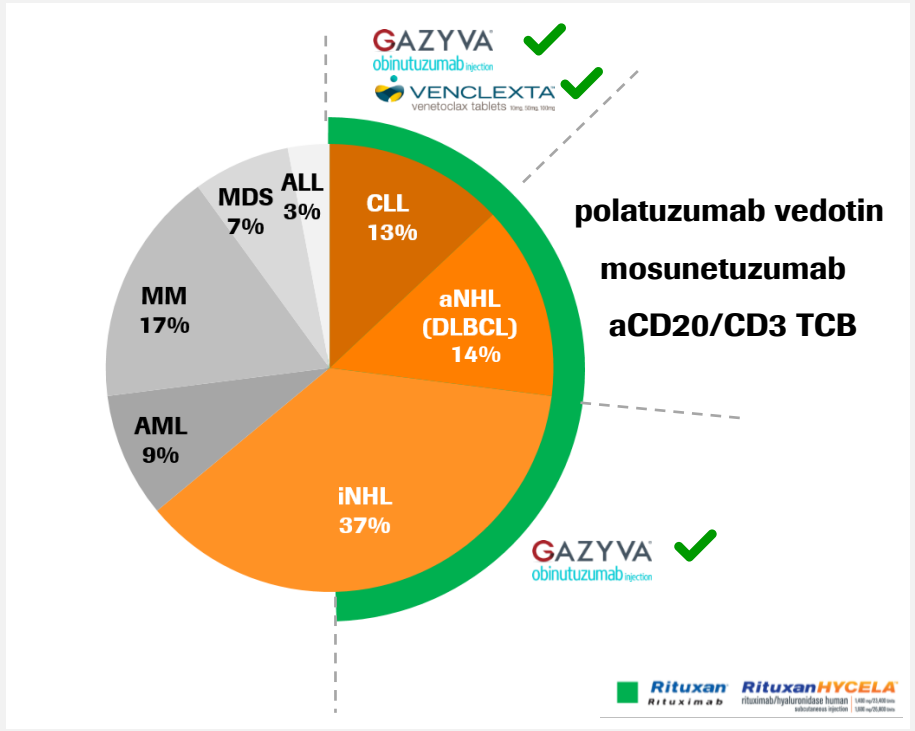
*Venclexta in collaboration with AbbVie; polatuzumab vedotin in collaboration with Seattle Genetics; Cotellic in collaboration with Exelixis; NHL=non-hodgkin`s lymphoma; FL = follicular lymphoma; CLL=chronic lymphoid leukemia; MM=multiple myeloma; MDS=myelodysplastic syndrom; AML=acute myeloid leukemia; MCL=mantle cell lymphoma; DLBCL=diffuse large B cell lymphoma

Hematology franchise

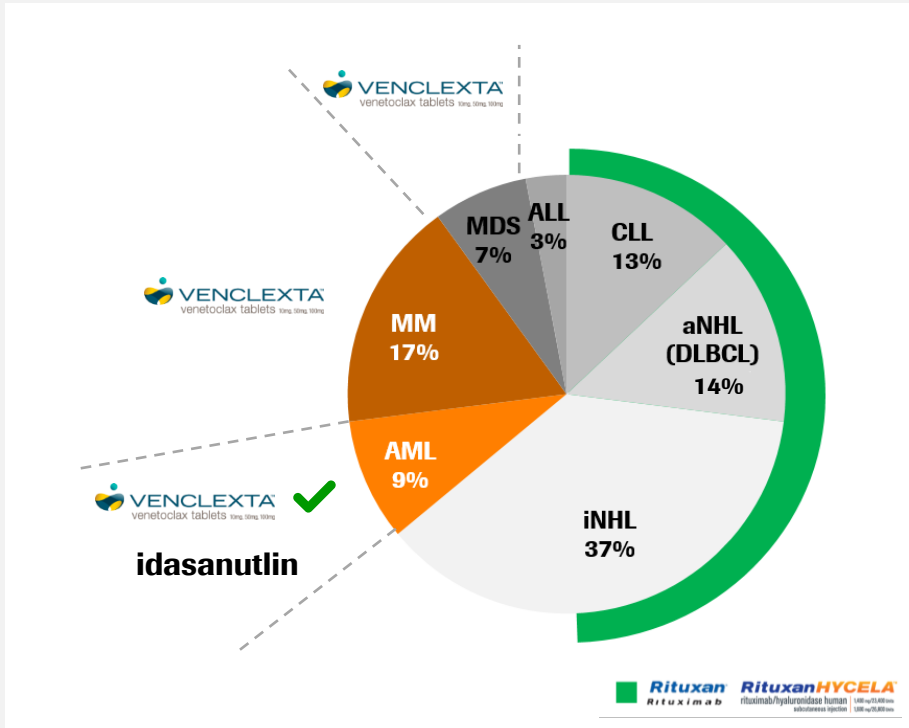
Redefining the SOC and expanding into new indications

60th ASH® Annual Meeting & Exposition
San Diego, CA • December 1-4, 2018

Continuing to redefine the SOC in B-cell malignancies



Expanding into new indications with transformative therapies



Datamonitor: incidence rates includes the 7 major markets (US, Japan, France, Germany, Italy, Spain, UK); SOC=standard of care; CLL=Chronic lymphoid leukemia; DLBCL=Diffuse large B-cell lymphoma; iNHL=Indolent Non-Hodgkin's lymphoma; AML=Acute myeloid leukemia; MM=Multiple myeloma; MDS=Myelodysplastic syndrome; ALL=Acute lymphoblastic leukemia; Venclexta in collaboration with AbbVie; polatuzumab vedotin in collaboration with Seattle Genetics

Hematology franchise

Venclexta + HMA/LDAC new SOC in 1L unfit AML

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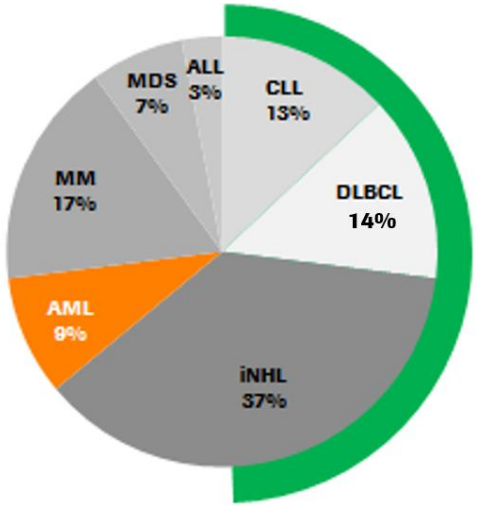
FDA BTD

AML incidence rate[1]



- Incidence rate: US 19.2k; EU5 15.1k
- ~50% of 1L AML patients unfit for intense chemotherapy

PhIb/II update in 1L unfit AML

CR rates doubled compared to historical SOC

	Ven (400mg) + azacitadine	Ven (400mg) + decitabine	azacitadine (historical data)[2]
CR	44%	55%	~20%
CR+CRi	71%	74%	~28%
MRD-negative	48%	39%	N/A
mOS	16.9m	16.2m	10.4m

- **1L AML**: Accelerated FDA approval in 1L unfit AML achieved; Two confirmatory Ph III trials (Viale-A, Viale-C) in 1L AML ongoing
- **R/R AML**: Promising early activity of Venclexta+idasanutlin presented; Ph III (MIRROS) results of idasanutlin+chemo expected in 2019

Pollyea, *et al.*, ASH 2018; 2 Dombert H., et al., International phase 3 study of azacitidine vs conventional care regimens in older patients with newly diagnosed AML with >30% blasts. *Blood.* 2016;126 (3): 291-299; [1] Datamonitor: incidence rates includes the 7 major markets (US, Japan, France, Germany, Italy, Spain, UK); SOC=standard of care; AML=acute myeloid leukemia; HMA=hypomethylating agent; LDAC=low dose aracytarabine; MRD=minimal residual disease: CR=complete response; mOS=median overall survival; Venclexta in collaboration with AbbVie

Hematology franchise

TCBs with strong efficacy and tolerable safety in NHL

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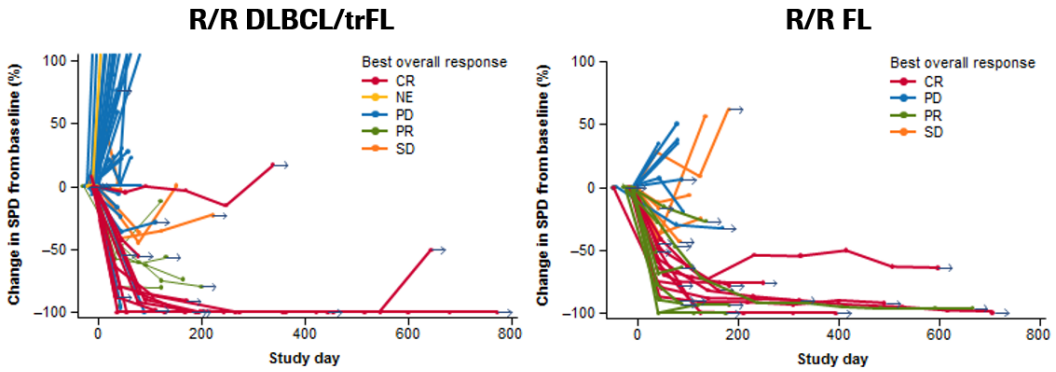
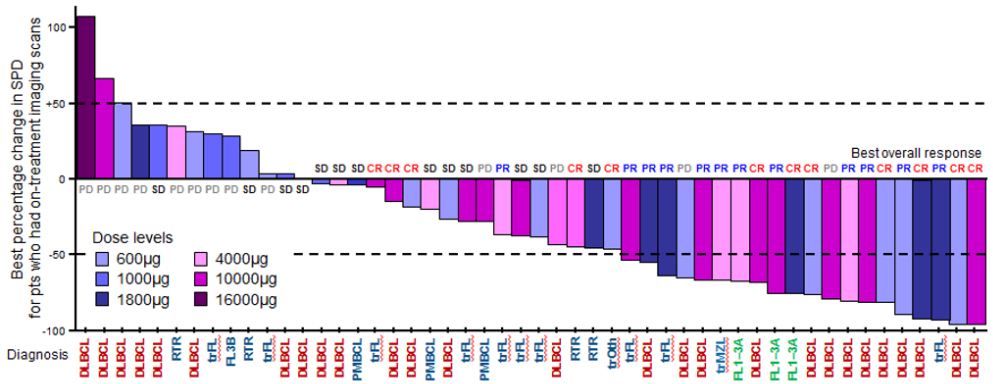
Mosunetuzumab: Ph I/Ib dose escalation



ORR 16/47 (34.0%)
CR 9/47 (19.1%)

ORR 18/26 (69.2%)
CR 10/26 (38.5%)

aCD20/CD3 TCB: Ph Ib dose escalation



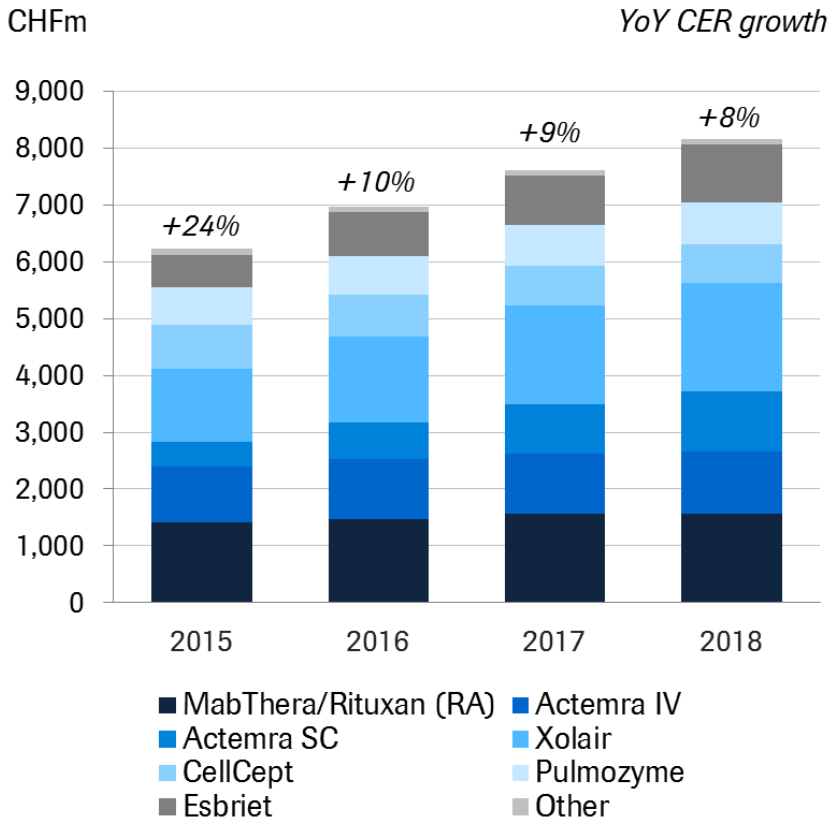
aNHL/DLBCL 10mg cohort*
ORR 9/15 (60%)
CR 5/15 (33%)

- Durable CRs as a single agent in 2L+ iNHL/aNHL
- CRs in patients refractory to R-CHOP and CAR-T
- Combination trials with Tecentriq, polatuzumab vedotin and CHOP ongoing
- Dose escalation ongoing

Budde L., et al, ASH 2018; Hutchings, M., et al, ASH 2018; CAR T cells=chimeric antigen receptor; CR=complete response; SPD=sum of the product diameters; R/R=relapsed/refractory; DLBCL=diffuse large B-cell lymphoma; FL=Follicular Lymphoma; AE=adverse event; NHL=non-Hodgkin's lymphoma; TCB=T=cell bispecific; *aNHL includes FL Grade 3B, DLBCL, trFL, PMBCL, MCL, trMZL, RS and DLBCL/MCL

Immunology franchise

Immunology sales hit CHF 8bn driven by well differentiated products



Immunology Q4 update

Esbriet

- Strong growth in mild to moderate patient segments

Actemra

- Ongoing launches in giant cell arteritis (GCA) and of pre-filled syringe in pJIA and sJIA
- US: Autoinjector approval received

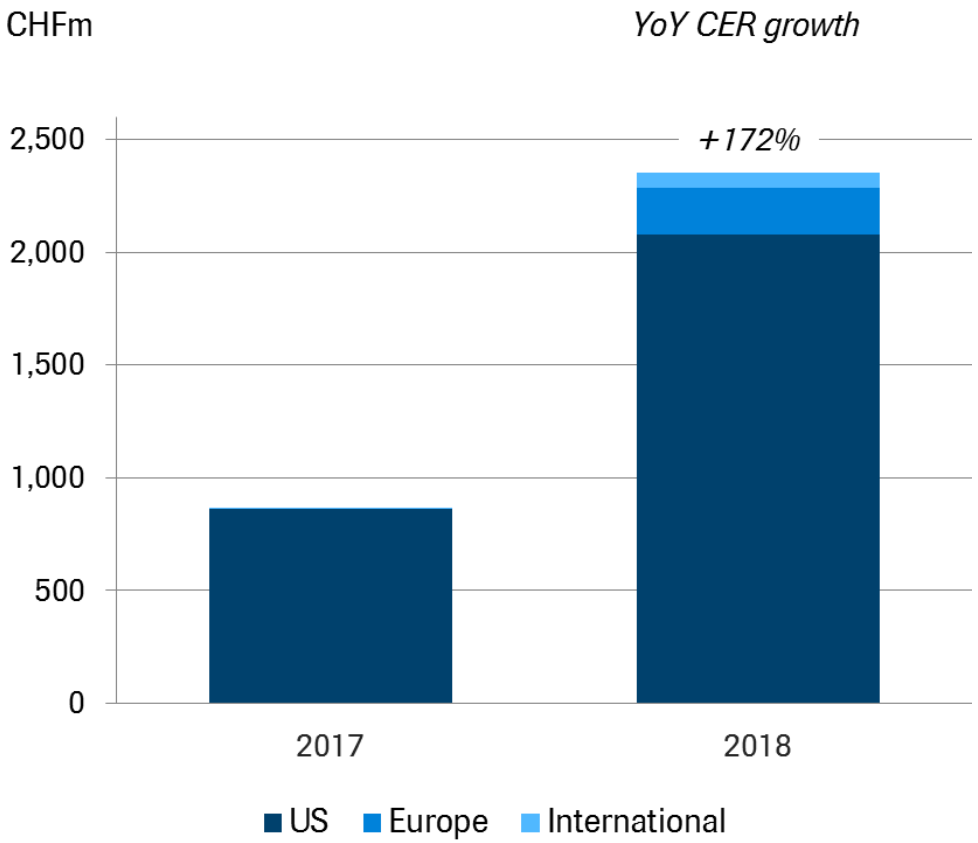
Xolair

- Growth driven by CIU, pediatric asthma and allergic asthma
- Pre-filled syringe launched; Self-administration filing ongoing

CER=Constant Exchange Rates; pJIA= polyarticular juvenile idiopathic arthritis; sJIA=systemic juvenile idiopathic arthritis; RA=rheumatoid artheritis; CIU=chronic idiopathic urticaria

Neuroscience franchise

Ocrevus with 15% total US market share after 20 months



Ocrevus Q4 update

- Strong launches in EU and International
- US driven by earlier lines, new and returning patients
- 5-Year efficacy and safety data presented at ECTRIMS
- Continue to generate new data in progressive MS (PMS) including new Phase III study using upper limb function and digital outcomes as measures of progression

Outlook 2019

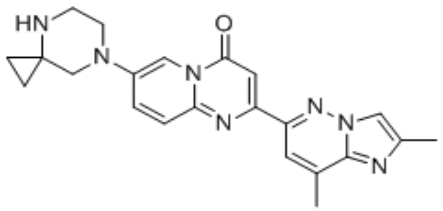
- Moving into earlier lines displacing orals
- Continued launches in EU and International

CER=Constant Exchange Rates

Neuroscience franchise

Risdiplam in spinal muscular atrophy (SMA) types 1/2/3

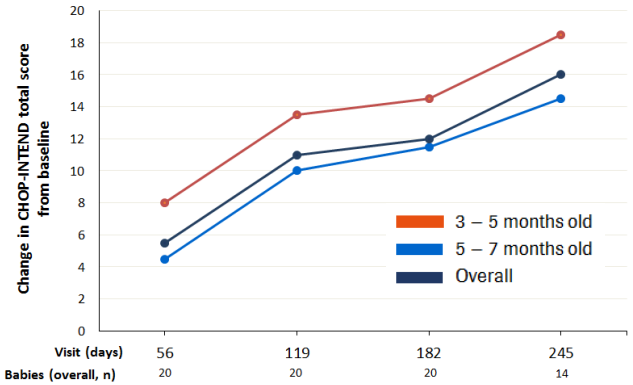
SMN2 splicing modifier



- Oral and systemically available SMN2 splicing modifier
- Durably increases SMN protein both in the CNS and in the periphery
- To date well tolerated at all doses assessed

Phase II/III (FIREFISH) Part 1 data in Type 1 SMA:

Median change from baseline in CHOP-INTEND



HINE-2 motor milestones

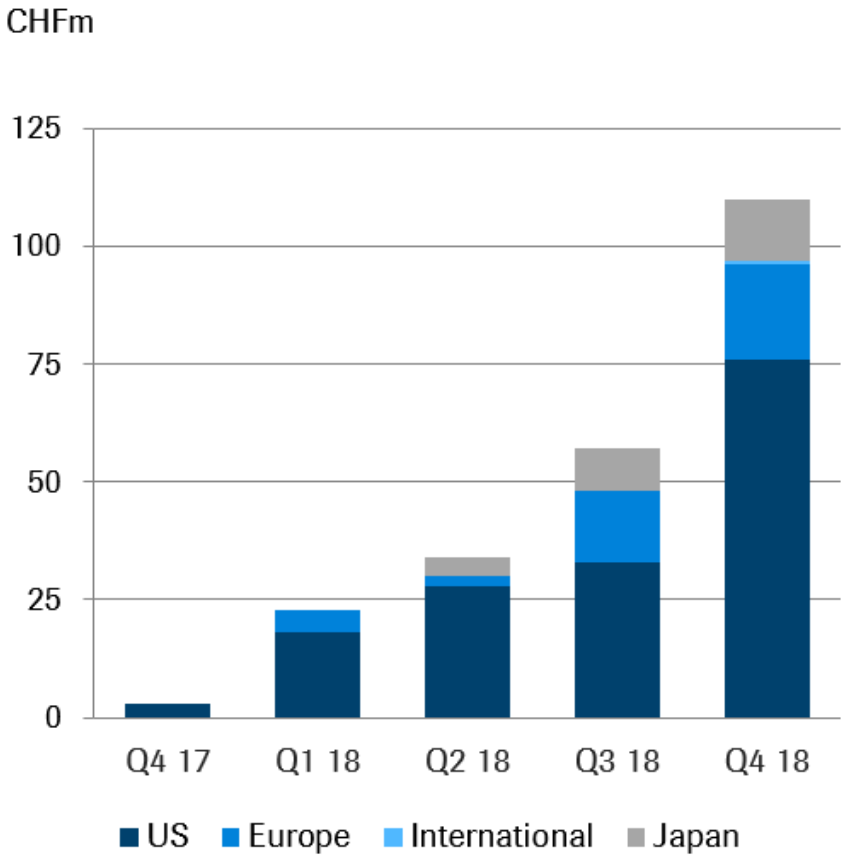
	Baseline (n=21)	8 months (n=14)
Upright head control	0%	43%
Kicking	5%	50%
Rolling	0%	29%
Stable sitting	0%	21%

- 20/21 babies (95%) were alive and without need of permanent ventilation at 10.5m, compared with 50% of babies at the same age in natural history studies
- No patients have lost the ability to swallow or reached permanent ventilation
- Among babies with 8m treatment: median change in CHOP-INTEND was 16 points and 21% achieved unassisted stable sitting
- Presymptomatic Ph III (RAINBOWFISH) in 0-6 week old babies starting in Q1 2019
- NME filing targeted in H2 2019

Baranello G. et al., WMS 2018; WMS=world muscle society; SMA=spinal muscular atrophy; CHOP-INTEND=Children's Hospital of Philadelphia Infant Test of Neuromuscular Disorders (16-item 64-point motor assessment designed specifically to evaluate the motor skills of infants with SMA); HINE-2=Hammersmith Infant Neurological Examination Module 2; Risdiplam in collaboration with PTC Therapeutics and the SMA Foundation

Hemophilia A franchise

Hemlibra with strong initial uptake in non-inhibitors



Hemlibra Q4 update

- US: Strong uptake in non-inhibitors and further market share gains in inhibitors
- Germany, France, UK: Inhibitor market share gains
- Strong preference data for Hemlibra in patients previously receiving episodic (92% preference) or prophylactic factor treatment (99% preference)

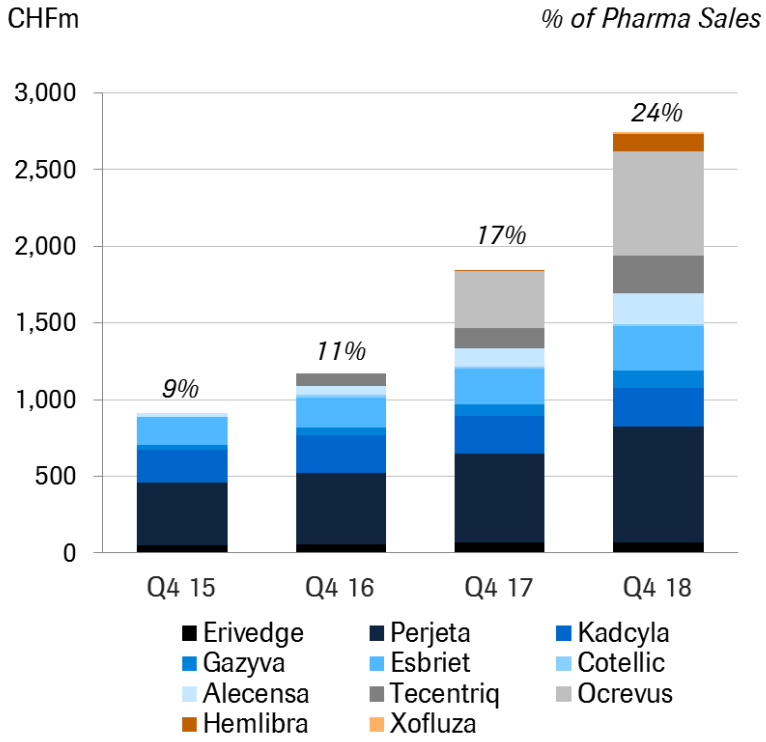
Outlook 2019

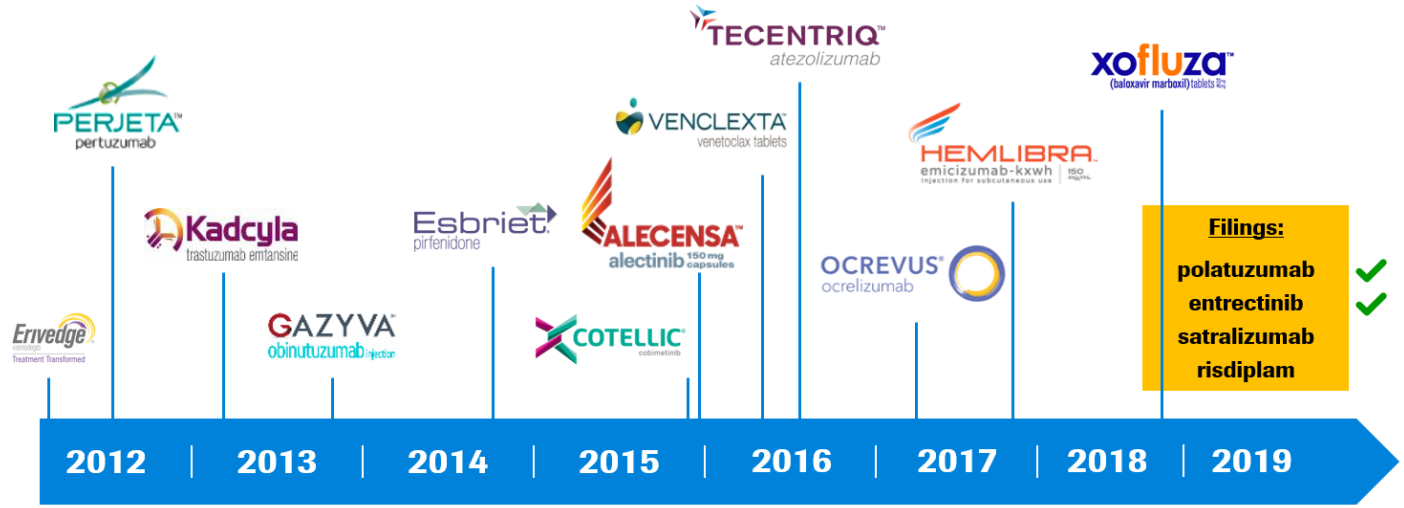
- US: Uptake in non-inhibitors and inhibitors
- EU: Launch in non-inhibitors and Q2W/Q4W dosing

CER=Constant Exchange Rates; Q2w=every 2 weeks dosing; Q4w=every 4 weeks dosing

New products close to annualized sales of CHF 11bn*

Late stage pipeline keeps delivering with 4 NMEs approaching launch





* Venclexta sales are booked by partner AbbVie and therefore not included.

2018: Key late-stage news flow*

	Compound	Indication	Milestone	
Regulatory	**Ocrevus**	RMS / PPMS	EU approval	✓
	Perjeta + Herceptin	Adjuvant HER2+ eBC	EU approval	✓
	Tecentriq + cb/pac +/- Avastin	1L non-sq NSCLC	US/EU filing	✓
	Tecentriq + Avastin	1L RCC	US/EU filing	
	Hemlibra	Hemophilia A inhibitors	EU approval	✓
	Hemlibra	Hemophilia A non-inhibitors	US/EU filing; US approval	✓
	Hemlibra	Every 4 weeks dosing inhibitors/non-inhibitors	US/EU filing	✓
	Xofluza	Acute uncomplicated influenza	US filing	✓
	Venclexta + Rituxan	R/R CLL	US/EU approval	✓
Phase III readouts	**Tecentriq + chemo**	1L non-sq NSCLC	Ph III IMpower130	✓
	Tecentriq + chemo	1L sq NSCLC	Ph III IMpower131	✓
	Tecentriq + chemo	1L non-sq NSCLC	Ph III IMpower132	✓
	Tecentriq + chemo	1L extensive-stage SCLC	Ph III IMpower133	✓
	Tecentriq + nab-pac	1L TNBC	Ph III IMpassion130	✓
	Tecentriq + Cotellic	2/3L CRC	Ph III IMblaze370 / COTEZO	✗
	Actemra	Systemic sclerosis	Ph III focuSSced	✗

Additional 2018 news flow:

- **Actemra**: EU approval of CAR T-cell induced cytokine release syndrome
- **MabThera/Rituxan**: US approval of pemphigus vulgaris
- **Avastin + carboplatin and paclitaxel**: US approval of 1L advanced OC following surgery
- **Gazyva + ibrutinib**: Positive Ph III results in 1L CLL (iLLUMINATE)
- **Venclexta + HMA/LDAC**: Early US filing/approval of PhI/II results in 1L unfit AML
- **polatuzumab vedotin**: Early US filing of Ph II results in R/R DLBCL
- **Hemlibra:** Positive Ph III results in hemophilia A non-inhibitors (HAVEN3/4)
- **entrectinib:** Positive pivotal Ph II results in ROS1+ NSCLC (ALKA, STARTRK1/2)
- **entrectinib:** Positive pivotal Ph II results in NTRK+ tumors (ALKA, STARTRK1/2)
- **risdiplam:** Positive preliminary Ph II/III results in type 1 SMA (FIREFISH)
- **Xofluza:** US approval and positive Ph III results in high risk influeza (CAPSTONE-2)
- **Kadcyla:** Positive Ph III results in eBC (KATHERINE)
- **MabThera/Rituxan:** US approval of rare forms of vasculitis (GPA/MPA)
- **satralizumab:** Positive Ph III results in NMOSD

* Outcome studies are event-driven: timelines may change

2019: Key late-stage news flow*

	Compound	Indication	Milestone	
Regulatory	**entrectinib**	ROS1+ NSCLC	US filing/approval; EU filing	
	entrectinib	1L NTRK+ pan tumor	US filing/approval; EU filing	
	polatuzumab vedotin	R/R DLBCL	US/EU approval	
	Tecentriq + chemo	1L PDL1+ TNBC	US/EU approval	
	Tecentriq + chemo	1L SCLC	US/EU approval	
	Xofluza	High risk influenza	US approval	
	Kadcyla	Adjuvant HER2+ BC	US filing/approval; EU filing	
	Hemlibra	Non-inhibitors	EU approval	
	Tecentriq + Avastin + chemo	1L NSCLC	EU approval	
	Venclexta + chemo	1L unfit AML	EU filing	
	Venclexta + Gazyva	1L unfit CLL	US/EU filing	
	satralizumab	Neuromyelitis optica spectrum disorders	US/EU filing	
	risdiplam	SMA type 1/2/3	US filing	
Phase III / pivotal readouts	**Tecentriq + Zelboraf +/- Cotellic**	1L BRAF+ Mel, BRAFwt Melanoma	Ph III IMspire150 (TRILOGY) / IMspire170	
	Tecentriq	Adjuvant high-risk MIBC	Ph III IMvigor010	
	Tecentriq + chemo	Neoadjuvant TNBC	Ph III IMpassion031	
	Tecentriq + Avastin	1L HCC	Ph Ib/IMbrave150	
	Venclexta + Gazyva	1L CLL	Ph III CLL14	✓
	idasanutlin + chemo	R/R AML	Ph III MIRROS	
	Venclexta + chemo	R/R MM	Ph III BELLINI	
	risdiplam	SMA type 2/3	Ph II SUNFISH	

* Outcome studies are event-driven: timelines may change

Diagnostics Division

Michael Heuer
CEO Roche Diagnostics

2018: Diagnostics Division sales

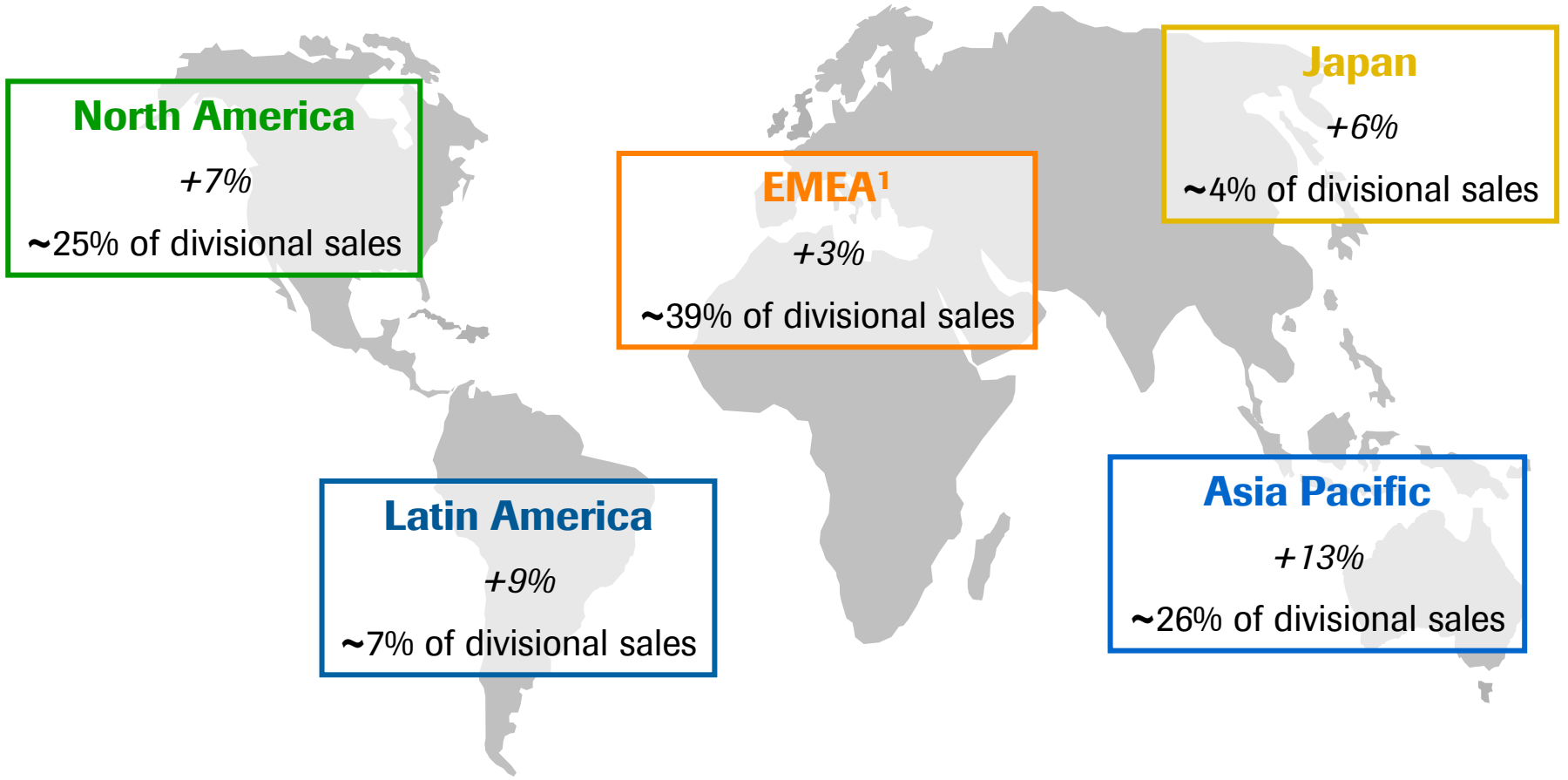
Strong sales growth with all business units contributing

	2018 CHFm	2017 CHFm	Change in % CHF	Change in % CER
Diagnostics Division	**12,879**	**12,079**	**7**	**7**
Centralised and Point of Care Solutions	7,768	7,179	8	8
Molecular Diagnostics	2,019	1,920	5	5
Diabetes Care	1,980	1,965	1	2
Tissue Diagnostics	1,112	1,015	10	10

CER=Constant Exchange Rates; Underlying growth of Molecular Diagnostics excluding sequencing business: +6%

2018: Diagnostics Division regional sales

Growth driven by Asia Pacific and North America

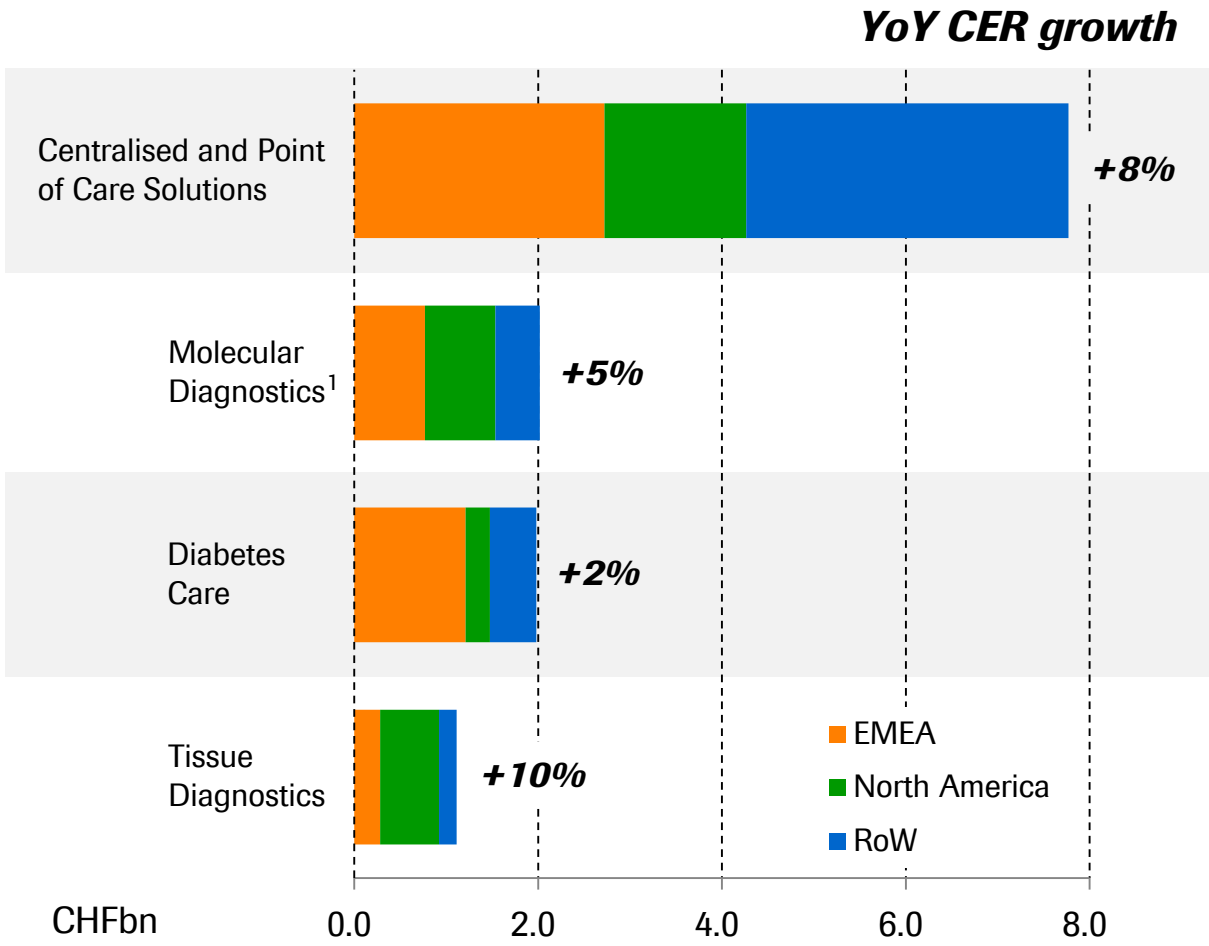


+14% growth in E7 countries[2]

[1] Europe, Middle East and Africa; [2] Brazil, China, India, Mexico, Russia, South Korea, Turkey; All growth rates at Constant Exchange Rates

2018: Diagnostics Division highlights

Strong growth driven by Centralised and Point of Care Solutions



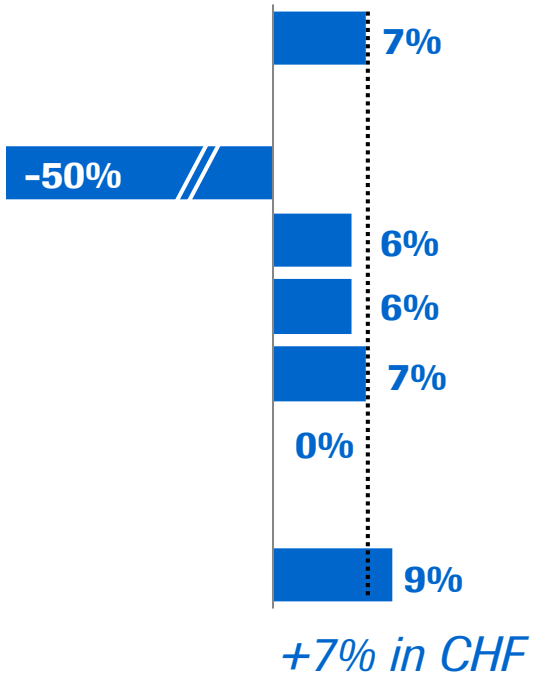
- Immunodiagnostics (+11%); Clinical chemistry (+7%)
- POC MDx[2] (+162%); Blood screening (+9%); Virology (+4%); HPV (+8%)
- Blood glucose monitoring (+2%); insulin delivery systems (-6%)
- Advanced staining (+10%); Companion diagnostics (+9%); Primary staining (+13%)

[1] Underlying growth of Molecular Diagnostics excluding sequencing business: +6%; CER=Constant Exchange Rates; EMEA=Europe, Middle East and Africa; [2] Point of Care Molecular Diagnostics

2018: Diagnostics Division

Core operating profit outgrowing sales

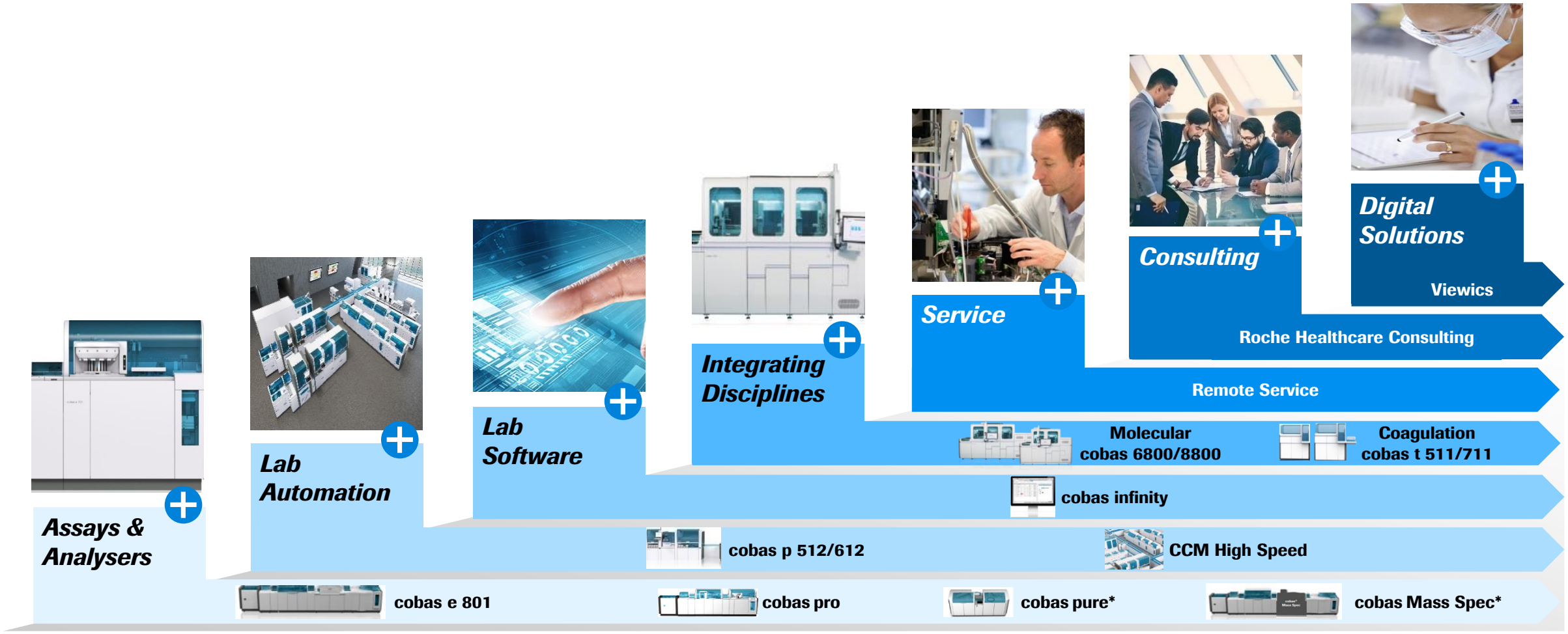
	2018 CHFm	2018 % sales
Sales	**12,879**	**100.0**
Royalties & other op. inc.	82	0.6
Cost of sales	-5,960	-46.3
M & D	-2,966	-23.0
R & D	-1,461	-11.3
G & A	-528	-4.1
Core operating profit	**2,046**	**15.9**



CER=Constant Exchange Rates

Integrated Core Lab

Expansion with additional solutions and entering new disciplines



*cobas pure and cobas Mass Spec have not been launched, yet.

Launch of cobas pro integrated solutions
Next generation medium throughput SWA solution

cobas pro integrated solutions

cobas connection modules (CCM)
cobas p 512, cobas p 612

cobas p 701 post-analytical unit

- Targeting medium to high throughput labs
- New clinical chemistry module cobas c 503 in combination with immunochemistry module cobas e 801
- Substantially higher capacity compared to cobas 6000 on the same footprint
- Enhanced automated procedures such as maintenance, calibration and on-the fly reagent loading

SWA=serum work area

Growth hormone portfolio completed with Elecsys IGFBP-3 test

Providing diagnosis and treatment decisions

Reagent cartridge for Insulin-like growth factor binding protein 3 (IGFBP-3)

- Complete menu by providing tests for all three main proteins related to growth hormone disorders:
  - Insulin-like growth factor 1 (IGF-1, Somatomedin C)
  - Insulin-like growth factor binding protein 3 (IGFBP-3)
  - Human Growth Hormone (hGH, Somatotropin)
- Available on all cobas e modules

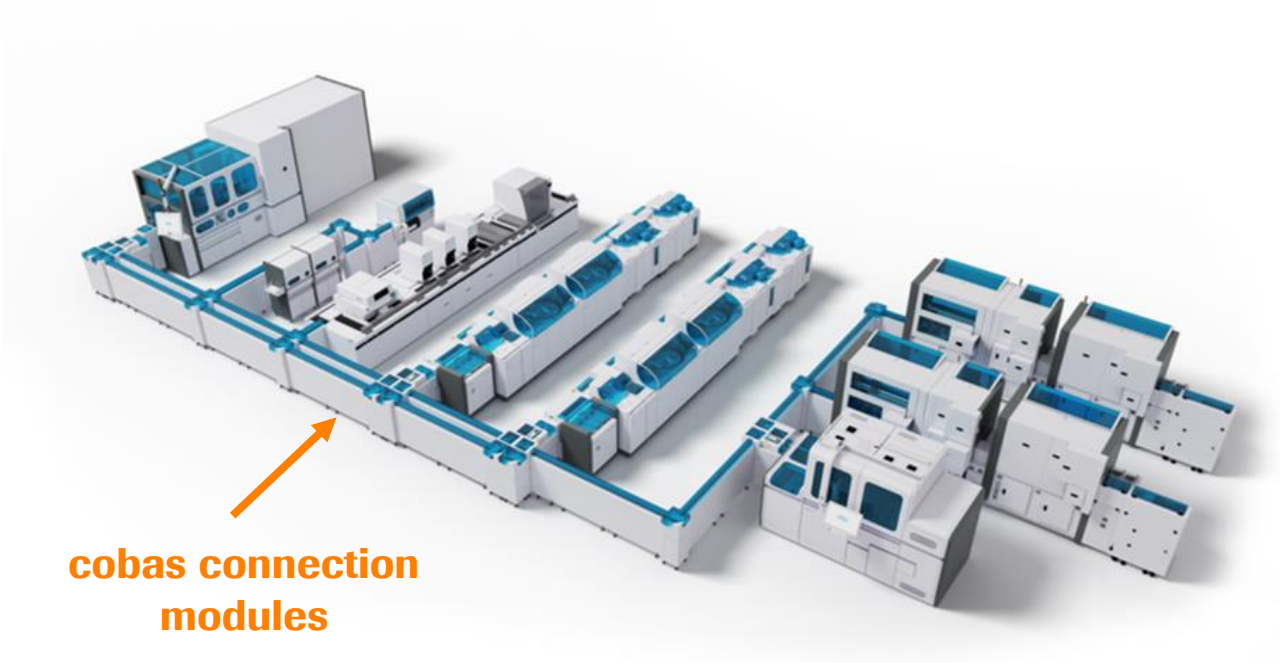
Launch of cobas connection modules (CCM) for cobas c 513

Enabling high throughput diagnosis and monitoring for diabetes

Multidisciplinary connectivity

- Clinical Chemistry
- Immunochemistry
- Hematology
- Coagulation
- Molecular Diagnostics — Unique in the market
- Specialized Infectious Diseases
- Urinalysis — Unique in the market
- Allergy
- Post-analytics
- HbA1c testing — NEW

Number of CCM installations: >600*

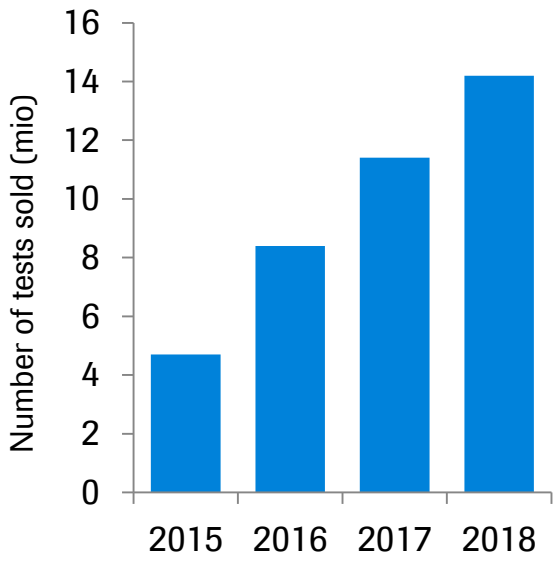


* Life-time installations, June 2018

Global Access Program

Providing access to HIV testing in Africa and beyond

Expanding access



Growing customers

- Tender win for five cobas 8800 and one cobas 6800, Nigeria
- Installation of cobas 8800 at KEMRI/CDC* laboratory, Kenya

Innovation

- Q1 2018 launch of the cobas Plasma Separation Card
- Q4 2018 launch of dried blood spot sample type for early infant diagnosis

*KEMRI: Kenya Medical Research Institute, CDC: Centers for Disease Control

Completing the digital pathology workflow

uPath enterprise software enables automated data analysis and information sharing

- Enhances the efficiency of pathology laboratory workflow with connectivity and automation
- Case management and collaboration between pathologists including remote consultation
- Automated image analysis
- Patient case evaluation and report generation

Key launches 2018

	Area	Product	Market
Instruments/ Devices	**Central Laboratory**	cobas pro integrated solution – Serum Work Area solution for medium throughput to lower high throughout labs	CE ✓
	Specialty Testing	cobas m 511 – World's first fully digital morphology analyzer and cell counter	US
	Workflow	CCM connectivity to cobas c513 – Connection of cobas c 513 to CCM Automation System for high volume HbA1c testing	WW ✓
	Tissue Dx	BenchMark ULTRA Plus – New and differentiated Advanced Staining System	CE
	Digital Pathology	VENTANA DP200 – Reliable low-volume scanner with superior image quality	CE ✓
	Diabetes Care	Accu-Chek Solo micropump – Small and tubeless insulin delivery device operated through a remote control which includes a blood glucose meter	CE ✓
Tests/ Assays	**Endocrinology**	IGFBP3 – Completion of the existing growth hormone menu of hGH and IGF-1	CE ✓
	Infectious Diseases	Zika IgG – Highly specific immunoassay for the in vitro qualitative detection of IgG antibodies to Zika virus in human serum and plasma	CE ✓
	Microbiology	cobas CT/NG – Highest throughput CT/NG test on the market with workflow efficiency benefits	US ✓
		cobas 6800/8800 MTB/MAI – High volume solution for MTB/MAI testing; efficient approach to disease management (mixed testing) for infectious disease	CE ✓
	Virology	Plasma Separation Card – Card-like sample collection device; separates plasma from whole blood; for use with CAP/CTM HIV-1 & cobas HIV-1 (6800/8800)	CE ✓
	Sequencing	AVENIO FFPET RUO oncology kits – 3 separate tissue based assay kits for solid tumors	WW ✓
Software	**Decision Support**	NAVIFY Tumor Board v 1.x – EMR integration	WW ✓

Key launches 2019

	Area	Product	Description	Market[1]
Instruments/ Devices	**Workflow**	cobas prime	Pre-analytical platform to support cobas 6800/8800	CE/US
Tests/ Assays	**Coagulation**	Protein C Chrom	Quantitative determination of protein C in citrated plasma on cobas t 511 / t 711 analyzers	CE
	Microbiology	cobas TV/MG	High volume solution for TV/MG testing; dual-target test with ability to test with CT/NG from the same specimen during the same run	US
		cobas vivoDx MRSA	Live cell assay for prevention and control of MRSA infections	CE
	Tissue Dx	VENTANA HER2 Dual ISH	Fully automated, brightfield ISH assay to determine eligibility for HER2 targeted therapy	CE
Software	**Central Laboratory**	cobas Infinity Central Lab 3.0	One global laboratory middleware solution realizing a very high degree of integration in the laboratory	WW
	Tissue Dx	Algorithm - Breast Panel	Whole slide analysis image analysis algorithm (HER2, ER, PR, Ki-67)	CE
		Algorithm - PD-L1 Lung	Whole slide analysis image analysis algorithm (SP263)	CE
	Sequencing	NAVIFY Mutation Profiler	Software as a medical device for annotating, variant classification, clinical interpretation and reporting from comprehensive genomic profile testing	CE/US
		NAVIFY Therapy Matcher	Informing on treatment options based on local drug labels, medical guidelines and clinical trial outcomes	CE/US
	Decision Support	NAVIFY Tumor Board V2	Integrating a GEHC DICOM imaging viewer into the Tumor Board to support the radiologist	WW
		NAVIFY Oncology Workflow V1	Integration of patient's longitudinal history, diagnosis, and treatment planning by leveraging relevant guidelines	WW
	Diabetes Care	Accu-Chek Sugar View 2.0 (non-ISO)	For non-insulin dependent T2 PwDs, allowing for meter-free blood glucose monitoring using Accu-Chek Active test strips and a smartphone camera	CE

[1] CE: European Conformity, US: FDA approval, WW: Worldwide; GEHC DICOM: GE Healthcare Digital Imaging and Communications in Medicine; T2: Type II Diabetes; PwDs: People with Diabetes

Finance

Alan Hippe
Chief Financial Officer

2018 results

Focus on Cash

Outlook

2018: Highlights

Business

- Sales growth of +7%[1] despite biosimilars impact of CHF -1.3bn[1]
- Core operating profit up +9%[1] and Core EPS growth of +19%[1] (+8%[1] excluding US tax reform)
- Dividend in Swiss francs further increased

Cash flow

- Significant cash generation (Operating Free Cash Flow of CHF 18.7bn, +5%[1])
- Net debt lower by CHF 1.3bn vs. YE 2017 as Free Cash Flow of CHF 14.8bn more than offsets dividends paid (CHF -7.3bn) and cash outflow for M&A (CHF -5.7bn)

Net financial results

- Core net financial result improved by +19%[1] due to higher income from equity securities

IFRS

- Net income +24%[1] driven by the operating results and the US tax reform impacts

[1] At Constant Exchange Rates (CER)

2018: Group performance

Strong Core EPS growth (+19%, +8% excl. US tax reform)

	2018 CHFm	2017 CHFm	Change in % CHF	Change in % CER
Sales	**56,846**	**53,299**	**7**	**7**
Core operating profit	**20,505**	**19,012**	**8**	**9**
as % of sales	*36.1*	*35.7*		
Core net income	**15,981**	**13,404**	**19**	**20**
as % of sales	*28.1*	*25.1*		
Core EPS (CHF)	**18.14**	**15.34**	**18**	**19**
IFRS net income	**10,865**	**8,825**	**23**	**24**
Operating free cash flow	**18,741**	**17,827**	**5**	**5**
as % of sales	*33.0*	*33.4*		
Free cash flow	**14,811**	**13,420**	**10**	**11**
as % of sales	*26.1*	*25.2*		

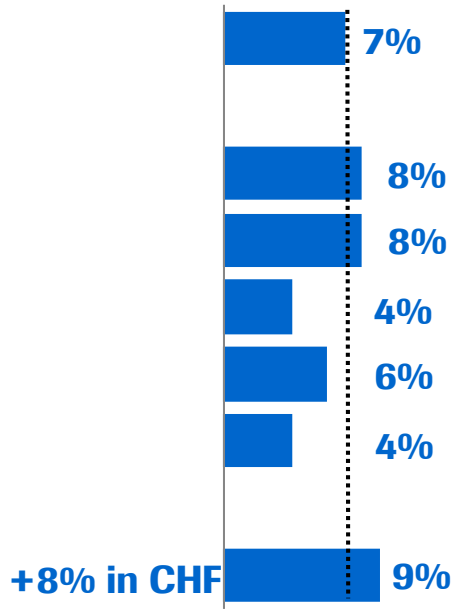
+8% at CER excl. US tax reform

CER=Constant Exchange Rates

2018: Group operating performance

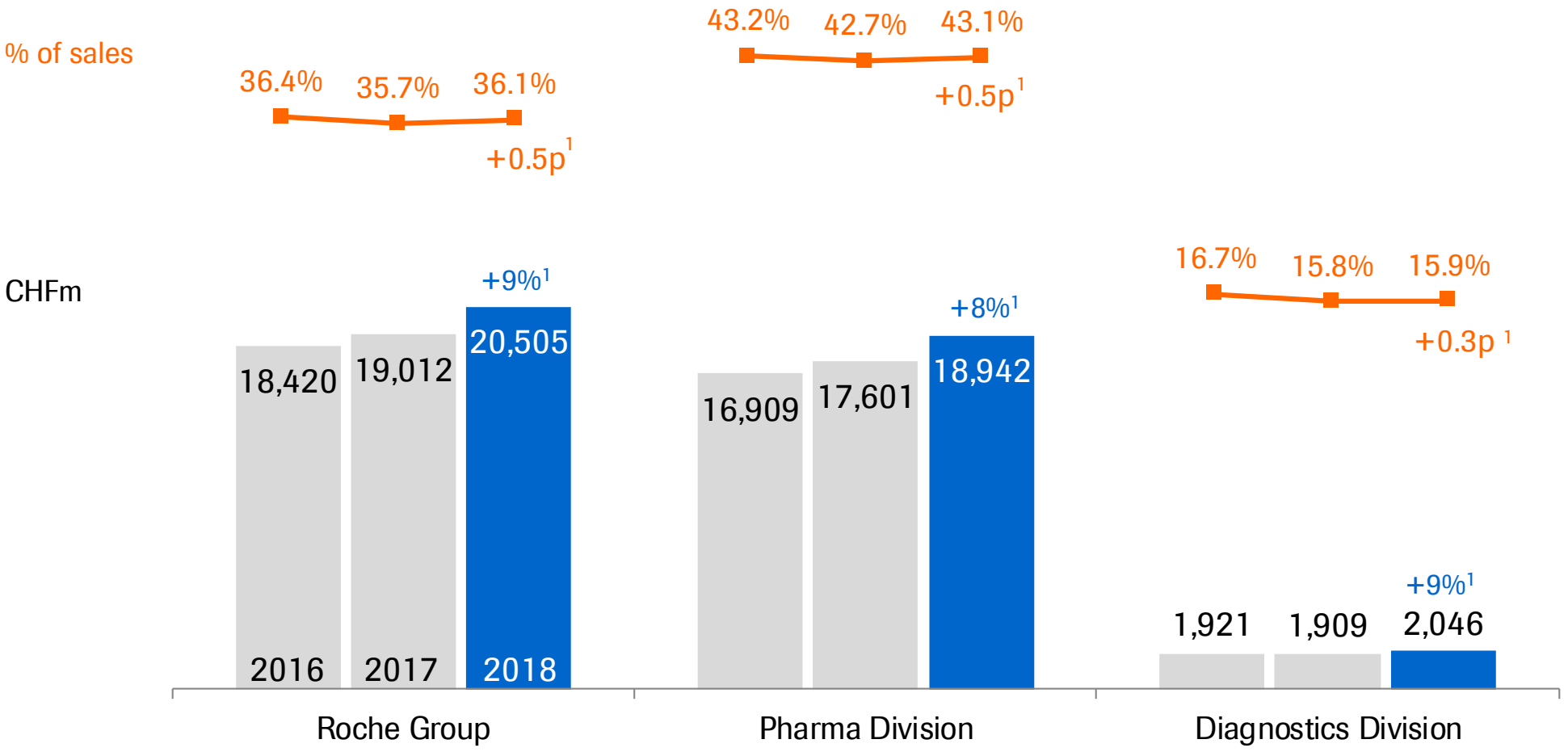
Core operating profit growth ahead of sales growth

	2018 CHFm	2018 abs. CER
Sales	**56,846**	**+3,809**
Royalties & other op. inc.	2,635	+197
Cost of sales	-15,464	-1,185
M & D	-9,905	-418
R & D	-11,047	-641
G & A	-2,560	-93
Core operating profit	**20,505**	**+1,669**
Core OP in % of sales	**36.1**	



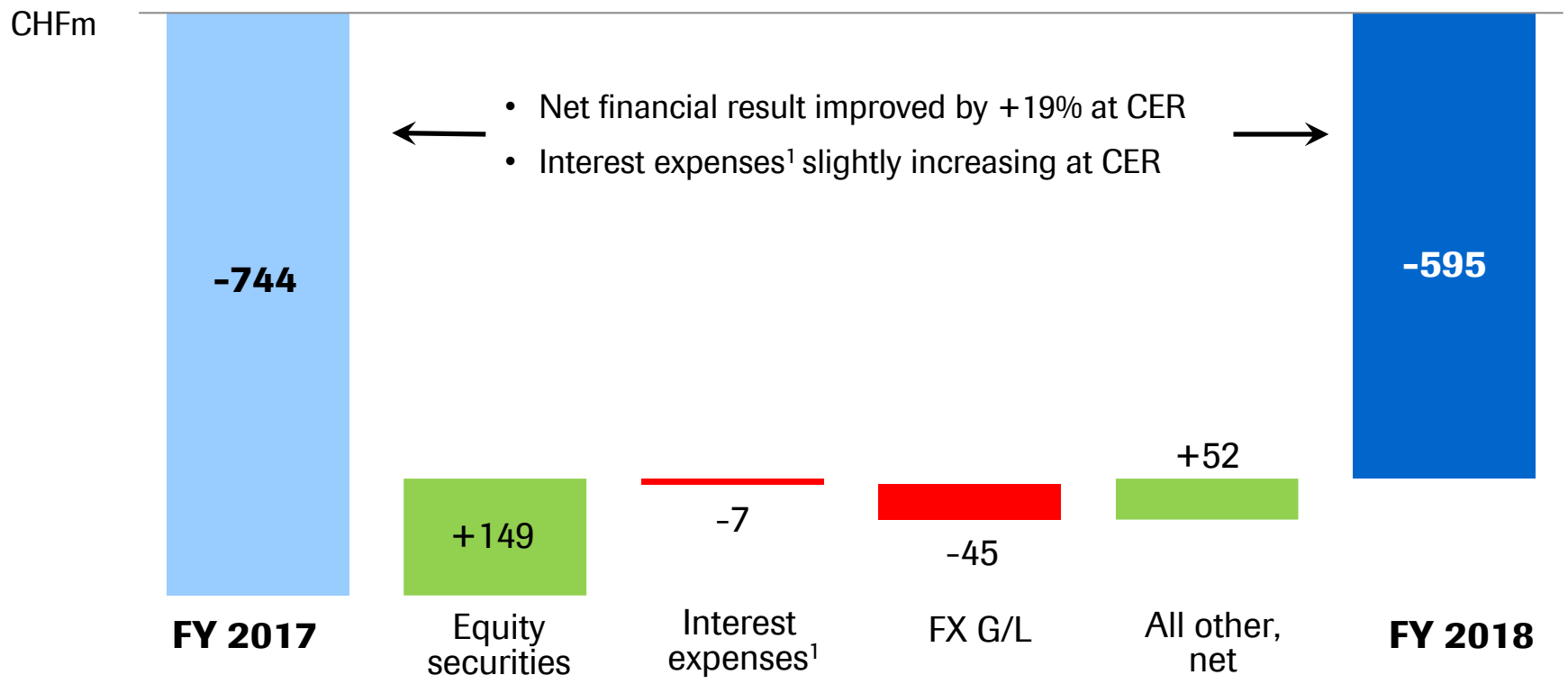
CER=Constant Exchange Rates

2018: Core operating profit and margin further improved



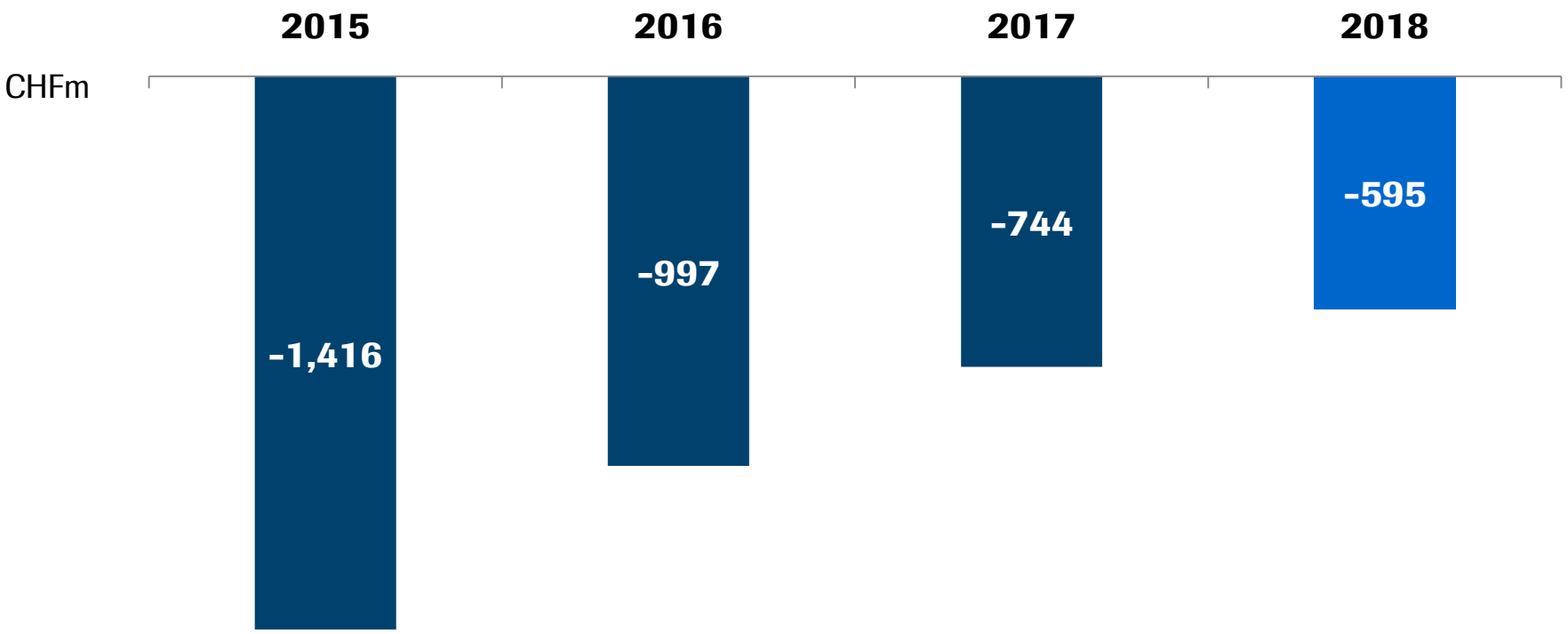
[1] At Constant Exchange Rates (CER)

2018: Core net financial result



CER = Constant Exchange Rates (avg full year 2017); [1] incl. amortisation of debt discount and net gains on interest rate derivatives

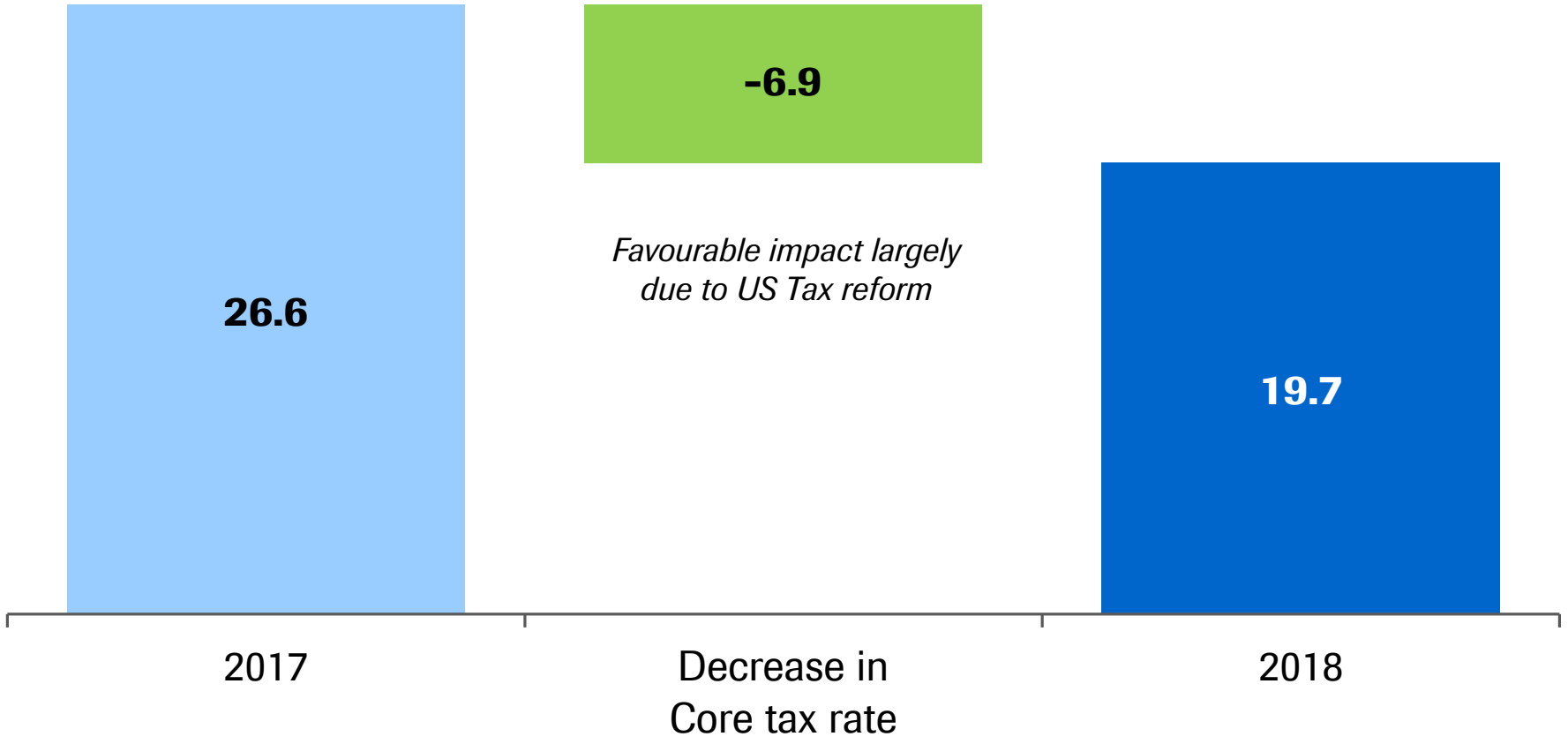
Core net financial result: Continuous improvement



Effective int. rate	*3.7%*	*2.9%*	*2.8%*	*3.0%*

2018: Group Core tax rate

Figures in %



2018: Non-core items; IFRS result impacted by impairments of goodwill & intangible assets

Full Year	2017	2018	CHFm	CHF	CER
Core operating profit	**19,012**	**20,505**	**+1,493**	**+8%**	**+9%**
Global restructuring plans	-1,208	-907	+301		
Amortisation of intangible assets	-1,691	-1,294	+397		
Impairment of intangible assets[1]	-3,518	-3,336	+182		
Alliances & Business Combinations	+350	-35	-385		
Legal & Environmental[2]	+58	-164	-222		
Total non-core operating items	-6,009	-5,736	+273		
IFRS operating profit	**13,003**	**14,769**	**+1,766**	**+14%**	**+15%**
Total financial result & taxes	-4,178	-3,904	+274		
IFRS net income	**8,825**	**10,865**	**+2,040**	**+23%**	**+24%**

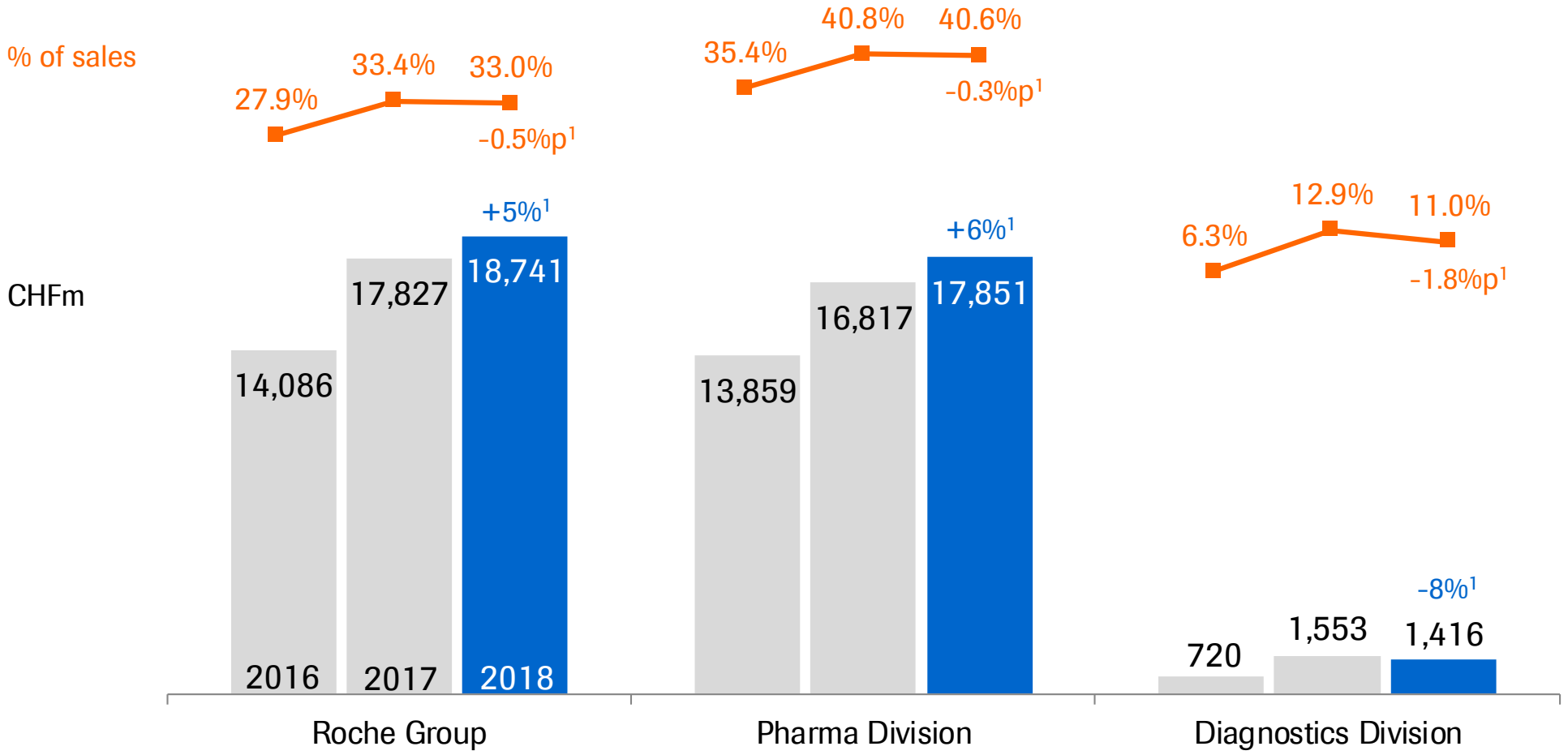
CER=Constant Exchange Rates; [1] incl. goodwill [2] incl. pension plan settlements

2018 results

Focus on Cash

Outlook

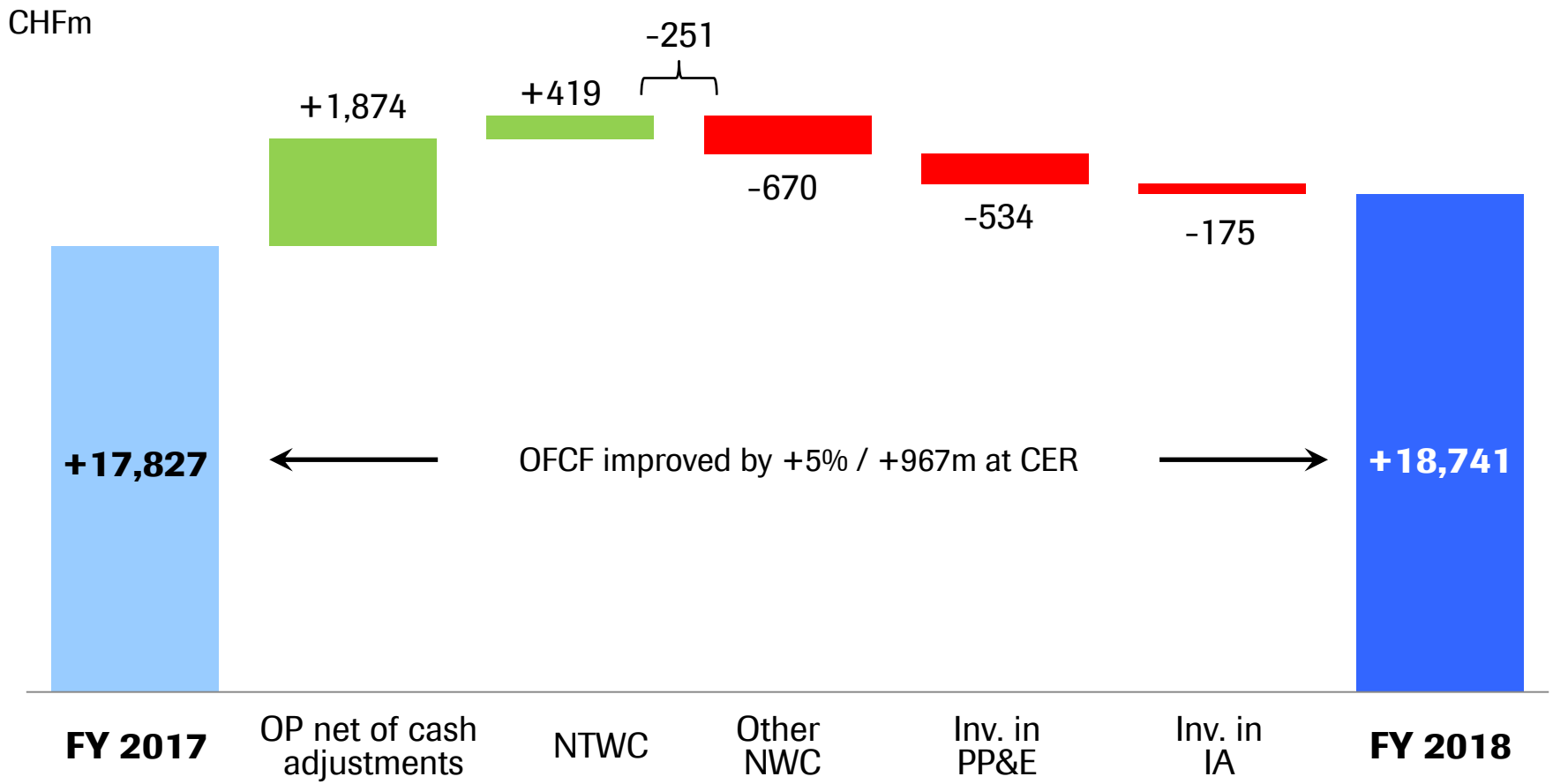
2018: Operating free cash flow and margin



[1] At Constant Exchange Rates (CER)

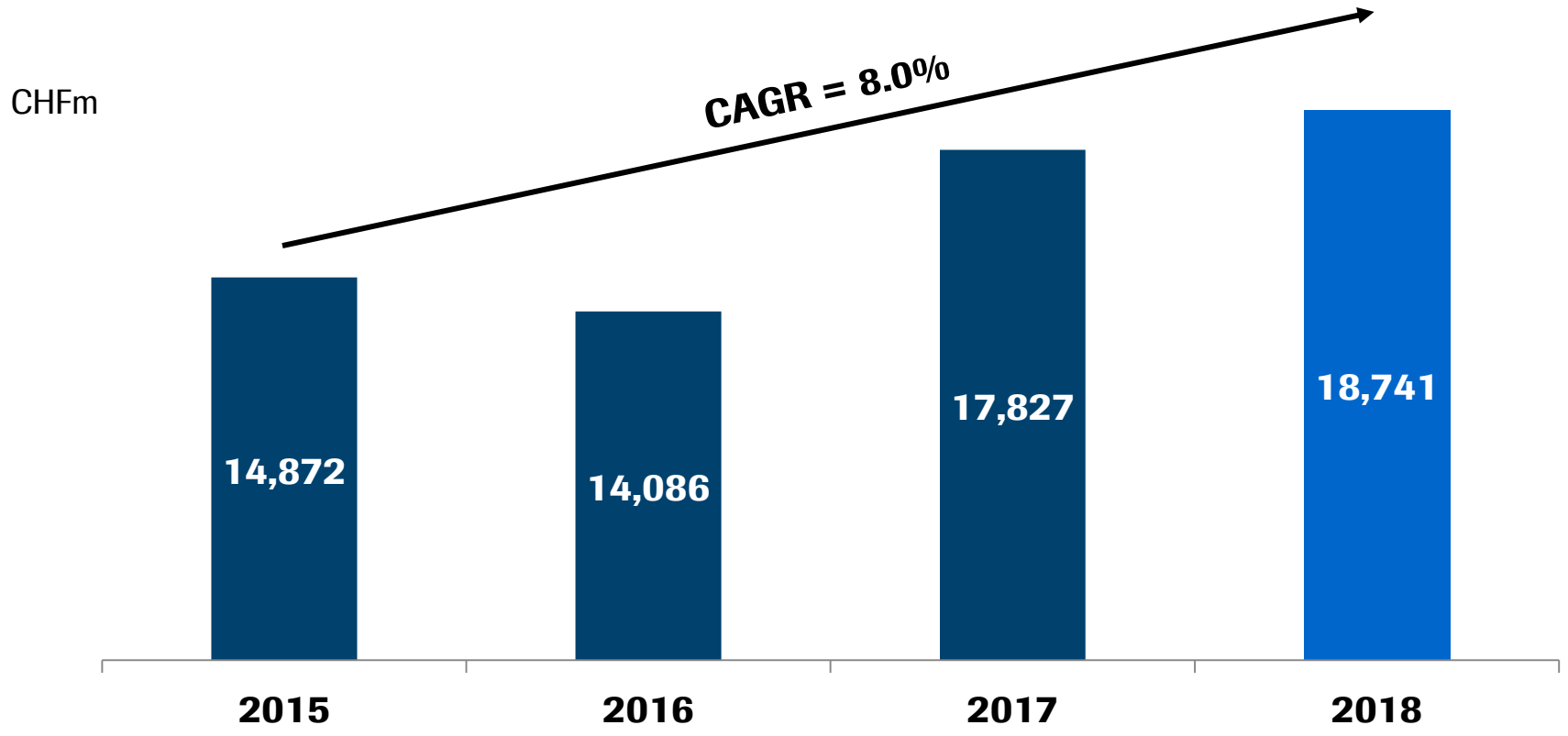
2018: Operating free cash flow

Higher than previous year (+5%) due to higher OP

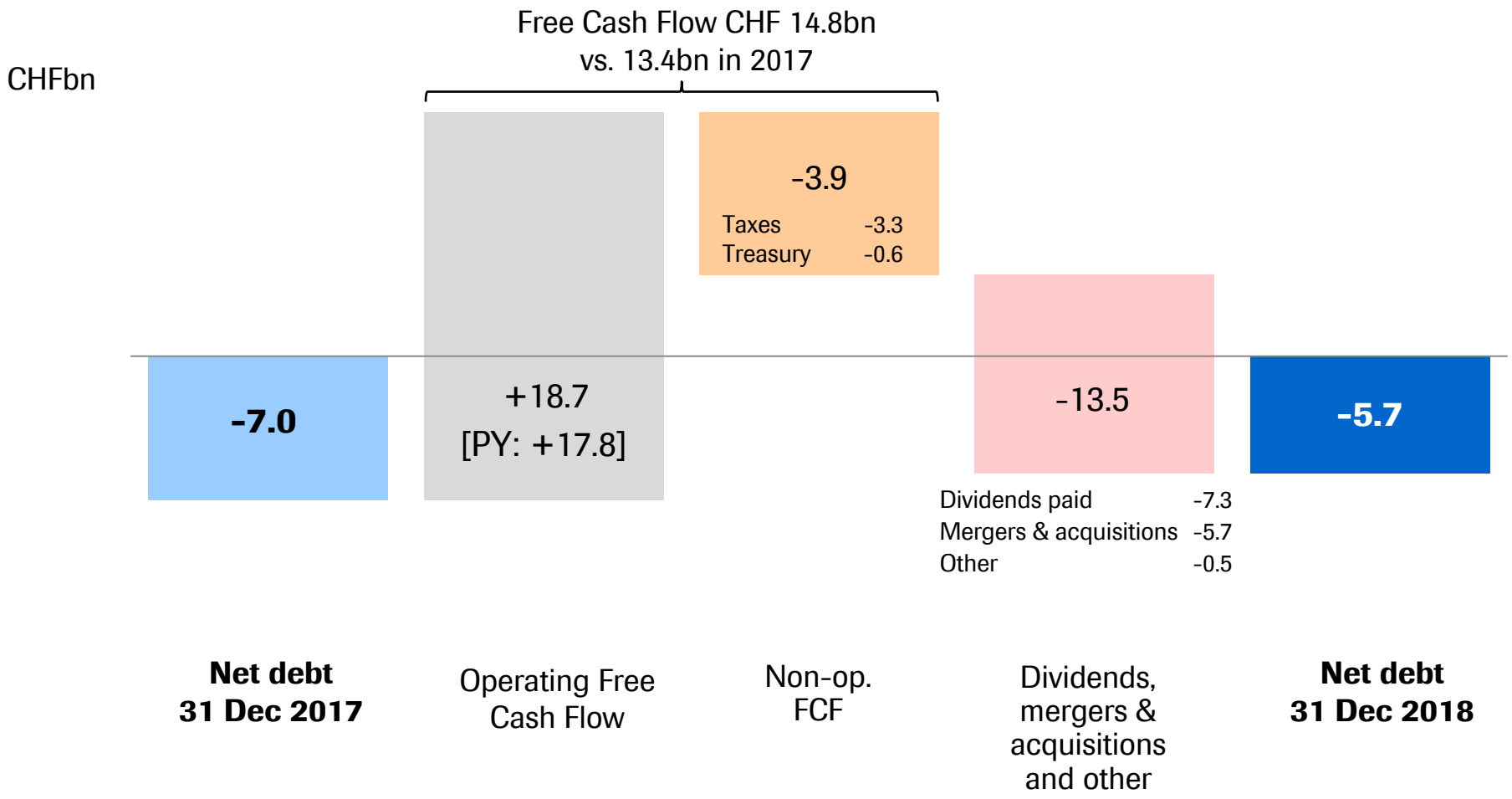


CER = Constant Exchange Rates (avg full year 2017); OP=operating profit; NTWC=net trade working capital; NWC=net working capital; PP&E=property, plant & equipment; IA=intangible assets

Operating free cash flow: Continuous improvement



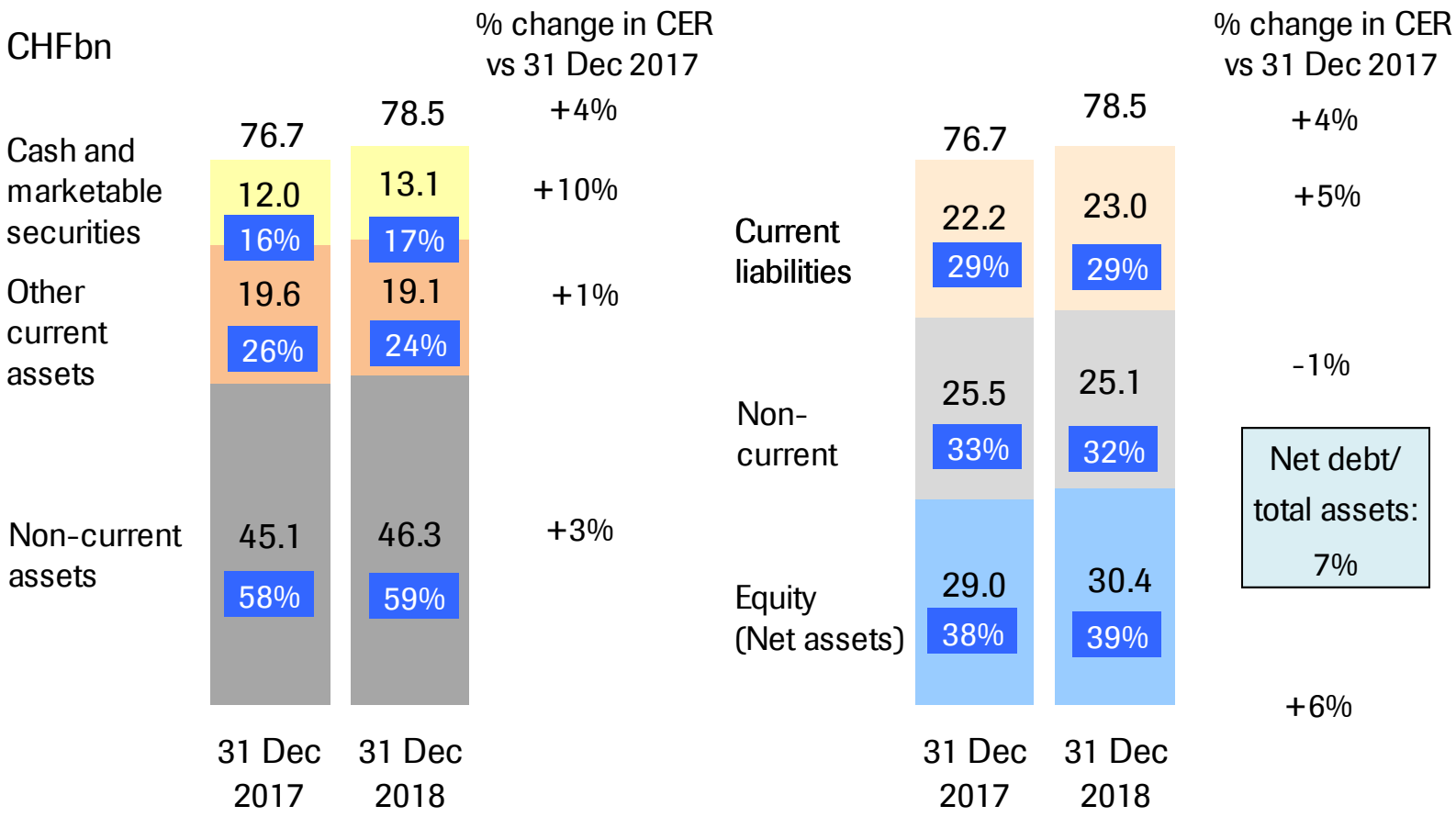
2018: Group net debt lower driven by strong cash generation (CHF 1.3bn vs. YE 2017)



CER = Constant Exchange Rates (avg full year 2017)

Balance sheet 31 December 2018

Equity ratio at 39% (31 December 2017: 38%)



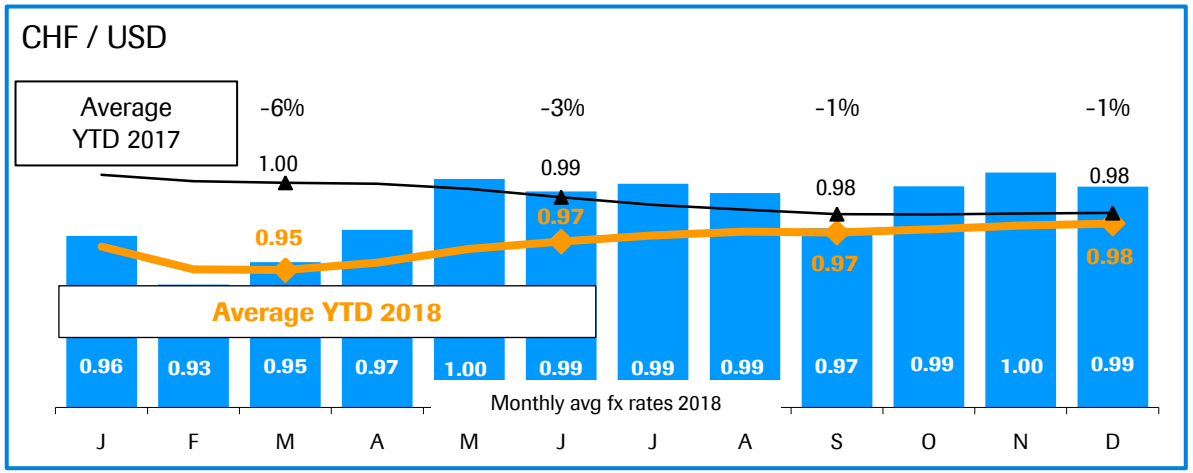
CER = Constant Exchange Rates (avg full year 2017)

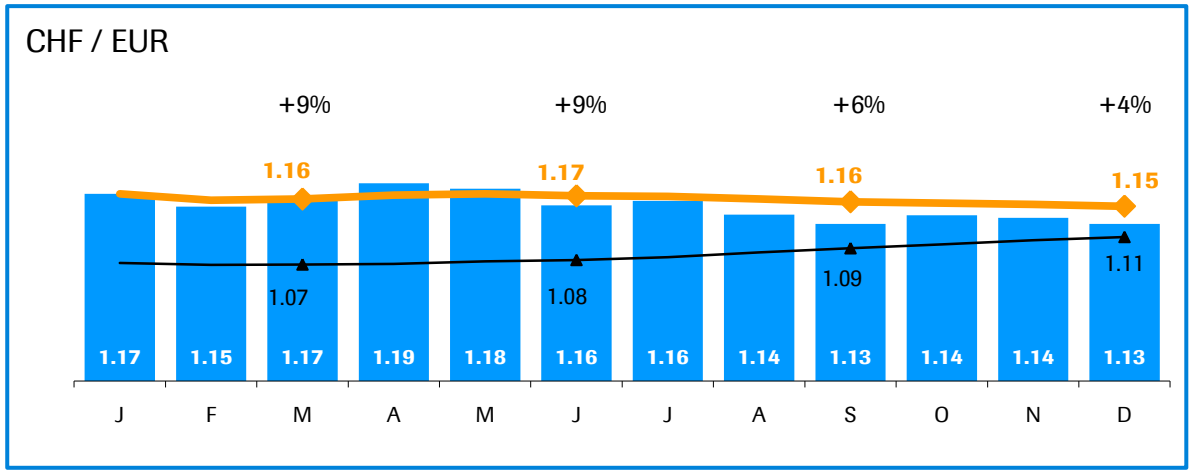
2018 results

Focus on Cash

Outlook

Low currency impact in 2018





In 2018 impact is (%p):

	Q1	HY	Sep YTD	FY
Sales	**-1**	**0**	**0**	**0**
Core operating profit		**0**		**-1**
Core EPS		**1**		**-1**

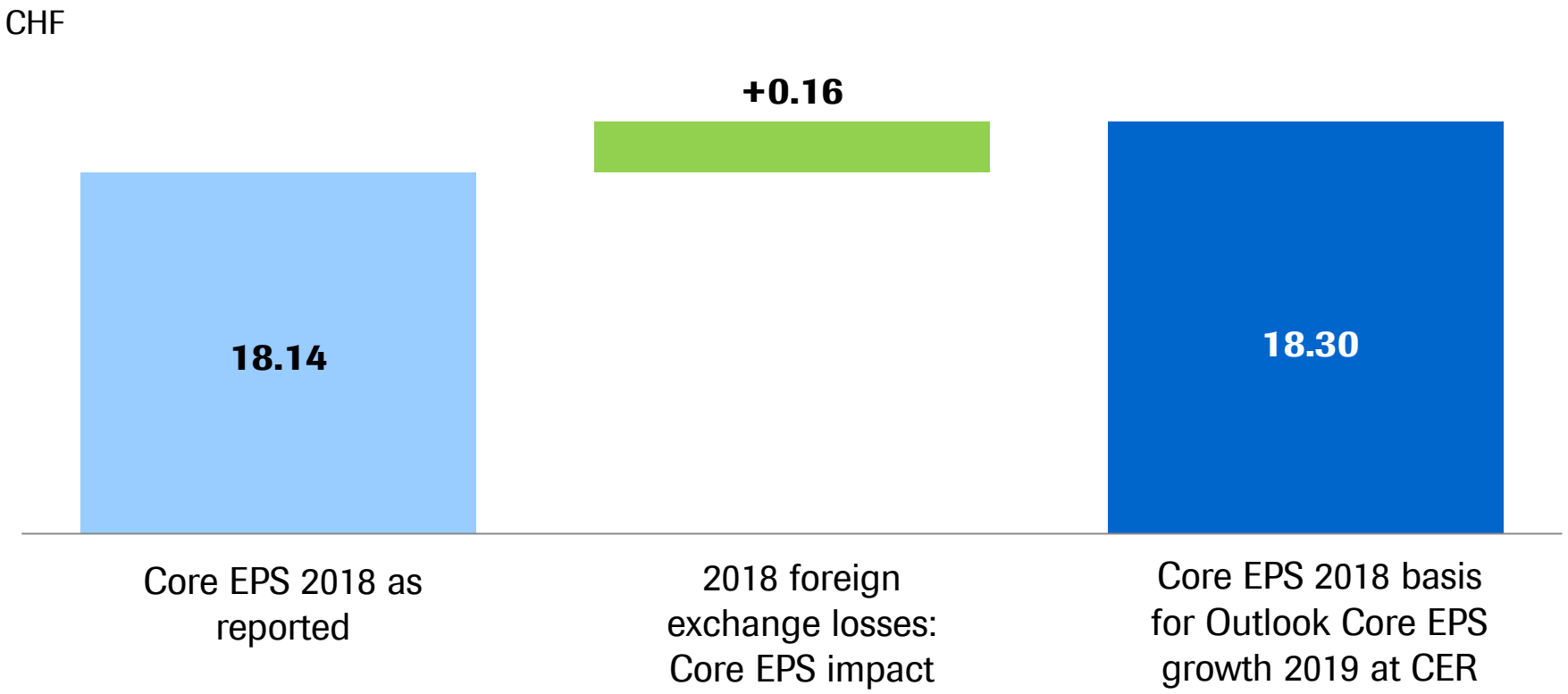
***2019** currency impact[1] expected (based on **31 Dec 2018** FX rates):*

- Around -1%p FX impact on Sales, Core OP & Core EPS

[1] On group growth rates

2018: Core EPS

Core EPS 2018 of CHF 18.30 is basis for Core EPS outlook 2019 at CER



CER=Constant Exchange Rates (avg full year 2018)

2019 outlook

Group sales growth[1]	• Low-to mid-single digit
Core EPS growth[1]	• Broadly in line with sales
Dividend outlook	• Further increase dividend in Swiss francs

[1] At Constant Exchange Rates (CER)

Pipeline summary

Marketed products additional indications

Global Development late-stage trials

pRED (Roche Pharma Research & Early Development)

gRED (Genentech Research & Early Development)

Roche Group 2018 results

Diagnostics

Foreign exchange rate information

Changes to the development pipeline
FY 2018 update

New to phase I

3 NMEs:
RG6217 - HBV
RG6237 - neuromuscular disorders
RG7769 PD1-TIM3 biMAb - solid tumors
1 AI:
RG7601 Venclexta + gilteritinib – r/r AML

New to phase II

2 NMEs transitioned from Ph1
RG7906 - psychiatric disorders
RG6058 tiragolumab + Tecentriq - NSCLC
1 NME starting Ph2
RG6180 iNeST (personalized cancer vaccine) + pembrolizumab - malignant melanoma
1 NME following termination of Ph3
RG7412 crenezumab – familial Alzheimer's disease healthy individuals

1 AI:
RG7446 Tecentriq SC – NSCLC

New to phase III

1 NME transitioned from Ph2:
RG6042 HTT ASO - Huntington's
6 AIs:
RG7446 Tecentriq – Her2-pos. BC neoadj
RG7446 Tecentriq – high risk NMIBC
RG6152 Xofluza - influenza hosp. patients
RG6152 Xofluza – influenza pediatric patients
RG7601 Venclexta - r/r MM t(11:14)
RG7601 Venclexta + HMA/LDAC - 1L AML*

New to registration

2 NMEs + 1 AI transitioned from Ph2 following filing in EU and US:
RG7596 polatuzumab vedotin - r/r DLBCL
RG6268 entrectinib - NSCLC ROS1+
RG6268 entrectinib – NTRK1 pan-tumor
3 AIs transitioned from Ph3 following filing in EU and US:
RG7446 Tecentriq + nab-paclitaxel 1L non sq NSCLC
RG7446 Tecentriq + nab-paclitaxel 1LTNBC
RG7446 Tecentriq + chemo - 1L extensive stage SCLC

Removed from phase I

2 NMEs:
RG7813 CEA IL2vFP + Tecentriq – solid tumors
RG6080 nacubactam – bacterial infections
2 AIs:
RG7876 selicrelumab + Tecentriq – solid tumors
RG7446 T+ Gazyva / tazemetostat – r/r DLBCL & FL

Removed from phase II

1 NME:
PRO VAP 1 inhibitor - inflammatory diseases
1AI:
RG7601 Venclexta + Rituxan +/- bendamustine - r/r FL

Removed from phase III

1 NME:
RG7412 crenezumab – Alzheimer's disease

Removed from registration

2 AIs following US approval:
RG1569 Actemra autoinjector - RA
RG7601 Venclexta + HMA/LDAC -1L AML
1 AIs following EU approval:
RG7601 Venclexta + Rituxan - r/r CLL

Status as of January 31, 2019

*study ongoing and lead by Abbvie

Roche Group development pipeline

Phase I (40 NMEs + 21 AIs)

RG6026	CD20 TCB ± chemo ± T	heme tumors
RG6109	-	AML
RG6114	mPI3K alpha inh	HR+ BC
RG6123	-	solid tumors
RG6146	BET inh combos	solid & heme tumors
RG6148	-	HER2 expressing BC
RG6160	-	multiple myeloma
RG6171	SERD (3)	ER+ (HER2-) mBC
RG6180	iNeST*± T	solid tumors
RG6185	pan-RAF inh + Cotellic	solid tumors
RG6194	HER2/CD3 TDB	BC
RG7159	anti-CD20 combos	heme tumors
RG7421	Cotellic + Zelboraf + T	melanoma
	Cotellic + T	2L BRAF WT mM
	Cotellic + T	RCC, bladder, head & neck ca
RG7440	ipatasertib + Taxane + T	TNBC
RG7446	Tecentriq (T)	solid tumors
	Tecentriq (T)	NMIBC
	T-based Morpheus platform	solid tumors
	T + Avastin + Cotellic	2/3L CRC
	T ± Avastin ± chemo	HCC, GC, PaC
	T + Tarceva/Alecensa	NSCLC
	T + anti-CD20 combos	heme tumors
	T ± lenalidomide ± daratumumab	MM
	T + K/HP	HER2+ BC
	T + radium 223	mCRPC
	T + rucaparib	ovarian ca
RG7461	FAP IL2v FP combos	solid tumors
RG7601	Venclexta + idasanutlin	AML
	Venclexta ± azacitidine	r/r MDS
	Venclexta + gilteritinib	r/r AML
	Venclexta + Cotellic + T	MM
RG7769	PD1-TIM3 biMAb	solid tumors
RG7802	cibisatamab ± T	solid tumors
RG7827	FAP-4-1BBL FP	solid tumors
RG7828	mosunetuzumab ± T	heme tumors
RG7876	selicrelumab + Avastin	solid tumors
CHU	Raf/MEK dual inh	solid tumors
CHU	glypican-3/CD3 biMAb	solid tumors
CHU	codrituzumab	HCC
RG6107	C5 inh MAb	PNH
RG6151	-	asthma
RG6173	-	asthma
RG6174	-	inflammatory diseases
RG7835	-	autoimmune diseases
RG7880	IL-22Fc	inflammatory diseases
RG6004	HBV LNA	HBV
RG6217	-	HBV
RG7854	TLR7 agonist (3)	HBV
RG7861	anti-S. *aureus* TAC	infectious diseases
RG7907	HBV CpAM (2) (Capsid)	HBV
RG7992	FGFR1/KLB MAb	metabolic diseases
RG6000	-	ALS
RG6049	-	neurodegenerative disorder
RG6237	-	neuromuscular disorder
RG7816	GABA Aa5 PAM	autism
RG6147	-	geographic atrophy
RG7774	-	retinal disease
CHU	PTH1 recep. ago	hypoparathyroidism
CHU	-	hyperphosphatemia
CHU	-	endometriosis

Phase II (13 NMEs + 10 AIs)

RG6180	iNeST* + pembrolizumab	malignant melanoma
RG6058	tiragolumab ± T	NSCLC
RG7388	idasanutlin	polycythemia vera
RG7421	Cotellic + Tecentriq ± taxane	TNBC
RG7440	ipatasertib	TNBC neoadj
RG7446	Tecentriq SC	NSCLC
RG7596	polatuzumab vedotin	r/r FL
RG7601	Venclexta + Rituxan	DLBCL
	Venclexta + azacitidine	1L MDS
	Venclexta + fulvestrant	2L HR+BC
RG6149	ST2 MAb	asthma
RG7159	obinutuzumab	lupus
RG7625	petesicatib	autoimmune diseases
RG7845	fenebrutinib	RA, lupus, CSU
CHU	nemolizumab#	pruritus in dialysis patients
NOV	TLR4 MAb	autoimmune diseases
RG1662	basmisanil	CIAS
RG6100	Tau MAb	Alzheimer's
RG7412	crenezumab	familial Alzheimer's healthy pts
RG7916	risdiplam §	SMA
RG7906	-	psychiatric disorders
RG7935	prasinezumab	Parkinson's
RG7716	faricimab	wAMD

New Molecular Entity (NME)
Additional Indication (AI)
Oncology
Immunology
Infectious Diseases
CardioMetabolism
Neuroscience
Ophthalmology
Other

RG-No - Roche/Genentech
CHU- Chugai managed
NOV- Novimmune managed
#out-licensed to Galderma and Maruho AD
§ Ph2 pivotal
TDB=T-cell dependent bispecific
*Individualized NeoAntigen Specific Immunotherapy, formerly PCV
T=Tecentriq; TCB=T-cell bispecific

Status as of January 31, 2019

Roche Group development pipeline

Phase III (11 NMEs + 35 AIs)

RG3502	Kadcyla	HER2+ eBC
	Kadcyla + Perjeta	HER2+ eBC
RG6264	Perjeta + Herceptin FDC SC	HER2+ BC
RG7388	idasanutlin + chemo	AML
RG7440	ipatasertib + abiraterone	1L CRPC
	ipatasertib + chemo	1L TNBC/HR+ BC
RG7421	Cotellic + Zelboraf+T	1L BRAFm melanoma
	Cotellic + T	1L BRAF WT melanoma
RG7596	polatuzumab vedotin	1L DLBCL
RG7446	Tecentriq	NSCLC adj
	Tecentriq	MIBC adj
	Tecentriq	NMIBC, high risk
	Tecentriq Dx+	1L sq + non-sq NSCLC
	Tecentriq	RCC adj
	T + chemo + Avastin	1L ovarian cancer
	T + pemetrexed	1L non-sq NSCLC
	T + nab-paclitaxel	1L sq NSCLC
	T ± chemo	SCCHN adj
	Tecentriq	HER2+ BC neoadj
	T + paclitaxel	1L TNBC
	T + capecitabine or carbo/gem	1L TNBC
	T + paclitaxel	TNBC adj
	T + nab-paclitaxel	TNBC neoadj
	T + Avastin	1L HCC
	T + Avastin	RCC
	T ± chemo	1L mUC
	T + enzalutamide	CRPC
RG7446/RG7853/ RG6268	Tecentriq or Alecensa or entrectinib	1L NSCLC Dx+
RG7601	Venclexta + Gazyva	1L CLL
	Venclexta + bortezomib	MM
	Venclexta	r/r MM t(11:14)
	Venclexta + HMA/LDA	1L AML
RG7853	Alecensa	NSCLC adj
RG3648	Xolair	nasal polyps
RG7413	etrolizumab	ulcerative colitis
	etrolizumab	Crohn's
RG6152	Xofluza	influenza, high risk
	Xofluza	influenza, hospitalized pts
	Xofluza	influenza, pediatric
RG1450	gantenerumab	Alzheimer's
RG6042	HTT ASO	Huntington's
RG6168	satralizumab	NMOSD
RG6206	anti-myostatin adnectin	DMD
RG7314	balovaptan	autism
RG3645	port delivery system with ranibizumab	wAMD
RG7716	faricimab	DME

Registration (3 NMEs + 8 AIs)

RG6013	Hemlibra[1]	hemophilia A w/o FVIII inh
	Hemlibra[1]	Q4W hemophilia A
RG6268	entrectinib	NSCLC ROS1+
	entrectinib	NTRK1 pantumor
RG7446	T + chemo + Avastin[1]	1L non-sq NSCLC
	T + nab-paclitaxel	1L non-sq NSCLC
	T + nab-paclitaxel	1L TNBC
	T + chemo	1L extensive stage SCLC
RG7596	polatuzumab vedotin	r/r DLBCL
RG105	MabThera[1]	pemphigus vulgaris
RG6152	Xofluza [1]	influenza

[1] Approved in US

New Molecular Entity (NME)
Additional Indication (AI)
Oncology
Immunology
Infectious Diseases

CardioMetabolism
Neuroscience
Ophthalmology
Other

RG-No Roche/Genentech

CHU Chugai managed

NOV Novimmune managed

#out-licensed to Galderma and Maruho AD

FDC=fixed-dose combination

T=Tecentriq; TCB=T-cell bispecific

TDB=T-cell dependent bispecific

Status as of January 31, 2019

NME submissions and their additional indications

Projects currently in phase II and III

2018		2019		2020		2021 and beyond					
		RG7916	risdiplam SMA			RG6058	tiragolumab + Tecentriq NSCLC	RG6042	HTT ASO Huntington's	RG3645	Port Delivery System with ranibizumab wAMD
		RG6168	satralizumab NMOSD	RG6206	anti-myostatin adnectin DMD	RG6180	iNeST oncology	RG1450	gantenerumab Alzheimer's	RG6149	ST2 MAb asthma
RG6152R	Xofluza (baloxavir marboxil) ✓ influenza (US)	RG6152	baloxavir marboxil influenza (EU)	RG6264	Perjeta + Herceptin FDC SC HER2+ BC	RG7388	idasanutlin polycythemia vera	RG1662	basmisanil CIAS	RG7413	etrolizumab ulcerative colitis
RG7596	polatuzumab vedotin✓ r/r DLBCL	RG6152	baloxavir marboxil influenza, high risk	RG7388	idasanutlin + chemo AML	RG7440	ipatasertib TNBC neoadj	RG6100	Tau MAb Alzheimer's	RG7413	etrolizumab Crohn's
RG6268	entrectinib (US)* ✓ NSCLC ROS1+	RG6268	entrectinib (EU) ✓ NSCLC ROS1+	RG7440	ipatasertib + abiraterone 1L CRPC	RG7596	polatuzumab vedotin 1L DLBCL	RG7314	balovaptan autism	RG7625	petesicatib autoimmune diseases
RG6268	entrectinib (US)* ✓ NTRK1 pantumor	RG6268	entrectinib (EU) ✓ NTRK1 pantumor	RG7440	ipatasertib +chemo 1L TNBC / HR+ BC	RG7596	polatuzumab vedotin r/r FL	RG7935	prasinezumab Parkinson's	RG7845	fenebrutinib autoimmune diseases
						RG6152	baloxavir marboxil influenza, pediatric				
						RG6152	baloxavir marboxil influenza, hospitalized pts	RG7716	faricimab wAMD		
								RG7716	faricimab DME		

*pending FDA acceptance of filing

✓ Indicates submission to health authorities has occurred
Unless stated otherwise submissions are planned to occur in US and EU

New Molecular Entity (NME)
Additional Indication (AI)
Oncology
Immunology
Infectious Diseases

CardioMetabolism
Neuroscience
Ophthalmology
Other

FDC =fixed-dose combination

Status as of January 31, 2019

AI submissions for existing products

Projects currently in phase II and III

2018		2019		2020		2021 and beyond			
RG105	**MabThera (EU) ✓** pemphigus vulgaris	RG3648	**Xolair** nasal polyps	RG3502	**Kadcyla + Perjeta** HER2+ eBC	RG7446/ RG7853/ RG6268	**Tecentriq or Alecensa or entrectinib** 1L NSCLC Dx+	RG7159	**obinutuzumab** lupus nephritis
RG1569	**Actemra auto injector (US)** RA ✓	RG3502	**Kadcyla** HER2+ eBC	RG7446	**Tecentriq + Avastin** RCC	RG7446	**Tecentriq SC** NSCLC	RG7421	**Cotellic + Tecentriq ± taxane** TNBC
RG1569	**Actemra (EU) ✓** CRS	RG7446	**Tecentriq + Avastin** 1L HCC	RG7446	**Tecentriq + paclitaxel** 1L TNBC	RG7446	**Tecentriq** NSCLC adj	RG7601	**Venclexta + HMA/LDAC** 1L AML
RG3648	**Xolair PFS (US)✓** Asthma & CIU	RG7421	**Cotellic + Tecentriq** 1L BRAF WT melanoma	RG7446	**Tecentriq** MIBC adj	RG7446	**Tecentriq** HER2+ BC neoadj	RG7601	**Venclexta** r/r MM t(11:14)
RG6013	**Hemlibra ✓** hemophilia A FVIII non-inh	RG7421	**Cotellic + Tecentriq + Zelboraf** 1L BRAFmut melanoma	RG7446	**Tecentriq ± chemo** 1L mUC	RG7446	**Tecentriq + paclitaxel** TNBC adj	RG7601	**Venclexta + Rituxan** DLBCL
RG6013	**Hemlibra ✓** hemophilia A, Q4W	RG7446	**Tecentriq** 1L non-sq + sq NSCLC (Dx+)	RG7446	**Tecentriq + enzalutamide** CRPC	RG7446	**Tecentriq** High risk NMIBC	RG7601	**Venclexta + azacitidine** 1L MDS
RG7601	**Venclexta + Rituxan (EU) ✓** r/r CLL	RG7446	**Tecentriq + nab-paclitaxel** TNBC neoadj	RG7446	**Tecentriq + chemo + Avastin** 1L ovarian cancer	RG7446	**Tecentriq** RCC adj	RG7601	**Venclexta+ fulvestrant** 2L HR+BC
RG7601	**Venclexta + HMA/LDAC (US) ✓** 1L AML	RG7446	**Tecentriq + nab-paclitaxel** 1L sq NSCLC			RG7446	**Tecentriq + chemo** SCCHN adj	RG7853	**Alecensa** NSCLC adj
RG7446	**Tecentriq + chemo + Avastin ✓** 1L non-sq NSCLC	RG7446	**Tecentriq + pemetrexed** 1L non-sq NSCLC			RG7446	**Tecentriq + capecitabine or carbo/gem** TNBC		
RG7446	**Tecentriq + nab-paclitaxel** 1L non-sq NSCLC✓	RG7601	**Venclexta + Gazyva** 1L CLL						
RG7446	**Tecentriq + chemo ✓** 1L extens. stage SCLC	RG7601	**Venclexta + bortezomib** MM						
RG7446	**Tecentriq + nab-paclitaxel** 1L TNBC ✓								

✓ Indicates submission to health authorities has occurred
Unless stated otherwise submissions are planned to occur in US and EU

New Molecular Entity (NME)
Additional Indication (AI)
Oncology
Immunology
Infectious Diseases
CardioMetabolism
Neuroscience
Ophthalmology
Other

Status as of January 31, 2019

Cancer immunotherapy pipeline overview

Phase I (10 NMEs + 26 AIs)

RG6026	CD20 TCB± chemo ± T	heme tumors
RG6123	-	solid tumors
RG6160	-	multiple myeloma
RG6180	iNeST (PCV) ± T	solid tumors
RG6194	HER2/CD3 TDB	BC
RG7421	Cotellic + Zelboraf + T	melanoma
	Cotellic + T	2L BRAF WT mM
	Cotellic + T	RCC, bladder, head & neck ca
RG7440	ipatasertib + Taxane + T	TNBC
RG7446	Tecentriq (T)	solid tumors
	Tecentriq (T)	NMIBC
	T-based Morpheus platform	solid tumors
	T + Avastin + Cotellic	2/3L CRC
	T ± Avastin ± chemo	HCC, GC, PaC
	T + Tarceva/Alecensa	NSCLC
	T + anti-CD20 combos	heme tumors
	T ± lenalidomide ± daratumumab	MM
	T + K/HP	HER2+ BC
	T + radium 223	mCRPC
	T + rucaparib	ovarian ca
RG7461	FAP IL2v FP combos	solid tumors
RG7601	Venclexta + Cotellic/idasanutlin	AML
	Venclexta + Cotellic + T	MM
RG7769	PD1-TIM3 biMAb	solid tumors
RG7802	cibisatamab ± T	solid tumors
RG7827	FAP-4-1BBL FP	solid tumors
RG7828	mosunetuzumab ± T	heme tumors
RG7876	selicrelumab + Avastin	solid tumors
AMGN**	Tecentriq + talimogene laherp	TNBC, CRC
BLRX**	Tecentriq + BL-8040	AML, solid tumors
CRVS**	Tecentriq + CPI-444	solid tumors
EXEL**	Tecentriq + cabozantinib	solid tumors
HALO**	Tecentriq + PEGPH20	CCC, GBC
INO**	Tecentriq + INO5401+INO9012	bladder ca
KITE**	Tecentriq + KTE-C19	r/r DLBCL

MORPHEUS Platform - Phase Ib/II (6 AIs)

RG7446	T-based Morpheus	pancreatic cancer
	T-based Morpheus	gastric cancer
	T-based Morpheus	HR+ BC
	T-based Morpheus	NSCLC
	T-based Morpheus	2L TNBC
	T-based Morpheus	CRC

Phase II (2 NMEs + 6 AIs)

RG6180	iNeST (PCV)+ pembrolizumab	malignant melanoma
RG6058	tiragolumab ± T	NSCLC
RG7421	Cotellic + Tecentriq ± taxane	TNBC
RG7446	Tecentriq SC	NSCLC
Gradalis**	Tecentriq + Vigil	ovarian ca
GTHX**	Tecentriq + trilaciclib	SCLC
IMDZ**	Tecentriq + NY-ESO-1	soft tissue sarcoma
SNDX**	Tecentriq + entinostat	TNBC

Phase III (21 AIs)

RG7421	Cotellic+Zelboraf+T	1L BRAFm melanoma
	Cotellic + T	1L BRAF WT melanoma
RG7446	Tecentriq	NSCLC adj
	Tecentriq	MIBC adj
	Tecentriq	high risk NMIBC
	Tecentriq Dx+	1L sq + non-sq SCLC
	Tecentriq	RCC adj
	T + chemo+ Avastin	1L ovarian cancer
	T + pemetrexed	1L non-sq NSCLC
	T + nab-paclitaxel	1L sq NSCLC
	T ± chemo	SCCHN adj
	Tecentriq	HER2-pos. BC neoadj
	T + nab-paclitaxel	1L TNBC
	T + capecitabine or carbo/gem	1L TNBC
	T + paclitaxel	TNBC adj
	T + nab-paclitaxel	TNBC neoadj
	T + Avastin	RCC
	T + Avastin	1L HCC
	T ± chemo	1L mUC
	T + enzalutamide	CRPC
RG7446/RG7853/ RG6268	Tecentriq or Alecensa or entrectinib	1L NSCLC Dx+

Registration (4 AIs)

RG7446	T + chemo + Avastin	1L non-sq NSCLC
	T + nab-paclitaxel	1L non-sq NSCLC
	T + chemo	1L extensive stage SCLC
	T + nab-paclitaxel	1L TNBC

** External collaborations: AMGN – Amgen oncolytic virus; BLRX - BioLine Rx CXCR4 antag; CRVS – Corvus ADORA2A antag; EXEL – Exelexis' TKI; Gradalis – EATC therapy; GTHX – G1 Therapeutics CDK4/6; HALO – Halozyme PEGPH20; IMDZ – Immune Design CMB305; INO - Inovio T cell activating immunotherapy (INO-5401), IL-12 activator (INO-9012); JNJ – Janssen CD38 MAb; KITE – Kite KTE-C19; SNDX – Syndax HDAC inh

New Molecular Entity (NME)
Additional Indication (AI)
Oncology

RG-No Roche/Genentech

T=Tecentriq; TCB=T-cell bispecific
TDB=T-cell dependent bispecific

Status as of January 31, 2019

Major granted approvals 2018

Approved

	US	EU	Japan-Chugai
	Lucentis 0.3 mg PFS DME/DR Mar 2018	**Ocrevus** PPMS & RMS, Jan 2018	**Hemlibra** hemophilia A FVIII inh (ped/adults), Mar 2018
RG435	**Avastin** Ovarian ca FL Jun 2018	**Perjeta + Herceptin** HER2+ BC adj, Jul 2018	**Gazyva** CD20+ FL, Jul 2018
RG6013	**Hemlibra** hemophilia A FVIII non-inh, Oct 2018	**Hemlibra** hemophilia A FVIII inh (ped/adults) Feb 2018	**Tecentriq** 2L NSCLC, Jan 2018
RG6013	**Hemlibra** Q4W hemophilia A Oct 2018	**Venclexta + Rituxan** r/r CLL, Nov 2018	**Perjeta + Herceptin** HER2+ BC adj, Oct. 2018
RG7446	**Tecentriq+chemo+Avastin** 1L non-sq NSCLC Dec. 2018	**Actemra auto injector** RA/GCA, Mar 2018	**Hemlibra** hemophilia A FVIII non-inh, Dec 2018
RG7601	**Venclexta + Rituxan** r/r CLL Jun 2018	**Actemra** CRS Sep 2018	**Hemlibra** Q4W hemophilia A, Dec 2018
RG7601	**Venclexta + HMA/LDAC** 1L AML Nov. 2018		**Tecentriq + other anti-tumor drugs** 1L NSCLC, Dec 2018
RG105	**Rituxan** pemphigus vulgaris, Jun 2018		
RG3648	**Xolair PFS** Asthma & CIU Sep 2018		
RG1569	**Actemra auto injector** RA, Nov 2018		
RG6152	**Xofluza** Influenza, Oct 2018		

- New Molecular Entity (NME)
- Additional Indication (AI)
- Oncology
- Immunology
- Infectious Diseases
- CardioMetabolism
- Neuroscience
- Ophthalmology
- Other

Status as of January 31, 2019

Major pending approvals 2019

Pending Approval

US		EU		Japan-Chugai	
RG7596	**polatzumab vedotin** r/r DLBCL Filed Dec 2018	RG7596	**polatzumab vedotin** r/r DLBCL Filed Dec 2018	RG1569	**Actemra** CRS, Filed May 2018
RG7446	**Tecentriq + nab-paclitaxel** 1L non sq NSCLC Filed Nov 2018	RG6013	**Hemlibra** hemophilia A FVIII non-inh, Filed Apr 2018	RG1569	**Actemra** Adult Onset Still's disease, Filed May 2018
RG7446	**Tecentriq + nab-paclitaxel** 1L TNBC Filed Sep 2018	RG6013	**Hemlibra** Q4W hemophilia A, Filed Apr 2018	RG7446	**Tecentriq + nab-paclitaxel** 1L TNBC Filed Dec 2018
RG7446	**Tecentriq + chemo** 1L extensive stage SCLC Filed Sep. 2018	RG7446	**Tecentriq + chemo + Avastin** 1L non-sq NSCLC Filed Feb 2018	RG7446	**Tecentriq + chemo** 1L extensive stage SCLC Filed Sep 2018
RG6268	**entrectinib** NSCLC ROS1+ Filed Dec 2018	RG7446	**Tecentriq + nab-paclitaxel** 1L non sq NSCLC Filed Oct 2018	RG6268	**entrectinib** NTRK+ solid tumors Filed Dec 2018
RG6268	**entrectinib** NTRK1 pan-tumor Filed Dec 2018	RG7446	**Tecentriq + nab-paclitaxel** 1L TNBC Filed Sep.2018		
		RG7446	**Tecentriq + chemo** 1L extensive stage SCLC Filed Sep. 2018		
		RG6268	**entrectinib** NSCLC ROS1+ Filed Jan 2019		
		RG6268	**entrectinib** NTRK1 pantumor Filed Jan 2019		
		RG105	**MabThera** pemphigus vulgaris, Filed Feb 2018		

New Molecular Entity (NME)
Additional Indication (AI)
Oncology
Immunology
Infectious Diseases
CardioMetabolism
Neuroscience
Ophthalmology
Other

Status as of January 31, 2019

Pipeline summary

Marketed products additional indications

Global Development late-stage trials

pRED (Roche Pharma Research & Early Development)

gRED (Genentech Research & Early Development)

Roche Group 2018 results

Diagnostics

Foreign exchange rate information

Hemlibra

Factor VIII mimetic for treatment of hemophilia A

Indication	Hemophilia A		
Phase/study	**Phase I** Study in Japan	**Phase I/II** Study in Japan	**Non-interventional study**
# of patients	N=82	N=18	N=221
Design	▪ Enrolled 64 healthy volunteers and 18 patients	▪ Extension study in patients from ph 1	Non-interventional study evaluating bleeding incidence, health-related quality of life and safety in patients with hemophilia A and inhibitors to factor VIII under SoC treatment ▪ **Cohort A:** Adults and adolescents with FVIII Inhibitors ▪ **Cohort B:** Children with FVIII Inhibitors ▪ **Cohort C:** Adults and adolescents without FVIII Inhibitors
Primary endpoint	▪ Exploratory safety and efficacy	▪ Exploratory safety and efficacy	▪ Number of bleeds over time, sites of bleed, type of bleed
Status	▪ Recruitment completed Q2 2014 ▪ Data presented at ASH 2014	▪ Recruitment completed Q4 2014 ▪ Data presented at ISTH 2015 ▪ Extension data presented at WFH 2016	▪ Inhibitor cohort closed Q4 2015, except China ▪ FPI in non-inhibitor and pediatric subjects in Q1 2016 ▪ Cohort A presented at ASH 2016 and EAHAD 2017; Cohort B presented at ASH 2017 and WFH 2018; Cohort C presented at EAHAD and WFH 2018 ▪ Study completed
	▪ Breakthrough Therapy Designation granted by FDA Q3 2015		
CT Identifier	JapicCTI-121934	JapicCTI-132195	NCT02476942

In collaboration with Chugai

SoC=Standard of care; FVIII=Factor VIII; ASH=American Society of Hematology; ISTH=International Society on Thrombosis and Haemostasis; WFH=World Federation of Hemophilia; EAHAD=European Association for Haemophilia and Allied Disorders

Hemlibra

Factor VIII mimetic for treatment of hemophilia A

Indication	Hemophilia A patients with inhibitors to factor VIII	Hemophilia A pediatric patients with inhibitors to factor VIII
Phase/study	**Phase III HAVEN 1**	**Phase III HAVEN 2**
# of patients	N=118	N=88
Design	Patients on episodic treatment prior to study entry: ▪ **Arm A:** Hemlibra prophylaxis ▪ **Arm B:** Episodic treatment (no prophylaxis) Patients on prophylaxis prior to study entry: ▪ **Arm C:** Hemlibra prophylaxis Patients on episodic treatment previously on non-interventional study: ▪ **Arm D:** Hemlibra prophylaxis	Patients on prophylactic or episodic treatment prior to study entry: ▪ **Cohort A:** Hemlibra prohylaxis qw ▪ **Cohort B:** Hemlibra prophylaxis q2w ▪ **Cohort C:** Hemlibra prophylaxis q4w
Primary endpoint	▪ Number of bleeds over 24 weeks	▪ Number of bleeds over 52 weeks
Status	▪ FPI Q4 2015, recruitment completed in Arms A and B Q2 2016 ▪ Primary and all secondary endpoints met Q4 2016 ▪ Data published in *NEJM* 2017 Aug 31;377(9):809-818	▪ FPI Q3 2016, recruitment completed Q2 2017 ▪ Positive interim data in Q2 2017 ▪ FPI cohorts B/C Q4 2017 ▪ Full primary data at ASH 2018
	▪ Data presented at ISTH 2017, updated data presented at ASH 2017 ▪ Filed in US and EU in Q2 2017; granted accelerated assessment (EMA) and priority review (FDA) ▪ Approved in US Q4 2017 and EU Q1 2018	
CT Identifier	NCT02622321	NCT02795767

In collaboration with Chugai

ASH=American Society of Hematology; ISTH=International Society on Thrombosis and Haemostasis; *NEJM=New England Journal of Medicine*

Hemlibra

Factor VIII mimetic for treatment of hemophilia A

Indication	Hemophilia A patients without inhibitors to factor VIII	Hemophilia A patients with and without inhibitors to Factor VIII, dosing every 4 weeks
Phase/study	**Phase III HAVEN 3**	**Phase III HAVEN 4**
# of patients	N=135	N=46
Design	Patients on FVIII episodic treatment prior to study entry: ▪ **Arm A:** Hemlibra prophylaxis qw ▪ **Arm B:** Hemlibra prophylaxis q2w ▪ **Arm C:** Episodic FVIII treatment; switch to Hemlibra prophylaxis possible after 24 weeks Patients on FVIII prophylaxis prior to study entry: ▪ **Arm D:** Hemlibra prophylaxis qw	Multicenter, open-label, non-randomized study to assess the efficacy, safety, pharmacokinetics, and pharmacodynamics of Hemlibra administered every 4 weeks. ▪ **Part 1:** Pharmacokinetic (PK) run-in part (N=6) ▪ **Part 2:** Expansion part (N=40)
Primary endpoint	▪ Number of bleeds over 24 weeks	▪ Number of bleeds over 24 weeks
Status	▪ FPI Q3 2016, recruitment completed Q2 2017 ▪ Study met primary and key secondary endpoints Q4 2017 ▪ FDA granted Breakthrough Therapy Designation April 2018 ▪ Data presented at WFH 2018. ▪ Filed in US (priority review) and EU in Q2 2018 ▪ Data published in NEJM 2018; 379: 811-822 ▪ Approved in US Oct 2018	▪ FPI Q1 2017, recruitment completed Q2 2017 ▪ PK run-in data at ASH 2017 ▪ Positive interim analysis outcome reported Q4 2017 ▪ Data presented at WFH 2018 ▪ Interim data filed in US and EU in Q2 2018 ▪ Approved in US Oct 2018
CT Identifier	NCT02847637	NCT03020160

In collaboration with Chugai

ASH=American Society of Hematology; WFH=World Federation of Hemophilia; *NEJM=New England Journal of Medicine*

Alecensa

New CNS-active inhibitor of anaplastic lymphoma kinase

Indication	Treatment-naïve ALK-positive advanced NSCLC	ALK-positive advanced NSCLC in ALK inhibitor-naïve patients who are chemotherapy-naïve or have received one previous line of chemotherapy	Adjuvant ALK+ NSCLC
Phase/study	**Phase III** **ALEX**	**Phase III** **J-ALEX/Japic CTI-132316** Japanese study	**Phase III** **ALINA**
# of patients	N=286	N=207	N=255
Design	▪ **ARM A:** Alecensa 600mg BID ▪ **ARM B:** Crizotinib 250mg BID	▪ **ARM A:** Alecensa 300mg BID ▪ **ARM B:** Crizotinib 250mg BID	▪ ARM A: Alecensa 600 mg BID ▪ ARM B: Platinum-based chemotherapy
Primary endpoint	▪ Progression-free survival	▪ Progression-free survival	▪ Disease-free survival
Status	▪ Recruitment completed Q3 2015 ▪ Primary endpoint met Q1 2017 ▪ Data presented at ASCO 2017, ESMO 2017, ASCO 2018 and ESMO 2018 ▪ Data published in *NEJM* 2017 June; 377:829-838 ▪ CNS data presented at ESMO 2017	▪ Primary data analysis positive ▪ Data presented at ASCO 2016 ▪ Breakthrough Therapy Designation granted by FDA Q3 2016 ▪ Data published in *Lancet* 2017 Jul; 390(10089):29–39	▪ FPI Q3 2018
	▪ Approved in US Q4 2017 (priority review) and in EU Q4 2017		
CT Identifier	NCT02075840	JapicCTI-132316	NCT03456076

In collaboration with Chugai - NSCLC=non-small cell lung cancer; ASCO=American Society of Clinical Oncology; *NEJM=New England Journal of Medicine;* ESMO=European Society for Medical Oncology

Cotellic

Selective small molecule inhibitor of MAPK kinase

Indication	First-line metastatic triple negative breast cancer	Recurrent or advanced solid tumors
Phase/study	**Phase II** **COLET**	**Phase Ib** **COTEST**
# of patients	N=160	N=250
Design	▪ **ARM A:** Cotellic plus paclitaxel ▪ **ARM B:** Placebo plus paclitaxel ▪ **ARM C:** Cotellic plus Tecentriq plus nab-paclitaxel ▪ **ARM D:** Cotellic plus Tecentriq plus paclitaxel	Cotellic plus Tecentriq in head and neck, bladder and renal cancer (cohorts for each cancer type in CPI naive and CPI experienced patients)
Primary endpoint	▪ Progression-free survival and safety	▪ Objective response rate
Status	▪ FPI Q1 2015 ▪ FPI Arms C and D: Q4 2016 ▪ Data from Arm A and B presented at SABCS 2017	▪ FPI Q4 2017
CT Identifier	NCT02322814	NCT03264066

In collaboration with Exelixis
SABCS=San Antonio Breast Cancer Symposium, CPI=Checkpoint inhibitor

Cotellic

Selective small molecule inhibitor of MAPK kinase

Indication	First-line BRAFv600 mutation-positive metastatic or unresectable locally advanced melanoma	First-line BRAF-WT metastatic or unresectable locally advanced melanoma	Previously untreated metastatic melanoma BRAF mutation-positive	BRAF-WT metastatic or unresectable locally advanced melanoma after immunotherapy
Phase/study	**Phase III IMspire150 TRILOGY**	**Phase III IMspire170**	**Phase I**	**Phase Ib**
# of patients	N=500	N=500	N=67	N=152
Design	Double-blind, randomized, placebo-controlled study ▪ **ARM A:** Tecentriq plus Cotellic plus Zelboraf[1] ▪ **ARM B:** Placebo plus Cotellic plus Zelboraf[1]	▪ **ARM A:** Cotellic plus Tecentriq ▪ **ARM B:** Pembrolizumab	▪ Dose-finding study of Cotellic plus Tecentriq plus Zelboraf[1] and Tecentriq plus Zelboraf[1] combinations	▪ Preliminary efficacy of Cotellic plus Tecentriq in patients who have progressed on prior aPD-1 therapy
Primary endpoint	▪ Progression-free survival	▪ Progression-free survival and overall survival	▪ Safety and PK	▪ Objective response rate and disease control rate
Status	▪ FPI Q1 2017 ▪ Recruitment completed Q2 2018	▪ FPI Q4 2017 ▪ Recruitment completed Q4 2018	▪ FPI Q4 2012 ▪ Data presented at ESMO 2016	▪ FPI Q2 2017 ▪ Recruitment completed Q4 2018
CT Identifier	NCT02908672	NCT03273153	NCT01656642	NCT03178851

In collaboration with Exelixis; [1]Zelboraf In collaboration with Plexxikon, a member of Daiichi Sankyo Group
ESMO=European Society for Medical Oncology

Gazyva/Gazyvaro

Oncology development program

Indication	Front-line indolent non-Hodgkin's lymphoma
Phase/study	**Phase III** **GALLIUM** Induction and maintenance study
# of patients	N=1,401
Design	▪ **ARM A:** G 1000mg IV + chemo followed by G maintenance ▪ **ARM B:** MabThera/Rituxan + chemo followed by MabThera/Rituxan maintenance *Chemotherapy:* ▪ For follicular lymphoma (FL): CHOP, CVP or bendamustine ▪ For non-FL: physician's choice
Primary endpoint	▪ Progression-free survival in FL patients (N=1,202)
Status	▪ Trial stopped at interim for efficacy (May 2016) ▪ Data presented at ASH 2016 ▪ Approved in EU Q3 2017 ▪ Approved by the FDA Q4 2017 after priority review ▪ Data published in *NEJM* 2017 Oct 5;377(14):1331-1344
CT Identifier	NCT01332968

In collaboration with Biogen

ASH=American Society of Hematology; CHOP=cyclophosphamide, doxorubicin, vincristine and prednisone; CVP=cyclophosphamide, vincristine and prednisolone; ; *NEJM=New England Journal of Medicine*

Kadcyla

First ADC for HER2-positive breast cancer

Indication	HER2-positive early breast cancer high-risk patients	Operable HER2-positive early breast cancer
Phase/study	**Phase III KATHERINE**	**Phase III KAITLIN**
# of patients	N=1,484	N=1,850
Design	▪ **ARM A:** Kadcyla 3.6mg/kg Q3W ▪ **ARM B:** Herceptin	Following surgery and antracycline-based therapy: ▪ **ARM A:** Herceptin 6mg/kg Q3W plus Perjeta 420 mg/kg Q3W plus chemo ▪ **ARM B:** Kadcyla 3.6mg/kg Q3W plus Perjeta 420mg/kg Q3W plus chemo
Primary endpoint	▪ Invasive disease-free survival	▪ Invasive disease-free survival
Status	▪ Recruitment complete Q4 2015 ▪ Stopped at pre-planned interim data analysis for efficacy Q4 2018 ▪ Data presented at SABCS 2018	▪ Recruitment completed Q2 2015 ▪ Data expected in 2020
CT Identifier	NCT01772472	NCT01966471

In collaboration with ImmunoGen, Inc.
ADC=antibody drug conjugate

Perjeta

First-in-class HER2 dimerization inhibitor

Indication	Adjuvant HER2-positive breast cancer	Neoadjuvant/adjuvant HER2-positive breast cancer	HER2-positive early breast cancer subcutaneous co-formulation
Phase/study	**Phase III APHINITY**	**Phase II BERENICE**	**Phase III FeDeriCa**
# of patients	N=4,803	N=401	N=500
Design	▪ **ARM A:** Perjeta (840mg loading, 420 q3w) + Herceptin for 52 weeks plus chemotherapy (6-8 cycles) ▪ **ARM B:** Placebo + Herceptin (52 weeks) plus chemotherapy (6-8 cycles)	*Neoadjuvant treatment:* ▪ **ARM A:** ddAC q2w x4 followed by wkly paclitaxel for 12 wks, with P+H x4 cycles ▪ **ARM B:** FEC plus P+H x4 followed by docetaxel plus P+H x4 *Adjuvant treatment:* ▪ P+H q3w to complete 1 year of HER2 therapy ▪ Hormonal and radiation therapy as indicated	Fixed-dose combination (FDC) of Perjeta (P) and Herceptin (H) for subcutaneous administration in combination with chemotherapy in the neoadjuvant/adjuvant setting ▪ **ARM A:** P IV+H IV+chemotherapy ▪ **ARM B:** FDC of PH SC+chemotherapy
Primary endpoint	▪ Invasive disease-free survival (IDFS)	▪ Safety	▪ Trough Serum Concentration (Ctrough) of Pertuzumab During Cycle 7
Status	▪ Primary endpoint met Q1 2017 ▪ Data presented at ASCO 2017 ▪ Filed in US and EU Q3 2017 ▪ Approved in US Q4 2017 (priority review) and EU Q2 2018	▪ Recruitment completed Q3 2015 ▪ Data presented at SABCS 2016 ▪ Data published Ann Oncol. 2018 Mar 1; 29(3): 646-653	▪ FPI Q2 2018 ▪ Recruitment completed Q4 2018
CT Identifier	NCT01358877	NCT02132949	NCT03493854

ddAC=dose-dense doxorubicin plus cyclophosphamide; FEC=fluorouracil, epirubicin and cyclophosphamide;
ASCO=American Society of Clinical Oncology; SABCS=San Antonio Breast Cancer Symposium

Tecentriq

Anti-PD-L1 cancer immunotherapy – lung cancer

Indication	1L non-squamous NSCLC		
Phase/study	**Phase III IMpower150**	**Phase III IMpower130**	**Phase III IMpower132**
# of patients	N=1,202	N=650	N=568
Design	▪ **ARM A:** Tecentriq plus paclitaxel plus carboplatin ▪ **ARM B:** Tecentriq plus Avastin plus paclitaxel plus carboplatin ▪ **ARM C:** Avastin plus paclitaxel plus carboplatin	▪ **ARM A:** Tecentriq plus nab-paclitaxel plus carboplatin ▪ **ARM B:** Nab-paclitaxel plus carboplatin	▪ **ARM A:** Tecentriq plus carboplatin or cisplatin plus pemetrexed ▪ **ARM B:** Carboplatin or cisplatin plus pemetrexed
Primary endpoint	▪ Progression-free survival and overall survival	▪ Progression-free survival and overall survival	▪ Progression-free survival and overall survival
Status	▪ FPI Q2 2015 ▪ Recruitment completed Q4 2016 ▪ Study met co-primary endpoint of PFS in Q4 2017 and OS in Q1 2018 ▪ PFS data presented at ESMO IO 2017 ▪ PFS subgroup data presented at AACR 2018 ▪ Filed in US Q1 2018 (priority review) and EU (Q1 2018) ▪ Data published in NEJM 2018 Jun 14;378(24):2288-2301 ▪ Approved in US Q4 2018	▪ FPI Q1 2015 ▪ Recruitment completed Q1 2017 ▪ Study met co-primary endpoint of OS and PFS in Q2 2018 ▪ Filed in US and EU	▪ FPI Q2 2016 ▪ Recruitment completed Q2 2017 ▪ Study met co-primary endpoint of PFS in Jul 2018 ▪ Data presented at WCLC 2018
CT Identifier	NCT02366143	NCT02367781	NCT02657434

NSCLC=non-small cell lung cancer; NSq=non-squamous; ESMO=European Society for Medical Oncology; AACR=American Association for Cancer Research; ; *NEJM=New England Journal of Medicine; WCLC=world Lung Cancer Congress*

Tecentriq

Anti-PD-L1 cancer immunotherapy – lung cancer

Indication	1L non-squamous and squamous NSCLC PD-L1-selected patients	1L squamous NSCLC	1L extensive-stage SCLC
Phase/study	**Phase III IMpower110**	**Phase III IMpower131**	**Phase III IMpower133**
# of patients	N=570	N=1,025	N=400
Design	▪ **ARM A:** Tecentriq monotherapy ▪ **ARM B:** *NSq*: carboplatin or cisplatin plus pemetrexed *Sq:* carboplatin or cisplatin plus gemcitabine	▪ **ARM A:** Tecentriq plus paclitaxel plus carboplatin ▪ **ARM B:** Tecentriq plus nab-paclitaxel plus carboplatin ▪ **ARM C:** Nab-paclitaxel plus carboplatin	▪ **ARM A:** Tecentriq plus carboplatin plus etoposide ▪ **ARM B:** Placebo plus carboplatin plus etoposide
Primary endpoint	▪ Overall survival	▪ Progression-free survival and overall survival	▪ Progression-free survival and overall survival
Status	▪ FPI Q3 2015 ▪ IMpower111 consolidated into IMpower110 Q3 2016 ▪ Recruitment completed Q1 2018	▪ FPI Q2 2015 ▪ Recruitment completed Q1 2017 ▪ Study met co-primary endpoint of PFS in Q1 2018 ▪ Primary PFS data presented at ASCO 2018 ▪ Interim OS data presented at ESMO 2018	▪ FPI Q2 2016 ▪ Orphan drug designation granted by FDA Q3 2016 ▪ Recruitment completed Q2 2017 ▪ Study met endpoints of OS and PFS in Q2 2018 ▪ Primary data presented at WCLC ▪ Data published at NEJM 2018 Sep 25 2018 2018; 379:2220-2229 ▪ Filed with the US and EU
CT Identifier	NCT02409342	NCT02367794	NCT02763579

NSCLC=non-small cell lung cancer; NSq=non-squamous; SCLC=small cell lung cancer; ASCO=American Society of Clinical Oncology; *NEJM=New England Journal of Medicine; WCLC=world Lung Cancer Congress*

Tecentriq

Anti-PD-L1 cancer immunotherapy – lung cancer

Indication	Adjuvant NSCLC	Neoadjuvant NSCLC
Phase/study	**Phase III** **IMpower010**	**Phase III** **IMpower030**
# of patients	N=1,127	N=302
Design	Following adjuvant cisplatin-based chemotherapy ▪ **ARM A:** Tecentriq ▪ **ARM B:** Best supportive care	▪ **ARM A:** Tecentriq + platinum-based chemotherapy ▪ **ARM B:** Platinum-based chemotherapy
Primary endpoint	▪ Disease-free survival	▪ Major pathological response (MPR)
Status	▪ FPI Q3 2015 ▪ Trial amended from PD-L1-selected patients to all-comers ▪ FPI for all-comer population Q4 2016 ▪ Recruitment completed Q3 2018	▪ FPI Q2 2018
CT Identifier	NCT02486718	NCT03456063

Tecentriq

Anti-PD-L1 cancer immunotherapy – lung cancer

Indication	1L non-squamous NSCLC	2L metastatic NSCLC	Locally advanced or metastatic NSCLC (2L/3L)
Phase/study	**Phase II/III B-FAST**	**Phase III OAK**	**Phase II POPLAR**
# of patients	N=580	N=1,225	N=287
Design	▪ **Cohort A:** ALK + (Alecensa[1]) ▪ **Cohort B:** ROS1 + (entrectinib) ▪ **Cohort C:** bTMB-high (Tecentriq)	▪ **ARM A:** Tecentriq 1200mg q3w ▪ **ARM B:** Docetaxel	▪ **ARM A:** Tecentriq 1200mg q3w ▪ **ARM B:** Docetaxel
Primary endpoint	▪ Cohort A/B: Objective response rate ▪ Cohort C: Progression-free survival	▪ Overall survival	▪ Overall survival
Status	▪ FPI Q3 2017 ▪ Recruitment completed for Cohort A Q3 2018	▪ Data presented at ESMO 2016 ▪ Data filed with US Q3 2016 ▪ Data published in *Lancet* 2017 Jan; 389(10066):255–265 ▪ Data presented at ASCO 2017	▪ Data presented at ASCO 2015 (interim) and ECC 2015 (primary) ▪ Data published in *Lancet* 2017 Apr 30; 387 (10030):1837-46 ▪ Updated data presented at ASCO 2016
		▪ Approved in US Q4 2016 (priority review) and in EU Q3 2017	
CT Identifier	NCT03178552	NCT02008227	NCT01903993

[1]In collaboration with Chugai

NSCLC=non-small cell lung cancer; bTMB=Blood-based tumor mutational burden; ASCO=American Society of Clinical Oncology; ESMO=European Society for Medical Oncology; ECC=European Cancer Congress

Tecentriq

Anti-PD-L1 cancer immunotherapy – lung cancer

Indication	Locally advanced or metastatic NSCLC PD-L1 positive	NSCLC	Stage IV non-small cell lung cancer
Phase/study	**Phase II BIRCH**	**Phase I**	**Phase Ib/II IMnscin**
# of patients	N=667	N=53	
Design	Single arm study: ▪ Tecentriq 1200mg q3w	▪ Tecentriq plus Tarceva1 or Alecensa	▪ Part 1: dose finding, atezo SC followed by atezo IV ▪ Part 2: non inferiority of atezo SC + Avastin + chemo vs atezo IV + Avastin+ chemo
Primary endpoint	▪ Objective response rate	▪ Safety	▪ Observed concentration of atezolizumab in serum at cycle 1
Status	▪ Recruitment completed Q4 2014 ▪ Primary data presented at ECC 2015 ▪ Data published in *Journal of Clinical Oncology* 2017 Aug 20; 35(24):2781-2789 ▪ Approved in US Q4 2016 (priority review)	▪ FPI Q1 2014 ▪ FPI in Alecensa arm Q3 2015 ▪ Recruitment completed in Tarceva arm Q3 2015 ▪ Data from Tarceva presented at WCLC and ESMO Asia 2016	▪ FPI Q4 2018
CT Identifier	NCT02031458	NCT02013219	NCT03735121

[1]Tarceva is a registered trademark of OSI Pharmaceuticals, LLC, a subsidiary of Astellas US, LLC;
NSCLC=non-small cell lung cancer; ESMO=European Society for Medical Oncology; ECC=European Cancer Congress; WCLC=World Conference on Lung Cancer

Tecentriq

Anti-PD-L1 cancer immunotherapy – SCCHN

Indication	Adjuvant squamous cell carcinoma of the head and neck
Phase/study	**Phase III** **IMvoke010**
# of patients	N=400
Design	▪ **ARM A:** Tecentriq 1200mg q3w ▪ **ARM B:** Placebo
Primary endpoint	▪ Event-free survival and overall survival
Status	▪ FPI Q1 2018
CT Identifier	NCT03452137

SCCHN=squamous cell carcinoma of the head and neck

Tecentriq

Anti-PD-L1 cancer immunotherapy – UC

Indication	Locally advanced or metastatic urothelial bladder cancer	
Phase/study	**Phase III** **IMvigor211**	**Phase II** **IMvigor210**
# of patients	N=932	N=439
Design	Patients who progressed on at least one platinum-containing regimen will receive: ▪ **ARM A:** Tecentriq 1200mg q3w ▪ **ARM B:** Chemotherapy (vinflunine, paclitaxel or docetaxel)	▪ **Cohort 1:** Treatment-naive and cisplatin-ineligible patients ▪ **Cohort 2:** Patients with disease progression following or during platinum-containing treatment
Primary endpoint	▪ Overall survival	▪ Objective response rate
Status	▪ Recruitment completed Q1 2016 ▪ Data presented at EACR-AACR-SIC Special Conference 2017 ▪ Data published in *Lancet* in Dec 2017; 391(10122):p748–757	▪ Cohort 2: US accelerated approval Q2 2016; filed in EU Q2 2016 ▪ Cohort 2 data published in *Lancet* May 2016; 387(10031):p1909–1920 ▪ Updated data (Cohorts 1 and 2) presented at ESMO 2016 ▪ Cohort 1: Approved in US Q2 2017 (priority review)
	▪ Approved in EU Q3 2017	
CT Identifier	NCT02302807	NCT02951767 (Cohort 1), NCT02108652 (Cohort 2)

UC=urothelial carcinoma; ESMO=European Society for Medical Oncology; EACR-AACR-SIC=European Association for Cancer Research - American Association for Cancer Research - Italian Cancer Society

Tecentriq

Anti-PD-L1 cancer immunotherapy – UC

Indication	Adjuvant high-risk muscle-invasive urothelial cancer	1L metastatic urothelial carcinoma
Phase/study	**Phase III IMvigor010**	**Phase III IMvigor130**
# of patients	N=800	N=1,200
Design	After cystectomy: ▪ **ARM A:** Tecentriq monotherapy ▪ **ARM B:** Observation	▪ **ARM A:** Tecentriq plus gemcitabine and carboplatin or cisplatin ▪ **ARM B:** Tecentriq monotherapy ▪ **ARM C:** Placebo plus gemcitabine and carboplatin or cisplatin
Primary endpoint	▪ Disease-free survival	▪ Progression-free survival, overall survival and safety
Status	▪ FPI Q4 2015 ▪ Recruitment completed Q3 2018	▪ FPI Q3 2016 ▪ FPI for Arm B (amended study) Q1 2017 ▪ Recruitment completed Q3 2018
CT Identifier	NCT02450331	NCT02807636

UC=urothelial carcinoma; BCG=Bacille Calmette-Guérin; NMIBC=non-muscle invasive bladder cancer

Tecentriq

Anti-PD-L1 cancer immunotherapy – UC

Indication	High-risk non-muscle-invasive bladder cancer	
Phase/study	**Phase Ib/II**	**Phase III ALBAN**
# of patients	N=70	n=614
Design	▪ **Cohort 1a:** Tecentriq (BCG-unresponsive NMIBC) ▪ **Cohort 1b:** Tecentriq + BCG (BCG-unresponsive NMIBC) ▪ **Cohort 2:** Tecentriq + BCG (BCG-relapsing NMIBC) ▪ **Cohort 3:** Tecentriq + BCG (BCG-naive NMIBC)	▪ **ARM A:** BCG induction and maintenance ▪ **ARM B:** Tecentriq+ BCG induction and maintenance
Primary endpoint	▪ Safety and objective response rate	▪ Recurrence-free survival
Status	▪ FPI Q2 2016	▪ FPI Q4 2018
CT Identifier	NCT02792192	NCT03799835

UC=urothelial carcinoma; BCG=Bacille Calmette-Guérin; NMIBC=non-muscle invasive bladder cancer

Tecentriq

Anti-PD-L1 cancer immunotherapy – renal cell cancer

Indication	Adjuvant renal cell carcinoma	Untreated advanced renal cell carcinoma	
Phase/study	**Phase III IMmotion010**	**Phase III IMmotion151**	**Phase II IMmotion150**
# of patients	N=664	N=900	N=305
Design	▪ **ARM A:** Tecentriq monotherapy ▪ **ARM B:** Observation	▪ **ARM A:** Tecentriq plus Avastin ▪ **ARM B:** Sunitinib	▪ **ARM A:** Tecentriq plus Avastin ▪ **ARM B:** Tecentriq; following PD: Tecentriq plus Avastin ▪ **ARM C:** Sunitinib; following PD: Tecentriq plus Avastin
Primary endpoint	▪ Disease-free survival	▪ Progression-free survival and overall survival (co-primary endpoint)	▪ Progression-free survival
Status	▪ FPI Q1 2017	▪ FPI Q2 2015 ▪ Recruitment completed Q4 2016 ▪ Study met co-primary endpoint (PFS in PD-L1+ patients) in Q4 2017 ▪ Data presented at ASCO GU 2018	▪ Recruitment completed Q1 2015 ▪ Presented at ASCO GU and AACR 2017 ▪ Updated data presented at ASCO 2017
CT Identifier	NCT03024996	NCT02420821	NCT01984242

ASCO GU=American Society of Clinical Oncology Genitourinary Cancers; AACR=American Association for Cancer Research; PD=progressive disease

Tecentriq

Anti-PD-L1 cancer immunotherapy – prostate cancer

Indication	Metastatic castration-resistant prostate cancer	Metastatic castration-resistant prostate cancer
Phase/study	**Phase Ib**	**Phase III** **IMbassador250**
# of patients	N=45	N=730
Design	▪ Tecentriq plus radium-223 dichloride	▪ **ARM A:** Tecentriq plus enzalutamide ▪ **ARM B:** Enzalutamide
Primary endpoint	▪ Safety and tolerability	▪ Overall survival
Status	▪ FPI Q3 2016 ▪ Recruitment completed Q3 2018	▪ FPI Q1 2017 ▪ Recruitment completed Q2 2018
CT Identifier	NCT02814669	NCT03016312

Tecentriq

Anti-PD-L1 cancer immunotherapy – CRC and HCC

Indication	2/3L metastatic colorectal cancer	1L hepatocellular carcinoma
Phase/study	**Phase I**	**Phase III** **IMbrave150**
# of patients	N=84	N=480
Design	Open-label, single-arm, two-stage study with Cotellic plus Tecentriq plus Avastin ▪ **Stage 1:** Safety run-in ▪ **Stage 2:** Dose-expansion with two cohorts; – Expansion – Biopsy	▪ **ARM A:** Tecentriq plus Avastin ▪ **ARM B:** Sorafenib
Primary endpoint	▪ Safety	▪ Overall survival and progression free survival
Status	▪ FPI Q3 2016	▪ FPI Q1 2018 ▪ Recruitment completed Jan 2019
CT Identifier	NCT02876224	NCT03434379

Cotellic in collaboration with Exelixis
ESMO WCGI= ESMO World Congress on Gastrointestinal Cancer

Tecentriq

Anti-PD-L1 cancer immunotherapy – solid tumors

Indication	Solid tumors	Locally advanced or metastatic solid tumors
Phase/study	**Phase I**	**Phase I**
# of patients	N=430	N=661
Design	▪ **ARM A:** HCC: Tecentriq + Avastin ▪ **ARM B:** HER2-neg. GC: Tecentriq+Avastin+oxaliplatin+leucovorin+5-FU ▪ **ARM C:** PaC: Tecentriq + nab-paclitaxel + gemcitabine ▪ **ARM D:** HCC: Tecentriq + vanucizumab or Tecentriq + Avastin ▪ **ARM E:** Squamous cell mEC: Tecentriq + 5FU-Cis and Tecentriq + FOLFOX; adenocarcinoma mEC: Tecentriq + FOLFOX ▪ **ARM F:** HCC: Tecentriq vs Tecentriq + Avastin (randomized)	▪ Dose escalation study
Primary endpoint	▪ Safety	▪ Safety and PK
Status	▪ FPI Q2 2016 ▪ FPI Arm E Q1 2017 ▪ FPI Arm F Q2 2018 ▪ Breakthrough Therapy Designation granted by FDA for HCC Jul 2018	▪ FPI Q2 2011 ▪ Initial efficacy data presented at ASCO 2013, data from bladder cohort presented at ASCO and ESMO 2014; TNBC cohort presented at AACR 2015; updated lung and bladder data presented at ASCO 2015; GBM data presented at SNO 2015; SCCHN data presented at ESMO 2017
CT Identifier	NCT02715531	NCT01375842

HCC=hepatocellular carcinoma; GC=gastric cancer; PaC=pancreatic cancer; mEC=metastatic esophageal cancer; CRC=colorectal cancer; TNBC=triple-negative breast cancer; GBM=glioblastoma multiforme; SCCHN=squamous cell carcinoma of the head and neck; AACR=American Association for Cancer Research; ASCO=American Society of Clinical Oncology; ESMO=European Society for Medical Oncology; SNO=Society for Neuro-Oncology;

Tecentriq

Anti-PD-L1 cancer immunotherapy – breast cancer

Indication	Previously untreated metastatic triple negative breast cancer		
Phase/study	**Phase III IMpassion130**	**Phase III IMpassion131**	**Phase III IMpassion132**
# of patients	N=900	N=540	N=350
Design	▪ **ARM A:** Tecentriq plus nab-paclitaxel ▪ **ARM B:** Placebo plus nab-paclitaxel	▪ **ARM A:** Tecentriq plus paclitaxel ▪ **ARM B:** Placebo plus paclitaxel	▪ **ARM A:** Tecentriq plus capecitabine or carbo/gem ▪ **ARM B:** Placebo plus capecitabine or carbo/gem
Primary endpoint	▪ Progression-free survival and overall survival (co-primary endpoint)	▪ Progression-free survival	▪ Overall survival
Status	▪ FPI Q3 2015 ▪ Recruitment completed Q2 2017 ▪ Study met co-primary endpoint of PFS in both PDL1+ and ITT populations Jul 2018 ▪ Primary PFS and interim OS data presented at ESMO 2018 ▪ Filed in US and EU	▪ FPI Q3 2017	▪ FPI Q1 2018
CT Identifier	NCT02425891	NCT03125902	NCT03371017

Tecentriq

Anti-PD-L1 cancer immunotherapy – breast cancer

Indication	Neoadjuvant triple negative breast cancer	Adjuvant triple negative breast cancer
Phase/study	**Phase III** **IMpassion031**	**Phase III** **IMpassion030**
# of patients	N=204	N=2300
Design	▪ **ARM A:** Tecentriq plus nab-paclitaxel ▪ **ARM B:** Placebo plus nab-paclitaxel	▪ **ARM A:** Tecentriq + paclitaxel followed by AC followed by Tecentriq + AC, followed by Tecentriq maintenance ▪ **ARM B:** Placebo + paclitaxel followed by AC followed by placebo
Primary endpoint	▪ Percentage of participants with pathologic complete response (pCR)	▪ iDFS
Status	▪ FPI Q3 2017 ▪ Recruitment completed Q2 2018	▪ FPI Q3 2018
CT Identifier	NCT03197935	NCT03498716

[1] In collaboration with ImmunoGen, Inc.
eBC=early breast cancer; mBC=metastatic breast cancer

Tecentriq

Anti-PD-L1 cancer immunotherapy – breast cancer

Indication	Metastatic and locally advanced early breast cancer (HER2-positive)	Neoadjuvant HER2-positive breast cancer
Phase/study	**Phase I**	**Phase III** **IMpassion050**
# of patients	N=76	N=224
Design	▪ **Cohort 1A (mBC):** Tecentriq plus Perjeta plus Herceptin ▪ **Cohort 1B (mBC):** Tecentriq plus Kadcyla[1] ▪ **Cohort 1F (mBC):** Tecentriq plus Perjeta plus Herceptin plus docetaxel ▪ **Cohort 2A (eBC):** Tecentriq plus Perjeta plus Herceptin ▪ **Cohort 2B (eBC):** Tecentriq plus Kadcyla[1] ▪ **Cohort 2C (expansion on cohort 1B):** Tecentriq plus Kadcyla[1]	▪ ARM A: ddAC Herceptin/Perjeta + paclitaxel followed by surgery and chemotherapy ▪ ARM B: ddAC Herceptin/Perjeta + chemotherapy +Tecentriq followed by surgery and chemotherapy +Tecentriq
Primary endpoint	▪ Safety	▪ pCR
Status	▪ FPI Q4 2015 ▪ Recruitment completed Q2 2018	▪ FPI Q4 2018
CT Identifier	NCT02605915	NCT03726879

[1] In collaboration with ImmunoGen, Inc.
eBC=early breast cancer; mBC=metastatic breast cancer

Tecentriq

Anti-PD-L1 cancer immunotherapy – ovarian cancer

Indication	Front-line ovarian cancer	Advanced gynecological cancers and platinum-sensitive ovarian cancer
Phase/study	**Phase III IMaGYN050**	**Phase Ib**
# of patients	N=1,300	N=48
Design	▪ **ARM A:** Tecentriq plus carboplatin plus paclitaxel plus Avastin ▪ **ARM B:** Carboplatin plus paclitaxel plus Avastin	▪ **Part 1:** Dose finding Tecentriq plus rucaparib (CO-338)[1] ▪ **Part 2:** Expansion Tecentriq plus rucaparib (CO-338)[1]
Primary endpoint	▪ Progression-free survival and overall survival (co-primary endpoint)	▪ Safety
Status	▪ FPI Q1 2017	▪ FPI Q2 2017
CT Identifier	NCT03038100	NCT03101280

[1]Rucaparib in collaboration with Clovis

Tecentriq

Anti-PD-L1 cancer immunotherapy – hematology

Indication	1L FL and 1L DLBCL	Relapsed or refractory FL	Multiple myeloma
Phase/study	**Phase I**	**Phase I**	**Phase Ib**
# of patients	N=92	N=38	N≈214
Design	▪ Tecentriq plus Gazyva plus bendamustine ▪ Tecentriq plus Rituxan plus CHOP	▪ Tecentriq plus Gazyva plus lenalidomide	▪ **ARM D:** Tecentriq plus daratumumab[2] ▪ **ARM F:** Tecentriq plus pomalidomide plus daratumumab[2] *vs* dexamethasone plus pomalidomide plus daratumumab[2] (randomized)
Primary endpoint	▪ Safety and efficacy	▪ Safety and efficacy	▪ Safety
Status	▪ FPI Q4 2015	▪ FPI Q4 2015 ▪ Data presented at ASH 2018	▪ FPI Q3 2015 ▪ FPI daratumumab[2] cohorts Q3 2016 ▪ Arm A/B/C/E completed/terminated
CT Identifier	NCT02596971	NCT02631577	NCT02431208

[1]Tazemetostat tested for r/r DLBCL in collaboration with Epizyme; [2]Daratumumab cohorts in collaboration with Janssen;
FL=follicular lymphoma; DLBCL=diffuse large B cell lymphoma

Venclexta

Novel small molecule Bcl-2 selective inhibitor –

Indication	Untreated CLL patients with coexisting medical conditions	Relapsed or refractory CLL
Phase/study	**Phase III CLL14**	**Phase III MURANO**
# of patients	N=432	N=391
Design	▪ **ARM A:** Venclexta plus Gazyva ▪ **ARM B:** Chlorambucil plus Gazyva	▪ **ARM A:** Venclexta plus Rituxan ▪ **ARM B:** Rituxan plus bendamustine
Primary endpoint	▪ Progression-free survival	▪ Progression-free survival
Status	▪ FPI Q4 2014 ▪ Recruitment completed Q3 2016 ▪ Study met primary endpoint at pre-specified interim analysis Q4 2018	▪ Recruitment completed Q3 2015 ▪ Study met primary endpoint at interim analysis ▪ Data presented at ASH 2017 ▪ Filed in US Q4 2017 and EU Q1 2018 ▪ Data published in *NEJM* 2018; 378:1107–20 ▪ Updated data presented at ASCO 2018 ▪ Approved in US Q2 2018 (priority review) ▪ EU approval Q4 2018
CT Identifier	NCT02242942	NCT02005471

Joint project with AbbVie, in collaboration with The Walter and Eliza Hall Institute
CLL=chronic lymphocytic leukemia; ASH=American Society of Hematology; ASCO=American Society of Clinical Oncology

Venclexta

Novel small molecule Bcl-2 selective inhibitor – CLL

Indication	Relapsed or refractory CLL	Relapsed or refractory or previously untreated CLL
Phase/study	**Phase II**	**Phase Ib**
# of patients	N=120	N=90
Design	▪ Venclexta after ibrutinib therapy ▪ Venclexta after idelalisib therapy	▪ Venclexta in combination with Gazyva
Primary endpoint	▪ Overall response rate	▪ Safety and maximum tolerated dose
Status	▪ FPI Q3 2014 ▪ Data presented at ASH 2015 ▪ Updated data presented at ASCO 2016 ▪ Interim data published in *Lancet Oncology* 2018 Jan;19(1):65-75	▪ FPI Q1 2014 ▪ Data presented at ASH 2015 and ASH 2017
CT Identifier	NCT02141282	NCT01685892

Joint project with AbbVie, in collaboration with The Walter and Eliza Hall Institute
CLL=chronic lymphocytic leukemia; ASH=American Society of Hematology; ASCO=American Society of Clinical Oncology

Venclexta

Novel small molecule Bcl-2 selective inhibitor – NHL

Indication	B cell NHL and front-line DLBCL
Phase/study	**Phase I/II** **CAVALLI**
# of patients	N=248
Design	Phase I (dose finding, patients with B cell NHL): ▪ **ARM A:** Venclexta plus R-CHOP ▪ **ARM B:** Venclexta plus G-CHOP Phase II (expansion, patients with 1L DLBCL): ▪ Venclexta plus R-CHOP
Primary endpoint	▪ Safety and efficacy
Status	▪ FPI Q2 2014 ▪ Data presented at ASCO 2016 and ASH 2016
CT Identifier	NCT02055820

Joint project with AbbVie, in collaboration with The Walter and Eliza Hall Institute

FL=follicular lymphoma; DLBCL=diffuse large B cell lymphoma; NHL=non-Hodgkin's lymphoma; CHOP=cyclophosphamide, doxorubicin, vincristine and prednisone; R=Rituxan/MabThera; G=Gazyva; ASH=American Society of Hematology; ASCO=American Society of Clinical Oncology

Venclexta

Novel small molecule Bcl-2 selective inhibitor – MM

Indication	Relapsed or refractory multiple myeloma	
Phase/study	**Phase III BELLINI**	**Phase III CANOVA**
# of patients	N=240	N=244
Design	▪ ARM A: Venclexta plus bortezomib plus dexamethasone ▪ ARM B: Placebo plus bortezomib plus dexamethasone	▪ Venclexta + dexamethazone vs pomalidomide + dexamethasone in t(11;14) positive r/r MM
Primary endpoint	▪ Progression-free survival	▪ Progression-free survival
Status	▪ FPI Q3 2016 ▪ Recruitment completed Q4 2017	▪ FPI Q4 2018
CT Identifier	NCT02755597	NCT03539744

Joint project with AbbVie, in collaboration with The Walter and Eliza Hall Institute; [1]Cotellic in collaboration with Exelixis
MM=multiple myeloma; ASCO=American Society of Clinical Oncology; ASH=American Society of Hematology

Venclexta

Novel small molecule Bcl-2 selective inhibitor – MM

Indication	Relapsed or refractory multiple myeloma		
Phase/study	**Phase I**	**Phase I**	**Phase Ib**
# of patients	N=66	N=212	N=65
Design	Patients receiving bortezomib and dexamethasone as standard therapy: ▪ **Dose escalation cohort:** Venclexta plus bortezomib plus dexamethasone ▪ **Safety expansion cohort:** Venclexta plus bortezomib plus dexamethasone	▪ **Dose escalation cohort:** Venclexta dose escalation ▪ **Safety expansion cohort (t11:14):** Venclexta expansion ▪ **Combination:** Venclexta plus dexamethasone	▪ **Arm A:** Cotellic[1] ▪ **Arm B:** Cotellic[1] plus Venclexta ▪ **Arm C:** Cotellic[1] plus Venclexta plus Tecentriq
Primary endpoint	▪ Safety and maximum tolerated dose	▪ Safety and maximum tolerated dose	▪ Safety and objective response rate
Status	▪ FPI Q4 2012 ▪ Data presented at ASCO 2015 ▪ Updated data presented at ASCO 2016 and ASH 2016	▪ FPI Q4 2012 ▪ Data presented at ASCO 2015 ▪ Updated data presented at ASCO 2016 and ASH 2016	▪ FPI Q4 2017
CT Identifier	NCT01794507	NCT01794520	NCT03312530

Joint project with AbbVie, in collaboration with The Walter and Eliza Hall Institute; [1]Cotellic in collaboration with Exelixis
MM=multiple myeloma; ASCO=American Society of Clinical Oncology; ASH=American Society of Hematology

Venclexta

Novel small molecule Bcl-2 selective inhibitor – AML

Indication	Treatment-naïve AML not eligible for standard induction therapy	
Phase/study	**Phase III** **Viale-A**	**Phase III** **Viale-C**
# of patients	N=400	N=175
Design	▪ **ARM A:** Venclexta plus azacitidine ▪ **ARM B:** Azacitidine	▪ **ARM A:** Venclexta plus low-dose cytarabine ▪ **ARM B:** Low-dose cytarabine
Primary endpoint	▪ Overall survival and percentage of participants with complete remission	▪ Overall survival
Status	▪ FPI Q1 2017	▪ FPI Q2 2017
CT Identifier	NCT02993523	NCT03069352

Joint project with AbbVie, in collaboration with The Walter and Eliza Hall Institute
AML=acute myeloid leukemia

Venclexta

Novel small molecule Bcl-2 selective inhibitor – AML

Indication	Treatment-naïve AML not eligible for standard induction therapy	
Phase/study	**Phase Ib**	**Phase Ib/II**
# of patients	N=212	N=92
Design	▪ Venclexta (dose escalation) plus decitabine ▪ Venclexta (dose escalation) plus azacitidine ▪ Venclexta (dose escalation) plus decitabine plus posaconazole	▪ Venclexta (dose escalation) plus low-dose cytarabine
Primary endpoint	▪ Safety	▪ Safety, PK, PD and efficacy
Status	▪ FPI Q4 2014 ▪ Initial data presented at ASH 2015, updated data presented at ASCO 2016 and ASCO 2018 ▪ Breakthrough Therapy Designation granted by FDA Q1 2016	▪ FPI Q1 2015 ▪ Initial data presented at ASCO 2016, updated data presented at ASH 2016 and ASH 2017 ▪ Breakthrough Therapy Designation granted by FDA Q3 2017
	▪ Filed in US Jul 2018 ▪ US accelerated approval Q4 2018	
CT Identifier	NCT02203773	NCT02287233

Joint project with AbbVie, in collaboration with The Walter and Eliza Hall Institute; [1]Cotellic in collaboration with Exelixis
AML=acute myeloid leukemia; ASH=American Society of Hematology; ASCO=American Society of Clinical Oncology

Venclexta

Novel small molecule Bcl-2 selective inhibitor – AML

Indication	Relapsed or Refractory AML	Relapsed or refractory AML not eligible for cytotoxic therapy
Phase/study	**Phase I**	**Phase Ib/II**
# of patients		N=140
Design	▪ Venetoclax in combination with gilteritinib	Phase I (dose escalation): ▪ **ARM A:** Cotellic[1] plus Venclexta ▪ **ARM B:** Idasanutlin plus Venclexta Phase II (expansion): ▪ **ARM A:** Cotellic[1] plus Venclexta ▪ **ARM B:** Idasanutlin plus Venclexta
Primary endpoint	▪ Dose and composite complete remission (CRc) Rate	▪ Safety and efficacy
Status	▪ FPI Q4 2018	▪ FPI Q1 2016 ▪ Data presented at ASH 2017
CT Identifier	NCT03625505	NCT02670044

Joint project with AbbVie, in collaboration with The Walter and Eliza Hall Institute; [1]Cotellic in collaboration with Exelixis
AML=acute myeloid leukemia; ASH=American Society of Hematology; ASCO=American Society of Clinical Oncology

Venclexta

Novel small molecule Bcl-2 selective inhibitor – MDS

Indication	Myelodysplastic syndromes after azacitidine failure	Treatment-naive myelodysplastic syndromes
Phase/study	**Phase Ib**	**Phase II**
# of patients	N=66	N=90
Design	Cohort 1: ▪ **ARM A:** Venclexta 400 mg ▪ **ARM B:** Venclexta 800 mg Cohort 2: ▪ **ARM A:** Venclexta plus azacitidine Study expansion: ▪ Venclexta or Venclexta plus azacitidine	▪ **ARM A:** Venclexta 400 mg plus azacitidine ▪ **ARM B:** Venclexta 800 mg plus azacitidine ▪ **ARM C:** Azacitidine
Primary endpoint	▪ Safety, efficacy, PK and PD	▪ Overall response rate
Status	▪ FPI Q1 2017	▪ FPI Q1 2017
CT Identifier	NCT02966782	NCT02942290

Joint project with AbbVie, in collaboration with The Walter and Eliza Hall Institute
MDS=myelodysplastic syndromes

Venclexta

Novel small molecule Bcl-2 selective inhibitor – breast cancer

Indication	≥2L HR+ breast cancer
Phase/study	**Phase II**
# of patients	N=100
Design	▪ **ARM A:** Venclexta plus Fulvestrant ▪ **ARM B:** Fulvestrant
Primary endpoint	▪ Clinical benefit lasting equal or more than 24 weeks
Status	▪ FPI Q3 2018
CT Identifier	NCT03584009

Oncology

Joint project with AbbVie, in collaboration with The Walter and Eliza Hall Institute

Ocrevus

Humanized mAb selectively targeting CD20⁺ B cells

Indication	Relapsing multiple sclerosis (RMS)		Primary-progressive multiple sclerosis (PPMS)
Phase/study	**Phase III OPERA I**	**Phase III OPERA II**	**Phase III ORATORIO**
# of patients	N=821	N=835	N=732
Design	96-week treatment period: ▪ **ARM A:** Ocrelizumab 2x 300 mg iv followed by 600 mg iv every 24 weeks ▪ **ARM B:** Interferon β-1a	96-week treatment period: ▪ **ARM A:** Ocrelizumab 2x 300 mg iv followed by 600 mg iv every 24 weeks ▪ **ARM B:** Interferon β-1a	120-week treatment period: ▪ **ARM A:** Ocrelizumab 2x 300 mg iv every 24 weeks ▪ **ARM B:** Placebo
Primary endpoint	▪ Annualized relapse rate at 96 weeks versus Rebif	▪ Annualized relapse rate at 96 weeks versus Rebif	▪ Sustained disability progression versus placebo by Expanded Disability Status Scale (EDSS)
Status	▪ Primary endpoint met Q2 2015, OLE ongoing ▪ Primary data presented at ECTRIMS 2015 ▪ Updated data presented at AAN and ECTRIMS 2017, AAN and EAN 2018 ▪ Data published in *NEJM*, 2017 Jan 19;376(3):221-234		▪ Primary endpoint met Q3 2015 ▪ Primary data presented at ECTRIMS 2015, updated data presented at AAN and ECTRIMS 2017, AAN and EAN 2018 ▪ Data published in *NEJM*, 2017 Jan 19;376(3):209-220
	▪ Approved in US Q1 2017 and EU Q1 2018		
CT Identifier	NCT01247324	NCT01412333	NCT01194570

OLE=Open label extension; ECTRIMS=European Committee for Treatment and Research in Multiple Sclerosis; AAN=Annual Meeting of the American Academy of Neurology; EAN=European Academy of Neurology

Actemra/RoActemra

Interleukin-6 receptor inhibitor

Indication	Systemic sclerosis	Giant cell arteritis
Phase/study	**Phase III focuSSced**	**Phase III GiACTA**
# of patients	N=210	N=250
Design	Blinded 48-week treatment with weekly dosing: ▪ **ARM A:** Actemra SC 162mg ▪ **ARM B:** Placebo SC Open-label weekly dosing at weeks 49 to 96: ▪ Actemra SC 162mg	Part 1: 52-week blinded period ▪ **ARM A:** Actemra SC 162mg qw plus 26 weeks prednisone taper ▪ **ARM B:** Actemra SC 162mg q2w plus 26 weeks prednisone taper ▪ **ARM C:** Placebo plus 26 weeks prednisone taper ▪ **ARM D:** Placebo plus 52 weeks prednisone taper Part II: ▪ 104-wk open label extension: patients in remission followed off of the study drug; Patients with active disease receive open label Actemra SC 162mg qw
Primary endpoint	▪ Change in modified Rodnan skin score (mRSS) at week 48	▪ Proportion of patients in sustained remission at week 52
Status	▪ FPI Q4 2015, recruitment completed Q1 2017 ▪ Breakthrough Therapy Designation granted by FDA Q1 2015 ▪ Primary endpoint not met Q3 2018 ▪ Data presented at ACR annual meeting Oct 2018	▪ Primary and key secondary endpoints met Q2 2016 ▪ Breakthrough Therapy Designation granted by FDA Q3 2016 ▪ Data presented at ACR 2016 ▪ Filed globally Q4 2016; approved in US Q2 2017 and in EU Q3 2017 ▪ Data published in *NEJM*, 2017 Jul 27;377(4):317-328
CT Identifier	NCT02453256	NCT01791153

In collaboration with Chugai
ACR=American College of Rheumatology

MabThera/Rituxan

Immunology development program

Indication	Moderate to severely active pemphigus vulgaris		Relapsing ANCA-associated vasculitis
Phase/study	**Phase III PEMPHIX**	**Phase III Ritux 3**	**Phase III MAINRITSAN**
# of patients	N=132	N=90	N=117
Design	▪ **ARM A:** Rituxan ▪ **ARM B:** Mycophenolate mofetil	▪ **ARM A:** Rituxan ▪ **ARM B:** General corticotherapy	▪ **ARM A:** Rituxan ▪ **ARM B:** Azathioprine
Primary endpoint	▪ Proportion of patients who achieve sustained complete remission	▪ Number of patients with pemphigus controlled 24 months after the start of Rituxan treatment and with both cutaneous and mucosal lesions healing after 6 months of Rituxan treatment	▪ Number of major relapse at the end of the maintenance treatment (18 months + 10 months follow-up)
Status	▪ FPI Q2 2015 ▪ Breakthrough Therapy Designation granted by FDA in Q1 2017 ▪ Data published in *Lancet* 2017 Mar; 389(10083): p2031–2040 ▪ Recruitment completed Q4 2017	▪ FPI Q3 2009 ▪ Data published in *Lancet* 2017 May 20;389(10083):2031–2040	▪ FPI Q4 2008 ▪ Data published in *NEJM* 2014;371(19):1771–80 ▪ US and EU approval Q4 2018
	▪ Approved in US Q2 2018 based on Roche-supported randomized controlled IST Ritux 3		
CT Identifier	NCT02383589	NCT00784589	NCT00748644

IST=Investigator sponsored trial; ANCA=Antineutrophil cytoplasmic antibodies

Obinutuzumab (GA101, RG7159)

Immunology development program

Indication	Lupus nephritis
Phase/study	**Phase II** **NOBILITY**
# of patients	N=120
Design	▪ **ARM A:** Obinutuzumab 1000mg IV plus mycophenolate mofetil ▪ **ARM B:** Placebo IV plus mycophenolate mofetil
Primary endpoint	▪ Percentage of participants who achieve complete renal response (CRR)
Status	▪ FPI Q4 2015 ▪ Recruitment completed Q4 2017
CT Identifier	NCT02550652

In collaboration with Biogen

Xolair

Humanized mAb that selectively binds to IgE

Indication	Chronic rhinosinusitis with nasal polyps	
Phase/study	**Phase III** **POLYP 1**	**Phase III** **POLYP 2**
# of patients	N=120	N=120
Design	Placebo-controlled study of Xolair in adult patients with chronic rhinosinusitis with nasal polyps (CRSwNP) who have had an inadequate response to standard-of-care treatments: ▪ **ARM A:** Xolair every 2 weeks or every 4 weeks ▪ **ARM B:** Placebo	Placebo-controlled study of Xolair in adult patients with chronic rhinosinusitis with nasal polyps (CRSwNP) who have had an inadequate response to standard-of-care treatments: ▪ **ARM A:** Xolair every 2 weeks or every 4 weeks ▪ **ARM B:** Placebo
Primary endpoint	▪ Change from baseline in average daily nasal congestion score (NCS) at week 24 ▪ Change from baseline in nasal polyp score (NPS) to week 24	▪ Change from baseline in average daily nasal congestion score (NCS) at week 24 ▪ Change from baseline in nasal polyp score (NPS) to week 24
Status	▪ FPI Q4 2017 ▪ Recruitment completed Q3 2018	▪ FPI Q4 2017 ▪ Recrutiment completed Q3 2018
CT Identifier	NCT03280550	NCT03280537

In collaboration with Novartis

Port Delivery System with ranibizumab

First-ever eye implant to achieve sustained delivery of a biologic medicine

Indication	wAMD		
Phase/study	**Phase II LADDER**	**Phase III Archway**	**Phase II+III extension Portal**
# of patients	N=220	N=360	N=500
Design	▪ Four-arm study: Lucentis monthly intravitreal control vs three ranibizumab formulations delivered via implant	▪ Arm A: PDS with ranibizumab every 24 weeks ▪ Arm B: Intravitreal renibizumab every 4 weeks	▪ Patients from LADDER or Archway will receive refills of 100 mg/mL ranibizumab q24w (patients without the PDS will receive the PDS and subsequent refills)
Primary endpoint	▪ Time to first refill	▪ Change in BCVA from baseline at the average of week 36 and week 40	▪ Safety
Status	▪ FPI Q3 2015 ▪ Recruitment completed Q3 2017 ▪ Positive primary data presented at ASRS 2018	▪ FPI Q3 2018	▪ FPI Q3 2018
CT Identifier	NCT02510794	NCT03677934	NCT03683251

In collaboration with Forsight and Novartis
wAMD=wet age-related macular degeneration

Xofluza (baloxavir marboxil, RG6152, S-033188)

Small molecule, novel CAP-dependent endonuclease inhibitor

Indication	Influenza	
Phase/study	**Phase III CAPSTONE-1**	**Phase III CAPSTONE-2**
# of patients	N=1,436	N=2,184
Design	▪ Randomized, double-blind study of a single dose of baloxavir marboxil compared with placebo or Tamiflu 75 mg twice daily for 5 days in otherwise healthy patients with influenza	▪ Randomized, double-blind study of a single dose of baloxavir marboxil compared with placebo or Tamiflu 75 mg twice daily for 5 days in patients with influenza at high risk of influenza complications
Primary endpoint	▪ Time to alleviation of symptoms	▪ Time to improvement of influenza symptoms
Status	▪ FPI Q4 2016, recruitment completed Q1 2017 ▪ Primary endpoint met Q3 2017 (time to alleviation of symptoms versus placebo) ▪ Filed in US Q2 2018 (priority review), US approval Q4 2018 ▪ Data published in NEJM 2018; 379:913-923	▪ FPI Q1 2017, recruitment completed Q1 2018 ▪ Primary endpoint met Q3 2018 (time to improvement of influenza symptoms versus placebo) ▪ Data presented at IDweek 2018
CT Identifier	NCT02954354	NCT02949011

NEJM=New England Journal of Medicine
In collaboration with Shionogi & Co., Ltd.

Xofluza (baloxavir marboxil, RG6152, S-033188)

Small molecule, novel CAP-dependent endonuclease inhibitor

Indication	Influenza		
Phase/study	**Phase III** **FLAGSTONE (hospitalised patients)**	**Phase III** **miniSTONE 1 (0-1 year old)**	**Phase III** **miniSTONE 2 (1-12 years old)**
# of patients	n=240	n=30	n=120
Design	▪ Xofluza + neuraminidase inhibitor vs placebo + neuraminidase inhibitor in hospitalized patients with influenza	▪ Xofluza on Day 1 (based on body weight and age) in healthy pediatric patients from birth to <1 year with influenza-like symptoms	▪ Xofluza vs Tamiflu in healthy pediatric patients 1 to <12 Years of age with influenza-like symptoms
Primary endpoint	▪ Time to Clinical Improvement	▪ Safety	▪ Safety
Status	▪ FPI Jan 2019	▪ FPI expected Q1 2019	▪ FPI Q4 2018
CT Identifier	NCT03684044	NCT03653364	NCT03629184

NEJM=New England Journal of Medicine
In collaboration with Shionogi & Co., Ltd.

Pipeline summary

Marketed products additional indications

Global Development late-stage trials

pRED (Roche Pharma Research & Early Development)

gRED (Genentech Research & Early Development)

Roche Group 2018 results

Diagnostics

Foreign exchange rate information

Entrectinib (RG6268, RXDX-101)

CNS-active and selective inhibitor of NTRK/ROS1

Indication	Locally Advanced or Metastatic tumors with ROS1 gene rearrangement	Locally Advanced or Metastatic tumors with NTRK1/2/3 gene rearrangement	Pediatric tumors with NTRK 1/2/3, ROS-1, or ALK rearrangement
Phase/study	**Phase II STARTRK2**	**Phase II STARTRK2**	**Phase I/Ib STARTRK - NG**
# of patients	N~300 total	N~300 total	N~80
Design	Single Arm with Baskets based on tumor type and genomic alteration status	Single Arm with Baskets based on tumor type and genomic alteration status	Single Arm with Baskets based on tumor type and genomic alteration status
Primary endpoint	▪ Objective response rate	▪ Objective response rate	▪ Maximum tolerated dose (MTD) and recommended phase II dose (RP2D)
Status	▪ FPI Q1 2016 ▪ Data presented at WCLC 2018	▪ FPI Q1 2016 ▪ Data presented at ESMO 2018	▪ FPI Q2 2016 ▪ ROS-1 Data presented at WCLC 2018
	Breakthrough Therapy Designation granted by FDA (Q2 2017), PRIME Designation granted by EMA (Q1 2018) and Sakigake Designation granted by MHLW (Q4 2017) for NTRK fusion-positive, locally advanced or metastatic solid tumors		
CT Identifier	NCT02568267	NCT02568267	NCT02650401

Idasanutlin (RG7388)

Small molecule MDM2 antagonist

Indication	Relapsed/refractory AML	Polycythemia vera
Phase/study	**Phase III MIRROS**	**Phase II**
# of patients	N=440	N=20
Design	▪ **ARM A:** Idasanutlin plus cytarabine ▪ **ARM B:** Placebo plus cytarabine	Single-arm study of idasanutlin monotherapy in participants with hydroxyurea (HU)-resistant/intolerant Polycythemia vera (PV)
Primary endpoint	▪ Overall survival	▪ Composite response at week 32 for participants with splenomegaly at baseline ▪ Hematocrit (Hct) control without phlebotomy at week 32 for participants without splenomegaly at baseline
Status	▪ FPI Q4 2015	▪ FPI Q1 2018
CT Identifier	NCT02545283	NCT03287245

Ipatasertib (RG7440, GDC-0068)

Highly selective small molecule inhibitor of Akt

Indication	1L castration-resistant prostate cancer	2L castration-resistant prostate cancer	1L metastatic gastric or gastroesophageal junction adenocarcinoma
Phase/study	**Phase III** **IPATential150**	**Phase II** **A.MARTIN**	**Phase II** **JAGUAR**
# of patients	N=1,100	N=262	N=153
Design	▪ **ARM A:** Ipatasertib plus abiraterone ▪ **ARM B:** Placebo plus abiraterone	▪ **ARM A:** Ipatasertib 400 mg plus abiraterone ▪ **ARM B:** Ipatasertib 200 mg plus abiraterone ▪ **ARM C:** Placebo plus abiraterone	▪ **ARM A:** Ipatasertib plus mFOLFOX6 ▪ **ARM B:** Placebo plus mFOLFOX6
Primary endpoint	▪ Progression-free survival	▪ Progression-free survival	▪ Progression-free survival
Status	▪ FPI Q2 2017 ▪ Recruitment completed Jan 2018	▪ Recruitment completed Q4 2014 ▪ ITT data presented at ASCO 2016 ▪ Biomarker data at ESMO 2016	▪ Recruitment completed Q4 2014 ▪ Data showed no benefit in treated vs control group Q2 2016
CT Identifier	NCT03072238	NCT01485861	NCT01896531

In collaboration with Array BioPharma

ASCO=American Society of Clinical Oncology; ESMO=European Society for Medical Oncology; mFOLFOX6=modified FOLFOX (folinic acid, fluorouracil, oxaliplatin)

Ipatasertib (RG7440, GDC-0068)

Highly selective small molecule inhibitor of Akt

Indication	1L TNBC and HR+ breast cancer	1L TNBC	Neoadjuvant TNBC	TNBC
Phase/study	**Phase III** **IPATunity130**	**Phase II** **LOTUS**	**Phase II** **FAIRLANE**	**Phase Ib**
# of patients	N=450	N=120	N=150	N=120
Design	Cohort 1: Dx+ 1L TNBC (N=249) ▪ **Arm A:** Ipatasertib plus paclitaxel ▪ **Arm B:** Placebo plus paclitaxel Cohort 2: Dx+ HR+ mBC (N=201) ▪ **Arm A:** Ipatasertib plus paclitaxel ▪ **Arm B:** Placebo plus paclitaxel	▪ **ARM A:** Ipatasertib plus paclitaxel ▪ **ARM B:** Placebo plus paclitaxel	▪ **ARM A:** Ipatasertib plus paclitaxel ▪ **ARM B:** Placebo plus paclitaxel	Study of ipatasertib plus Tecentriq plus taxane ▪ **Arm A:** Ipatasertib plus Tecentriq plus paclitaxel ▪ **Arm B:** Ipatasertib plus Tecentriq plus nab-paclitaxel
Primary endpoint	▪ Progression-free survival	▪ Progression-free survival	▪ Pathologic complete response (pCR)	▪ Safety and efficacy
Status	▪ FPI Q1 2018	▪ Recruitment completed Q1 2016 ▪ Data presented at ASCO 2017 and ASCO 2018 ▪ Data published in *Lancet Oncology* 2017 Aug 8. pii: S1470-2045(17)30450-3	▪ FPI Q1 2015 ▪ Recruitment completed Q2 2017 ▪ Data presented at AACR 2018	▪ FPI Q1 2018
CT Identifier	NCT03337724	NCT02162719	NCT02301988	

In collaboration with Array BioPharma

TNBC=triple-negative breast cancer; ASCO=American Society of Clinical Oncology; AACR=American Association for Cancer Research

Polatuzumab vedotin (RG7596)

ADC targeting CD79b to treat B cell malignancies

Indication	Non-Hodgkin's lymphoma	Relapsed or refractory FL and DLBCL	1L DLBCL
Phase/study	**Phase II ROMULUS**	**Phase Ib/II**	**Phase III POLARIX**
# of patients	N=246	N=224	N=875
Design	▪ **Arm A:** Pinatuzumab vedotin plus Rituxan ▪ **Arm B:** Polatuzumab vedotin plus Rituxan ▪ **Arm C:** Polatuzumab vedotin plus Rituxan ▪ **Arms E, G, H:** Polatuzumab vedotin plus Gazyva	▪ **PIb:** Dose escalation ▪ **PhII:** Polatuzumab vedotin plus BR vs. BR ▪ **PhII expansion:** Polatuzumab vedotin plus Gazyva (non-randomized)	▪ **ARM A:** Polatuzumab vedotin plus R-CHP ▪ **ARM B:** R-CHOP
Primary endpoint	▪ Safety and anti-tumor activity	▪ Safety and response by PET/CT	▪ Progression-free survival
Status	▪ FPI in Gazyva arms Q1 2015 ▪ Recruitment completed Q3 2016 ▪ Updated data presented at ASCO, ICML and EHA 2015 ▪ Updated data presented at ASH 2016	▪ FPI Q4 2014 ▪ Recruitment completed Q3 2016 ▪ Data presented at ASH 2016, ICML and EHA 2017 ▪ PRIME Designation (Q2 2017) and Breakthrough Therapy Designation (Q3 2017) granted for r/r DLBCL ▪ Pivotal randomized Ph2 in r/r DLBCL presented at ASH 2017 ▪ Additional data presented at ASCO and EHA 2018	▪ FPI Q4 2017
CT Identifier	NCT01691898	NCT02257567	NCT03274492

In collaboration with Seattle Genetics

ADC=antibody–drug conjugate; DLBCL=diffuse large B cell lymphoma; FL=follicular lymphoma; r/r=Relapsed or refractory; ASH=American Society of Hematology; ICML=international Conference on Malignant Lymphoma; EHA=European Hematology Association; BR=bendamustine and Rituxan; R-CHP=Rituxan, cyclophosphamide, hydroxydoxorubicin, prednisone; R-CHOP=Rituxan, cyclophosphamide, doxorubicin, vincristine, and prednisone

Polatuzumab vedotin (RG7596)

ADC targeting CD79b to treat B cell malignancies

Indication	Relapsed or refractory FL or DLBCL	
Phase/study	**Phase I/II**	**Phase I/II**
# of patients	N=116	N=116
Design	▪ **Dose escalation cohort:** Polatuzumab vedotin plus Gazyva plus Venclexta[1] ▪ **Expansion cohort DLBCL:** Polatuzumab vedotin plus Rituxan plus Venclexta[1] ▪ **Expansion cohort FL:** Polatuzumab vedotin plus Gazyva plus Venclexta[1]	▪ **Dose escalation cohort:** Polatuzumab vedotin plus Gazyva plus lenalidomide ▪ **Expansion cohort DLBCL:** Polatuzumab vedotin plus Rituxan plus lenalidomide ▪ **Expansion cohort FL:** Polatuzumab vedotin plus Gazyva plus lenalidomide
Primary endpoint	▪ Percentage of participants with CR	▪ Percentage of participants with CR
Status	▪ FPI Q1 2016	▪ FPI Q1 2016
CT Identifier	NCT02611323	NCT02600897

In collaboration with Seattle Genetics; [1]Joint project with AbbVie, in collaboration with The Walter and Eliza Hall Institute
ADC=antibody–drug conjugate; FL=follicular lymphoma; DLBCL=diffuse large B cell lymphoma; CR=complete response

Balovaptan (RG7314)

Small molecule antagonist of the V1A vasopressin receptor

Indication	Autism Spectrum Disorder		
Phase/study	**Phase II VANILLA**	**Phase II aV1ation**	**Phase III V1aduct**
# of patients	N=223	N=300	N=350
Design	▪ Multi-center, randomized, double-blind, placebo-controlled proof-of-concept study in individuals with ASD	▪ Multi-center, randomized, double-blind, placebo-controlled proof-of-concept study in pediatrics (5-17 yrs) with ASD	Study in Adults (≥18 ys) with ASD with a 2-year open-label extension: ▪ **Arm A:** Balovaptan 10mg/day ▪ **Arm B:** Placebo
Primary endpoint	▪ Safety and efficacy	▪ Safety and efficacy	▪ Change from baseline at week 24 on the Vineland Adaptive Behavior Scales (Vineland-II) two-domain composite (2DC) score
Status	▪ FPI Q3 2013 ▪ Data presented at IMFAR 2017 ▪ Breakthrough Therapy Designation granted by FDA Q1 2018	▪ FPI Q4 2016	▪ FPI Q3 2018
CT Identifier	NCT01793441	NCT02901431	NCT03504917

ASD=Autism spectrum disorder; IMFAR=International Meeting For Autism Research

Crenezumab (RG7412)

Humanized mAb targeting all forms of Aβ

Indication	Prodromal to mild Alzheimer's disease	
Phase/study	**Phase III CREAD 1**	**Phase III CREAD 2**
# of patients	N=750	N=750
Design	▪ **ARM A:** Crenezumab IV 60mg/kg q4w ▪ **ARM B:** Placebo IV q4w	▪ **ARM A:** Crenezumab IV 60mg/kg q4w ▪ **ARM B:** Placebo IV q4w
Primary endpoint	▪ CDR-SB at 105 weeks	▪ CDR-SB at 105 weeks
Status	▪ FPI Q1 2016 ▪ Recruitment completed Q4 2017	▪ FPI Q1 2017 ▪ Recruitment completed Q3 2018
	▪ Decision to discontinue studies based on results of a pre-planned interim analysis conducted by the Independent Data Monitoring Committee, which indicated that crenezumab was unlikely to meet the primary endpoint (Jan 2019)	
CT Identifier	NCT02670083	NCT03114657

In collaboration with AC Immune

Aβ=amyloid-beta; CDR-SB=Clinical Dementia Rating, Sum of Boxes

Crenezumab (RG7412)

Humanized mAb targeting all forms of Aβ

Indication	Mild to moderate Alzheimer's disease	Alzheimer's Prevention Initiative (API) Colombia
Phase/study	**Phase I**	**Phase II** Cognition study
# of patients	N=72	N=252
Design	▪ **ARM A/B**: Crenezumab dose level I & placebo ▪ **ARM C/D**: Crenezumab dose level II & placebo ▪ **ARM E/F**: Crenezumab dose level III & placebo	▪ **ARM A:** 100 carriers receive crenezumab SC ▪ **ARM B:** 100 carriers receive placebo ▪ **ARM C:** 100 non-carriers receive placebo
Primary endpoint	▪ Safety (incidence and nature of MRI safety findings) and PK	▪ Change on Alzheimer's Prevention Initiative (API) Composite Cognitive Test total score
Status	▪ FPI Q1 2015 ▪ Recruitment completed Q3 2016 ▪ Interim data presented at CTAD 2016 ▪ Data presented at AD/PD and AAN 2017, AAN 2018	▪ FPI Q4 2013 ▪ Recruitment completed Q1 2017
CT Identifier	NCT02353598	NCT01998841

In collaboration with AC Immune

Aβ=amyloid-beta; AAIC=Alzheimer's Association International Conference; CTAD= Clinical Trials on Alzheimer's Disease; AD/PD=Alzheimer's & Parkinson's Diseases Congress; AAN=American Academy of Neurology; MRI=Magnetic resonance imaging

Gantenerumab (RG1450)

Fully human mAb binding aggregated forms of Aβ

Indication	Prodromal to mild Alzheimer's disease	
Phase/study	**Phase III GRADUATE 1**	**Phase III GRADUATE 2**
# of patients	N=760	N=760
Design	104-week subcutaneous treatment period ▪ **ARM A:** Gantenerumab ▪ **ARM B:** Placebo	104-week subcutaneous treatment period ▪ **ARM A:** Gantenerumab ▪ **ARM B:** Placebo
Primary endpoint	▪ Change in CDR-SB at 2 years	▪ Change in CDR-SB at 2 years
Status	▪ FPI Q2 2018	▪ FPI Q3 2018
CT Identifier	NCT03443973	NCT03444870

In collaboration with MorphoSys AG

Aβ=amyloid-beta; CDR-SB=Clinical Dementia Rating, Sum of Boxes

Gantenerumab (RG1450)

Fully human mAb binding aggregated forms of Aβ

Indication	Prodromal Alzheimer's disease	Mild Alzheimer's disease
Phase/study	**Phase II/III** **SCarlet RoAD**	**Phase III** **Marguerite RoAD**
# of patients	N=799	N=1,000
Design	104-week subcutaneous treatment period ▪ **ARM A:** Gantenerumab (225 mg) ▪ **ARM B:** Gantenerumab (105 mg) ▪ **ARM C:** Placebo	104-week subcutaneous treatment period ▪ **ARM A:** Gantenerumab ▪ **ARM B:** Placebo
Primary endpoint	▪ Change in CDR-SB at 2 years ▪ Sub-study: change in brain amyloid by PET at 2 years	▪ Change in ADAS-Cog and CDR-SB at 2 years (co-primary)
Status	▪ Phase I PET data: *Archives of Neurology*, 2012 Feb;69(2):198-207 ▪ Recruitment completed Q4 2013 ▪ Dosing stopped due to futility Q4 2014 ▪ Data presented at AAIC 2015 ▪ FPI in open label extension study Q4 2015 ▪ OLE data presented at CTAD 2017, AD/PD and AAN 2018	▪ FPI Q1 2014 ▪ Recruitment stopped Q4 2015 ▪ FPI Q1 2016 for open label extension ▪ OLE data (MRI) presented at CTAD 2017, AD/PD, AAN and AAIC 2018
CT Identifier	NCT01224106	NCT02051608

In collaboration with MorphoSys AG

Aβ=amyloid-beta; CDR-SB=Clinical Dementia Rating, Sum of Boxes; ADAS-cog=Alzheimer's Disease Assessment Scale cognitive subscale; AAIC=Alzheimer's Association International Conference; CTAD=Clinical Trials on Alzheimer's Disease; AD/PD=Alzheimer's & Parkinson's Diseases Congress; AAN=American Academy of Neurology; MRI=Magnetic resonance imaging

RG6206

Myostatin-inhibiting adnectin fusion protein

Indication	Duchenne muscular dystrophy	
Phase/study	**Phase I/II**	**Phase II/III**
# of patients	N=40	N=159
Design	▪ Randomized, double-blind, placebo-controlled, multiple ascending dose study in ambulatory boys with Duchenne muscular dystrophy	Randomized, double blind, placebo-controlled study in ambulatory boys age 6-11 years with duchenne muscular dystrophy ▪ **ARM A:** RG6206 low dose ▪ **ARM B:** RG6206 high dose ▪ **ARM C:** Placebo
Primary endpoint	▪ Safety	▪ Change from baseline in the 4 stair climb velocity after 48 weeks
Status	▪ FPI Q4 2015 ▪ 24 week data presented at BPNA and AAN 2018	▪ FPI Q3 2017
CT Identifier	NCT02515669	NCT03039686

BPNA=British Paediatric Neurology Asscoiation; AAN=American Academy of Neurology

Risdiplam (RG7916)

Oral SMN2 splicing modifier

Indication	Spinal muscular atrophy		
Phase/study	**Phase II/III FIREFISH**	**Phase II/III SUNFISH**	**Phase II JEWELFISH**
# of patients	N=21 (Part 1), 41 (Part 2)	N=51 (Part 1), 180 (Part 2)	N=125
Design	Open-label study in infants with type 1 spinal muscular atrophy ▪ **Part 1 (dose-finding):** At least 4 weeks ▪ **Part 2 (confirmatory):** 24 months	Randomized, double-blind, placebo-controlled study in adult and pediatric patients with type 2 or type 3 spinal muscular atrophy ▪ **Part 1 (dose-finding):** At least 12 weeks ▪ **Part 2 (confirmatory):** 24 months	▪ Open-label single arm study adult and pediatric patients (0.5-60 years) with previously treated SMA type 1, 2 and 3
Primary endpoint	▪ Safety, tolerability, PK, PD and efficacy	▪ Safety, tolerability, PK, PD and efficacy	▪ Safety, tolerability and PK/PD
Status	▪ FPI Q4 2016, FPI Part 2 Q1 2018 ▪ Recruitment completed for part 2 Q4 2018 ▪ Data of Part 1 presented at International SMA, AAN, Cure SMA and WMS 2018	▪ FPI Q4 2016, FPI Part 2 Q4 2017 ▪ Recruitment completed for part 2 Q3 2018 ▪ Data of Part 1 presented at Cure SMA, WMS 2017, AAN 2018, Cure SMA and WMS 2018	▪ FPI Q1 2017 ▪ Data presented at WMS 2017, AAN 2018 and WMS 2018
	Orphan drug designation granted by FDA Q1 2017 and EU Jan 2019, PRIME designation in Q4 2018		
CT Identifier	NCT02913482	NCT02908685	NCT03032172

In collaboration with PTC Therapeutics and SMA Foundation
AAN=American Academy of Neurology; WMS=World Muscle Society

Risdiplam (RG7916)

Oral SMN2 splicing modifier

Indication	Spinal muscular atrophy
Phase/study	**Phase II** **RAINBOWFISH**
# of patients	n=25
Design	Open-label, single-arm, multicenter study in infants aged from birth to 6 weeks who have been genetically diagnosed with SMA but are not yet presenting with symptoms
Primary endpoint	▪ Proportion who are sitting without support at month 12
Status	▪ FPI expected Q1 2019
CT Identifier	NCT03779334

In collaboration with PTC Therapeutics and SMA Foundation
AAN=American Academy of Neurology; WMS=World Muscle Society

HTT ASO (RG6042)

Antisense oligonucleotide (ASO) targeting human HTT mRNA

Indication	Huntington's disease		
Phase/study	**Phase I/IIa**	**Phase II OLE**	**Phase III Generation HD1**
# of patients	N=46	N=46	N=660
Design	▪ Multiple ascending doses of HTT-ASO administered intrathecally to adult patients with early manifest Huntington's Disease	▪ Patients from phase 1 are enrolled into OLE	▪ Arm A: RG6042 120mg monthly ▪ Arm B: RG6042 120mg bi-monthly ▪ Arm C: Placebo monthly
Primary endpoint	▪ Safety, tolerability, PK and PD	▪ Longer term safety, tolerability, PK, PD.	▪ cUHDRS Globally ▪ TFC USA only
Status	▪ FPI Q3 2015 ▪ Data presented at CHDI 2018 and AAN 2018 ▪ PRIME designation granted 2018	▪ FPI Q1 2018	▪ FPI Jan 2019
CT Identifier	NCT02519036	NCT03342053	

cUHDRS = composite Unified Huntington's Disease Rating Scale; TFC = total function capacity
In collaboration with Ionis Pharmaceuticals

Etrolizumab (RG7413)

Humanized mAb against beta 7 integrin

Indication	Ulcerative colitis patients who are TNF-naïve		
Phase/study	**Phase III** **HIBISCUS I** Induction study	**Phase III** **HIBISCUS II** Induction study	**Phase III** **GARDENIA** Sustained remission study
# of patients	N=350	N=350	N=600
Design	▪ **ARM A:** Etrolizumab 105mg SC q4w plus adalimumab placebo SC ▪ **ARM B:** Etrolizumab placebo SC plus adalimumab SC ▪ **ARM C:** Etrolizumab placebo SC plus adalimumab placebo SC	▪ **ARM A:** Etrolizumab 105mg SC q4w plus adalimumab placebo SC ▪ **ARM B:** Etrolizumab placebo SC plus adalimumab SC ▪ **ARM C:** Etrolizumab placebo SC plus adalimumab placebo SC	Time on treatment 54 weeks ▪ **ARM A:** Etrolizumab 105mg SC q4w plus placebo IV ▪ **ARM B:** Placebo SC q4w plus inflixumab IV
Primary endpoint	▪ Induction of remission compared with placebo as determined by the Mayo Clinic Score (MCS) at week 10	▪ Induction of remission compared with placebo as determined by the Mayo Clinic Score (MCS) at week 10	▪ Proportion of patients in sustained clinical remission as determined by Mayo Clinic Score (MCS) at weeks 10, 30 and 54
Status	▪ FPI Q4 2014	▪ FPI Q4 2014	▪ FPI Q4 2014
CT Identifier	NCT02163759	NCT02171429	NCT02136069

Etrolizumab (RG7413)

Humanized mAb against beta 7 integrin

Indication	Ulcerative colitis patients who are TNF-naïve and refractory or intolerant to immunosuppressant and/or corticosteroid treatment	Ulcerative colitis patients who are refractory or intolerant of TNF inhibitors	Moderate to severe ulcerative colitis patients
Phase/study	**Phase III** **LAUREL** Maintenance study	**Phase III** **HICKORY** Induction and maintenance study	**Phase III** **COTTONWOOD** Open label extension study
# of patients	N=350	N=800	N=2,625
Design	Induction phase: ▪ **ARM A:** Open label etrolizumab 105mg SC q4w Maintenance study: ▪ **ARM B:** Etrolizumab 105mg SC q4w ▪ **ARM C:** Placebo	Cohort 1 (open-label): ▪ **ARM A:** Etrolizumab induction + placebo maintenance ▪ **ARM B:** Etrolizumab induction + maintenance Cohort 2 (blinded): ▪ **ARM A:** Etrolizumab induction + maintenance ▪ **ARM B:** Placebo induction + maintenance	▪ Patients who were previously enrolled in etrolizumab phase II and phase III studies and meet recruitment criteria will receive etrolizumab 105 SC q4w
Primary endpoint	▪ Maintenance of remission (at week 62) among randomized patients in remission at Week 10 as determined by the Mayo Clinic Score (MCS)	▪ Clinical Remission (Mayo Clinic Score, MCS) at Week 14 ▪ Remission maintenance (by MCS, at Week 66) among patients with remission at Week 14	▪ Long-term efficacy as determined by partial Mayo Clinic Score (pMCS), incidence of adverse events
Status	▪ FPI Q3 2014	▪ FPI Q2 2014 ▪ First data presented at ECCO 2017 ▪ Open label induction and endoscopy data presented at UEGW 2017 ▪ Recruitment completed Q4 2018	▪ FPI Q3 2014
CT Identifier	NCT02165215	NCT02100696	NCT02118584

ECCO=European Crohn's and Colitis Organisation; UEGW=United European Gastroenterology Week

Etrolizumab (RG7413)

Humanized mAb against beta 7 integrin

Indication	Moderately to severely active Crohn's disease	Moderately to severely active Crohn's disease
Phase/study	**Phase III** **BERGAMOT**	**Phase III** **JUNIPER** Open label extension study for BERGAMOT
# of patients	N=1,150	N=900
Design	▪ **ARM A:** Etrolizumab SC 210 mg (induction only) ▪ **ARM B:** Etrolizumab SC 105 mg and maintenance ▪ **ARM C:** Placebo	▪ Etrolizumab SC 105mg q4w
Primary endpoint	▪ Induction and maintenance of clinical remission	▪ Safety
Status	▪ FPI Q1 2015 ▪ Cohort 1 data presented at UEGW 2017	▪ FPI Q2 2015
CT Identifier	NCT02394028	NCT02403323

UEGW=United European Gastroenterology Week

Faricimab (RG7716)

Bispecific antibody to simultaneously bind Ang-2 and VEGF-A

Indication	Neovascular age related macular degeneration (nAMD)		Center-involving diabetic macular edema (CI-DME)
Phase/study	**Phase II AVENUE**	**Phase II STAIRWAY**	**Phase II BOULEVARD**
# of patients	N=271	N=75	N=210
Design	▪ **ARM A:** SoC (Lucentis), q4w ▪ **ARM B:** 1.5 mg RG7716, q4w ▪ **ARM C:** 6mg RG7716, q4w ▪ **ARM D:** 6mg RG7716, q4w / q8w ▪ **ARM E:** SoC q4w x 3 doses, switch group to 6 mg RG7716 q4w	▪ **ARM A:** SoC (Lucentis), q4w ▪ **ARM B:** 6mg RG7716, q>8w (short interval duration) ▪ **ARM C:** 6mg RG7716, q>8w (long interval duration)	▪ **ARM A:** SoC (Lucentis), 0.3 mg q4w ▪ **ARM B:** 1.5mg RG7716, q4w ▪ **ARM C:** 6mg RG7716, q4w
Primary endpoint	▪ Change from baseline BCVA after 32 weeks	▪ Change from baseline BCVA at Week 40	▪ Mean change from baseline BCVA at week 24
Status	▪ FPI Q3 2015 ▪ Recruitment completed Q1 2017 ▪ Data presented at Retina Society 2018	▪ FPI Q1 2017 ▪ Recruitment completed Q1 2017 ▪ Data presented at Retina Society 2018 (24 week data) and AAO 2018 (full data)	▪ FPI Q2 2016 ▪ Recruitment completed Q1 2017 ▪ Data presented at Angiogenesis 2018 and Retina Society 2018
CT Identifier	NCT02484690	NCT03038880	NCT02699450

BCVA=best corrected visual acuity; SoC=standard of care

Faricimab (RG7716)

Bispecific antibody to simultaneously bind Ang-2 and VEGF-A

Indication	Center-involving diabetic macular edema (CI-DME)	
Phase/study	**Phase III YOSEMITE**	**Phase III RHINE**
# of patients	N=900	N=900
Design	▪ **ARM A:** faricimab q8w ▪ **ARM B:** faricimab (RG7716) q8w/PRN ▪ **ARM C:** aflibercept, q8w	▪ **ARM A:** faricimab q8w ▪ **ARM B:** faricimab (RG7716) q8w/PRN ▪ **ARM C:** aflibercept, q8w
Primary endpoint	▪ Change from baseline in BCVA at 1 year	▪ Change from baseline in BCVA at 1 year
Status	▪ FPI Q3 2018	▪ FPI Oct 2018
CT Identifier	NCT03622580	NCT03622593

BCVA=best corrected visual acuity

Pipeline summary

Marketed products additional indications

Global Development late-stage trials

pRED (Roche Pharma Research & Early Development)

gRED (Genentech Research & Early Development)

Roche Group 2018 results

Diagnostics

Foreign exchange rate information

Oncology development programs

Small molecules

Molecule	BET inhibitor (RG6146, TEN-010)		
Indication	**Multiple myeloma**	**Relapsed/refractory DLBCL**	**Advanced ovarian cancer and triple negative breast cancer**
Phase/study	**Phase Ib**	**Phase Ib**	**Phase Ib**
# of patients	N=86	N=94	N=30-90
Design	Dose escalation and cohort expansion study: ▪ **Part 1:** RG6146 monotherapy ▪ **Part 2:** RG6146 in combination with daratumumab	▪ Dose escalation and cohort expansion study of the doublet or triplet combination with RG6146 plus Venclexta[1] ± Rituxan	▪ Dose escalation and expansion study of RG6146 plus Tecentriq
Primary endpoint	▪ Safety and efficacy	▪ Safety and efficacy	▪ Safety and efficacy
Status	▪ FPI Part 1 Q2 2017	▪ FPI Q3 2017	▪ FPI Q4 2017
CT Identifier	NCT03068351	NCT03255096	NCT03292172
Collaborator	Tensha acquisition		

[1]Joint project with AbbVie, in collaboration with The Walter and Eliza Hall Institute
MM=multiple myeloma; DLBCL=diffuse large B cell lymphoma

Oncology development programs

Monoclonal antibodies

Molecule	FAP-IL2v FP (RG7461)		
Indication	**Solid tumors**	**1L Renal call carcinoma**	**Solid tumors**
Phase/study	**Phase I**	**Phase Ib**	**Phase Ib**
# of patients	N=60	N=110	N=360
Design	▪ **Part A:** Dose escalation study (monotherapy) ▪ **Part B:** Dose escalation and extension in combination with trastuzumab (HER2+ breast cancer) ▪ **Part C:** Dose escalation and extension in combination with cetuximab (head & neck cancer)	**Part I:** Dose escalation ▪ Arm A: FAP-IL2v plus Tecentriq; ▪ Arm B: FAP-IL2v plus Tecentriq plus Avastin **Part II:** Dose expansion ▪ Arm A: FAP-IL2v plus Tecentriq; ▪ Arm B: FAP-IL2v plus Tecentriq plus Avastin	Open-label multicenter basket study of FAP-IL2v plus Tecentriq in CPI-naïve and/or CPI–experienced NSCLC, HNSCC, cervical cancer and esophageal cancer
Primary endpoint	▪ Safety, PK/PD and efficacy (Part B/C only)	▪ Safety, PD and efficacy	▪ Safety, PD and efficacy
Status	▪ FPI Q4 2015 ▪ FPI Part B/C Q4 2017	▪ FPI Q1 2017	▪ FPI Q1 2018
CT Identifier	NCT02627274	NCT03063762	NCT03386721

Oncology development programs

Monoclonal antibodies

Molecule	cibisatamab (CEA-TCB, RG7802)	
Indication	CEA-positive solid tumors	
Phase/study	**Phase Ia**	**Phase Ib**
# of patients	N≈286 (DE & DF)	N=410
Design	▪ **Part I:** Dose escalation of RG7802 ▪ **Part II:** Dosing strategy ▪ **Part III:** Assessment of schedule ▪ **Part IV:** Dose and schedule expansion	▪ **Part I:** RG7802 dose escalation plus Tecentriq ▪ **Part II:** Expansion at defined dose and schedule
Primary endpoint	▪ Safety, Efficacy, PK and PD	▪ Safety, Efficacy, PK and PD
Status	▪ FPI Q4 2014 ▪ Data presented at ASCO 2017	▪ FPI Q1 2016 ▪ Data presented at ASCO 2017
CT Identifier	NCT02324257	NCT02650713

TCB=T-cell bispecific; ASCO=American Society of Clinical Oncology

Oncology development programs

Monoclonal antibodies

Molecule	CD20 TCB (RG6026)		
Indication	**Relapsed or refractory B cell non-Hodgkin's lymphoma**		**Non-Hodgkin's lymphoma**
Phase/study	**Phase I**	**Phase Ib**	**Phase Ib**
# of patients	N~95	N=140	Part I: 15-60 Part II: ~66-104
Design	**Cohort 1:** Single-agent dose escalation study ▪ Initial dose escalation (N>50) ▪ Expansion cohort in r/r DLBCL (N=100) ▪ Expansion cohort in r/r FL (N=40) *All patients will receive pretreatment with a single dose of Gazyva (1000mg)* **Cohort 2:** RG6026 + Gazyva (i.e. continuous treatment with Gazyva	▪ Dose escalation and expansion of RG6026 plus Tecentriq	▪ **Part I:** Dose-finding for the combination of RG6026 plus G/R CHOP in r/r FL ▪ **Part II:** Dose expansion RG6026 plus G/R-CHOP or R-CHOP in 1L DLBCL
Primary endpoint	▪ Safety	▪ Safety	▪ Safety
Status	▪ FPI Q1 2017 ▪ Data presented at ASH 2018	▪ FPI Q2 2018	▪ FPI Q1 2018
CT Identifier	NCT03075696	NCT03533283	NCT03467373

TCB=T-cell bispecific; DLBCL=diffuse large B cell lymphoma; FL=Follicular lymphoma

Oncology development programs

Monoclonal antibodies

Molecule	**selicrelumab** (CD40 MAb, RG7876)	
Indication	**Solid tumors**	**Solid tumors**
Phase/study	**Phase Ib**	**Phase Ib**
# of patients	N=270	N=170
Design	▪ **Part I:** Selicrelumab single dose escalation in combination with Tecentriq ▪ **Part II:** Selicrelumab plus Tecentriq combination extension in CRC, HNSCC and cpi-experienced NSCLC	▪ **Part I:** Selicrelumab dose escalation in combination with vanucizumab ▪ **Part II:** Selicrelumab dose expansion in combination with Avastin in PROC, HNSCC and CPI exp. NSCLC
Primary endpoint	▪ Safety, PD and efficacy	▪ Safety, PD and efficacy
Status	▪ FPI Part 1 Q4 2014 ▪ FPI Part 2 Q4 2017	▪ FPI Q1 2016 ▪ Part II FPI Q2 2018 ▪ Selicrelumab + vanucizumab arm is no longer recruiting patients
CT Identifier	NCT02304393	NCT02665416

CRC=colorectal cancer; HNSCC=head and neck squamous cell carcinoma; NSCLC=non-small cell lung cancer; CPI=checkpoint inhibitor; MAb=monoclonal antibody, PROC= Palliative Radiation Oncology Consult

Oncology development programs

Monoclonal antibodies

Molecule	NME (RG6123)	FAP-4-1BBL FP (RG7827)	PD1-TIM3 (RG7769)
Indication	**Solid tumors**	**Solid tumors**	**advanced and metastatic solid tumors**
Phase/study	**Phase I**	**Phase I**	**Phase Ia/b**
# of patients	N=125	N=200	n=280
Design	▪ Dose escalation of single agent RG6123	▪ **Part 1:** Single agent dose escalation ▪ **Part 2:** Combo dose escalation with Tecentriq ▪ **Part 3:** Combo expansion with Tecentriq	▪ **Part 1a**: Dose escalation (Q2W) ▪ **Part 1b**: Dose escalation (Q3W) ▪ **Part 2a**: Dose expansion Metastatic Melanoma ▪ **Part 2b**: Dose expansion NSCLC ▪ **Part 2c**: Dose expansion NSCLC (PD-L1 high cohort)
Primary endpoint	▪ Safety, efficacy, PK and PD	▪ Safety, efficacy, PK and PD	▪ Safety, PD and efficacy
Status	▪ FPI Jul 2018	▪ FPI Q2 2018	▪ FPI Q4 2018
CT Identifier	NCT03539484		NCT03708328

ASCO=American Society of Clinical Oncology; ECC=European Cancer Congress; ESMO=European Society for Medical Oncology; FP=antibody fusion protein

Neuroscience development programs

Molecule	**basmisanil** (GABRA5 NAM, RG1662)
Indication	**Cognitive impairment associated with schizophrenia**
Phase/study	**Phase II**
# of patients	N=180
Design	For 24 weeks patients will receive: ▪ **ARM A:** RG1662 80mg twice daily ▪ **ARM B:** RG1662 240mg twice daily ▪ **ARM C:** Placebo
Primary endpoint	▪ Efficacy (cognitive function), PK, safety and tolerability
Status	▪ FPI Q4 2016
CT Identifier	NCT02953639

NAM= negative allosteric modulator

Neuroscience development programs

Molecule	NME (RG7906)		
Indication	**Psychiatric disorders**	**Schizophrenia**	
Phase/study	**Phase I**	**Phase II**	**Phase II**
# of patients	N=164	N=36	N=500
Design	▪ **Part 1:** Adaptive single ascending dose in healthy volunteers. Single-center, randomized, placebo-controlled, parallel study ▪ **Part 2:** Adaptive multiple ascending dose in healthy volunteers. Single-center, randomized, double-blind, placebo-controlled, parallel study	▪ Randomized, double-blind, placebo-controlled, crossover study for two weeks in patients.	▪ **Part 1:** Monotherapy, one dose, qd, 12 weeks (N=125) ▪ **Part B:** Add-on therapy, two dose levels, qd, 12 weeks (N=375)
Primary endpoint	▪ Safety, tolerability, PK and PD	Effects on dopamine synthesis capacity	Effects on negative symptoms (Brief Negative Symptoms Scale, BNSS)
Status	▪ FPI Q1 2016 ▪ Part 1 completed, Part 2 completed	FPI Q4 2018	FPI Q4 2018
CT Identifier	NCT02699372		NCT03669640

ASCO=American Society of Clinical Oncology; ECC=European Cancer Congress; ESMO=European Society for Medical Oncology; FP=antibody fusion protein

Neuroscience development programs

Parkinson's disease and autism

Molecule	prasinezumab (anti-αSynuclein, RG7935, PRX002)	GABA-Aa5 PAM (RG7816)	
Indication	**Parkinson's disease**	**Autism**	
Phase/study	**Phase II PASADENA**	**Phase I**	**Phase I**
# of patients	N=316	N=105	N=15
Design	▪ Randomized, double-blind, placebo-controlled study to evaluate the efficacy of prasinezumab in participants with early PD (52 weeks plus a 52-week blinded extension)	▪ Randomized, double-blind, adaptive single-ascending-dose SAD/MAD/FE study in healthy volunteers	▪ PET study to assess occupancy of brain alpha5-Containing GABAA receptors of RG7816 using [11C] Ro15-4513 following single oral doses in healthy participants
Primary endpoint	▪ Change from baseline in Movement Disorder Society-Unified Parkinson's Disease Rating Scale (MDS-UPDRS) total score (sum of Parts I, II, and III) at week 52	▪ Safety and tolerability	▪ Percentage of brain alpha5-Containing GABA-A receptors occupied by RG7816, plasma concentrations of RG7816
Status	▪ FPI Q2 2017 ▪ Enrollment completed Q4 2018 ▪ Ph1 data published online in *JAMA Neurol.* 2018 Jun 18	▪ FPI Q4 2017	▪ FPI Q2 2018
CT Identifier	NCT03100149		NCT03507569
Collaborator	Prothena		

PD=Parkinson's disease; SAD=single ascending dose; MAD=multiple ascending dose; FE=food effect; PET=positron emission tomography

Infectious diseases development programs

Chronic hepatitis B

Molecule	TLR7 agonist (3) (RG7854)	HBV LNA (RG6004)
Indication	Chronic hepatitis B	Chronic hepatitis B
Phase/study	Phase I	Phase I
# of patients	N=140	N=160
Design	▪ Healthy volunteer and chronic hepatitis B patient study	▪ Healthy volunteer and chronic hepatitis B patient study
Primary endpoint	▪ Safety, PK and PD	▪ Safety, PK and PD
Status	▪ FPI Q4 2016	▪ FPI Q1 2017
CT Identifier	NCT02956850	NCT03038113

LNA=locked nucleic acid

Infectious diseases development programs

Chronic hepatitis B

Molecule	Capsid inhibitor CAPi (2) (RG7907)	NME (RG6217)
Indication	Chronic hepatitis B	Chronic hepatitis B
Phase/study	**Phase I**	**Phase I**
# of patients	N=128	N=75
Design	▪ Healthy volunteer and chronic hepatitis B patient study	▪ Healthy volunteer and chronic hepatitis B patient study
Primary endpoint	▪ Safety, PK and PD	▪ Safety
Status	▪ FPI Q4 2016	▪ FPI Q4 2018
CT Identifier	NCT02952924	NCT03762681

LNA=locked nucleic acid

Immunology development programs

Molecule	**petesicatib** (CAT-S inh, RG7625)
Indication	**Primary Sjögren's syndrome**
Phase/study	**Phase II**
# of patients	N=75
Design	▪ **ARM A:** RG7625 ▪ **ARM B:** Placebo
Primary endpoint	▪ Percentage of participants with a clinically relevant decrease in European League Against Rheumatism (EULAR) Sjögren's Syndrome Disease Activity Index (ESSDAI) Score
Status	▪ FPI Q3 2016 ▪ Recruitment completed Q1 2017
CT Identifier	NCT02701985

Immunology development programs

Molecule	C5 inh MAb (RG6107, SKY59)	IgG-IL2 FP (RG7835)
Indication	Paroxysmal nocturnal hemoglobinuria	Autoimmune diseases
Phase/study	**Phase I/II COMPOSER**	**Phase I**
# of patients	N=49	N=56
Design	Healthy volunteers and treatment naïve/pretreated patients with PNH ▪ **Part 1:** Single ascending dose study in healthy subjects ▪ **Part 2:** Intra-patient single ascending dose study in PNH patients ▪ **Part 3:** Multiple-dose study in PNH patients	▪ A randomized, adaptive, investigator/subject blind, single ascending dose, placebo-controlled study of subcutaneously administered RO7049665 (RG7835) in healthy volunteers
Primary endpoint	▪ Safety, PK and PD	▪ Safety, PK and PD
Status	▪ Part 1: FPI Q4 2016 ▪ Part 2/3: FPI Q2 2017 ▪ Nonclinical data published in Scientific Reports 2017 Apr; 7(1):1080 ▪ Data presented for Part 1 at ASH 2018	▪ FPI Q3 2017 ▪ Recruitment completed Q3 2018
CT Identifier	NCT03157635	NCT03221179
Collaborator	Chugai	

PNH=paroxysmal nocturnal hemoglobinuria

Pipeline summary

Marketed products additional indications

Global Development late-stage trials

pRED (Roche Pharma Research & Early Development)

gRED (Genentech Research & Early Development)

Roche Group 2018 results

Diagnostics

Foreign exchange rate information

Oncology development programs

Monoclonal antibodies

Molecule	mosunetuzumab (CD20 TDB, RG7828)			
Indication	**Hematologic tumors**	**1L DLBCL & R/R NHL**	**R/R DLBCL & FL**	**1L DLBCL & DLBCL following 1L Induction**
Phase/study	**Phase I**	**Phase Ib/II**	**Phase Ib**	**Phase I**
# of patients	N=665	N=160	N=276	N=40
Design	▪ Dose escalation study of RG7828 as single agent and in combination with Tecentriq ▪ Expansion cohorts for r/r FL, r/r DLBCL and r/r MCL	▪ mosunetuzumab plus CHOP ▪ mosunetuzumab plus CHP + polatuzumab vendotin	▪ mosunetuzumab monotherapy ▪ mosunetuzumab + polatuzumab vendotin	▪ mosunetuzumab monotherapy (after a response to prior systemic chemotherapy) ▪ mosunetuzumab monotherapy (1L treatment)
Primary endpoint	▪ Safety, tolerability, dose/schedule, PK, and response rates ▪ First data in R/R NHL presented at ASH 2018	▪ Safety/tolerability and response	▪ Safety/tolerability and response	▪ Safety/tolerability and response
Status	▪ FPI Q3 2015	▪ FPI expected Q1 2019	▪ FPI Q3 2018	▪ FPI expected Q1 2019
CT Identifier	NCT02500407	NCT03677141	NCT03671018	NCT03677154

TDB=T cell dependent bispecific; FL=follicular lymphoma; DLBCL=diffuse large B cell lymphoma; MCL=mantle cell lymphoma; r/r=relapsed/refractory; NHL=non-Hodgkin's lymphoma; CHOP=cyclophosphamide, doxorubicin, vincristine, and prednisone; CHP=cyclophosphamide, doxorubicin, and prednisone)

Oncology development programs

Monoclonal antibodies

Molecule	**tiragolumab** (anti-TIGIT, RG6058, MTIG7192A)	
Indication	**Solid tumors**	**NSCLC**
Phase/study	**Phase I**	**Phase II**
# of patients	N=300	N=120
Design	▪ **Phase Ia:** Dose escalation and expansion of tiragolumab ▪ **Phase Ib:** Dose escalation and expansion Tecentriq plus tiragolumab	▪ Tecentriq plus tiragolumab
Primary endpoint	▪ Safety, tolerability, PK variability and preliminary efficacy	▪ Overall response rate and progression-free survival
Status	▪ FPI Q2 2016	▪ FPI expected Q3 2018
CT Identifier	NCT02794571	NCT03563716

TDB=T cell dependent bispecific; FL=follicular lymphoma; DLBCL=diffuse large B cell lymphoma; MCL=mantle cell lymphoma; r/r=relapsed/refractory; NHL=non-Hodgkin's lymphoma

Oncology development programs

Monoclonal antibodies

Molecule	NME (RG6160)	HER2/CD3 TDB (RG6194)
Indication	**Relapsed/refractory multiple myeloma**	**Metastatic HER2-expressing cancers**
Phase/study	**Phase I**	**Phase I**
# of patients	N=80	N=449
Design	▪ Dose escalation and expansion of single agent	▪ Dose escalation and expansion of single agent RG6194
Primary endpoint	▪ Safety and tolerability	▪ Safety and tolerability
Status	▪ FPI Q3 2017	▪ FPI Q2 2018
CT Identifier	NCT03275103	NCT03448042

Oncology development programs

Antibody–drug conjugates

Molecule	NME (RG6109)	NME (RG6148)
Indication	**AML**	**HER2+ Breast cancer**
Phase/study	**Phase I**	**Phase I**
# of patients	N=110	N=55
Design	Dose escalation and expansion study: ▪ **ARM A:** RG6109 monotherapy in r/r AML ▪ **ARM B:** RG6109 + azacitidine in 1L AML patients not eligible for intensive induction chemotherapy	▪ Dose escalation and expansion study
Primary endpoint	▪ Safety and PK	▪ Safety and PK
Status	▪ FPI Q4 2017	▪ FPI Q2 2018
CT Identifier	NCT03298516	NCT03451162

AML=acute myeloid leukemia; r/r=relapsed/refractory

Oncology development programs

Small molecules

Molecule	SERD (3) (RG6171, GDC-9545)	PI3K inhibitor (RG6114, GDC-0077)
Indication	**Metastatic ER+ HER2-neg. breast cancer**	**PIK3CA mutant solid tumors and metastatic ER+ HER2- breast cancer**
Phase/study	**Phase I**	**Phase I**
# of patients	N=130	N=156
Design	▪ Dose escalation and expansion at recommended phase II dose (RP2D) ▪ Single agent and in combination with palbociclib and/or luteinizing hormone–releasing hormone (LHRH) agonist	Monotherapy and in combination with SoC (letrozole; letrozole plus palbociclib; fulvestrant) ▪ **Stage 1:** Dose escalation ▪ **Stage 2:** Expansion
Primary endpoint	▪ Safety	▪ Safety, tolerability and PK
Status	▪ FPI Q4 2017	▪ FPI Q4 2016 ▪ Preclinical/molecule discovery data presented at AACR 2017
CT Identifier	NCT03332797	NCT03006172

AACR=American Association for Cancer Research; SoC=standard of care

Oncology development programs

Individualized Neoantigen-Specific Therapy

Molecule	**Individualized Neoantigen-Specific Therapy, iNeST (Personalized Cancer Vaccine, PCV)** (RG6180)	
Indication	**Locally advanced or metastatic solid tumors**	**1L Advanced Melanoma**
Phase/study	**Phase Ia/Ib**	**Phase II**
# of patients	N=572	N=132
Design	Open-label, multicenter, global study ▪ **Phase Ia:** Dose escalation of RG6180 as single agent ▪ **Phase Ib:** Dose escalation, exploration and expansion trial of RG6180 in combination with Tecentriq	Open-label, multi-center, global study ▪ RG6180 + pembrolizumab vs pembrolizumab
Primary endpoint	▪ Safety, tolerability, PK and immune response	▪ Progression free survival and overall response rate
Status	▪ FPI Q4 2017	▪ FPI Q1 2019
CT Identifier	NCT03289962	NCT03815058
Collaborator	BioNTech	

Neuroscience development programs

Molecule	DLK inhibitor (RG6000, GDC-0134)	Anti-Tau (RG6100)
Indication	Amyotrophic lateral sclerosis	Prodromal to mild Alzheimer's disease
Phase/study	Phase I	Phase II Tauriel
# of patients	N=82	N=360
Design	▪ Randomized, double-blind, placebo-controlled, multicenter, single and multiple ascending dose study	▪ Randomized, double-blind, placebo-controlled, multi-center efficacy and safety study
Primary endpoint	▪ Safety, tolerability, and PK of single and multiple doses	▪ Safety, CDR-SB score from baseline to week 72
Status	▪ FPI Q2 2016	▪ FPI Q4 2017
CT Identifier	NCT02655614	NCT03289143
Collaborator		AC Immune

CDR-SB=Clinical Dementia Rating, Sum of Boxes

Immunology development programs

Molecule	IL-22Fc (RG7880)		
Indication	**Inflammatory diseases**	**Diabetic foot ulcer**	**Inflammatory bowel disease**
Phase/study	**Phase Ib**	**Phase Ib**	**Phase II**
# of patients	N=90	N=72	N=270
Design	▪ Multiple ascending dose study with healthy volunteer and patient cohorts	▪ Multiple ascending dose study in patients with neuropathic diabetic foot ulcers that do not respond adequately to standard wound care	IL-22 FC compared with vedolizumab and with placebo in the treatment of participants with moderate to severe UC ▪ **Part A:** Induction of clinical remission ▪ **Part B:** Durability of clinical remission
Primary endpoint	▪ Safety and tolerability	▪ Safety and tolerability	▪ Percentage of participants with clinical remission at week 8
Status	▪ FPI Q2 2016	▪ FPI Q4 2016 ▪ Recruitment completed Q2 2018	▪ FPI expected Q4 2018
CT Identifier	NCT02749630	NCT02833389	NCT03558152

UC=Ulcerative Colitis

Immunology development programs

gRED Genentech Research & Early Development

Molecule	NME (RG6151, GDC-0214)	NME (RG6173, MTPS9579A)	ST2 MAb (RG6149, AMG 282, MSTT1041A)
Indication	**Asthma**		
Phase/study	**Phase I**	**Phase I**	**Phase IIb ZENYATTA**
# of patients	N=84	N=70	N=515
Design	▪ Single and multiple ascending dose study with healthy volunteer and patient cohorts	▪ Single and multiple ascending dose study of MTPS9579A in healthy adult subjects	Add-on therapy for the treatment of high-need, uncontrolled asthma in adults (50-week subcutaneous treatment period): ▪ **ARM A:** RG6149 (70 mg) ▪ **ARM B:** RG6149 (210mg) ▪ **ARM C:** RG6149 (490mg) ▪ **ARM D:** Placebo
Primary endpoint	▪ Safety, tolerability and biomarker for target engagement (FeNO reduction)	▪ Safety, tolerability and PK	▪ Percentage of participants with asthma exacerbations
Status	▪ FPI Q4 2017	▪ FPI Q1 2018	▪ FPI Q3 2016 ▪ Recruitment completed Apr 2018
CT Identifier	ACTRN12617001227381p		NCT02918019
Collaborator			Amgen

Immunology development programs

gRED Genentech Research & Early Development

Molecule	NME (RG6174, GDC-0334)	fenebrutinib (BTKi, RG7845, GDC-0853)	
Indication	**Inflammatory disease**	**Rheumatoid arthritis**	
Phase/study	**Phase I**	**Phase II ANDES**	**Phase II Open label extension**
# of patients	N=106	N=578	N=578
Design	▪ Single and multiple ascending dose study of GDC-0334 and the effect of food on the pharmacokinetics of GDC-0334 in healthy adult participants	Randomized, double-blind, parallel group study in rheumatoid arthritis patients ▪ **Cohort 1:** Fenebrutinib vs adalimumab in patients with inadequate response to previous MTX ▪ **Cohort 2:** Fenebrutinib vs placebo in patients with inadequate response to previous TNF	Patients enter the study after completing 12 weeks of treatment in the ANDES Randomized study: ▪ 200mg BID of fenebrutinib for 52 weeks
Primary endpoint	▪ Safety, tolerability, PK of single doses and multiple doses	▪ ACR 50 at week12 and safety	▪ ACR 50 at week12 and safety
Status	▪ FPI Q4 2017	▪ FPI Q3 2016 ▪ Recruitment completed Q1 2018	▪ FPI Q4 2016 ▪ Recruitment completed Q2 2018
CT Identifier	NCT03381144	NCT02833350	NCT02983227

MTX=methotrexate

Immunology development programs

Molecule	**fenebrutinib** (BTKi, RG7845, GDC-0853)	
Indication	**Moderate to severe active systemic lupus erythematosus**	
Phase/study	**Phase II ATHOS**	**Phase II Open label extension**
# of patients	N=240	N=240
Design	Randomized, double-blind, placebo-controlled study in active systemic lupus erythematosus patients ▪ **ARM A:** Fenebrutinib (high dose) ▪ **ARM B:** Fenebrutinib (low dose) ▪ **ARM C:** Placebo	▪ Open-Label extension study of patients previously enrolled in study GA30044 to evaluate the long-term safety and efficacy of fenebrutinib
Primary endpoint	▪ Systemic Lupus Erythematosus Responder Index (SRI)-4 response at week 48	▪ Safety
Status	▪ FPI Q1 2017 ▪ Recruitment completed Q2 2018	▪ FPI Q1 2018
CT Identifier	NCT02908100	NCT03407482

Immunology development programs

Molecule	**fenebrutinib** (BTKi, RG7845, GDC-0853)
Indication	**Chronic spontaneous urticaria**
Phase/study	**Phase II** **SHASTA**
# of patients	Cohort 1: N=41 Cohort 2: N=120
Design	Randomized, double-blind, placebo-controlled study in patients with CSU refractory to H1 anti-histamines *Cohort 1:* ▪ **ARM A:** Fenebrutinib ▪ **ARM B:** Placebo *Cohort 2:* ▪ **ARM A:** Fenebrutinib high dose ▪ **ARM B:** Fenebrutinib mid dose ▪ **ARM C:** Fenebrutinib low dose ▪ **ARM D:** Placebo
Primary endpoint	▪ Change from baseline in the Urticaria Activity Score over 7 days (UAS7) at day 57
Status	▪ FPI Q2 2017
CT Identifier	NCT03137069

CSU=chronic spontaneous urticaria

Infectious diseases development programs

Molecule	**Anti-*S. aureus* TAC** (RG7861)
Indication	**Serious infections caused by *Staphylococcus aureus***
Phase/study	**Phase Ib**
# of patients	N=24
Design	▪ Establish safety and PK in patients (*S. aureus* bacteremia)
Primary endpoint	▪ Safety and PK
Status	▪ FPI Q3 2017
CT Identifier	NCT03162250
Collaborator	Seattle Genetics, Symphogen

TAC=THIOMAB™ antibiotic conjugate

Ophthalmology development programs

Molecule	**NME** (RG6147)
Indication	**Geographic atrophy**
Phase/study	**Phase I**
# of patients	N≈44
Design	Open-label study of RG6417 following single and multiple intravitreal administrations in patients with GA secondary to AMD ▪ **Stage 1:** Single dose-escalation (SAD) ▪ **Stage 2:** Multiple-dose (MD) stages
Primary endpoint	▪ Safety and tolerability
Status	▪ FPI Q3 2017
CT Identifier	NCT03295877

GA=geographic atrophy; AMD=age-related macular degeneration

Metabolic diseases development programs

Molecule	FGFR1/KLB MAb (RG7992)	
Indication	**Metabolic diseases**	
Phase/study	**Phase Ia**	**Phase Ib**
# of patients	N=79	N=140
Design	Healthy volunteer study ▪ Randomized, blinded, placebo-controlled, single ascending dose of RG7992	Obese type 2 diabetes ▪ Randomized, blinded, placebo-controlled, multiple ascending dose of RG7992
Primary endpoint	▪ Safety and tolerability	▪ Safety, tolerability and PK
Status	▪ FPI Q4 2015 ▪ Recruitment completed Q1 2017	▪ FPI Q1 2017
CT Identifier	NCT02593331	NCT03060538

FGFR1=fibroblast growth factor receptor 1; KLB=β-Klotho

Pipeline summary

Marketed products additional indications

Global Development late-stage trials

pRED (Roche Pharma Research & Early Development)

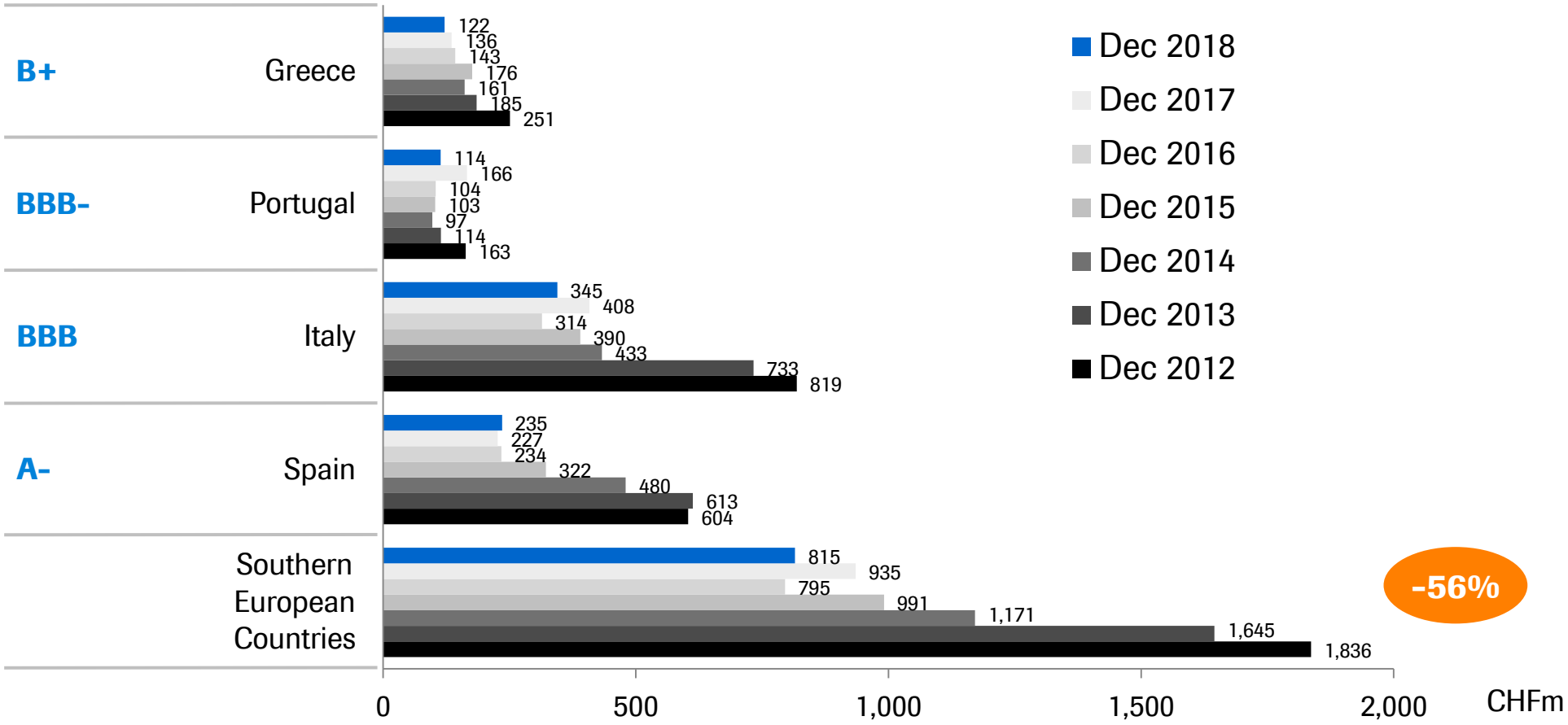
gRED (Genentech Research & Early Development)

Roche Group 2018 results

Diagnostics

Foreign exchange rate information

2018: Accounts receivable in Southern Europe decreased by –56% since 2012



Sovereign country ratings from Standard & Poor's, as of 7 Jan 2019.

2018: Geographical sales split by divisions and Group*

CHFm	2017	2018	% change CER
Pharmaceuticals Division	**41,220**	**43,967**	**+7**
United States	20,496	23,233	**+14**
Europe	9,051	8,693	**-7**
Japan	3,713	3,701	**-1**
International	7,960	8,340	**+10**
Diagnostics Division	**12,079**	**12,879**	**+7**
United States	2,677	2,866	**+8**
Europe	3,925	4,059	**0**
Japan	472	502	**+6**
International	5,005	5,452	**+12**
Group	**53,299**	**56,846**	**+7**
United States	23,173	26,099	**+13**
Europe	12,976	12,752	**-5**
Japan	4,185	4,203	**0**
International	12,965	13,792	**+11**

* Geographical sales split shown here does not represent operational organization
CER=Constant Exchange Rates

Pharma Division sales 2018

Top 20 products

	Global		US		Europe		Japan		International	
	CHFm	% CER	CHFm	% CER	CHFm	% CER	CHFm	% CER	CHFm	% CER
Herceptin	6,982	1	2,908	9	1,849	-16	249	-16	1,976	10
Avastin	6,849	3	2,904	1	1,820	-1	847	3	1,278	12
MabThera	6,752	-8	4,290	4	916	-47	188	-36	1,358	11
Perjeta	2,773	27	1,325	32	915	15	143	18	390	45
Ocrevus	2,353	172	2,080	144	206	*	-	-	67	*
Actemra / RoActemra	2,160	12	857	14	701	7	354	15	248	15
Xolair	1,912	11	1,912	11	-	-	-	-	-	-
Lucentis	1,659	18	1,659	18	-	-	-	-	-	-
TNKase / Activase	1,284	6	1,231	6	-	-	-	-	53	5
Esbriet	1,031	19	754	19	230	17	-	-	47	29
Kadcyla	979	8	359	5	376	5	75	6	169	22
Tecentriq	772	59	469	4	152	*	81	-	70	468
Pulmozyme	739	2	506	1	133	4	1	-	99	7
CellCept	669	-4	107	-11	179	-3	80	1	303	-4
Alecensa	637	76	284	65	99	261	188	27	66	355
Tarceva	538	-36	233	-49	113	-21	73	-21	119	-21
Mircera	532	5	-	-	76	-13	205	-4	251	21
Xeloda	427	-6	35	-3	17	-38	111	3	264	-7
Gazyva	390	40	195	24	136	64	13	-	46	21
Tamiflu	378	-29	168	-29	25	-10	95	-37	90	-24

CER=Constant Exchange Rates

* over 500%

Pharma Division sales 2018

New products

	Global		US		Europe		Japan		International	
	CHFm	% CER	CHFm	% CER	CHFm	% CER	CHFm	% CER	CHFm	% CER
Erivedge	258	4	160	0	71	6	-	-	27	31
Perjeta	2,773	27	1,325	32	915	15	143	18	390	45
Kadcyla	979	8	359	5	376	5	75	6	169	22
Gazyva	390	40	195	24	136	64	13	-	46	21
Esbriet	1,031	19	754	19	230	17	-	-	47	29
Cotellic	60	1	14	-14	35	-2	-	-	11	43
Alecensa	637	76	284	65	99	261	188	27	66	355
Tecentriq	772	59	469	4	152	*	81	-	70	468
Ocrevus	2,353	172	2,080	144	206	*	-	-	67	*
Hemlibra	224	*	154	*	42	*	26	-	2	-
Xofluza	13	-	13	-	-	-	-	-	-	-
Total	**9,490**	**52**	**5,807**	**53**	**2,262**	**43**	**526**	**55**	**895**	**64**

CER=Constant Exchange Rates

* over 500%

Pharma Division CER sales growth[1] in %

Global top 20 products

	Q4/17	Q1/18	Q2/18	Q3/18	Q4/18
Herceptin	6	2	2	1	-3
Avastin	1	-2	1	6	5
MabThera	-3	-8	-11	-7	-6
Perjeta	22	18	28	27	35
Ocrevus	-	-	195	104	83
Actemra / RoActemra	14	13	13	9	14
Xolair	15	7	14	9	12
Lucentis	-11	6	27	2	47
TNKase / Activase	0	8	10	1	4
Esbriet	17	13	15	21	26
Kadcyla	12	6	11	8	7
Tecentriq	65	29	44	71	89
Pulmozyme	10	0	6	1	3
CellCept	-1	-8	-4	4	-9
Alecensa	99	81	98	62	69
Tarceva	-21	-32	-31	-37	-44
Mircera	3	5	4	16	-4
Xeloda	-28	-2	-11	-2	-8
Gazyva	42	27	38	51	44
Tamiflu	-52	11	-75	-63	-67

CER=Constant Exchange Rates
[1] Q4/17 vs Q4/16; Q1-Q4/18 vs. Q1-Q4/17

Pharma Division CER sales growth[1] in %

Top 20 products by region

	US				Europe				Japan				International			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Herceptin	13	11	11	0	-3	-7	-21	-34	-10	-19	-19	-17	-8	4	13	32
Avastin	-3	-1	5	3	-3	-1	-1	1	2	4	2	2	2	9	21	15
MabThera	4	3	5	7	-44	-50	-49	-46	-11	-33	-40	-54	11	4	18	12
Perjeta	18	36	34	38	13	8	15	25	11	12	12	35	34	56	42	46
Ocrevus	-	163	82	59	-	-	*	*	-	-	-	-	-	*	*	459
Actemra / RoActemra	15	17	8	17	9	2	11	8	14	18	16	13	15	25	-4	24
Xolair	7	14	9	12	-	-	-	-	-	-	-	-	-	-	-	-
Lucentis	6	27	2	47	-	-	-	-	-	-	-	-	-	-	-	-
TNKase / Activase	8	11	1	4	-	-	-	-	-	-	-	-	14	4	-1	3
Esbriet	8	12	21	33	21	19	15	14	-	-	-	-	61	43	40	-5
Kadcyla	2	12	6	1	1	1	7	9	1	12	8	3	33	35	13	14
Tecentriq	5	-7	-4	21	*	*	*	286	-	-	-	-	357	434	*	458
Pulmozyme	-10	7	2	4	-4	5	8	8	4	7	32	26	69	4	-11	-8
CellCept	-19	-14	16	-24	-5	-4	-1	0	6	3	0	-4	-8	-1	4	-11
Alecensa	66	107	56	44	*	349	137	217	27	36	26	20	500	403	289	343
Tarceva	-41	-46	-52	-56	-23	-22	-19	-21	-23	-9	-19	-34	-24	-10	-14	-37
Mircera	-	-	-	-	-17	-17	-7	-8	-1	-5	-4	-4	19	25	44	-3
Xeloda	38	-54	50	183	-32	-33	-52	-27	0	6	5	1	-3	-3	-3	-17
Gazyva	19	29	24	25	64	66	79	52	-	-	-	-	-2	10	58	24
Tamiflu	10	-100	-86	-100	45	118	-33	-77	14	-96	-77	-73	2	-59	-4	11

CER=Constant Exchange Rates

[1] Q1-Q4/18 vs. Q1-Q4/17

* over 500%

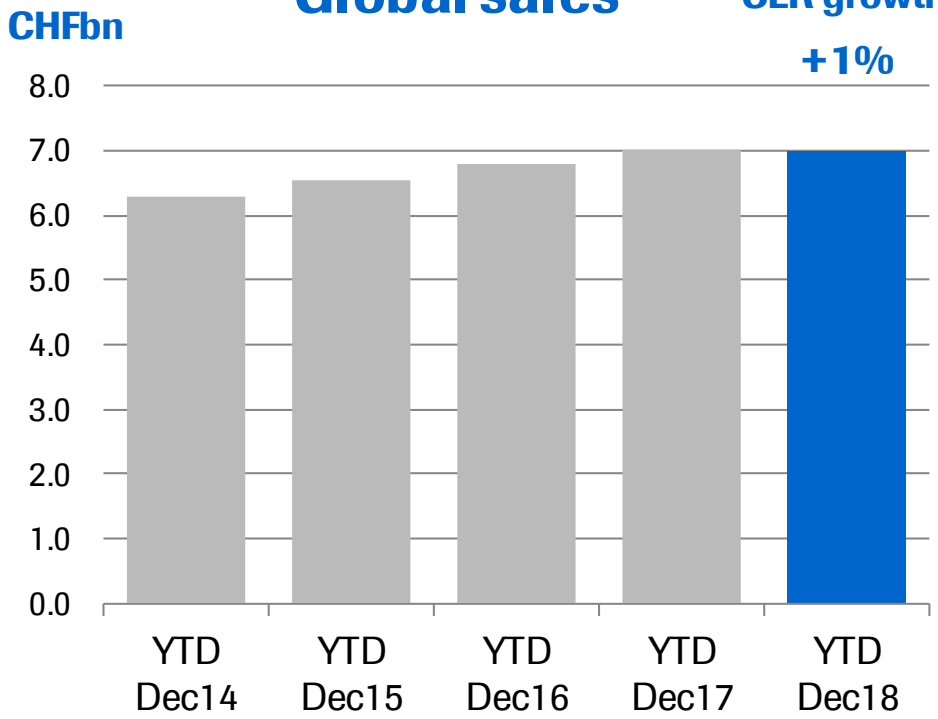
CER sales growth (%)
Quarterly development

	2017 vs. 2016				2018 vs. 2017			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Pharmaceuticals Division	**3**	**7**	**6**	**6**	**7**	**7**	**7**	**8**
United States	6	10	12	12	15	15	12	14
Europe	1	0	-5	-5	-7	-8	-7	-6
Japan	-2	2	6	6	0	0	0	-5
International	1	8	2	3	5	6	14	14
Diagnostics Division	**6**	**4**	**6**	**4**	**5**	**7**	**6**	**10**
Roche Group	**4**	**6**	**6**	**5**	**6**	**7**	**7**	**9**

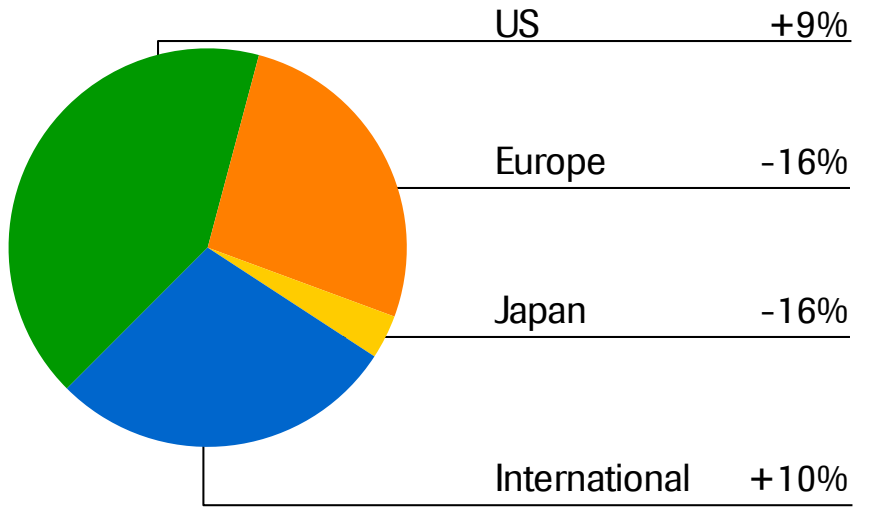
CER=Constant Exchange Rates

Herceptin

Global sales



Regional sales



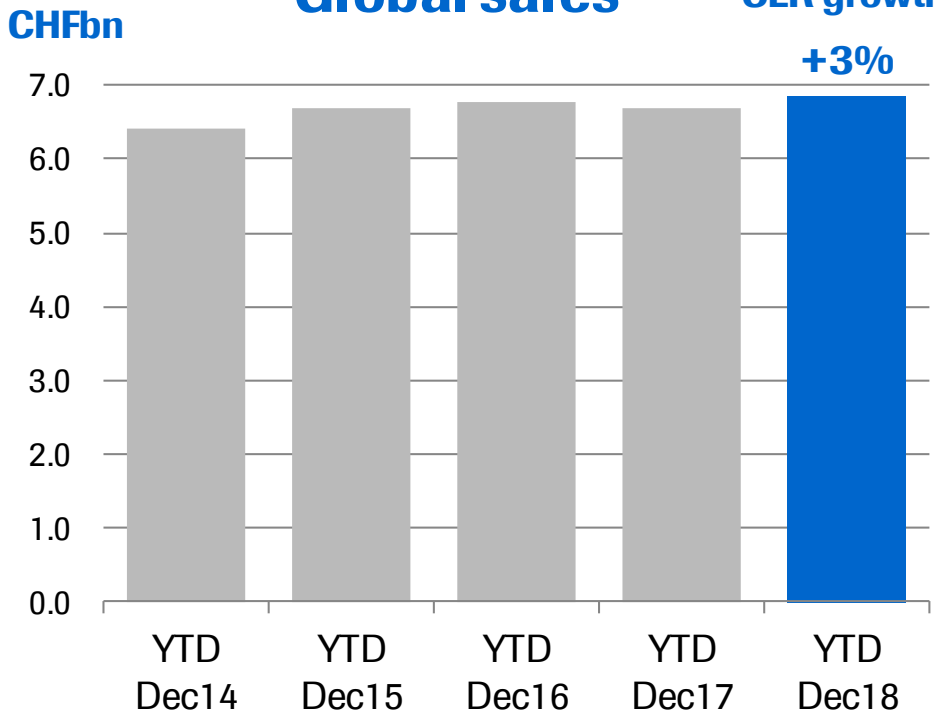
2018 sales of CHF 6,982m

- US: Impacted by lower sales reserves and longer duration
- EU: Accelerated impact of biosimilar launches
- Japan: First biosimilar in mGC approved
- International: Growth driven by volume demand in China

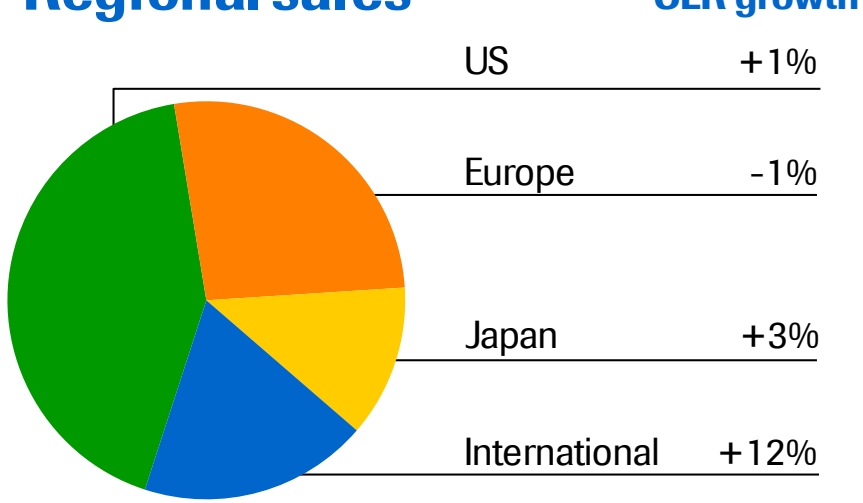
CER=Constant Exchange Rates

Avastin

Global sales



Regional sales



2018 sales of CHF 6,849m

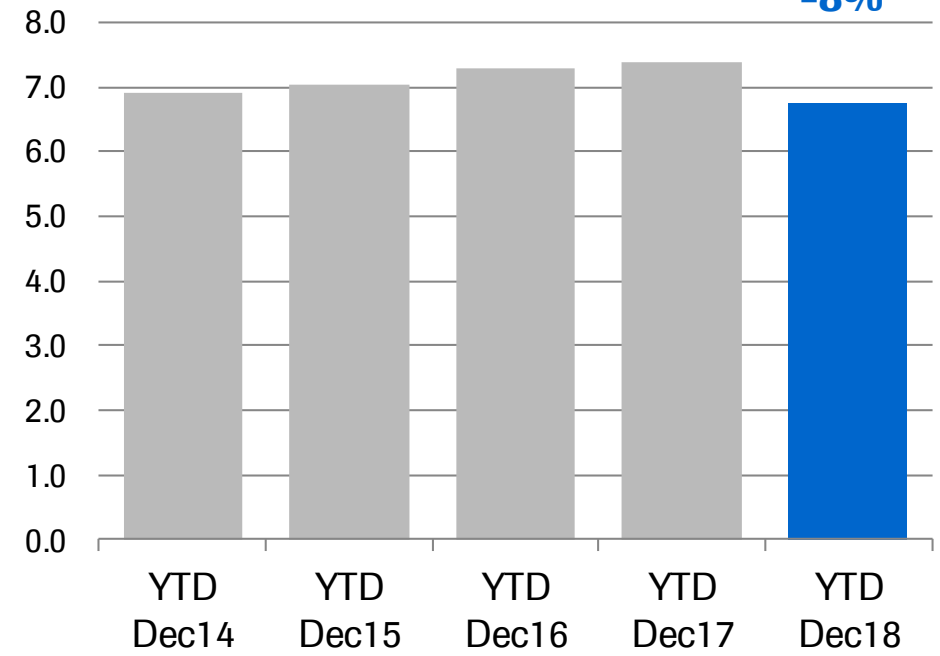
- US: 1L CRC shares reached new highs, whereas 1L lung continuoued to soften due to CIT competition
- EU: Sales decline driven by BC delisting and price decline in France
- International: Growth mainly driven by volume growth in China in 1L lung and colorectal cancer

CER=Constant Exchange Rates

MabThera/Rituxan

Global sales

CHFbn

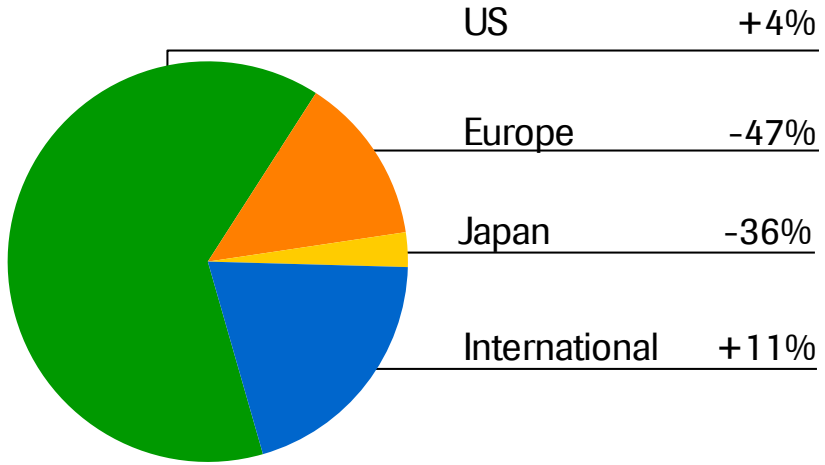


CER growth

-8%

Regional sales

CER growth



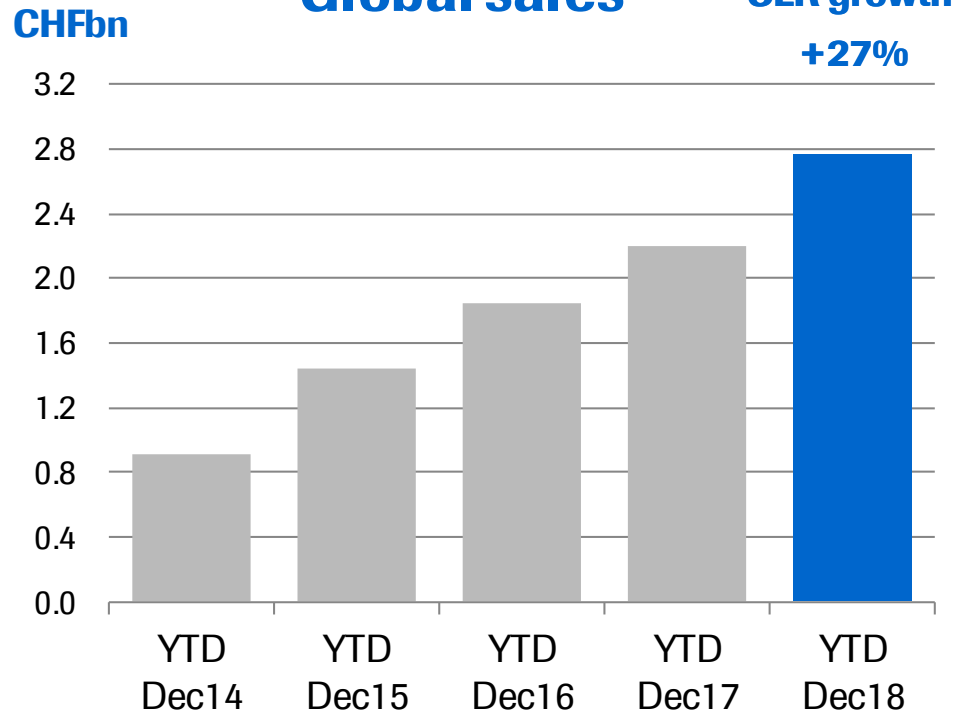
2018 sales of CHF 6,752m

- US: Growth driven by volume and pricing
- EU: Decline due to biosimilars softening
- Japan: First biosimilar launched in January and impact from mandatory price cut
- International: Growth driven by all regions, especially by China

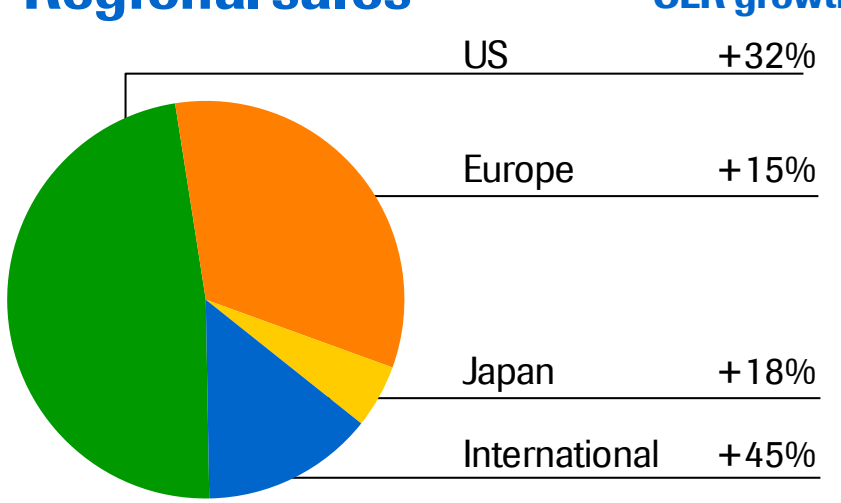
CER=Constant Exchange Rates

Perjeta

Global sales



Regional sales

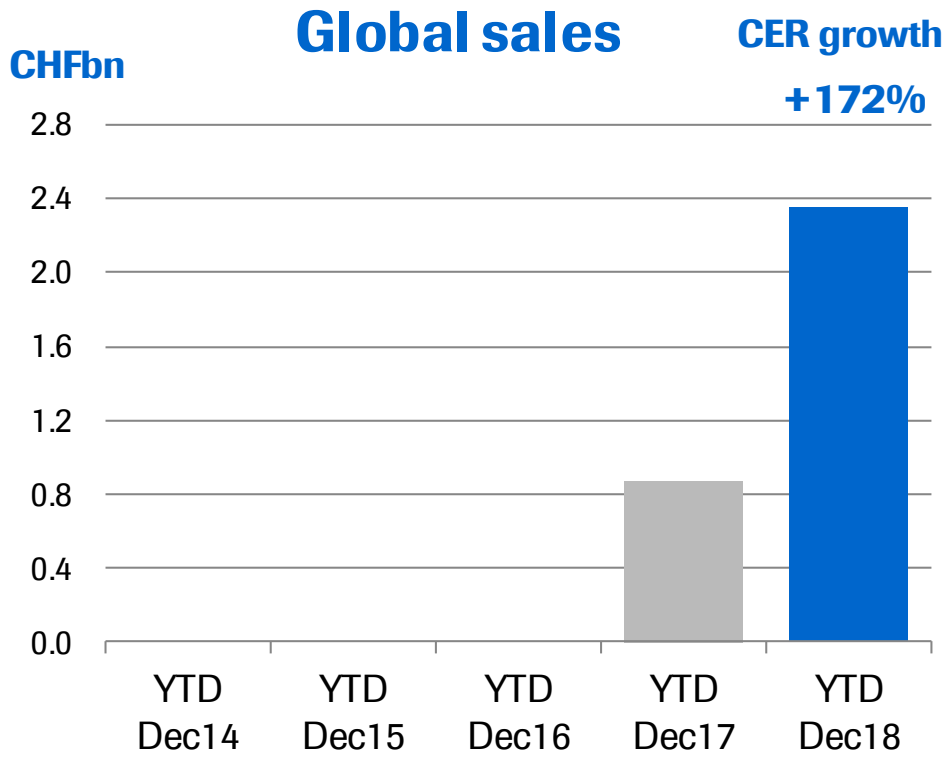


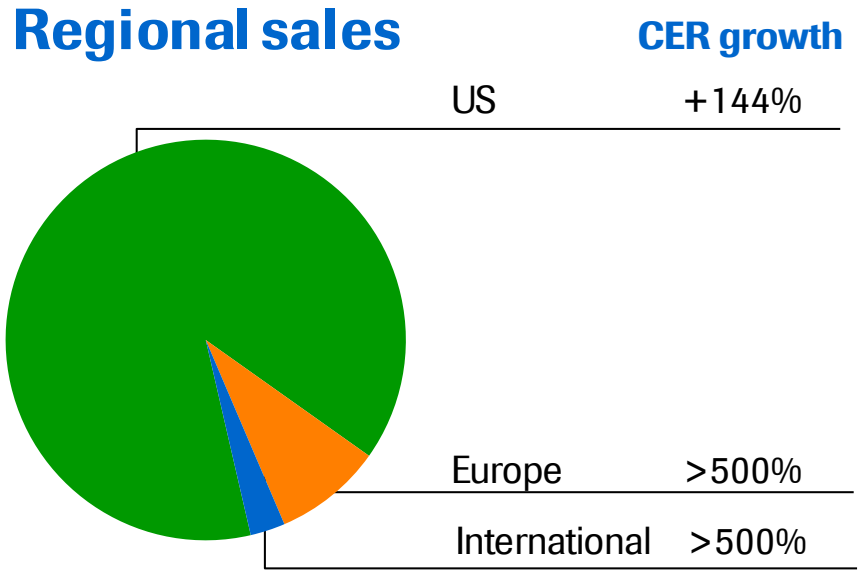
2018 sales of CHF 2,773m

- US: Accelerated growth driven by eBC following APHINITY approval in Q4 17
- EU: Growth in neoadjuvant and 1L mBC and eBC sales following APHINITY approval in Q2 18
- International: Strong growth in all regions

CER=Constant Exchange Rates

Ocrevus





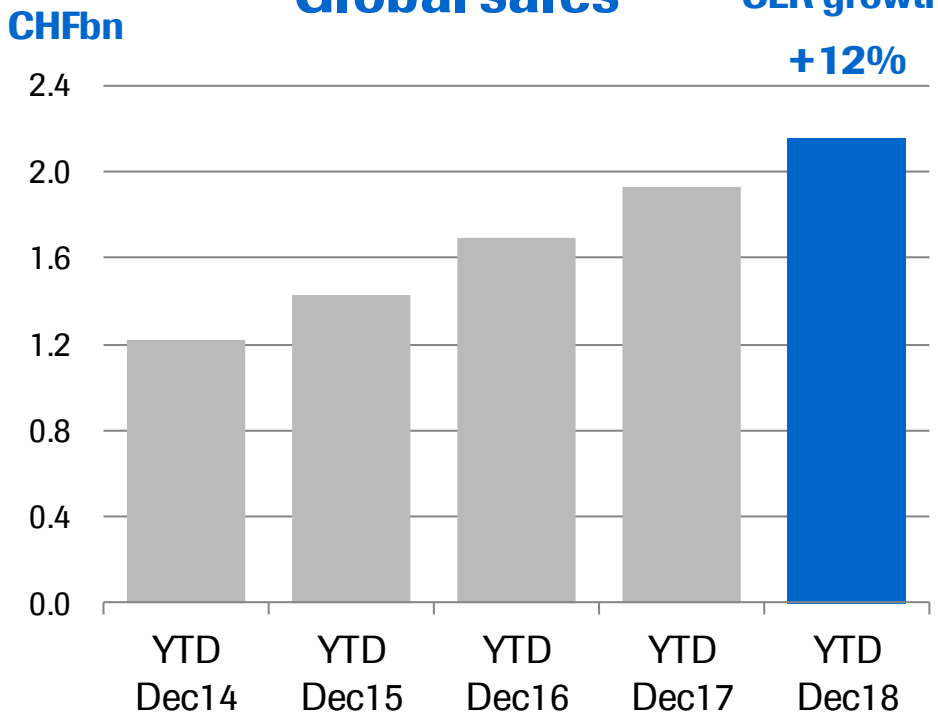
2018 sales of CHF 2,353m

- US: Growth due to an increasing number of new and returning patients; Moving into earlier lines
- Europe: Very successful early launches in Germany and Switzerland

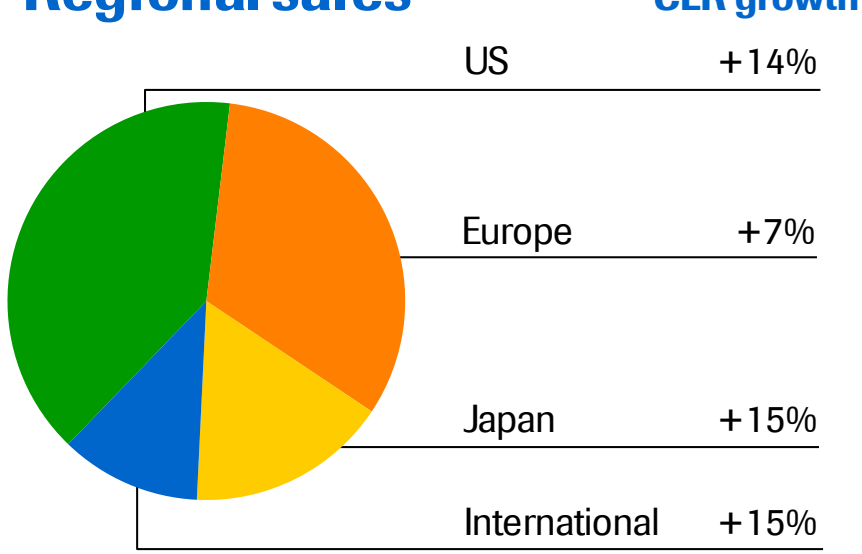
CER=Constant Exchange Rates

Actemra/RoActemra

Global sales



Regional sales



2018 sales of CHF 2,160m

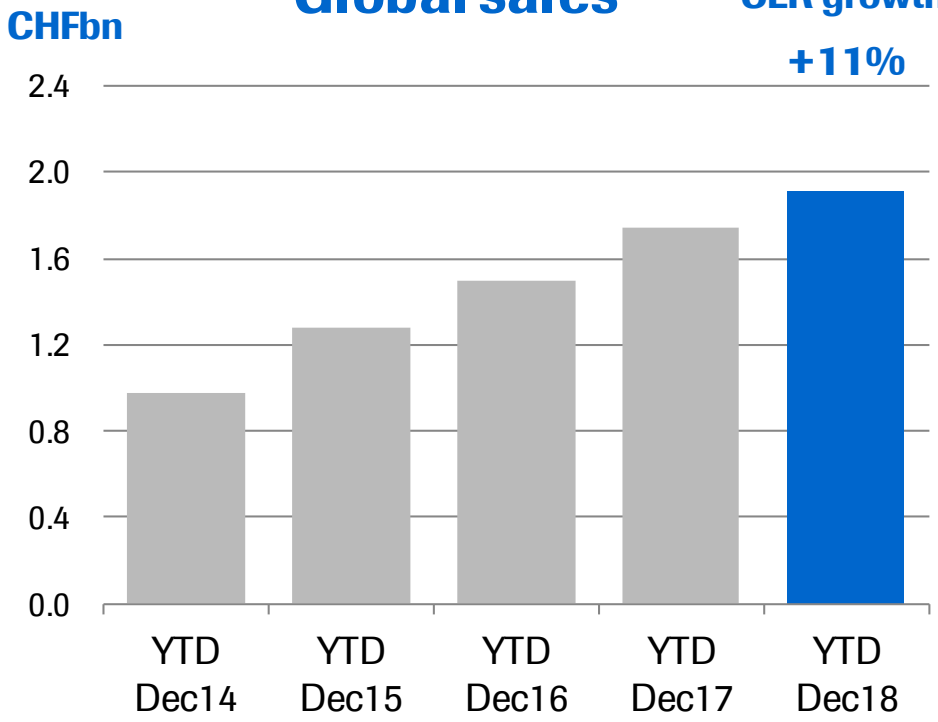
- US: Growth driven by Giant Cell Arteritis (GCA) launch and continued SC uptake
- EU: Market leadership in monotherapy achieved; Growth driven by GCA; Autoinjector approved in Q1 18
- International: Growth driven by all regions

CER=Constant Exchange Rates

Xolair

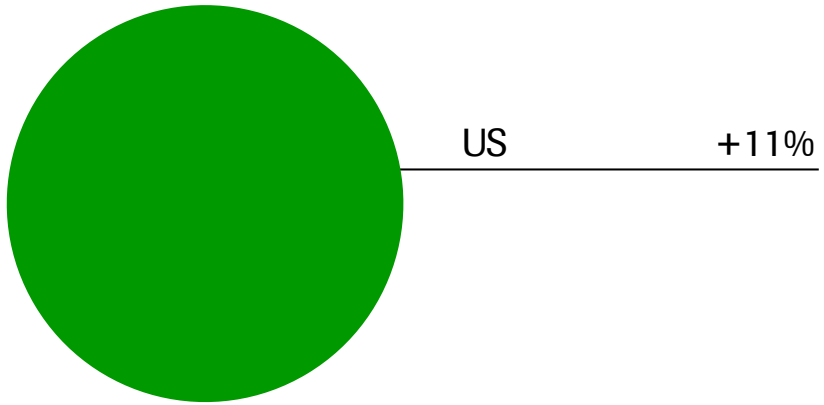
Global sales

CER growth +11%



Regional sales

CER growth



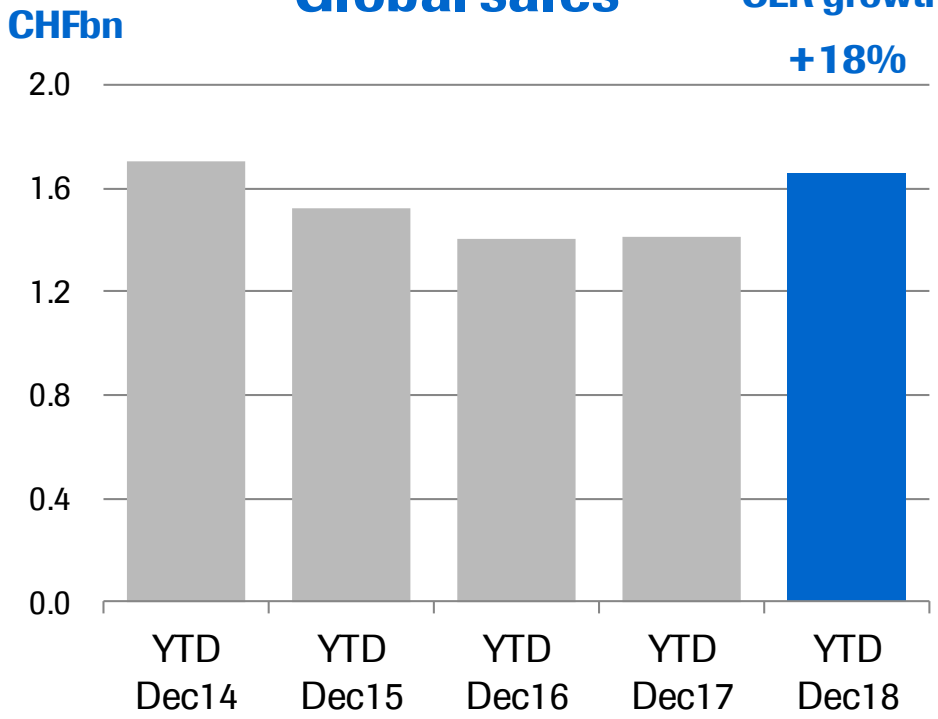
2018 sales of CHF 1,912m

- Growth driven by pediatrics asthma launch, allergic asthma and chronic idiopathic urticaria
- Pre-filled syringe approved in Q3 18

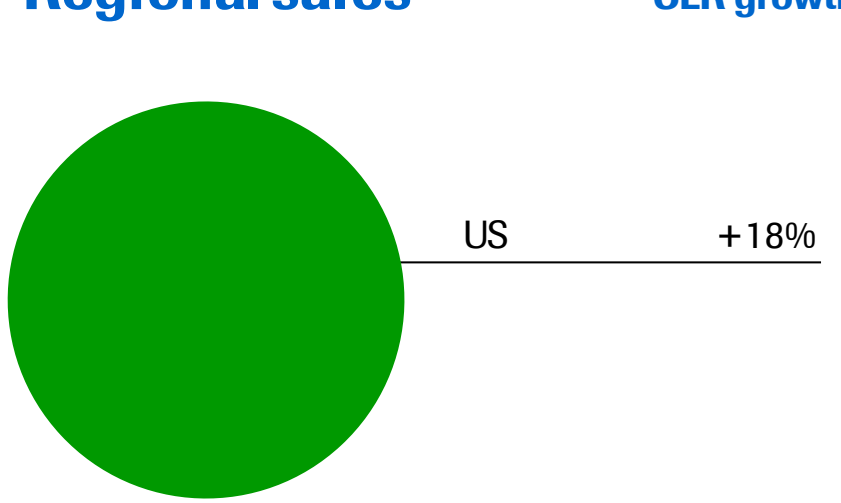
CER=Constant Exchange Rates

Lucentis

Global sales



Regional sales



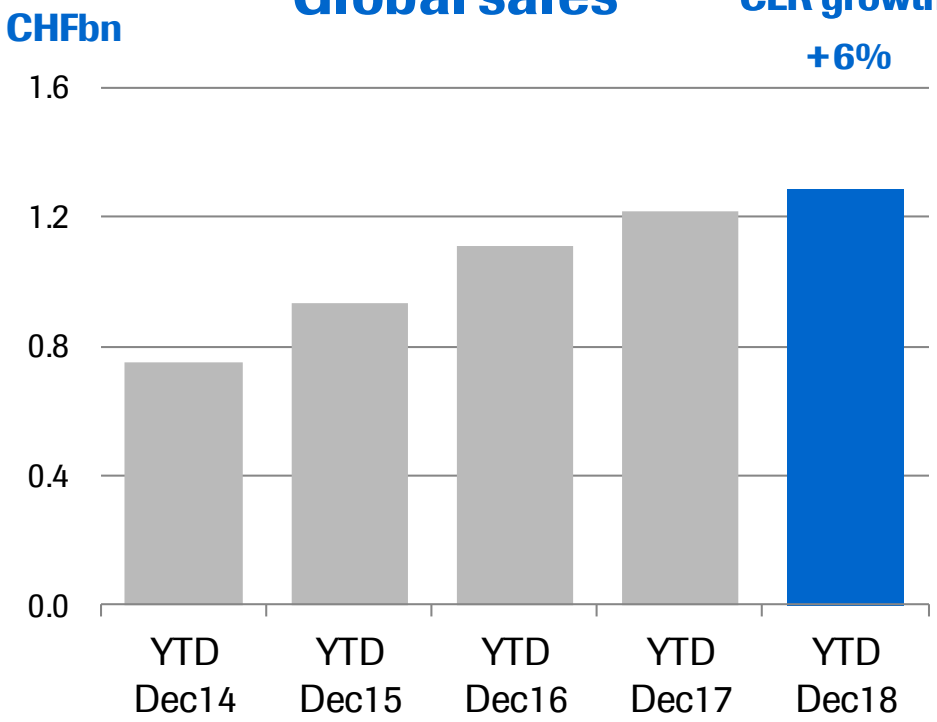
2018 sales of CHF 1,659m

- Accelerated growth after first prefilled syringe launched for wAMD and macular edema after retinal vein oclusion
- First-in-class launches in mCNV and DR w/o DME on-going
- Market share gains in all approved indications

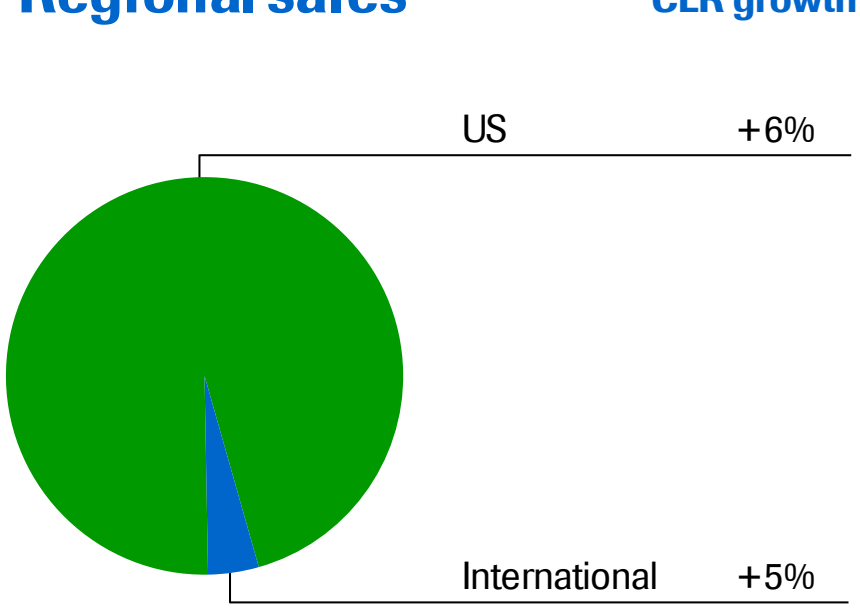
CER=Constant Exchange Rates

TNKase / Activase

Global sales



Regional sales

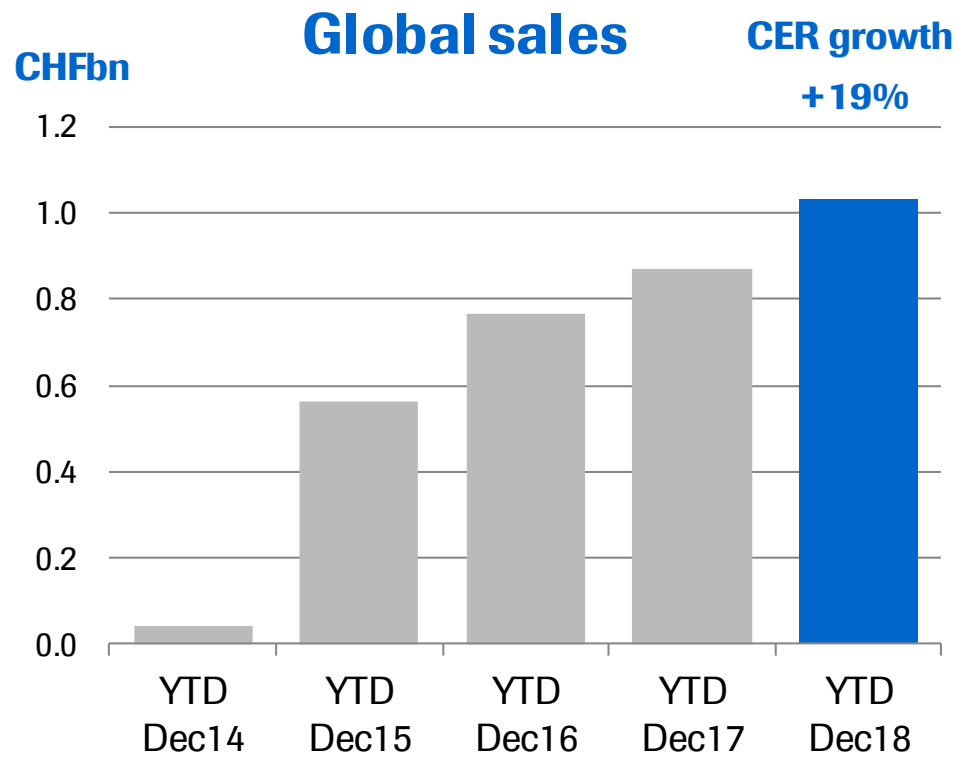


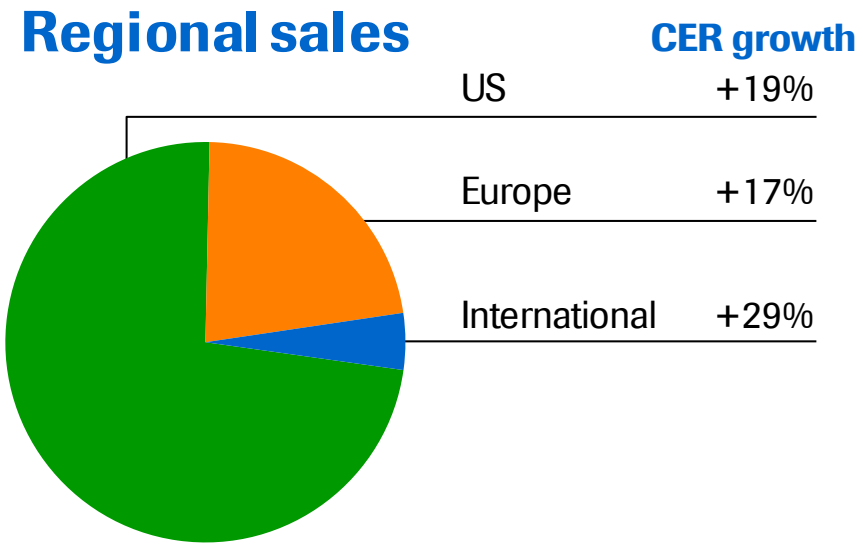
2018 sales of CHF 1,284m

- US: Growth driven by demand

CER=Constant Exchange Rates

Esbriet





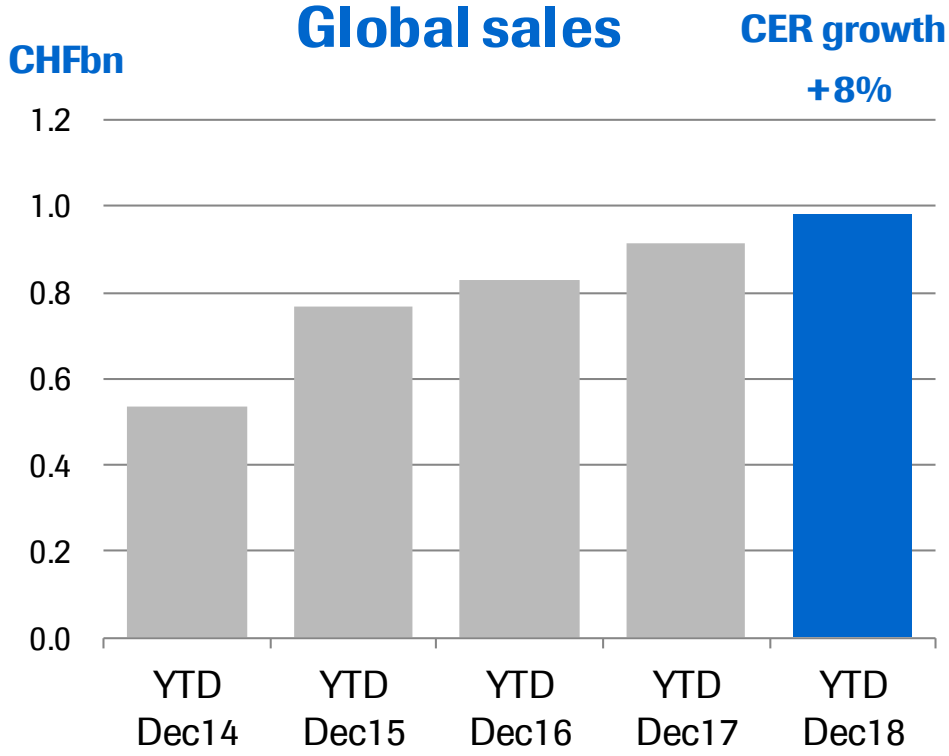
2018 sales of CHF 1,031m

- US: Growth driven by continued penetration in moderate and mild patients; improved patient compliance
- EU: Growth driven by continued penetration in moderate and mild patients
- Overall market leadership in US and EU5 maintained

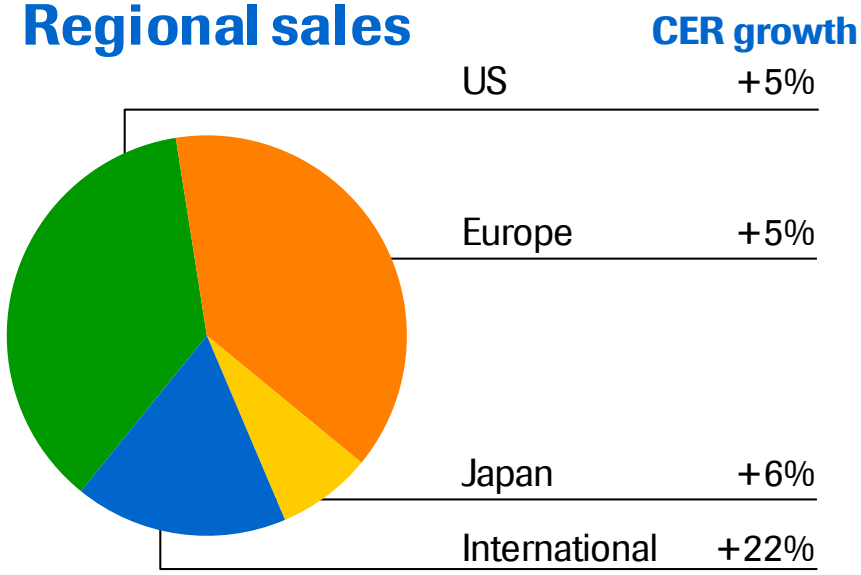
CER=Constant Exchange Rates

Kadcyla

Global sales



Regional sales



2018 sales of CHF 979m

- US/EU: Increasing patient shares in 2L mBC
- International: Growth driven by all regions as roll-out progresses

CER=Constant Exchange Rates

Pipeline summary

Marketed products additional indications

Global Development late-stage trials

pRED (Roche Pharma Research & Early Development)

gRED (Genentech Research & Early Development)

Roche Group 2018 results

Diagnostics

Foreign exchange rate information

2018: Diagnostics Division CER growth
By Region and Business Area (vs. 2017)

	Global		North America		EMEA[1]		RoW	
	CHFm	% CER growth	CHFm	% CER growth	CHFm	% CER growth	CHFm	% CER growth
Centralised and Point of Care Solutions	7,768	8	1,541	6	2,723	4	3,504	13
Molecular Diagnostics	2,019	5	766	6	770	7	483	1
Diabetes Care	1,980	2	265	20	1,212	-4	503	8
Tissue Diagnostics	1,112	10	641	8	281	10	190	17
Diagnostics Division	**12,879**	**7**	**3,213**	**7**	**4,986**	**3**	**4,680**	**11**

CER=Constant Exchange Rates
[1] Europe, Middle East and Africa

Diagnostics Division quarterly sales and CER growth[1]

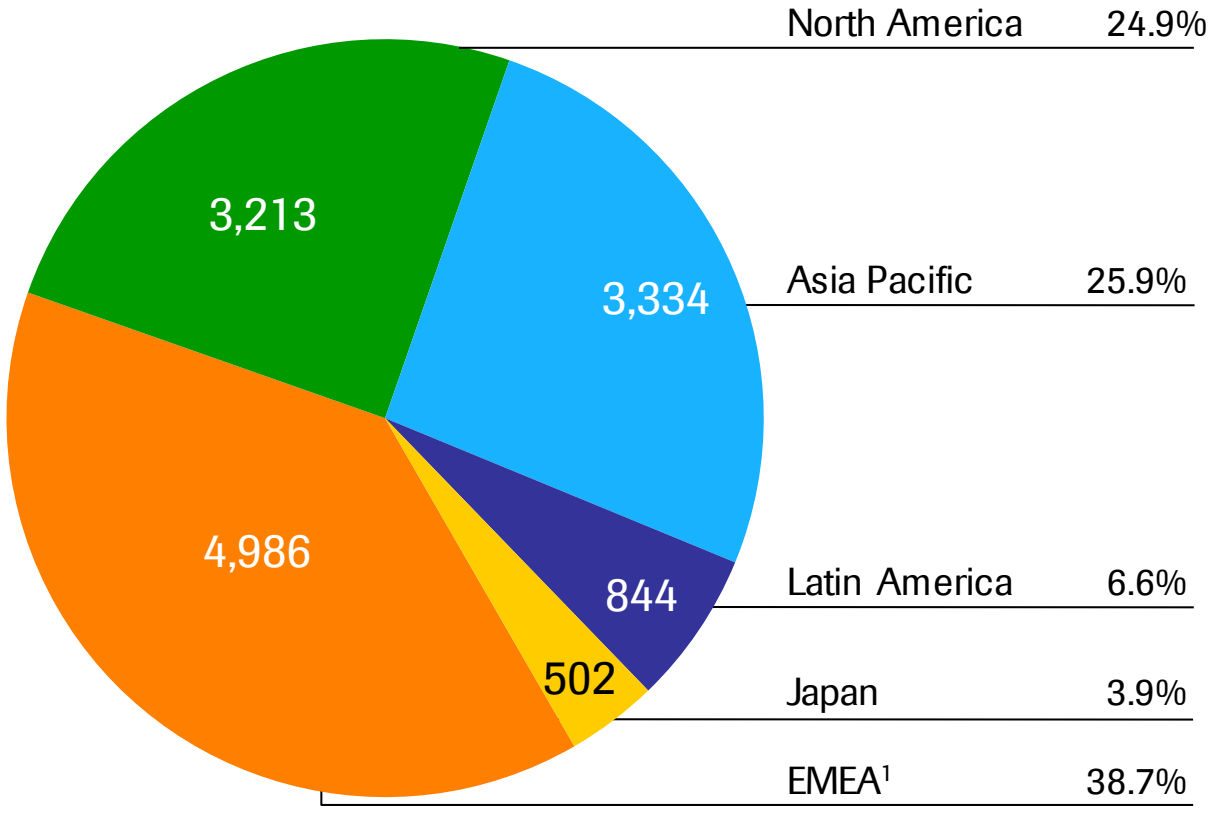
	Q1 17		Q2 17		Q3 17		Q4 17		Q1 18		Q2 18		Q3 18		Q4 18	
	CHFm	% CER	CHFm	% CER	CHFm	% CER	CHFm	% CER	CHFm	% CER	CHFm	% CER	CHFm	% CER	CHFm	% CER
Centralised and Point of Care Solutions	1,641	9	1,815	7	1,755	7	1,968	7	1,716	4	2,039	9	1,870	8	2,143	12
Molecular Diagnostics	441	-2	479	4	468	6	532	5	468	6	511	4	489	5	551	6
Diabetes Care	447	1	515	-7	502	2	501	-9	478	5	513	-3	493	1	496	5
Tissue Diagnostics	236	15	249	12	250	13	280	6	249	7	290	15	262	4	311	13
Dia Division	**2,765**	**6**	**3,058**	**4**	**2,975**	**6**	**3,281**	**4**	**2,911**	**5**	**3,353**	**7**	**3,114**	**6**	**3,501**	**10**

CER=Constant Exchange Rates
[1] versus same period of prior year

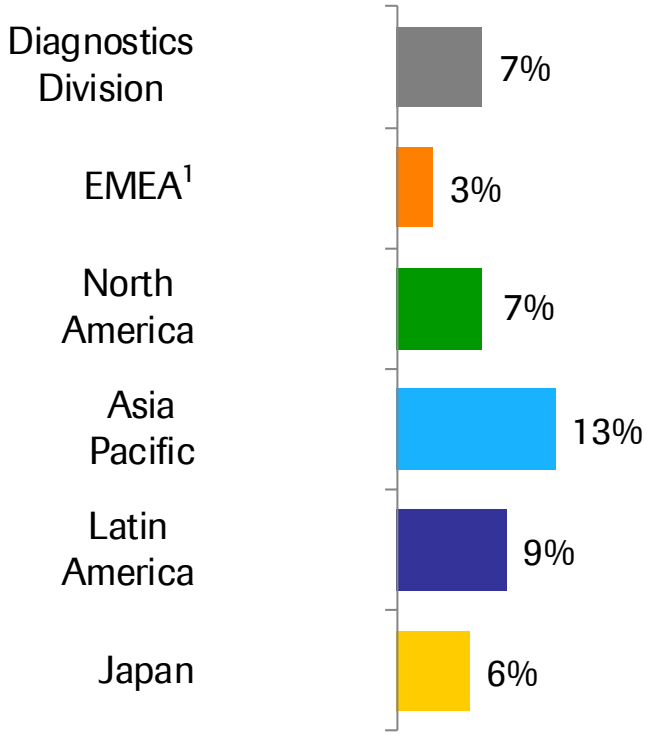
2018: Diagnostics Division sales

Growth driven by Asia Pacific and North America

CHF 12,879m



CER sales growth

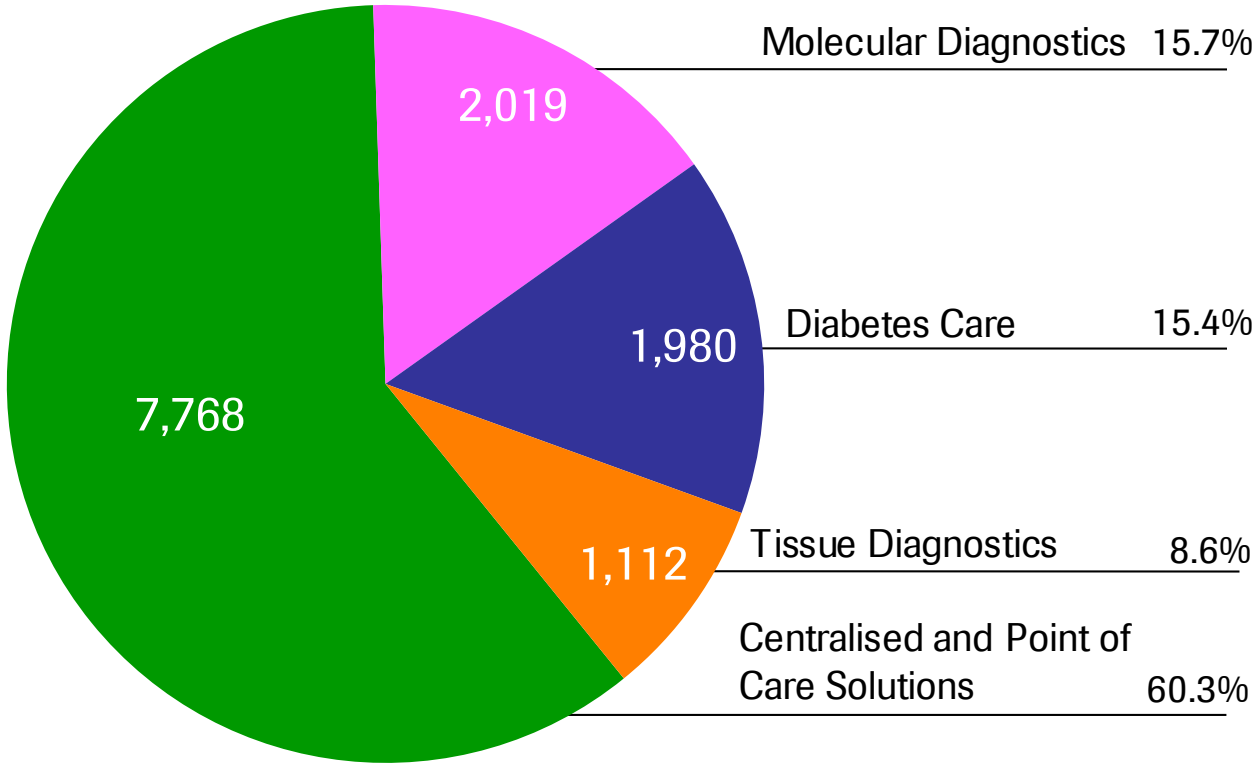


CER=Constant Exchange Rates
[1] Europe, Middle East and Africa

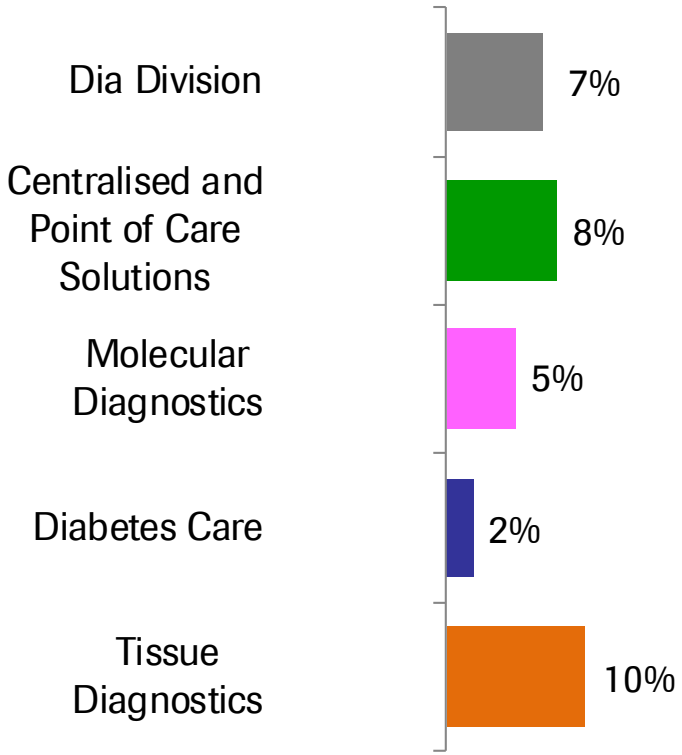
2018: Diagnostics Division sales

Strong growth driven by Centralised and Point of Care Solutions

CHF 12,879m

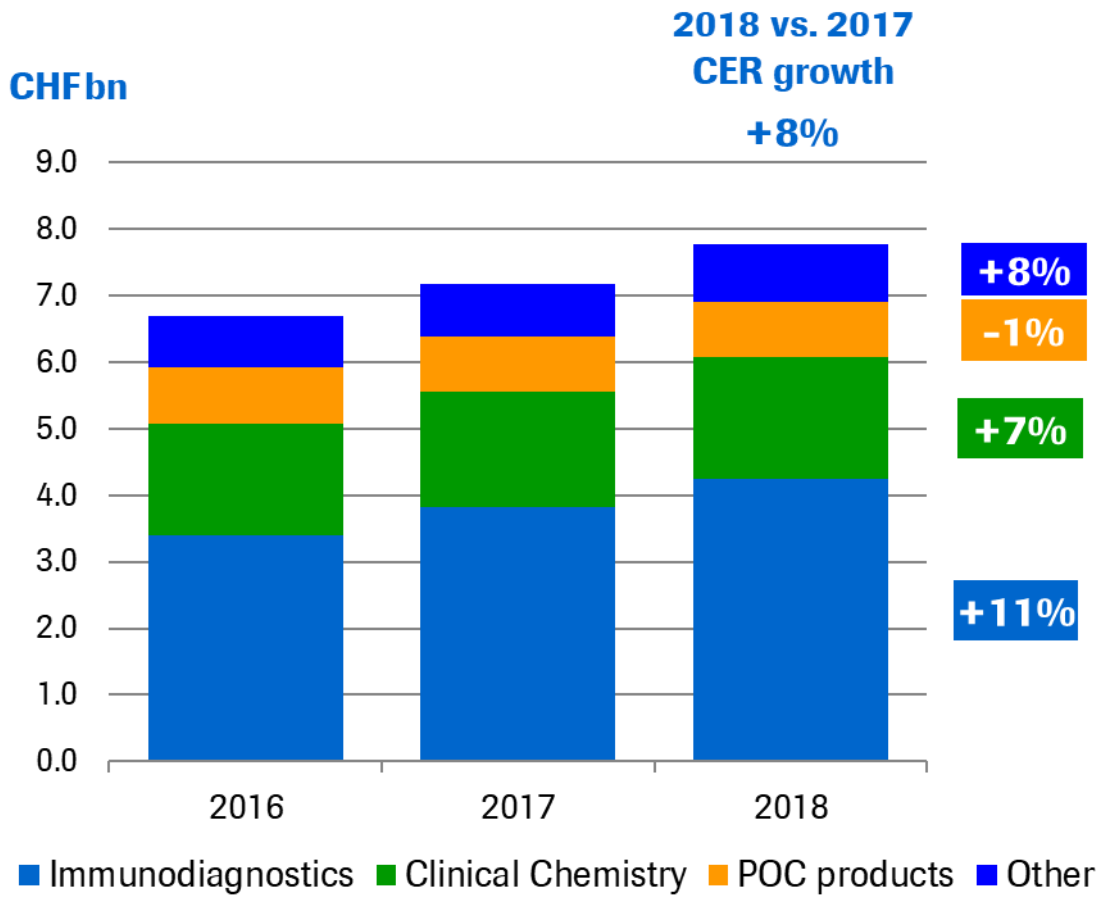


CER sales growth



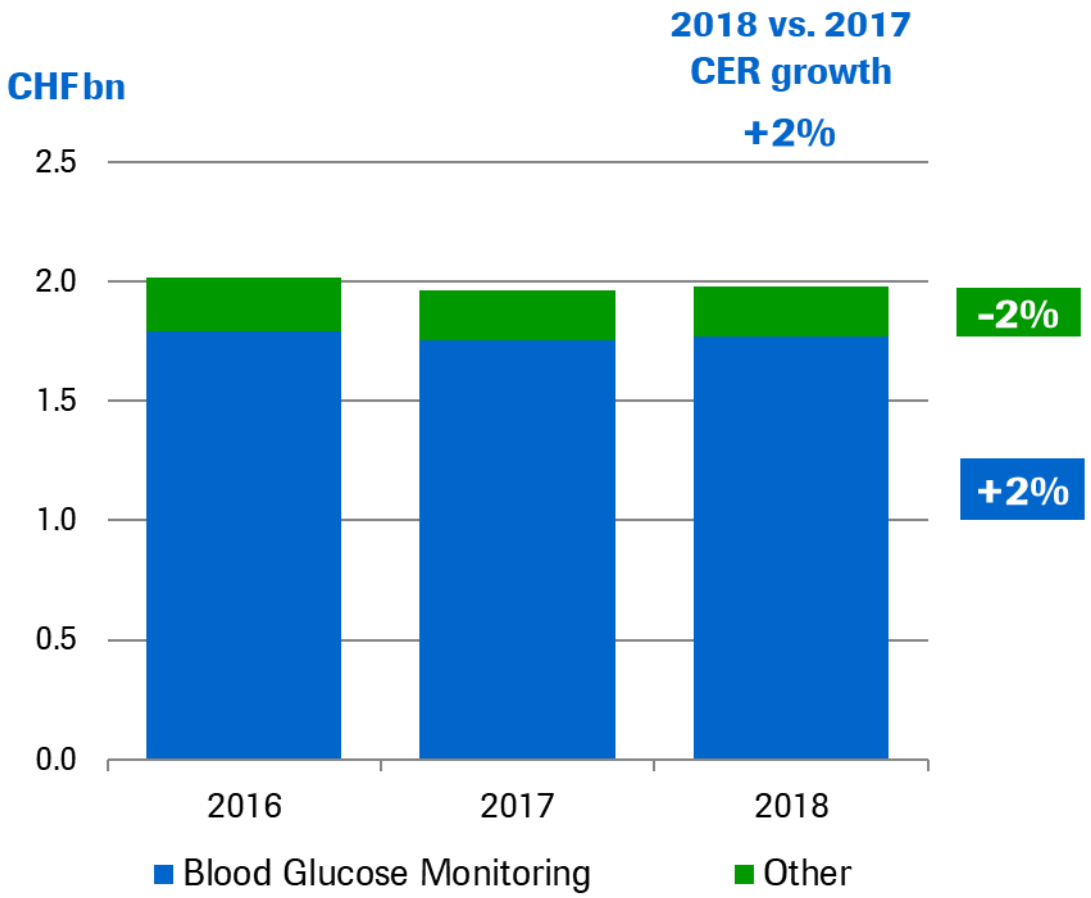
CER=Constant Exchange Rates

Centralised and Point of Care Solutions



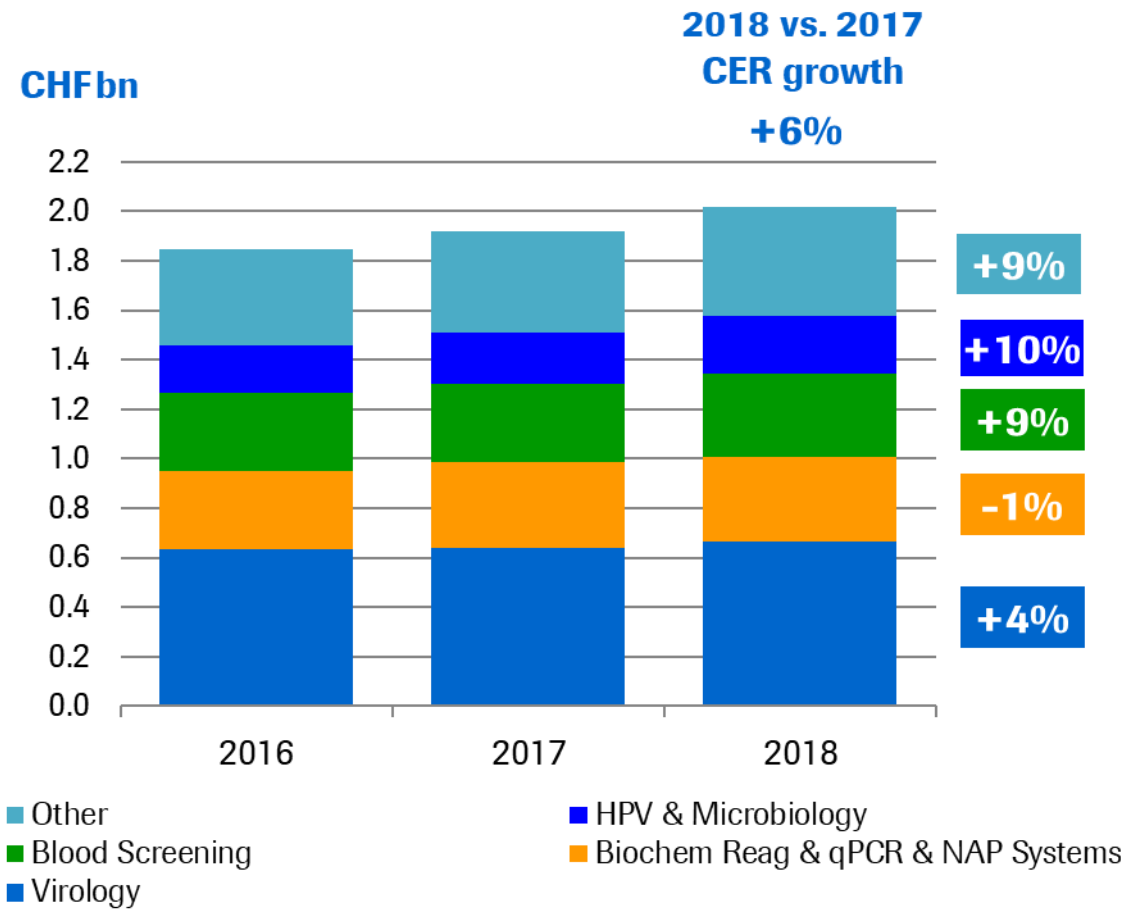
CER=Constant Exchange Rates

Diabetes Care



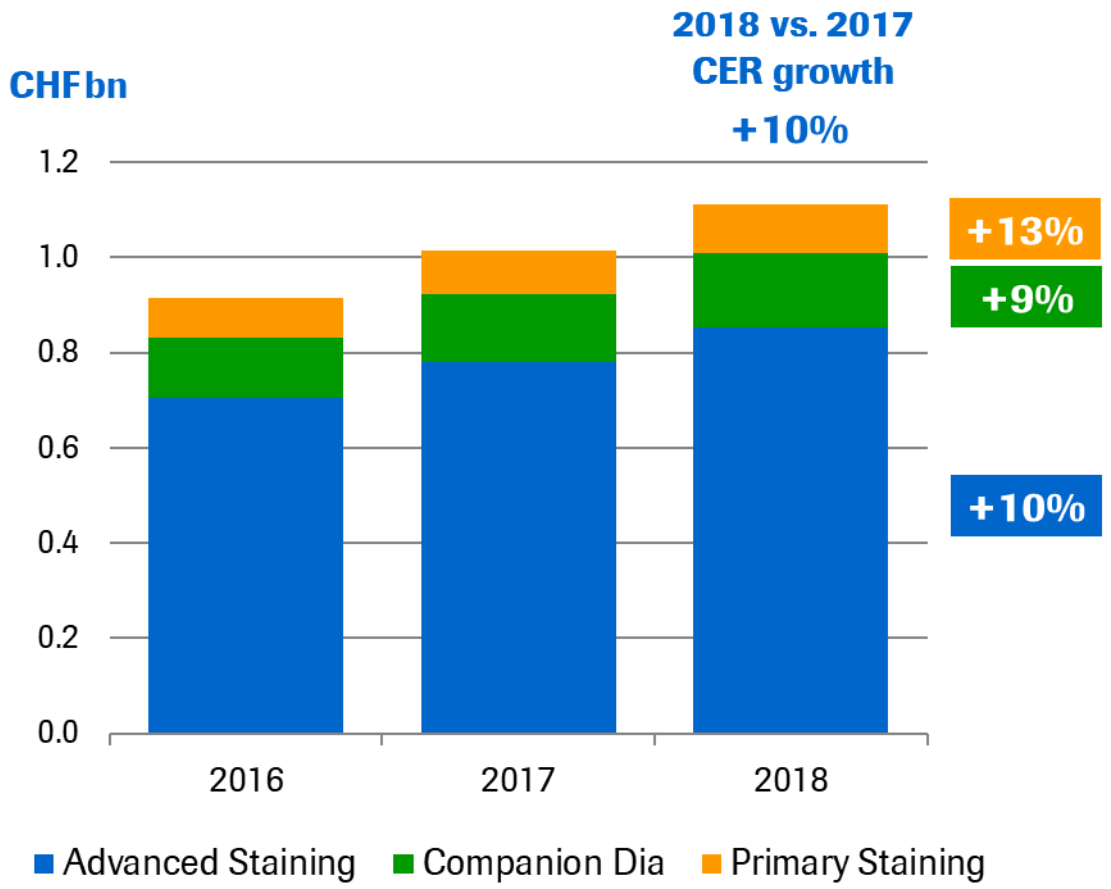
CER=Constant Exchange Rates

Molecular Diagnostics



CER=Constant Exchange Rates

Tissue Diagnostics



CER=Constant Exchange Rates

Pipeline summary

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Roche Group 2018 results

Diagnostics

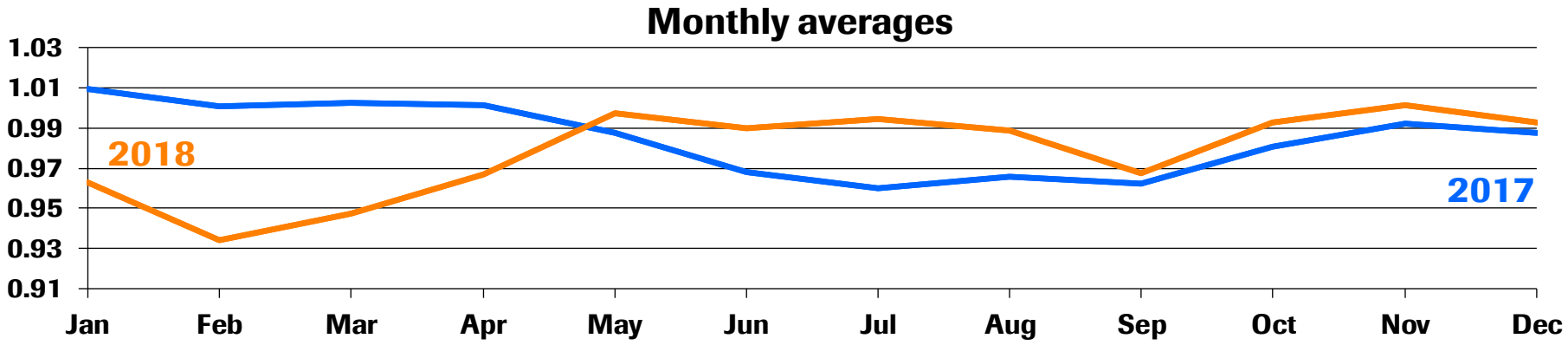
Foreign exchange rate information

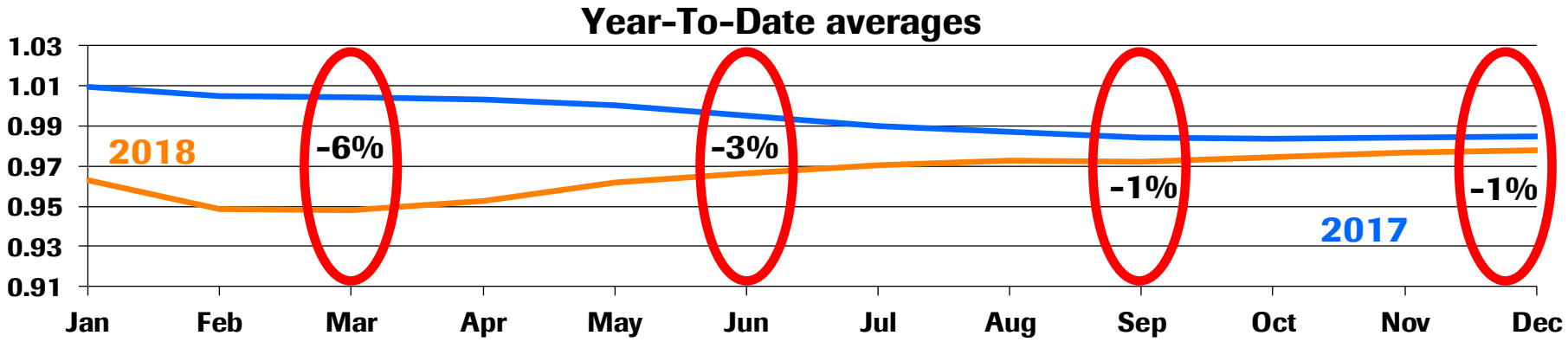
Exchange rate impact on sales growth

Positive impact from EUR offset by negative impact from USD

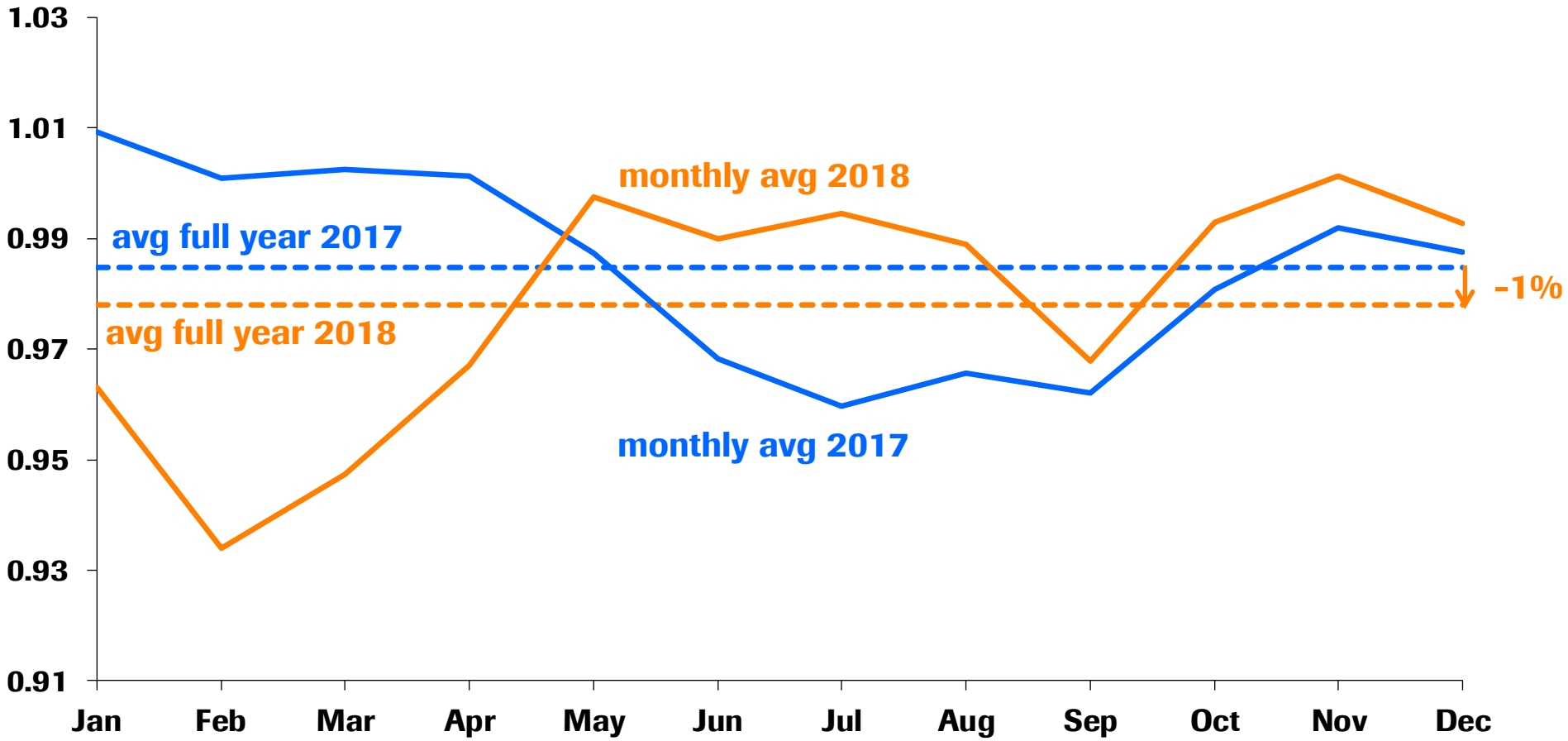
CER = Constant Exchange Rates (avg full year 2017)

CHF / USD

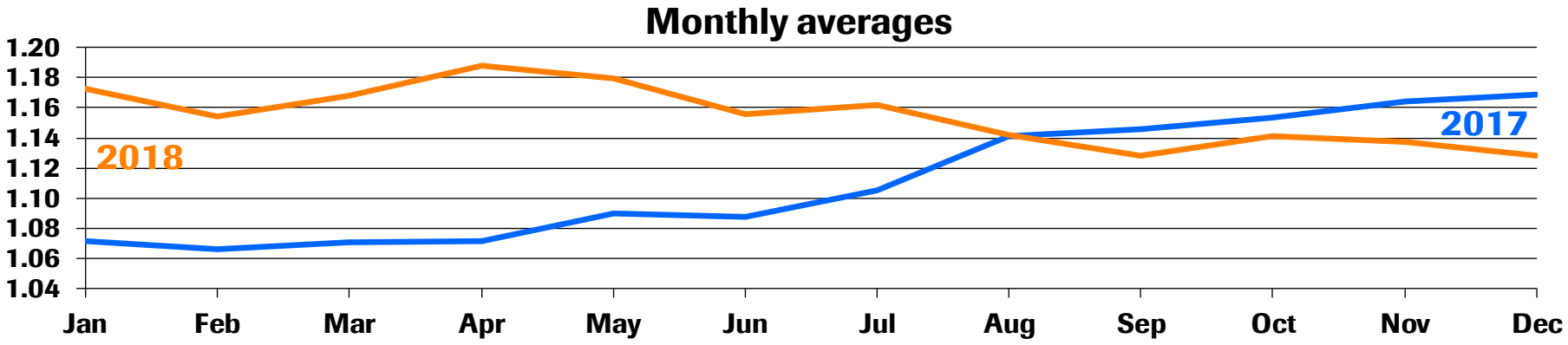

Monthly averages
1.03
1.01
0.99
0.97
0.95
0.93
0.91
2018
2017
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

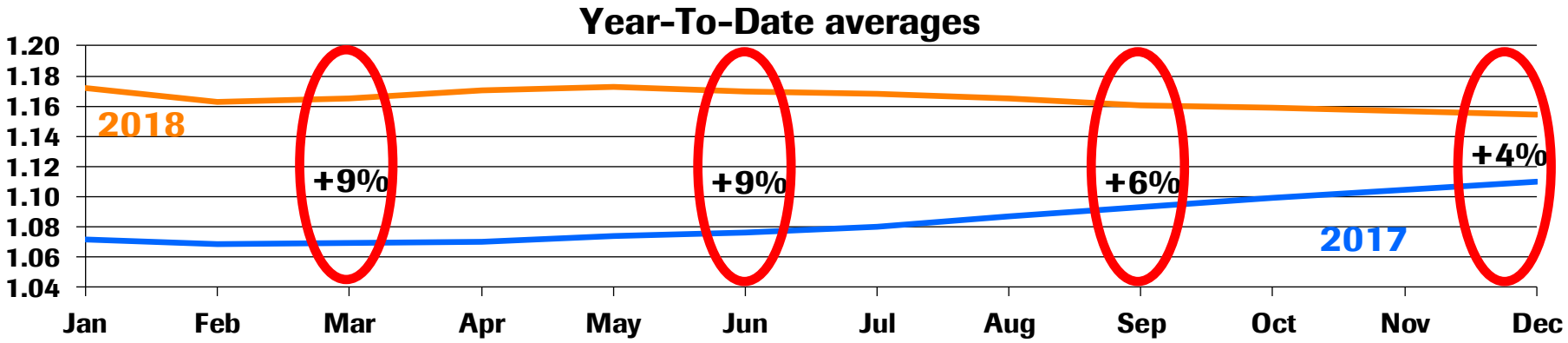

Year-To-Date averages
1.03
1.01
0.99
0.97
0.95
0.93
0.91
2018
-6%
-3%
-1%
-1%
2017
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

CHF / USD

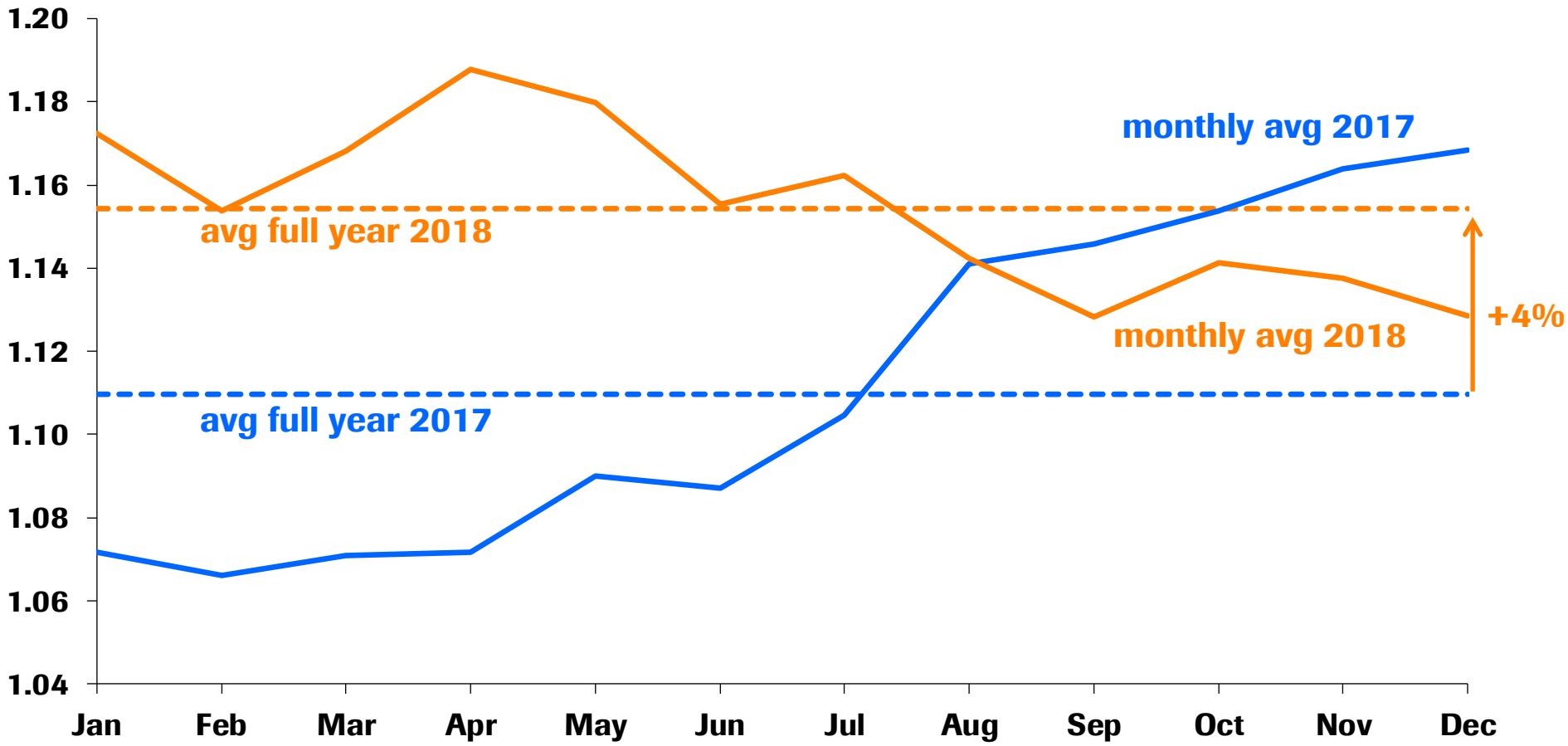

1.03
1.01
0.99
0.97
0.95
0.93
0.91
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
monthly avg 2018
avg full year 2017
avg full year 2018
monthly avg 2017
-1%

CHF / EUR


Monthly averages
1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
1.04
2018
2017
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

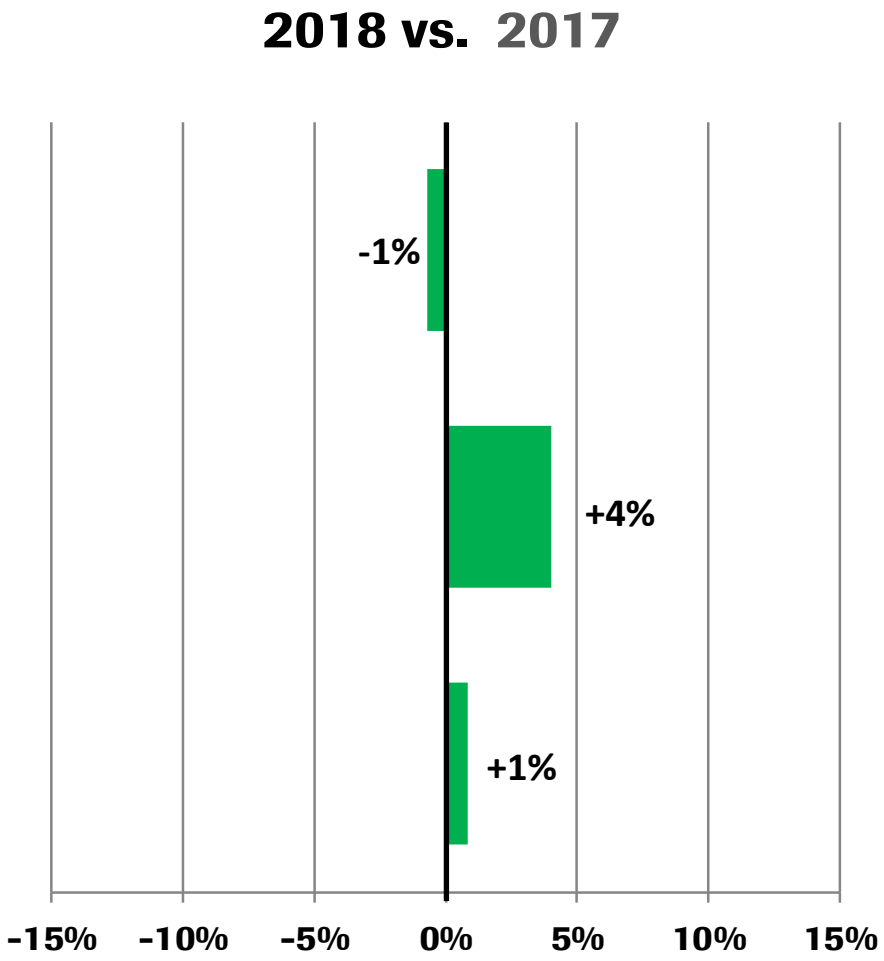

Year-To-Date averages
1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
1.04
2018
+9%
+9%
+6%
+4%
2017
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

CHF / EUR


1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
1.04
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
monthly avg 2017
avg full year 2018
monthly avg 2018
+4%
avg full year 2017

Average CHF exchange rates

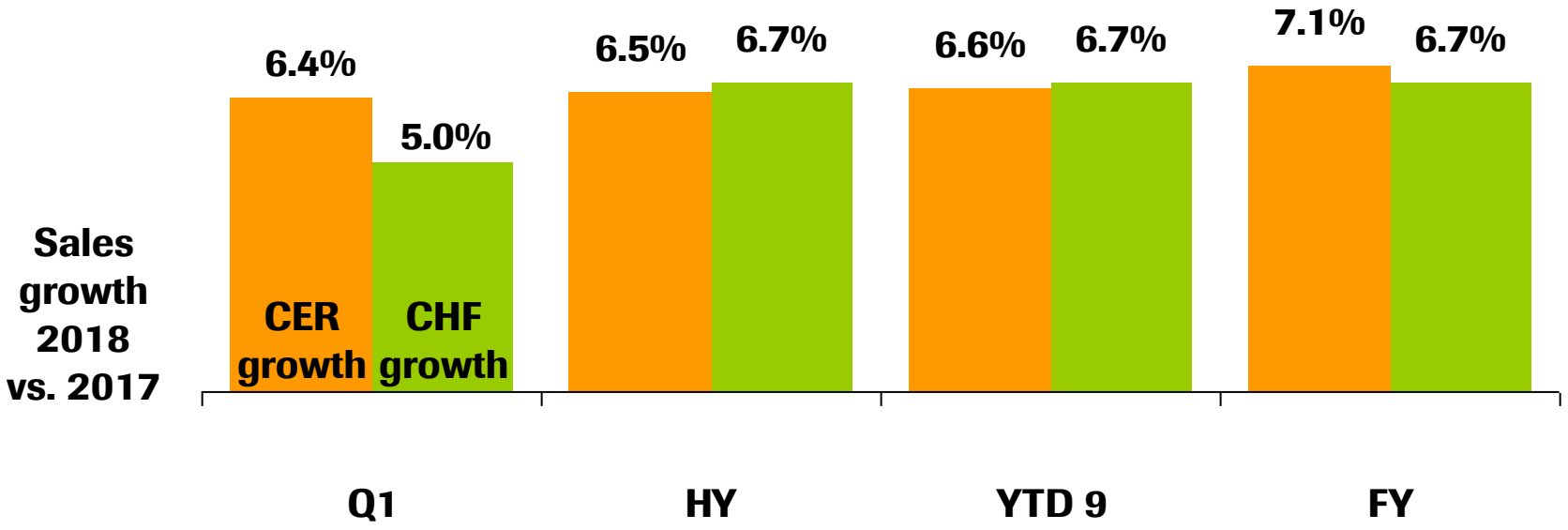
	2018	2017
USD	0.98	0.98
EUR	1.15	1.11
JPY	0.89	0.88



Exchange rate impact on sales growth

In 2018 negative impact of USD, partially offset by EUR and JPY

Development of average exchange rates versus prior year period				
CHF / USD	-5.6%	-2.9%	-1.2%	-0.7%
CHF / EUR	+8.9%	+8.7%	+6.2%	+4.0%
CHF / JPY	-1.0%	+0.4%	+0.8%	+0.9%
Difference in CHF / CER growth	-1.4%p	+0.2%p	+0.1%p	-0.4%p

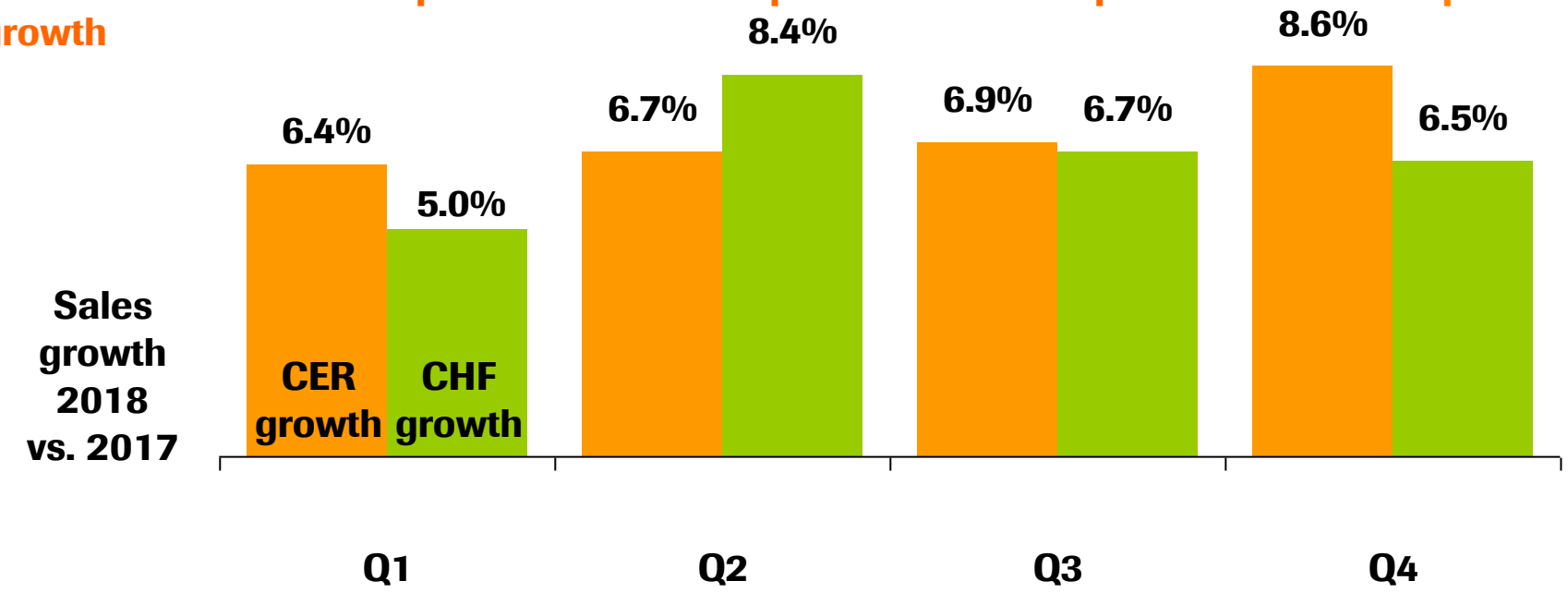


CER=Constant Exchange Rates

Exchange rate impact on sales growth

In Q4 2018 negative impact of EUR, partially offset by USD and JPY

Development of average exchange rates versus prior year period				
CHF / USD	-5.6%	-0.1%	+2.2%	+0.9%
CHF / EUR	+8.9%	+8.4%	+1.2%	-2.2%
CHF / JPY	-1.0%	+1.7%	+1.8%	+1.0%
Difference in CHF / CER growth	-1.4%p	+1.7%p	-0.2%p	-2.1%p



CER=Constant Exchange Rates

Doing now what patients need next