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Q4 2023 Results

Investor presentation
January 31, 2024

NOVARTIS | Reimagining Medicine

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Company overview

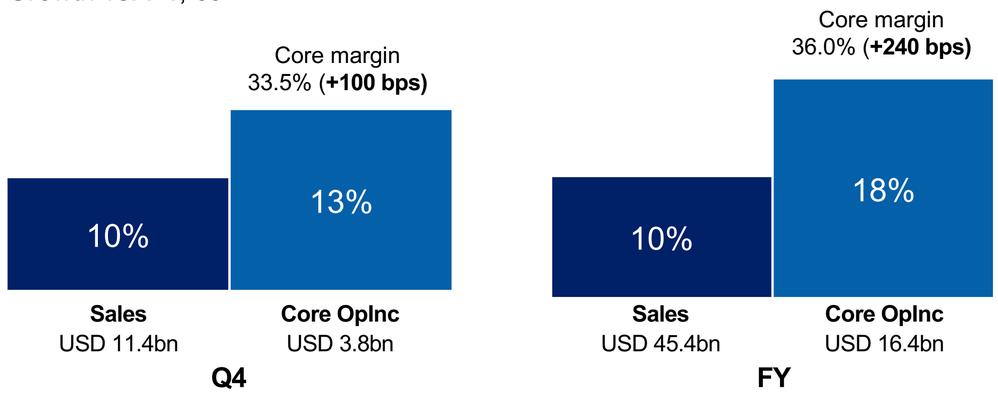
Vas Narasimhan, M.D.
Chief Executive Officer

NOVARTIS | Reimagining Medicine

Novartis delivers strong full year performance with margin expansion. Continuing innovation momentum with multiple positive Ph3 readouts

Double-digit growth for sales and Core OpInc for the quarter and full year[1]

Growth vs. PY, cc



Several major innovation milestones in Q4

Fabhalta® (iptacopan) US approval in PNH

Cosentyx® US approval in HS

Cosentyx® US approval of IV formulation (PsA, AS, nr-axSpA)

Iptacopan Ph3 APPLAUSE study met its primary endpoint in IgAN

Atrasentan Ph3 ALIGN study met its primary endpoint in IgAN

Iptacopan Ph3 APPEAR-C3G met its primary endpoint in C3G

Scemblix® Ph3 ASC4FIRST met primary endpoints in 1L Ph+ CML-CP (Jan)

Successful spin-off of Sandoz

FY 2024 guidance[1]: Sales expected to **grow mid single digit**; Core OpInc expected to **grow high single digit**

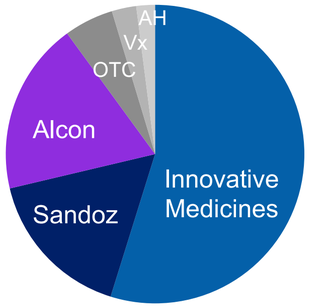
Mid-term guidance[1] updated: Sales expected to grow **+5% cc CAGR 2023-28**; core operating income margin **~40%+ by 2027**

OpInc – operating income. 1. As defined on page 37 of the Condensed Financial Report, Continuing operations include the retained business activities of Novartis, comprising the Innovative Medicines Division and the continuing Corporate activities Constant currencies (cc), core results are non-IFRS measures; explanation can be found on page 49 of Condensed Financial Report. Unless otherwise noted, all growth rates refer to same period in PY.

Completed the transformation; laying the foundation for our future growth

Strategy

FY 2014
Pre-portfolio transformation



FY 2023
Focused company

Operations

	FY 2014	FY 2023
Core margin	25.2%	36.0%
FCF (USD) as % of sales	11.1bn 19.1%	13.2bn 29.0%

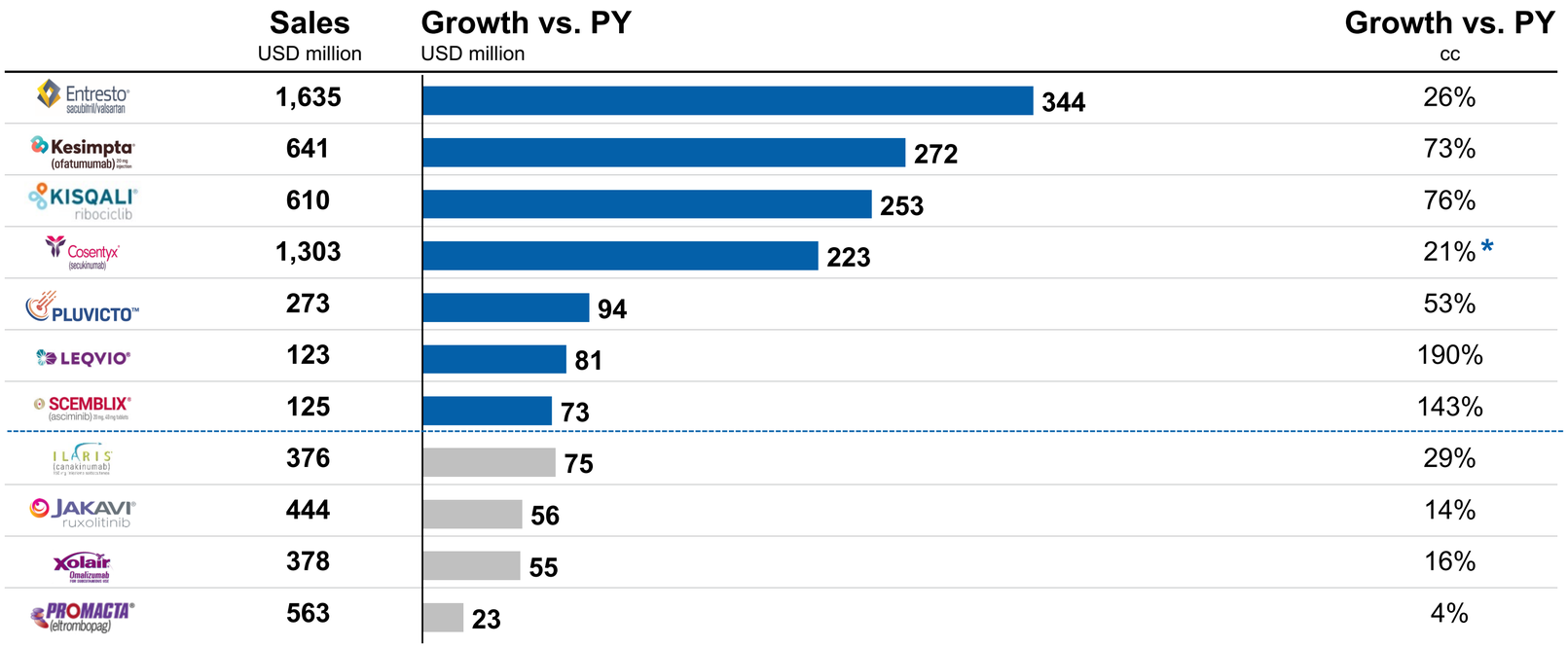
Innovation

10 positive Ph3 readouts on assets with significant sales potential

2014 figures reflecting revised free cash flow definition, 2023 figures reflect Continuing Operations. As defined on page 37 of the Condensed Financial Report, Continuing operations include the retained business activities of Novartis, comprising the Innovative Medicines Division and the continuing Corporate activities.

Strong Q4 growth driven by performance from Entresto®, Kesimpta®, Kisqali® and Cosentyx®

Q4 sales



Strong growth (+40% cc); expected to continue

* Benefitting from lower prior year base.

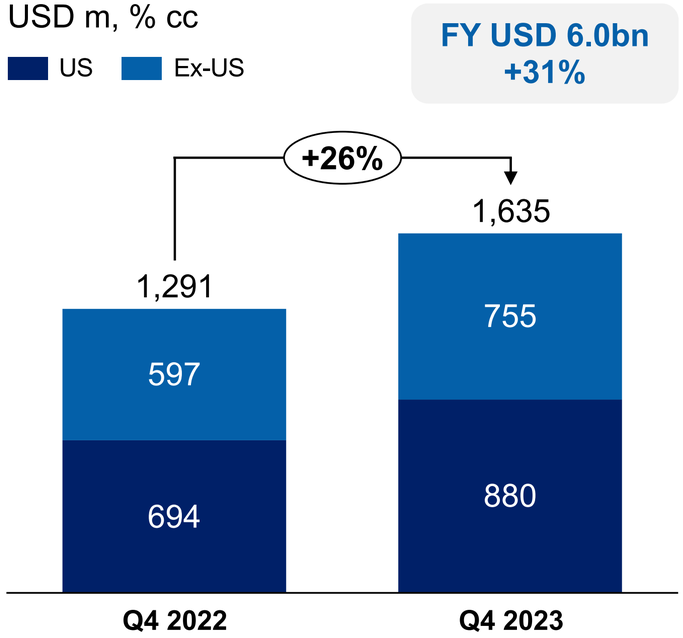
Constant currencies (cc) is a non-IFRS measure; explanation of non-IFRS measures can be found on page 49 of Condensed Financial Report. Unless otherwise noted, all growth rates refer to same period in PY.

Entresto® delivers 31% FY growth with sales reaching USD 6bn. Expecting USD 7bn peak sales

Entresto®

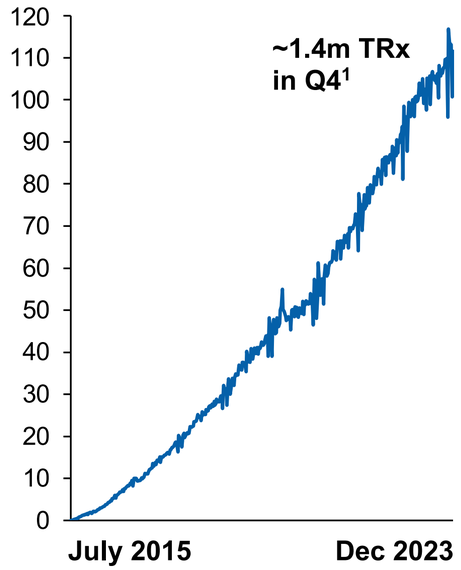
Sales evolution

USD m, % cc



US weekly TRx[1]

Total prescriptions (000)



Continues strong momentum in Q4

- US: **+27%** cc
- Ex-US: **+26%** cc
- China/Japan: Contribution from HTN[2]

Confidence in future growth

- Strong guidelines position[3] (US/EU)
- Further penetration in HF and HTN
- US: Forecasting purposes, we assume Entresto® LoE in 2025
- EU: RDP to Nov 2026[4]

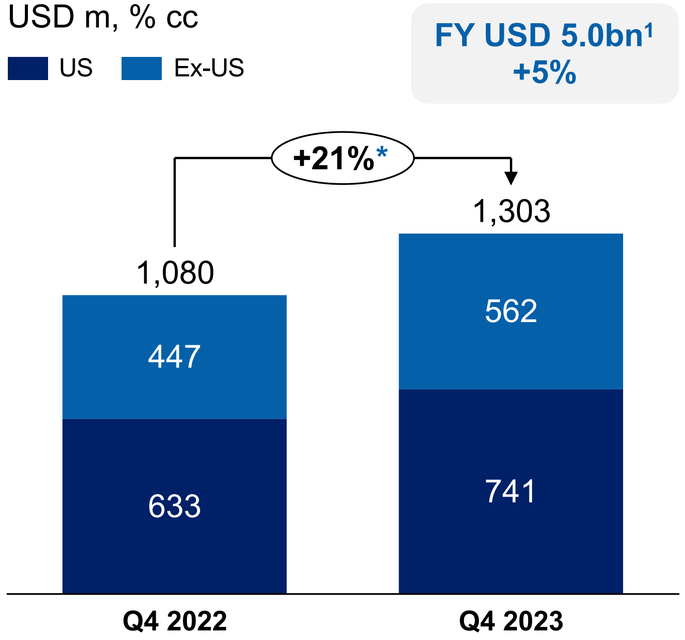
See last page for references (footnotes 1-4). Constant currencies (cc), core results are non-IFRS measures; explanation can be found on page 49 of Condensed Financial Report. TRx – total prescriptions. HF – heart failure. HTN – hypertension. LoE – loss of exclusivity. RDP – Regulatory data protection.

Cosentyx® FY sales reached USD 5bn[1]. Expect mid to high single-digit growth in 2024 and USD 7bn peak sales

Cosentyx®

Sales evolution

USD m, % cc



Q4 performance benefitted from lower PY base

- US +17% cc; Ex-US sales +26% cc
- Lower PY base in US due to revenue deduction adjustments
- Launched IV and HS in US

FY 2024: Expect mid to high single-digit growth

- US/EU: HS launch
- US: IV launch in adult PsA, AS and nr-axSpA
- China: PsA approved January 2024

Further Cosentyx® innovation

- 3 Ph3 studies ongoing: Giant Cell Arteritis, Polymyalgia Rheumatica, Rotator Cuff Tendinopathy

* Benefitting from lower prior year base

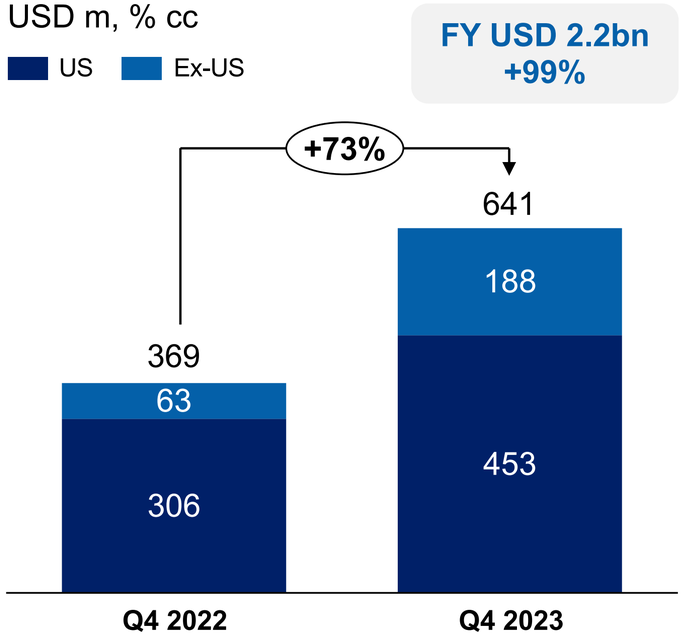
HS – moderate to severe hidradenitis suppurativa in adult population. IV – intravenous. PsA – psoriatic arthritis. AS – ankylosing spondylitis. nr-axSpA – non-radiographic axial spondyloarthritis. Constant currencies (cc), core results are non-IFRS measures; explanation can be found on page 49 of Condensed Financial Report. 1. Rounded from USD 4.98bn.

Kesimpta® FY sales doubled (USD 2.2bn) and on track for USD 4bn peak based on compelling product profile

Kesimpta

Sales evolution

USD m, % cc



Launch momentum continues across all regions

- >85k patients treated, majority naive or first switch[1]
- US (+48% cc in Q4): Demand-driven growth
- Ex-US (+193% cc in Q4): NBRx leadership in 7/10 major markets[2]

Compelling product profile

- Clinically meaningful efficacy superiority over teriflunomide[3]
- 1 minute a month dosing at home/anywhere[4]
- ~90% find Kesimpta Sensoready® pen easy and simple to use (US RWE study)[5,6]
- 5-year efficacy[7], safety and tolerability data[8,9]

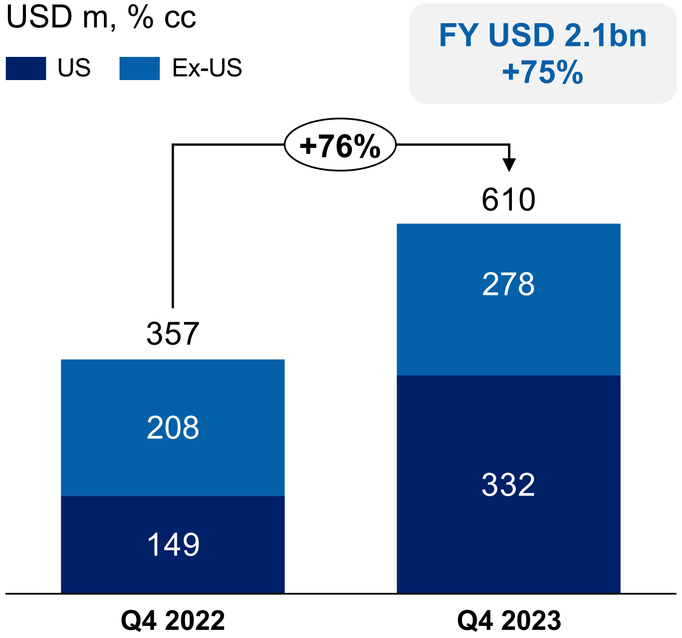
See last page for references (footnotes 1-9). NBRx – new to brand prescription. MS – Multiple Sclerosis. Constant currencies (cc), core results are non-IFRS measures; explanation can be found on page 49 of Condensed Financial Report.

Kisqali® FY sales reached USD 2.1bn in metastatic breast cancer (mBC). Maintain USD 4bn peak sales guidance for mBC

KISQALI®

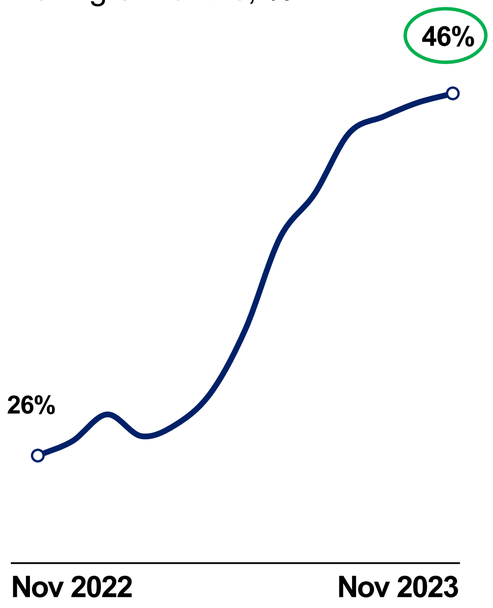
Sales evolution

USD m, % cc



US mBC NBRx share[1]

Rolling 3 months, %



Expect continued strong sales momentum in mBC

- **Statistically significant OS benefit** proven across all 3 Ph3 pivotal trials[2]
- Recognized by **NCCN** guidelines with **Category 1 designation** for 1L and **highest score by ESMO-MCBS**[3]
- **Median OS of ~5 years** across all 3 pivotal trials when combined with letrozole or fulvestrant in 1L mBC

Adjuvant indication

- Filed in EU, US and China

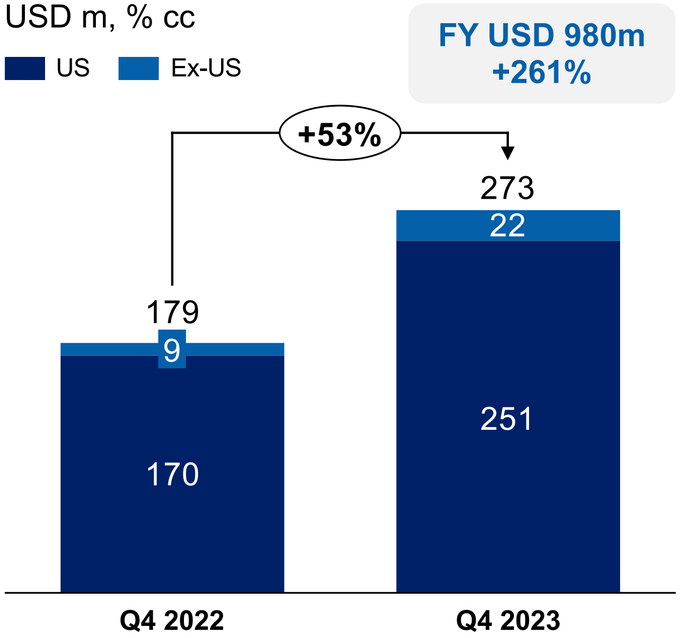
mBC – metastatic breast cancer. NBRx – new to brand prescription. NCCN – national comprehensive cancer network. AI – aromatase inhibitor. 1. Of CDK4/6 mBC market, US 3 months ending Nov 2023, IQVIA Breast Cancer Market Sizing report. 2. MONALEESA-2: Hortobagyi et al, NEJM 2022; MONALEESA-7: Lu et al, Clin Cancer Res 2022; MONALEESA-3: Neven et al, ESMO Breast 2022. 3. NCCN Guidelines updated as of 27-Jan-2023.
Constant currencies (cc), core results are non-IFRS measures; explanation can be found on page 49 of Condensed Financial Report.

Pluvicto® FY sales close to blockbuster. Supply now unconstrained. Maintain multi-bn peak sales guidance for current indication (post-taxane)

PLUVICTO®

Sales evolution

USD m, % cc



- Q4 sales grew YoY (+53% cc) and QoQ (+7% USD) driven by demand
- **Treatment sites:** 300+ US sites, vast majority active and regularly ordering
- **Unconstrained supply:** 99.9% of doses injected on planned day in Q4 in US: approval of Indianapolis site to increase capacity to 250k RLT doses in 2024
- **Global network expansion:** RLT facility investment in China and Japan
- **Confident in 2024:** Expect return to stronger QoQ growth following earlier supply disruption

Additional indications

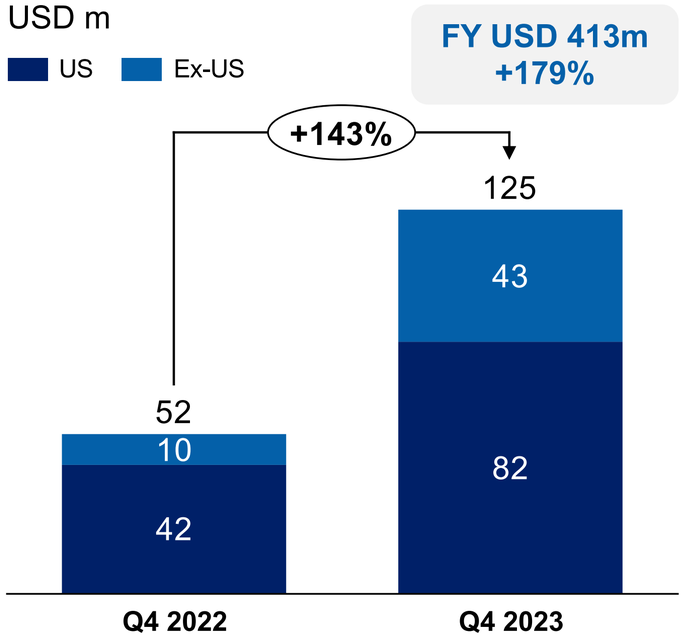
- PSMAfore (pre-taxane) expect US submission in H2 2024
- Additional studies in earlier stages of disease (PSMAddition in mHSPC, PSMA-DC in localized oligometastatic disease)

Constant currencies (cc), core results are non-IFRS measures; explanation can be found on page 49 of Condensed Financial Report.

Scemblix® continues strong launch trajectory, driven by increasing recognition of its differentiated profile and high unmet need in CML

SCEMBLIX® (asciminib) 20 mg, 40 mg tablets

Sales evolution



- FY and Q4 sales more than doubled driven by highly differentiated profile
- Leading 3L+ market share in US (NBRx 43%, TRx 22%) and ex-US (TRx 28%)[1]
- **High unmet need** in 3L patients: >50% of hematologists aim to improve quality of life and management of side effects[2]
- ASCEMBL Ph3 data 3L with nearly **4 years of follow-up** reinforces **differentiated profile** vs. alternative TKIs; with sustained efficacy and safety benefit[3]
- Global rollout in 3L ongoing with approval in 60+ countries; access pathways in 25+, with consistently positive feedback from payers on **added clinical benefit**

Ph+ CML-CP – Philadelphia chromosome-positive chronic myeloid leukemia in chronic phase. 1. US: October rolling 3-months US IQVIA CML market sizing report (Jan 2024). Ex-US: IPSOS & IQVIA Oncology Dynamics, EU5 and JP, MAT October 2023). 2. Survey on unmet needs in CML at EHA: reveals the need for treatment decisions that balance quality of life, efficacy, and tolerability goals; Chronic Myeloid Leukemia Survey on Unmet Needs (CML SUN). 3. Mauro M.J. et al., ASH 2023, Poster 4536 (median follow-up of 3.7 years). Constant currencies (cc), core results are non-IFRS measures; explanation can be found on page 49 of Condensed Financial Report.

Scemblix®: ASC4FIRST trial met both primary endpoints with clinically meaningful and statistically significant results

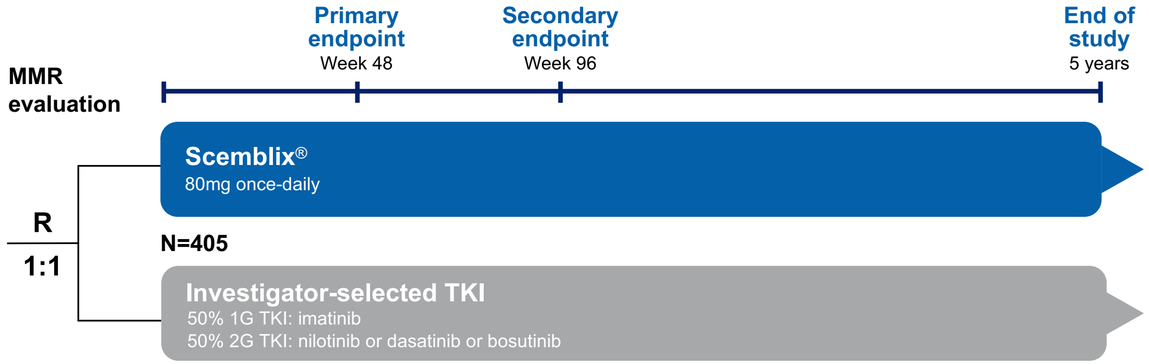
Both primary endpoints met

- Scemblix shows **superior MMR rates** at week 48 vs. SoC TKIs in newly diagnosed Ph+ CML-CP patients
- **Favorable safety and tolerability profile** with fewer AEs and treatment discontinuations vs. SoC TKIs and no new safety signals were observed

Achievement of MMR

- BCR-ABL1 ≤ 0.1% is associated with higher rates of EFS, PFS and OS[1]

Study design



Population: Newly diagnosed adult patients with CML-CP with no prior TKI
Primary endpoints as assessed by MMR at 48 weeks: Superiority of Scemblix® vs. 1) investigator choice TKI and/or 2) imatinib subgroup alone

Data will be presented at an upcoming medical congress | **CML-CP 1L FDA submission anticipated in H1 2024**

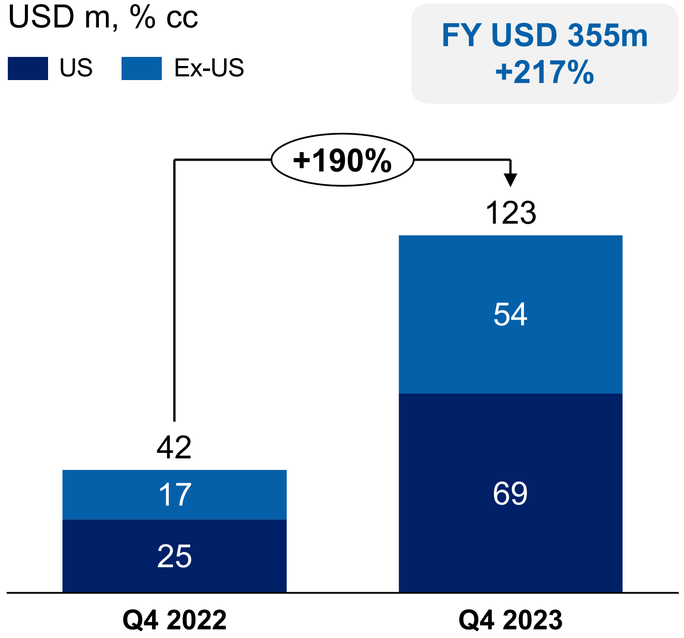
CML-CP – chronic myeloid leukemia in chronic phase. MMR – major molecular response (BCR-ABL 1IS ≤0.1%). SoC – Standard of care. TKI – tyrosine kinase inhibitor. 1. Saussele S et al. Leukemia; 32(5):1222-8; 2018; Hochhaus et al., Leukemia; 34:966-84, 2020.

Leqvio® adoption continues to expand across regions

LEQVIO® (inclisiran)

Sales evolution

USD m, % cc



US: Steady growth, ahead of advanced lipid lowering market[1]

Adoption

- 3,500 facilities have ordered Leqvio® (+13% vs. Q3)
- ~55% of business is from in-office buy & bill

Continued execution on growth enablers

- Depth is increasing in key accounts
- Buy & bill is fastest growing acquisition channel
- Improved HCP targeting driving increase in breadth and depth

Ex-US: Rollout continues

- 29 countries with public reimbursement
- 39 countries have private (commercial) coverage
- Solid early uptake in China self-pay market

Outcomes trials

- On track for readout 2026+

HCP – healthcare professional. 1. Includes PCSK9 mAbs and bempedoic acid. Constant currencies (cc), core results are non-IFRS measures; explanation can be found on page 49 of Condensed Financial Report.

Fabhalta®[1]: FDA approved with compelling label in PNH
Positive early launch signals, expect modest ramp

FABHALTA (iptacopan) 200 mg capsules

Strong product profile reflected in label

Compelling data

- Hb improvement vs. C5i in patients with residual anemia
- Transfusion avoidance
- Comprehensive IVH and EVH control
- Demonstrated safety profile

Broad population

- Adults with PNH
- Naive and switch

Oral administration

- First oral monotherapy
- REMS requirements similar to other complement inhibitors

Positive early launch signals, expect modest ramp

Launch execution

- Promotion started early Dec incl. at ASH
- REMS and patient support programs live
- First patients initiated shortly after approval

Sentiment

- Positive HCP sentiment on efficacy, safety and oral profile
- Strong interest from patients/patient groups

Access

- Distribution with two national specialty pharmacies
- Bridge support in place pending payer coverage

PNH – paroxysmal nocturnal hemoglobinuria. C5i – complement 5 inhibitor. IVH – intravascular hemolysis. EVH – extravascular hemolysis. REMS – risk evaluation and mitigation strategies. ASH – American Society of Hematology. HCP – healthcare professional. 1. Iptacopan is the generic name for unapproved indications.

Achieved our innovation milestones in 2023
10 positive Ph3 readouts for medicines with significant sales potential[1]

		Status update – as of end Q4
Regulatory decisions	**Cosentyx® HS**	EU approval (Q2), US approval (Q4)
	Cosentyx® 2ml AI	US approval (Q2)
	Cosentyx® IV	US approval (Q4)
	Fabhalta® (iptacopan) PNH	US approval (Q4)
	Leqvio® Hypercholesterolemia	Japan and China approval in Q3
Submissions	**Iptacopan PNH (US/EU/JP)**	Filed in US, EU (Q2), JP (Q3)
	Kisqali® HR+/HER2- BC (adj)	Filed in EU in Q3, in US in Q4
	Pluvicto® mCRPC, pre-taxane (US)	US submission expected in 2024
Readouts	**Atrasentan IgAN**	Met pre-specified interim analysis primary endpoint in Q4
	Kisqali® HR+/HER2- BC (adj)	Primary endpoint met at interim analysis; 500 iDFS event milestone reached; data consistent with interim analysis (March 2023[2])
	Iptacopan IgAN	Met pre-specified interim analysis primary endpoint in Q3
	Iptacopan C3G	Met primary endpoint in Q4
	Lutathera® GEP-NETs	Met primary endpoint in Q3
	Remibrutinib CSU	Met primary endpoint in Q4
Ph3 starts	**Iptacopan in IC-MPGN**	APPARENT trial (Q2)
	Leqvio® CVRR primary prevention	VICTORION-1P (Q1)
	Ianalumab in immune thrombocytopenia	1L (VAYHIT1) and 2L (VAYHIT2) (H1)
	Ianalumab in systemic lupus erythematosus	SIRIUS-SLE 1 and 2 (Q1)

10 positive Ph3 readouts

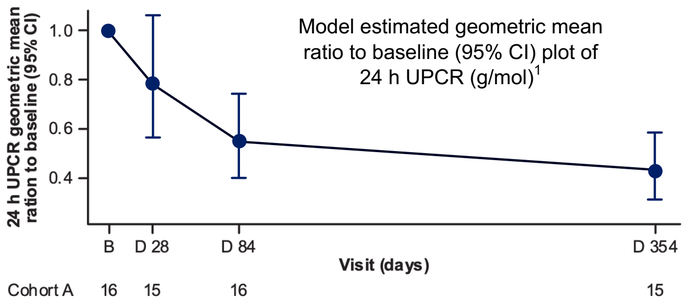
1. Kisqali® eBC NATALEE
2. Iptacopan PNH APPOINT
3. Remibrutinib CSU REMIX-1
4. Remibrutinib CSU REMIX-2
5. Lutathera® GEP-NETs NETTER-2
6. Iptacopan IgAN APPLAUSE
7. Pluvicto® mCRPC pre-taxane PSMAfore
8. Atrasentan IgAN ALIGN
9. Iptacopan C3G APPEAR
10. Scemblix® 1L CML ASC4FIRST (Jan 2024)

HS – hidradenitis suppurativa. PNH – paroxysmal nocturnal hemoglobinuria. mCRPC – metastatic castration-resistant prostate cancer. FIR – first interpretable results. IgAN – immunoglobulin A nephropathy. C3G – complement 3 Glomerulopathy. IC-MPGN – immune complex membranoproliferative glomerulonephritis. 1. Readout or presentations 2. Interim analysis in March 2023, data presented at ASCO 2023.

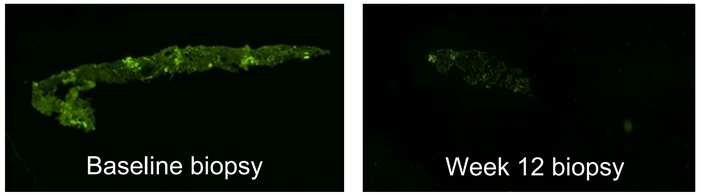
Iptacopan: Ph3 APPEAR study demonstrates clinically meaningful and statistically significant proteinuria reduction in patients with C3G

Ph2 showed sustained benefits up to 1 year

Primary endpoint
native kidney



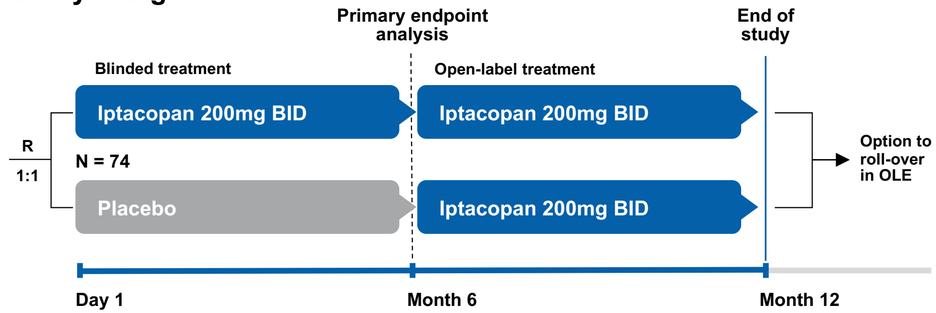
Primary endpoint
transplanted kidney[2]



Ph3 met primary endpoint[3]

- **Clinically meaningful and statistically significant proteinuria reduction** at six-month analysis
- **Safety profile consistent** with previously reported data
- **Simple administration**: Oral

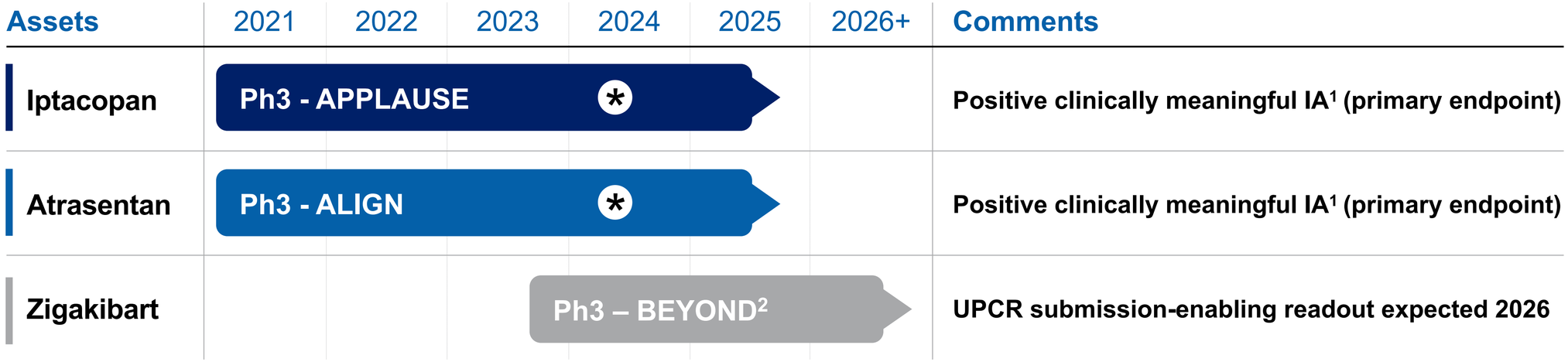
Study design



Review results with health authorities for potential submissions in 2024

RoE – Roll-over extension. UPCR – urine protein creatinine ratio. CI – confidence interval. 1. ASN 2022 poster. 2. Kidney biopsy baseline → Week 12 C3 Deposit Score. Wong EK, et al. ePoster ASN 2021. 3. December 2023.

Iptacopan and atrasentan: Positive Ph3 readouts demonstrating clinically meaningful proteinuria reduction in IgAN



* US submission for accelerated approval

Iptacopan and atrasentan FDA submissions expected in H1 2024, based on proteinuria reduction
Studies continue to confirmatory endpoint (eGFR) in 2025

UPCR – urine protein creatinine ratio. 1. October 2023, 9 months readout may support US submission for accelerated approval. 2. Global, randomized, multicenter, double-blind, placebo-controlled Ph3 comparing safety and efficacy of zigakibart (600mg Q2W) vs. placebo in patients (N~272) with IgAN at risk of progressive loss of kidney function.

Expect to continue our innovation momentum in 2024...

2024 selected key events (expected)

		H1 2024	H2 2024
Regulatory decisions	**Fabhalta® PNH**		EU, JP
	Kisqali® HR+/HER2- adj.BC		US, EU
Submissions	**Atrasentan IgAN**	US	
	Iptacopan C3G	US	EU
	Iptacopan IgAN	US	
	Pluvicto® mCRPC, pre-taxane		US
	Remibrutinib CSU		US, EU, JP
	Scemblix® CML 1L	US	JP
	Lutathera® GEP-NET 1L G2/G3	EU	
Readouts	**Scemblix® CML 1L**	Ph3 (ASC4FIRST)	
	Zolgensma® SMA IT		Ph3 (STEER)
	XXB750 Hypertension		Ph2
Ph3 starts	**Pluvicto® Oligometastatic prostate cancer**	Ph3	
	Opnurasib 1L NSCLC (combo)[1]	Ph2/3	

PNH – paroxysmal nocturnal hemoglobinuria. mCRPC – metastatic castration-resistant prostate cancer. FIR – first interpretable results. IgAN – immunoglobulin A nephropathy. C3G – complement 3 Glomerulopathy. cCSU – Chronic spontaneous urticaria. CML – Chronic myeloid leukemia. SMA – Spinal muscular atrophy. NSCLC – Non-small cell lung cancer. 1. This is a seamless Ph2/3 trial.

... and to deliver >20 key submissions in core therapeutic areas by 2028

Select key assets submission schedule

Core therapeutic areas

- CRM
- Immunology
- Neuroscience
- Oncology

2024	2025	2026-2028		
atrasentan IgAN[1]	**pelacarsen** CVRR-Lp(a)	**Cosentyx®** Tendinopathy	**ianalumab** Sjögren's syndrome	**Pluvicto®** Oligometastatic PC
iptacopan IgAN[1]	**Pluvicto®** mHSPC[2]	**Cosentyx®** Polymyalgia rheumatica	**ianalumab** Lupus Nephritis	**remibrutinib** CINDU
iptacopan C3G	**Zolgensma®** SMA IT	**ianalumab** 2L ITP	**ianalumab** SLE	**remibrutinib** Multiple sclerosis
remibrutinib CSU	**Cosentyx®** GCA	**ianalumab** 1L ITP	**iptacopan** IC-MPGN	**zigakibart** igAN
Pluvicto® mCRPC, pre-taxane	**Leqvio®** Hyperlipidemia ped	**ianalumab** wAIHA	**Leqvio®** CVRR-LDLC	
Scemblix® CML 1L				

1. US submission for accelerated approval. 2. Event-driven trial endpoint.

We have signed >15 strategic deals during the last year, totaling >6bn USD, to enhance our pipeline across core therapeutic areas and technology platforms

Select recent examples

CHINOOK THERAPEUTICS / SanReno Therapeutics	Calypso biotech	CLOVIS ONCOLOGY — RLT
IONIS — xRNA	voyager therapeutics — Gene therapy	Bicycle — RLT
Argo Biopharma — xRNA	AVROBIO — Gene therapy	LEGEND BIOTECH — Cell therapy
Chong Kun Dang Pharm. Seoul, Korea	DTX PHARMA — xRNA	Isomorphic Labs

- CRM
- Immunology
- Neuroscience
- Oncology

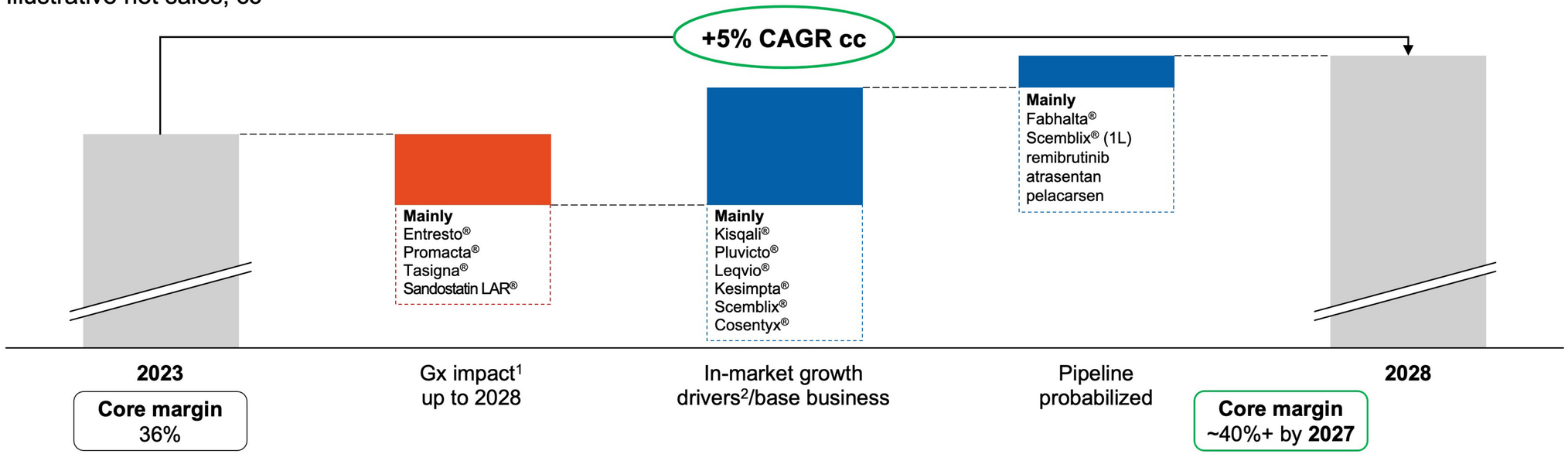
Note: Number of strategic M&A and BD&L transactions announced, value reflecting upfront payments.

Updating mid-term sales guidance: Expect to grow +5% CAGR 2023-2028 and maintaining core margin of ~40%+ by 2027

Updated mid-term guidance

2023-2028 +5% (cc) expected sales CAGR (previous guidance 2022-27)

Illustrative net sales, cc



Note: All figures reflecting Continuing Operations. 1. For forecasting purposes, we assume Entresto US LoE in 2025. 2. Including indication expansion. Leqvio – licensed from Alnylam Pharmaceuticals, Inc. Pelacarsen – licensed from Ionis Pharmaceuticals, Inc.

We continue to focus on material environmental, social and governance factors alongside our pursuit of sustainable shareholder value creation

Value creation

Innovation and access to medicines

- Future-proof pipeline addressing unmet need
- Broad access to medicines

Human Capital

- Diversity, Equity & Inclusion
- Culture

Risk mitigation

Environmental Sustainability

- Climate
- Water
- Waste

Ethical Standards

- Ethics
- Compliance
- Human rights

Enablers

- Governance, transparency, non-financial reporting

Right thing to do

Creating sustainable social and economic impact

Consistent industry-leading performance across priority ESG ratings

- #1 in Sustainalytics[1]
- Leaders group in MSCI
- Industry leader group in ISS ESG
- Leadership group in ATMI
- AA in CDP climate and water

ATMI – Access to Medicines Index. 1. Pharmaceuticals subindustry group.

Financial review and 2024 guidance

Harry Kirsch
Chief Financial Officer

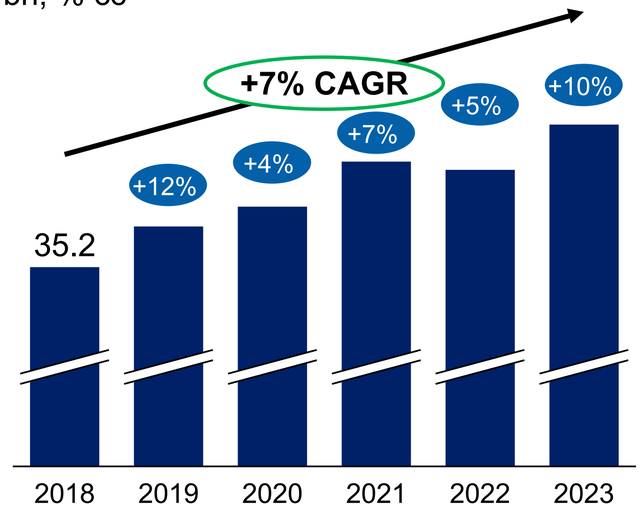
NOVARTIS | Reimagining Medicine

Novartis continues to deliver strong operational performance over a number of years...

Continuing operations[1] performance, ***numbers restated post-Sandoz spin-off***

Net sales

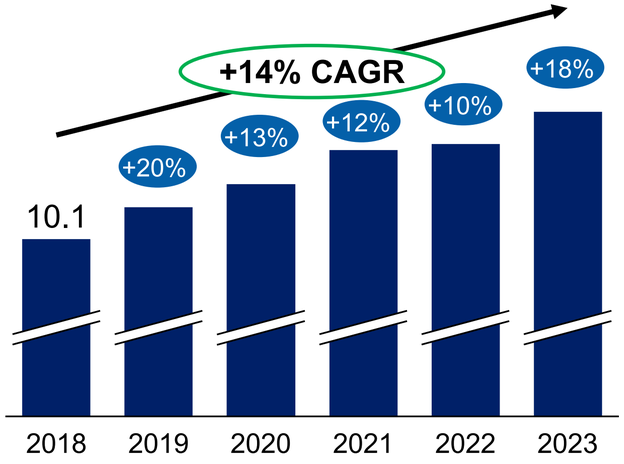
USDbn, % cc



USDbn	35.2	38.1	39.5	42.8	42.2	45.4

Core OpInc[2]

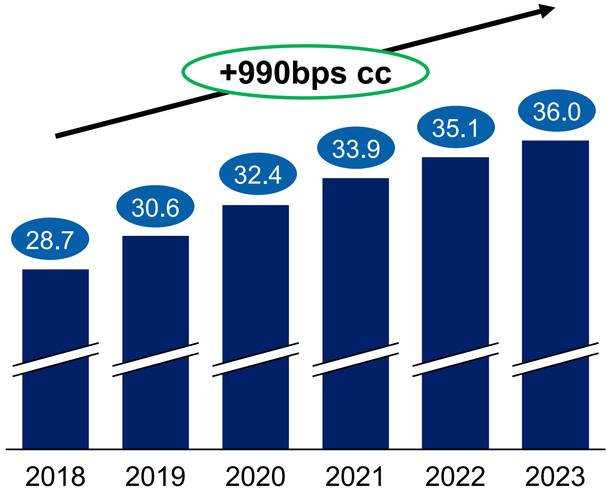
USDbn, % cc



	10.1	11.7	12.8	14.5	14.8	16.4

Core margin[2]

%



1. As defined on page 37 of the Condensed Financial Report, Continuing operations include the retained business activities of Novartis, comprising the Innovative Medicines Division and the continuing Corporate activities. 2. Core results and constant currencies are non-IFRS measures. Details regarding non-IFRS measures can be found starting on page 49 of the Condensed Financial Report. Unless otherwise noted, all growth rates refer to same period in PY.

... and in 2023, met/exceeded our upgraded FY guidance

Continuing operations[1]

In cc

	Sales expected to grow high single-digit	Core operating income expected to grow mid to high-teens
Actual results FY 2023 vs. PY	+10%	+18%
Prior guidance before upgrades (Q4 2022)	**Guidance as per Q4 2022 earnings** Sales expected to grow low to mid single-digit	**Guidance as per Q4 2022 earnings** Core operating income expected to grow mid to high single-digit

FY guidance (Q3 earnings Oct 2023)

1. As defined on page 37 of the Condensed Financial Report, Continuing operations include the retained business activities of Novartis, comprising the Innovative Medicines Division and the continuing Corporate activities. Constant currencies (cc), core results are non-IFRS measures; explanation can be found on page 49 of Condensed Financial Report.

Robust top and bottom-line growth during the quarter and FY

Continuing operations[1] USD million	Q4 2023	Change vs. PY % USD	Change vs. PY % cc	FY 2023	Change vs. PY % USD	Change vs. PY % cc
Net sales	11,423	8	10	45,440	8	10
Core operating income	3,821	5	13	16,372	11	18
Core margin	33.5%		1% pts	36.0%		2.4% pts
Operating income	2,582	47	68	9,769	23	39
Net Income	2,638	101	130	8,572	42	62
Core EPS (USD)	1.53	10	16	6.47	18	25
EPS (USD)	1.29	108	140	4.13	49	70
Free cash flow	2,141	-38		13,160	9	

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Continuing to create significant shareholder value

Investing in the business

Investments in organic business
R&D >USD 47bn, CAPEX >USD 6bn 2018-2023[1]

Value-creating bolt-ons
>USD 33bn 2018-2023

Substantial cash generation

Returning capital to shareholders

Consistently growing annual dividend[2]
>USD 42bn of dividends 2018-2023
No rebasing post Alcon and Sandoz spin-off

Share buybacks
>USD 32bn 2018-2023
New USD 15bn SBB commenced in Jul 2023

Whilst also creating shareholder value via numerous strategic actions

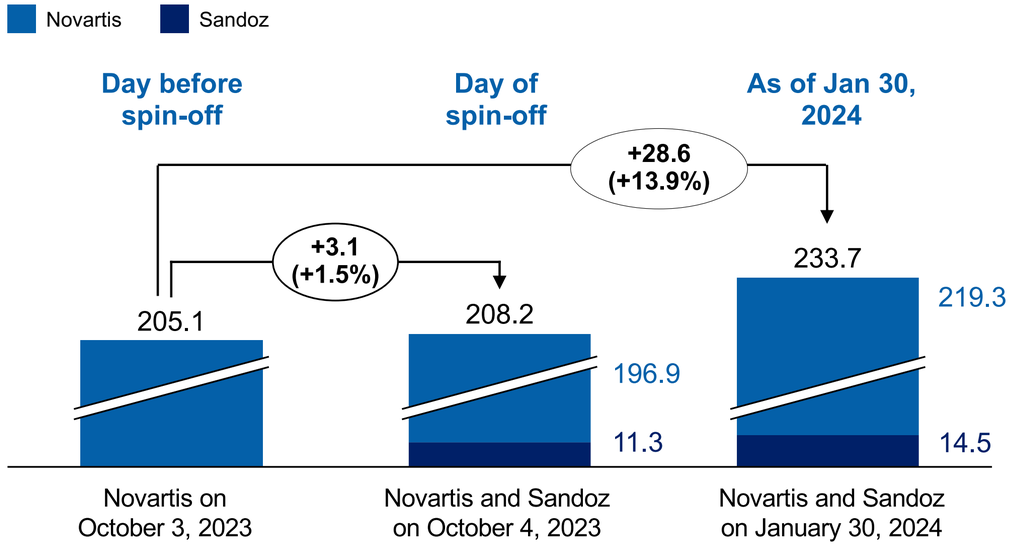
Jun 2018	Apr 2019	Nov 2021	Oct 2023
Divested consumer health JV	**Spun Alcon**	**Exited Roche stake**	**Spun Sandoz**

1. Core R&D and CAPEX actuals. 2. In CHF.

For Novartis and Sandoz shareholders since October 3, 2023, USD 28.6bn (+13.9%) of value has been created

Market capitalization growth since the Sandoz spin-off

Total market capitalization[1,2] (in USD bn)

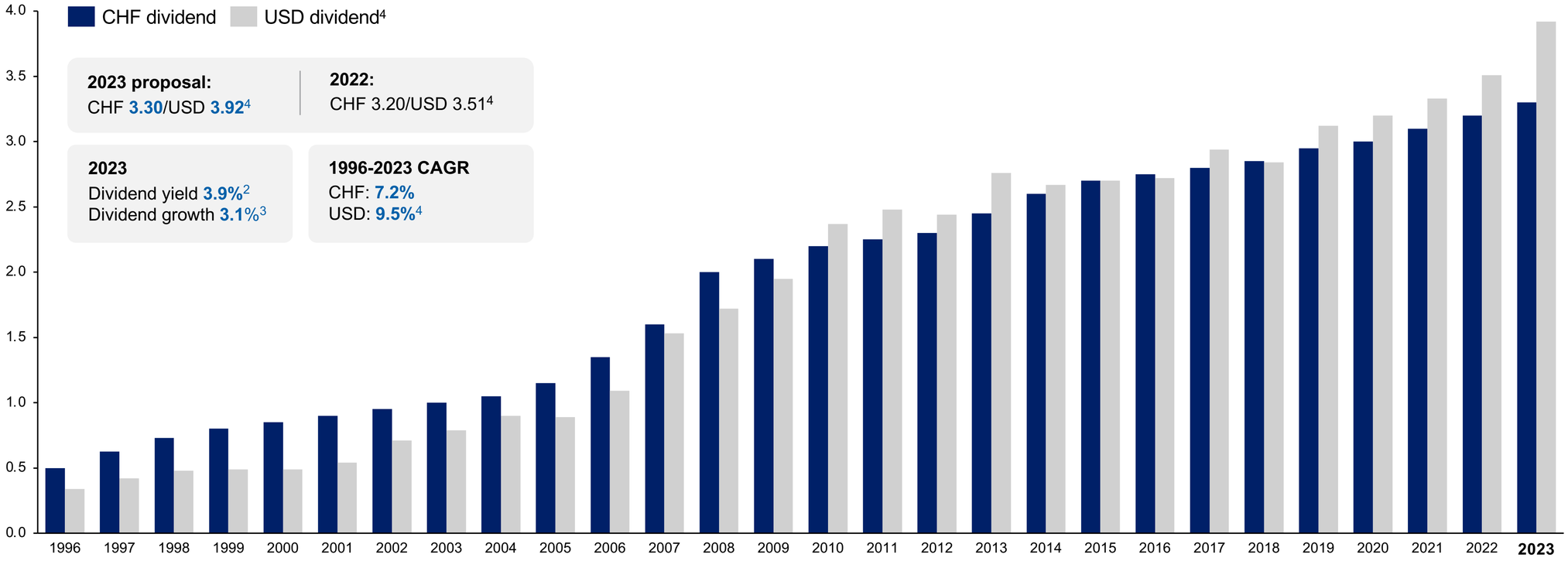


Sandoz spin-off highlights

- Completed the separation of Sandoz to create an independent company by way of 100% spin-off (Oct 4, 2023)
- Shares of Sandoz are listed on the SIX Swiss Exchange and traded OTC in the US
- Novartis continues with its consistently growing annual dividend with no re-basing post the Sandoz spin-off

1. Market capitalization of Novartis on October 3, 2023 is based on closing share price and outstanding shares of 2,055,060,483 (as per October 3); market capitalization for Novartis and Sandoz on October 4, 2023 are based on opening share prices on October 4, outstanding shares of 2,055,060,483 for Novartis and 431,000,000 shares for Sandoz; market capitalization for Novartis and Sandoz on January 30, 2024 are based on closing share prices on January 30, outstanding shares as of December 31, 2023 of 2,044,033,986 for Novartis and 431,000,000 shares for Sandoz. 2. USD values based on USD/CHF exchange rates as per the respective days; source: Bloomberg.

Novartis proposes 3.30 CHF/share[1] dividend at the AGM; 27th consecutive dividend increase (no rebasing post Sandoz spin-off)



1. Proposal to shareholders at the 2024 Annual General Meeting, taking place on March 5, 2024. 2. Based on the NOVN closing share price of CHF 84.87, as of December 29, 2023. 3. In CHF.
4. Historical dividends per share converted at historical exchange rates at the dividend payment dates as per Bloomberg; for 2023, translated into US dollars at the FX rate of CHF/USD of 1.189, as of December 31, 2023.

Novartis (continuing operations[1]) 2024 full year guidance

Expected, barring unforeseen events; growth vs. PY in cc

Net sales expected to grow

mid-single-digit

Core operating income expected to grow

high single-digit

Key assumptions

- No US Entresto® Gx launch in 2024

FY 2024 guidance on other financial KPIs

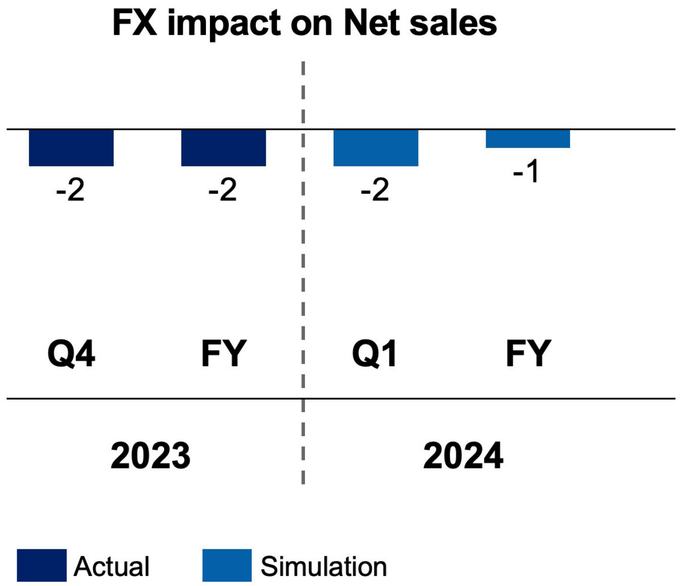
- **Core net financial result:** Expenses expected to be around USD 0.6bn to 0.7bn
- **Core tax rate:** Expected to be around 16-16.5%

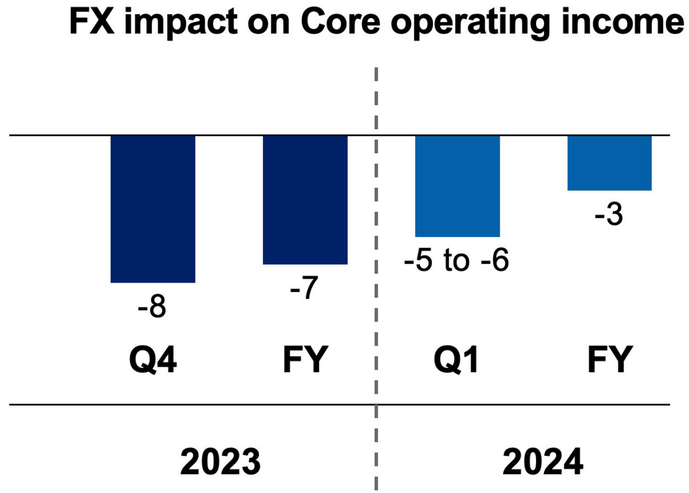
1. As defined on page 37 of the Condensed Financial Report, Continuing operations include the retained business activities of Novartis, comprising the Innovative Medicines Division and the continuing Corporate activities. Core results and constant currencies are non-IFRS measures. Further details regarding non-IFRS measures can be found starting on page 49 of the Condensed Financial Report.

Expected currency impact for Q1 and full year 2024

Currency impact vs. PY

%pts, assuming late-January exchange rates prevail in 2024





Q4 Core OpInc FX impact includes app. -2%pts from the effect of mid Dec Argentina ARS devaluation[1]

1. Core results are non-IFRS measures as defined on page 49 of Condensed Financial Report. 2. IFRS requires for our Argentina subsidiary, as it operates in a hyperinflation economy, to translate for consolidation purposes their full year income statement to our USD presentation currency using the ARS closing rate, and not using the average exchange rate for the period. This results in the 9-months and the Q4 devaluation impact being recognized in Q4.

Conclusions

Vas Narasimhan, M.D.
Chief Executive Officer

NOVARTIS | Reimagining Medicine

Very strong 2023: Double-digit growth for sales and Core OpInc for the quarter and full year

Met/exceeded all strategic, operational and innovation targets: Including successful Sandoz spin-off; 10 positive Ph3 readouts with significant sales potential

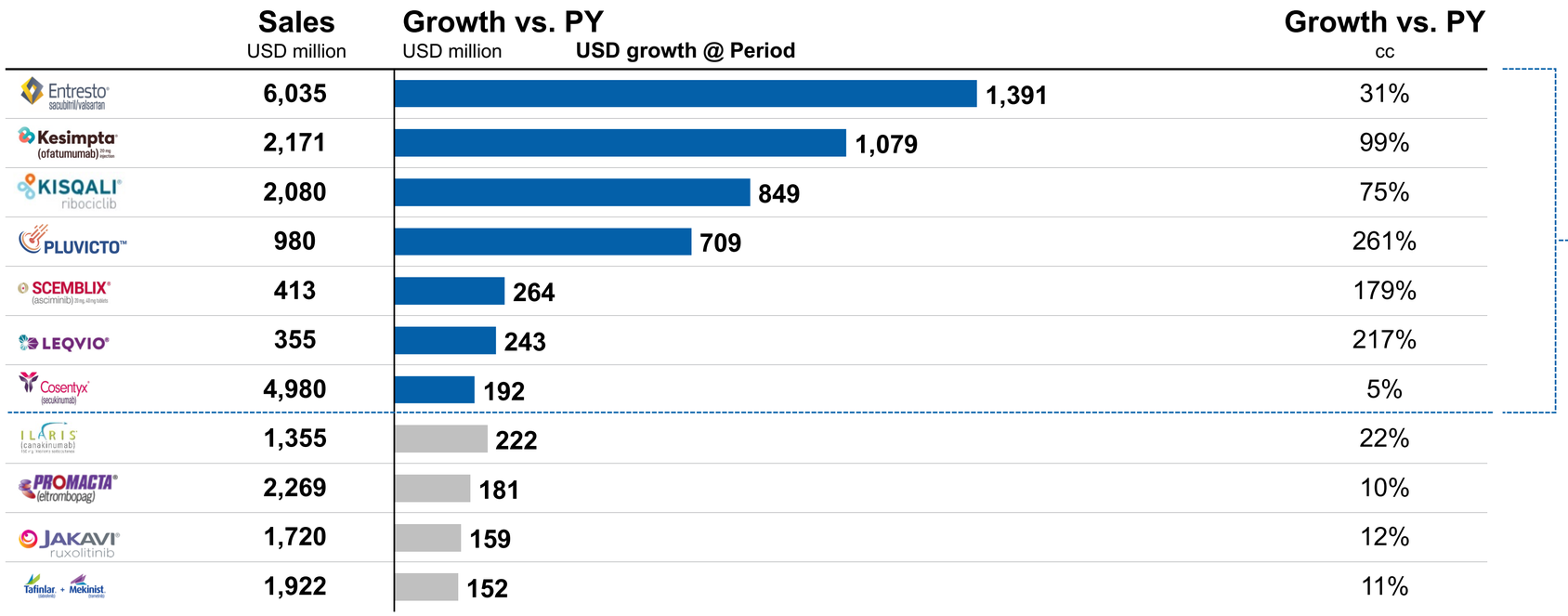
Confident for 2024 and mid-term guidance of 5% cc sales CAGR 2023-28, ~40%+ margin by 2027

Appendix

NOVARTIS | Reimagining Medicine

Strong FY growth driven by performance from Entresto®, Kesimpta®, Kisqali® and Pluvicto®

FY sales



Strong growth (+40% cc); expected to continue

Constant currencies (cc) is a non-IFRS measure; explanation of non-IFRS measures can be found on page 49 of Condensed Financial Report. Unless otherwise noted, all growth rates refer to same period in PY.

Our pipeline projects at a glance

	Phase 1/2	Phase 3	Registration	Total
Oncology	25	12	3	40
Solid tumors	18	6	3	27
Hematology	7	6	0	13
Immunology	17	10	1	28
Neuroscience	5	5	0	10
Cardiovascular, Renal and Metabolic	6	10	0	16
Others (thereof IB&GH)	11 (7)	4 (3)	0	15
	64	41	4	109

IB&GH: In-market Brands and Global Health.

Novartis pipeline in Phase 1

17 lead indications

Lead indication

Oncology

Code	Name	Mechanism	Indication(s)
Solid tumors			
AAA603	^{177}Lu-NeoB	Radioligand therapy target GRPR	Multiple solid tumors
			Breast cancer
			Glioblastoma multiforme
AAA604	AAA604	Radioligand therapy target integrin beta-3/beta-5	Pancreatic cancer
AAA614	AAA614	Radioligand therapy target FAP	Solid tumors
AAA802	^{225}Ac-PSMA-R2	Radioligand therapy target PSMA	Prostate cancer
AAA817	^{225}Ac-PSMA-617	Radioligand therapy target PSMA	Metastatic castration-resistant prostate cancer
HRO761	HRO761	Werner inhibitor	Solid tumors
IAG933	IAG933	-	Mesothelioma
KFA115	KFA115	Novel immunomodulatory Agent	Solid tumors
MGY825	MGY825	-	NSCLC
NZV930	NZV930	CD73 antagonist	Solid tumors
QEQ278	QEQ278	NKG2D/-L pathway modulator	Solid tumors
Hematology			
DFV890	DFV890	NLRP3 inhibitor	Low risk myelodysplastic syndrome
PIT565	PIT565	-	B-cell malignancies
YTB323	rapcabtagene autoleucel	CD19 CAR-T	Adult ALL

Cardiovascular, Renal and Metabolic

Code	Name	Mechanism	Indication(s)
DFV890	DFV890	NLRP3 inhibitor	Cardiovascular risk reduction

Neuroscience

Code	Name	Mechanism	Indication(s)
DFT383	DFT383	CTNS gene delivery	Cystinosis pre/post kidney transplant
NIO752	NIO752	Tau antisense oligonucleotide	Alzheimer's disease
			Progressive supranuclear palsy

Immunology

Code	Name	Mechanism	Indication(s)
MHV370	MHV370	TLR7, TLR8 Antagonist	Systemic lupus erythematosus

Others

Code	Name	Mechanism	Indication(s)
IB&GH			
EDI048	EDI048	CpPI(4)K inhibitor	Cryptosporidiosis
EYU688	EYU688	NS4B inhibitor	Dengue
INE963	INE963	-	Malaria, uncomplicated

Novartis pipeline in Phase 2

20 lead indications

Lead indication

Oncology

Code	Name	Mechanism	Indication(s)
Solid tumors			
AAA601	Lutathera®	Radioligand therapy target SSTR	GEPNET, pediatrics
			1L ES-SCLC
			Glioblastoma
JDQ443	opnurasib	KRAS inhibitor	NSCLC and CRC (mono and/or combo)
TNO155	TNO155	SHP2 inhibitor	Solid tumors
Hematology			
ABL001	Scemblix®	BCR-ABL inhibitor	Chronic myeloid leukemia, 2L, pediatrics
PHE885	durcabtagene autoleucel	BCMA cell therapy	4L multiple myeloma
PKC412	Rydapt®	Multi-targeted kinase inhibitor	Acute myeloid leukemia, pediatrics
YTB323	rapcabtagene autoleucel	CD19 CAR-T	1L high-risk large B-cell lymphoma

Neuroscience

Code	Name	Mechanism	Indication(s)
BLZ945	sotuletinib	CSF-1R inhibitor	Amyotrophic lateral sclerosis
DLX313[1]	minzasolmin	Alpha-synuclein misfolding inhibitor	Parkinson's disease

Cardiovascular, Renal and Metabolic

Code	Name	Mechanism	Indication(s)
CFZ533	iscalimab	CD40 inhibitor	Lupus nephritis
LNP023	iptacopan	CFB inhibitor	Lupus nephritis
TIN816	TIN816	ATP modulator	Acute kidney injury
XXB750	XXB750	NPR1 agonist	Hypertension
			Heart failure

Immunology

Code	Name	Mechanism	Indication(s)
CFZ533	iscalimab	CD40 inhibitor	Sjögren's
DFV890	DFV890	NLRP3 inhibitor	Osteoarthritis
			Familial cold auto-inflammatory syndrome
LNA043	LNA043	ANGPTL3 agonist	Osteoarthritis
			Osteoarthritis (combos)
LOU064	remibrutinib	BTK inhibitor	Food allergy
			Hidradenitis suppurativa
LRX712	LRX712	-	Osteoarthritis
MAS825	MAS825	-	NLRC4-GOF indications
MHV370	MHV370	TLR7, TLR8 Antagonist	Sjögren's
			Mixed connective tissue disease
NGI226	NGI226	-	Tendinopathy
QUC398	QUC398	ADAMTS5 inhibitor	Osteoarthritis
RHH646	RHH646	-	Osteoarthritis
VAY736	ianalumab	BAFF-R inhibitor, ADCC-mediated B-cell depletor	Autoimmune hepatitis
YTB323	rapcabtagene autoleucel	CD19 CAR-T	srSLE/LN

Others

Code	Name	Mechanism	Indication(s)
IB&GH			
KAE609	cipargamin	PfATP4 inhibitor	Malaria, severe
			Malaria, uncomplicated
LXE408	LXE408	Proteasome inhibitor	Visceral leishmaniasis
SEG101	Adakveo®	P-selectin inhibitor	Sickle cell disease, pediatrics
Others			
CMK389	CMK389	IL-18 inhibitor	Pulmonary sarcoidosis
LNP023	iptacopan	CFB inhibitor	iAMD
LTP001	LTP001	SMURF1 inhibitor	Pulmonary arterial hypertension
			Idiopathic pulmonary fibrosis

1. DLX313 is the Novartis compound code for UCB0599.

Novartis pipeline in Phase 3

8 lead indications

Lead indication

Oncology

Code	Name	Mechanism	Indication(s)
Solid tumors			
AAA617	Pluvicto®	Radioligand therapy target PSMA	Metastatic castration-resistant prostate cancer (mCRPC), pre-taxane
			Metastatic hormone sensitive prostate cancer (mHSPC)
			Oligometastatic prostate cancer
AAA601[1]	Lutathera®	Radioligand therapy target SSTR	Gastroenteropancreatic neuroendocrine tumors, 1st line in G2/3 tumors (GEP-NET 1L G3)
BYL719	Piqray®, Vijoyce®	PI3K-alpha inhibitor	Lymphatic malformations
JDQ443	opnurasib	KRAS inhibitor	2/3L Non-small cell lung cancer
Hematology			
ABL001	Scemblix®	BCR-ABL inhibitor	Chronic myeloid leukemia, 1st line
ETB115	Promacta®	Thrombopoietin receptor (TPO-R) agonist	Radiation sickness syndrome
LNP023	iptacopan	CFB inhibitor	Atypical hemolytic uraemic syndrome
VAY736	ianalumab	BAFF-R inhibitor, ADCC-mediated B-cell depletor	1L Immune Thrombocytopenia
			2L Immune Thrombocytopenia
			warm Autoimmune Hemolytic Anemia

Cardiovascular, Renal and Metabolic

Code	Name	Mechanism	Indication(s)
EXV811	atrasentan	ET_A receptor antagonist	IgA nephropathy
FUB523	zigakibart	Anti-APRIL	IgA nephropathy
KJX839	Leqvio®	siRNA (regulation of LDL-C)	CVRR-LDLC
			Primary prevention
			Hyperlipidemia, pediatrics
LNP023	iptacopan	CFB inhibitor	IgA nephropathy
			C3 glomerulopathy
			C3 glomerulopathy, pediatrics
			IC-MPGN
TQJ230	pelacarsen	ASO targeting Lp(a)	Secondary prevention of cardiovascular events in patients with elevated levels of lipoprotein (a) (CVRR-Lp(a))

1. ^{177}Lu-dotatate in US.

Neuroscience

Code	Name	Mechanism	Indication(s)
AMG334	Aimovig®	CGRPR antagonist	Migraine, pediatrics
BAF312	Mayzent®	S1P1,5 receptor modulator	Multiple sclerosis, pediatrics
LOU064	remibrutinib	BTK inhibitor	Multiple sclerosis
OAV101	AVXS-101	SMN1 gene replacement therapy	SMA IT administration
OMB157	Kesimpta®	CD20 Antagonist	Multiple sclerosis, pediatrics

Immunology

Code	Name	Mechanism	Indication(s)
AIN457	Cosentyx®	IL17A inhibitor	Giant cell arteritis
			Polymyalgia rheumatica
			Rotator cuff tendinopathy
LOU064	remibrutinib	BTK inhibitor	Chronic spontaneous urticaria
			Chronic spontaneous urticaria, pediatrics
			CINDU
QGE031	ligelizumab	IgE inhibitor	Food allergy
VAY736	ianalumab	BAFF-R inhibitor, ADCC-mediated B-cell depletor	Sjögren's
			Lupus Nephritis
			Systemic lupus erythematosus

Others

Code	Name	Mechanism	Indication(s)
IB&GH			
COA566	Coartem®	PGH-1 (artemisinin combination therapy)	Malaria, uncomplicated (<5kg patients)
KLU156	Ganaplacide + lumefantrine	Non-artemisinin plasmodium falciparum inhibitor	Malaria, uncomplicated
QMF149	Atectura®	LABA + ICS	Asthma, pediatrics
Others			
RTH258	Beovu®	VEGF Inhibitor	Diabetic retinopathy

Novartis pipeline in registration

Oncology

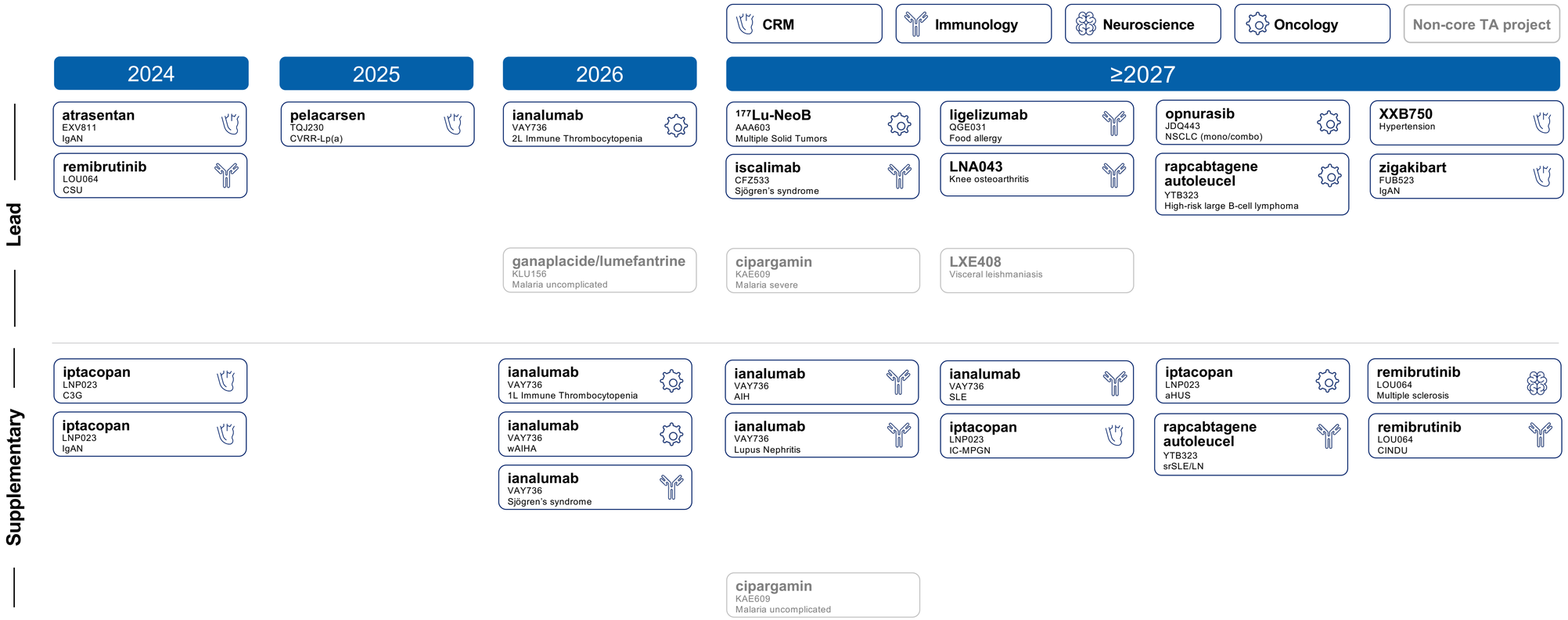
Code	Name	Mechanism	Indication(s)
Solid tumors			
LEE011	Kisqali®	CDK4/6 Inhibitor	HR+/HER2- BC (adj)
INC424	Jakavi®	JAK1/2 inhibitor	Acute GVHD, pediatrics
			Chronic GVHD, pediatrics

Immunology

Code	Name	Mechanism	Indication(s)
IGE025	Xolair®	IgE inhibitor	Food Allergy

Novartis submission schedule

New Molecular Entities: Lead and supplementary indications

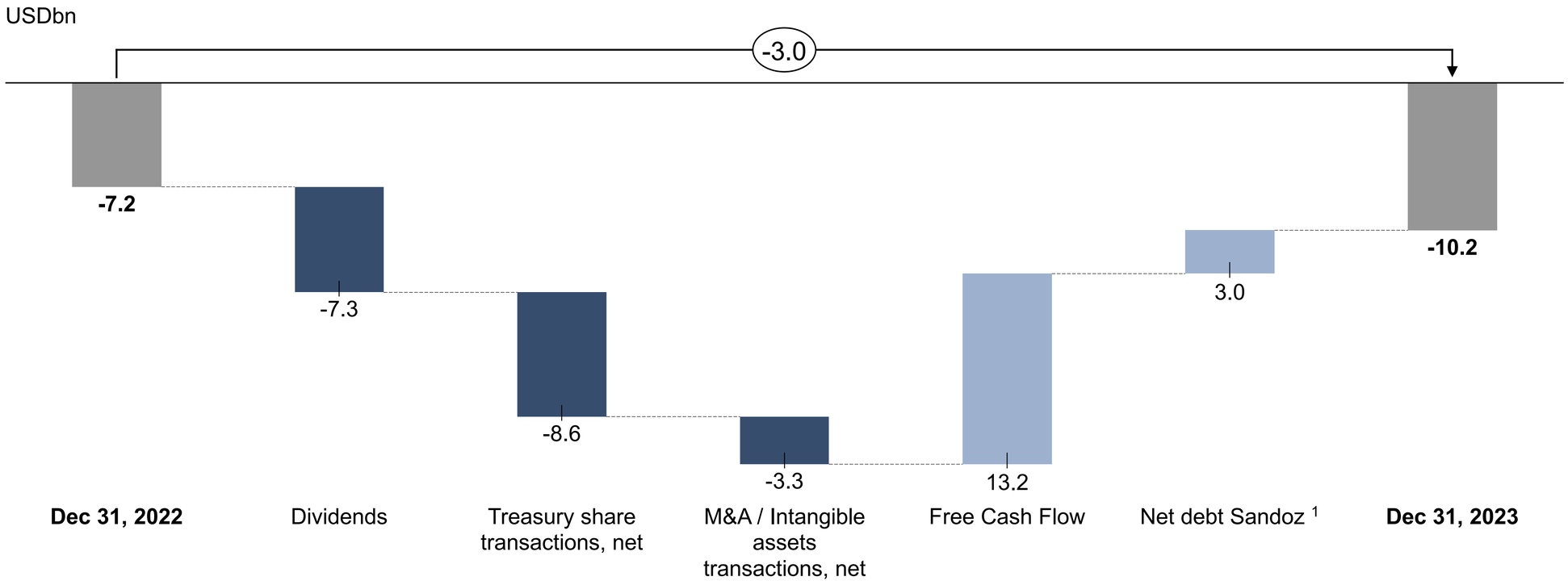


Novartis submission schedule

Supplementary indications for existing brands

1. 177Lu-dotatate in US. 2. Event-driven trial endpoint. 3. Kesimpta and Mayzent: Pediatric trial in multiple sclerosis run in conjunction (NEOS).

Net debt increased by USD 3.0bn mainly due to dividends and share buybacks, partly offset by FCF



1 Reflects USD 0.7bn cash and cash equivalents, and USD 3.7bn of financial debts of Sandoz at the time of the spin-off.

Clinical Trials Update

Includes selected ongoing or recently concluded global trials of Novartis development programs/products which are in confirmatory development or marketed (typically Phase 2b or later).

For further information on all Novartis clinical trials, please visit: www.novartisclinicaltrials.com

Cardiovascular, Renal and Metabolic

atrasentan - ETA receptor antagonist

NCT04573478 ALIGN (CHK01-01)

Indication	IgA nephropathy
Phase	Phase 3
Patients	380
Primary Outcome Measures	Change in proteinuria Time Frame: Up to Week 24 or approximately 6 months Annualized total estimated Glomerular Filtration Rate (eGFR) slope estimated over 24 months
Arms Intervention	Arm 1 Experimental: Atrasentan, once daily oral administration of 0.75 mg atrasentan for 132 weeks Arm 2 Placebo comparator: Placebo once daily oral administration of placebo for 132 weeks
Target Patients	Patients with IgA nephropathy (IgAN) at risk of progressive loss of renal function
Readout Milestone(s)	2023 (primary endpoint for US initial submission) 2026 (24 months)
Publication	TBD

iptacopan - CFB inhibitor

NCT04578834 APPLAUSE-IgAN (CLNP023A2301)

Indication	IgA nephropathy
Phase	Phase 3
Patients	450
Primary Outcome Measures	Ratio to baseline in urine protein to creatinine ratio (sampled from 24h urine collection) at 9 months Annualized total estimated Glomerular Filtration Rate (eGFR) slope estimated over 24 months
Arms Intervention	Arm 1 - LNP023 200mg BID Arm 2 - Placebo BID
Target Patients	Primary IgA Nephropathy patients
Readout Milestone(s)	2023 (primary endpoint for US initial submission, 9 months UPCR) 2025 (24 months)
Publication	TBD

iptacopan - CFB inhibitor

NCT05755386 APPARENT (CLNP023B12302)

Indication	Immune complex-mediated membranoproliferative glomerulonephritis
Phase	Phase 3
Patients	68
Primary Outcome Measures	Log-transformed ratio to baseline in UPCR (sampled from a 24-hour urine collection) at 6 months. [Time Frame: 6 months (double-blind)] *To demonstrate the superiority of iptacopan compared to placebo in reducing proteinuria at 6 months.* Log-transformed ratio to baseline in UPCR at the 12-month visit (both study treatment arms) [Time Frame: 12 months] *To evaluate the effect of iptacopan on proteinuria at 12 months.* Log-transformed ratio to 6-month visit in UPCR at the 12-month visit in the placebo arm. [Time Frame: 12 months] *To evaluate the effect of iptacopan on proteinuria at 12 months.*
Arms Intervention	Arm 1 experimental: Drug: iptacopan 200 mg b.i.d. (Adults 200mg b.i.d; Adolescents 2x 100mg b.i.d) Arm 2 placebo to iptacopan 200mg b.i.d. (both on top of SoC)
Target Patients	Patients (adults and adolescents aged 12-17 years) with idiopathic IC-MPGN
Readout Milestone(s)	2026
Publication	Vivarelli M, et al., Kidney International Reports (2023), Iptacopan in idiopathic immune complex-mediated membranoproliferative glomerulonephritis: Protocol of the APPARENT multicenter, randomized Phase III study

iptacopan - CFB inhibitor

NCT03955445 (CLNP023B12001B)

Indication	C3 glomerulopathy (C3G)
Phase	Phase 2
Patients	27 patients from ongoing Ph2 (sample size from Ph3 pending HA discussions Q1 2021), total patients for this study will increase
Primary Outcome Measures	Characterize the effect of LNP023 treatment on a composite renal response endpoint at 9 months (1. a stable or improved eGFR and, 2. a reduction in proteinuria and 3. an increase in C3 compared to the CLNP023X2202 baseline visit)
Arms Intervention	Open-label LNP023 200mg bid
Target Patients	Patients with C3 glomerulopathy
Readout Milestone(s)	2025
Publication	TBD

iptacopan - CFB inhibitor

NCT04817618 APPEAR-C3G (CLNP023B12301)

Indication	C3 glomerulopathy
Phase	Phase 3
Patients	83
Primary Outcome Measures	Log-transformed ratio to baseline in UPCR (sampled from a 24 hour urine collection)
Arms Intervention	Experimental: iptacopan 200mg b.i.d. Placebo Comparator: Placebo to iptacopan 200mg b.i.d.
Target Patients	Patients with native C3G
Readout Milestone(s)	2023
Publication	TBD

Leqvio® - siRNA (regulation of LDL-C)

NCT03705234 ORION-4 (CKJX839B12301)

Indication	Hypercholesterolemia inc. Heterozygous Familial Hypercholesterolaemia (HeFH)
Phase	Phase 3
Patients	16124
Primary Outcome Measures	A composite of major adverse cardiovascular events, defined as: Coronary heart disease (CHD) death; Myocardial infarction; Fatal or non-fatal ischaemic stroke; or Urgent coronary revascularization procedure
Arms Intervention	Arm 1: every 6 months treatment Inclisiran sodium 300mg (given by subcutaneous injection on the day of randomization, at 3 months and then every 6-months) for a planned median duration of about 5 years Arm 2: matching placebo (given bysubcutaneous injection on the day of randomization, at 3 months and then every 6 months) for a planned median duration of about 5 years.
Target Patients	Patient population with mean baseline LDL-C ≥ 100mg/dL
Readout Milestone(s)	2026
Publication	TBD

Leqvio® - siRNA (regulation of LDL-C)

NCT05030428 VICTORION-2P (CKJX839B12302)

Indication	Secondary prevention of cardiovascular events in patients with elevated levels of LDL-C
Phase	Phase 3
Patients	16970
Primary Outcome Measures	1. Time to First Occurrence of 3P-MACE (3-Point Major Adverse Cardiovascular Events)
Arms Intervention	Arm 1: Experimental Inclisiran sodium, Subcutaneous injection Arm 2: Placebo Comparator, Placebo Subcutaneous injection
Target Patients	Participants with established cardiovascular disease (CVD)
Readout Milestone(s)	2027
Publication	TBD

Leqvio® - siRNA (regulation of LDL-C)

NCT04652726 ORION-16 (CKJX839C12301)

Indication	Hyperlipidemia, pediatrics
Phase	Phase 3
Patients	141
Primary Outcome Measures	Percentage (%) change in low-density lipoprotein cholesterol (LDL-C) from baseline to Day 330
Arms Intervention	Group 1: Inclisiran sodium 300mg on Days 1, 90, 270, placebo on Day 360, inclisiran sodium 300mg on Days 450 and 630 Group 2: Placebo on Days 1, 90, 270, inclisiran sodium 300mg on Days 360, 450 and 630.
Target Patients	Adolescents (12 to less than 18 years) with heterozygous familial hypercholesterolemia (HeFH) and elevated low density lipoprotein cholesterol (LDL-C)
Readout Milestone(s)	2025
Publication	TBD

Leqvio® - siRNA (regulation of LDL-C)

NCT04659863 ORION-13 (CKJX839C12302)

Indication	Hyperlipidemia, pediatrics
Phase	Phase 3
Patients	13
Primary Outcome Measures	Percentage (%) change in low-density lipoprotein cholesterol (LDL-C) from baseline to day 330
Arms Intervention	Group 1: Inclisiran sodium 300mg on Days 1, 90, 270, placebo on Day 360, inclisiran sodium 300mg on Days 450 and 630. Group 2: Placebo on Days 1, 90, 270, inclisiran sodium 300mg on Days 360, 450 and 630.
Target Patients	Adolescents (12 to less than 18 years) with homozygous familial hypercholesterolemia (HoFH) and elevated low density lipoprotein cholesterol (LDL-C)
Readout Milestone(s)	2025
Publication	TBD

Leqvio® - siRNA (regulation of LDL-C)

NCT05739383 VICTORION-1P (CKJX839D12302)

Indication	CVRR (Primary prevention)
Phase	Phase 3
Patients	14000
Primary Outcome Measures	Time to the first occurrence of 4P-MACE 4-Point-Major Adverse Cardiovascular Events (4P-MACE): composite of cardiovascular death, non-fatal myocardial infarction, non-fatal ischemic stroke, and urgent coronary revascularization
Arms Intervention	Arm 1 Experimental: Inclisiran Sodium 300mg, subcutaneous injection in pre-filled syringe Arm 2 Placebo
Target Patients	High-risk primary prevention patients
Readout Milestone(s)	2029
Publication	TBD

Leqvio® - siRNA (regulation of LDL-C)

NCT05763875 V-Mono (CKJX839D12304)

Indication	CVRR (Primary prevention)
Phase	Phase 3
Patients	300
Primary Outcome Measures	1.Percentage change in Low-density Lipoprotein Cholesterol (LDL-C) from baseline to day 150 compared with placebo [Time Frame: Baseline, Day 150] 2. Percentage change in LDL-C from baseline to day 150 compared with ezetimibe [Time Frame: Baseline, Day 150]
Arms Intervention	Arm 1 Experimental: Inclisiran s.c and Placebo p.o Arm 2 Active Comparator: Placebo s.c. and Ezetimibe p.o. Arm 3 Placebo Comparator: Placebo s.c. and Placebo p.o.
Target Patients	Adult patients with primary hypercholesterolemia not receiving any lipid-lowering therapy (LLT), with a 10-year Atherosclerotic Cardiovascular Disease (ASCVD) risk of less than 7.
Readout Milestone(s)	2024
Publication	TBD

pelacarsen - Antisense oligonucleotide (ASO) targeting Lp(a)

NCT04023552 Lp(a)HORIZON (CTQJ230A12301)

Indication	Secondary prevention of cardiovascular events in patients with elevated levels of lipoprotein(a)
Phase	Phase 3
Patients	8323
Primary Outcome Measures	Time to the first occurrence of MACE (cardiovascular death, non-fatal MI, non-fatal stroke and urgent coronary re-vascularization)
Arms Intervention	TQJ230 80 mg injected monthly subcutaneously or matched placebo
Target Patients	Patients with a history of Myocardial infarction or Ischemic Stroke, or a clinically significant symptomatic Peripheral Artery Disease, and Lp(a) ≥ 70 mg/dL
Readout Milestone(s)	2025
Publication	TBD

XXB750 - NPR1 agonist

NCT05562934 (CXXB750B12201)

Indication	Hypertension
Phase	Phase 2b
Patients	170
Primary Outcome Measures	Change from baseline in mean 24hr ambulatory systolic blood pressure at week 12
Arms Intervention	Arm 1 experimental: Dose 1 Arm 2 experimental: Dose 2 Arm 3 experimental: Dose 3 Arm 4 experimental: Dose 4 Arm 5 placebo comparator
Target Patients	Resistant Hypertension Patients
Readout Milestone(s)	2024
Publication	TBD

XXB750 - NPR1 agonist

NCT06142383 (CXXB750A12201)

Indication	Heart failure
Phase	Phase 2
Patients	720
Primary Outcome Measures	Change in log NT-proBNP from baseline to Week 16 [Time Frame: Baseline to Week 16]
Arms Intervention	Arm 1 Placebo Comparator Arm 2 Experimental: XXB750 Low Dose Arm 3 Experimental: XXB750 Medium Dose Arm 4 Experimental: XXB750 High Dose Arm 5 Active Comparator: Sacubitril/valsartan, open label tablet
Target Patients	Patients with heart failure
Readout Milestone(s)	2026
Publication	TBD

zigakibart - Anti-APRIL

NCT05852938 BEYOND (CFUB523A12301)

Indication	IgA nephropathy
Phase	Phase 3
Patients	292
Primary Outcome Measures	Change in proteinuria [Time Frame: 40 weeks or approximately 9 months]
Arms Intervention	Arm 1 Experimental: BION-1301 (Zigakibart) 600mg subcutaneous administration every 2 weeks for 104 weeks Arm 2 Placebo Comparator: Placebo subcutaneous administration every 2 weeks for 104 weeks
Target Patients	Adults with IgA Nephropathy
Readout Milestone(s)	2026
Publication	TBD

Immunology

Cosentyx® - IL-17A inhibitor

NCT05767034 REPLENISH (CAIN457C22301)

Indication	Polymyalgia rheumatica
Phase	Phase 3
Patients	360
Primary Outcome Measures	Proportion of participants achieving sustained remission
Arms Intervention	Arm 1 Experimental: Secukinumab 300 mg, randomized in 1:1:1 ratio every 4 weeks Arm 2 Experimental: Secukinumab 150 mg, randomized in 1:1:1 ratio every 4 weeks Arm 3 Placebo : randomized in 1:1:1 ratio every 4 weeks
Target Patients	Adult patients with PMR who have recently relapsed
Readout Milestone(s)	2025
Publication	TBD

Cosentyx® - IL-17A inhibitor

NCT04930094 GCAPTAIN (CAIN457R12301)

Indication	Giant cell arteritis
Phase	Phase 3
Patients	348
Primary Outcome Measures	Number of participants with sustained remission
Arms Intervention	Experimental: Secukinumab 300 mg Placebo Comparator: Placebo
Target Patients	Patients with Giant Cell Arteritis (GCA)
Readout Milestone(s)	Primary 2025 Final 2026
Publication	TBD

Cosentyx® - IL-17A inhibitor

NCT05722522 (CAIN457O12301)

Indication	Rotator cuff tendinopathy
Phase	Phase 3
Patients	234
Primary Outcome Measures	Change from BSL in in the Western Ontario Rotator Cuff Index (WORC) Physical Symptom Domain (PSD) score [Time Frame: At Week 16]: - Improving physical shoulder symptoms in participants with moderate to severe RCT at Week 16
Arms Intervention	Arm 1: Secukinumab 2 X 150 mg / 1 mL, subcutaneous (s.c.) injection, randomized in a 1:1 ratio Arm 2: Placebo 2X 1 mL, subcutaneous (s.c.) injection, randomized in a 1:1 ratio
Target Patients	Patients with moderate-severe Rotator Cuff Tendinopathy
Readout Milestone(s)	2025
Publication	TBD

Cosentyx® - IL-17A inhibitor

NCT05758415 (CAIN457O12302)

Indication	Rotator cuff tendinopathy
Phase	Phase 3
Patients	234
Primary Outcome Measures	Change from BSL in in the Western Ontario Rotator Cuff Index (WORC) Physical Symptom Domain (PSD) score [Time Frame: At Week 16]: - Change in physical shoulder symptoms in participants with moderate to severe RCT at Week 16
Arms Intervention	Arm 1 experimental: Secukinumab 2 X 150 mg / 1 mL, subcutaneous (s.c.) injection, randomized in a 1:1 ratio Arm 2 placebo: 2 X 1 mL, subcutaneous (s.c.) injection, randomized in a 1:1 ratio
Target Patients	Patients with moderate-severe Rotator Cuff Tendinopathy
Readout Milestone(s)	2025
Publication	TBD

ianalumab - BAFF-R inhibitor

NCT03217422 AMBER (CVAY736B2201)

Indication	Autoimmune hepatitis
Phase	Phase 2
Patients	68
Primary Outcome Measures	Alanine aminotransferase (ALT) normalization
Arms Intervention	VAY736 Placebo control with conversion to active VAY736
Target Patients	Autoimmune hepatitis patients with incomplete response or intolerant to standard treatment of care
Readout Milestone(s)	2024
Publication	TBD

ianalumab - BAFF-R inhibitor

NCT05126277 SIRIUS-LN (CVAY736K12301)

Indication	Lupus Nephritis
Phase	Phase 3
Patients	420
Primary Outcome Measures	Frequency and percentage of participants achieving complete renal response (CRR) [Time Frame: week 72]
Arms Intervention	Arm 1: Experimental - ianalumab s.c. q4w in addition to standard of care (SoC) Arm 2: Experiemental - ianalumab s.c. q12w in addition to SoC Arm 3: Placebo comparator - Placebo s.c. q4w in addition to SoC
Target Patients	Patients with active Lupus Nephritis
Readout Milestone(s)	Primary 2027
Publication	TBD

ianalumab - BAFF-R inhibitor

NCT05349214 NEPTUNUS-2 (CVAY736A2302)

Indication	Sjögren's syndrome
Phase	Phase 3
Patients	489
Primary Outcome Measures	Change from baseline in EULAR Sjögren Syndrome Disease Activity Index (ESSDAI) score at Week 48 as compared to placebo
Arms Intervention	Arm 1: Experimental - ianalumab exposure level 1 Arm 2: Experimental - ianalumab exposure level 2 Arm 3: Placebo comparator
Target Patients	Patients with active Sjogren's syndrome
Readout Milestone(s)	Primary 2026
Publication	TBD

ianalumab - BAFF-R inhibitor

NCT05350072 NEPTUNUS-1 (CVAY736A2301)

Indication	Sjögren's syndrome
Phase	Phase 3
Patients	268
Primary Outcome Measures	Change from baseline in EULAR Sjögren Syndrome Disease Activity Index (ESSDAI) score at Week 48 as compared to placebo
Arms Intervention	Arm 1: Experimental - ianalumab Arm 2: Placebo comparator
Target Patients	Patients with active Sjogren's syndrome
Readout Milestone(s)	Primary 2026
Publication	TBD

ianalumab - BAFF-R inhibitor

NCT05639114 SIRIUS-SLE 1 (CVAY736F12301)

Indication	Systemic lupus erythematosus
Phase	Phase 3
Patients	406
Primary Outcome Measures	Proportion of participants on monthly ianalumab achieving Systemic Lupus Erythematosus Responder Index -4 (SRI-4) [Time Frame: Week 60]
Arms Intervention	Experimental: Ianalumab s.c. monthly Experimental: Ianalumab s.c. quarterly Placebo Comparator: Placebo s.c. monthly
Target Patients	Patients with active systemic lupus erythematosus (SLE)
Readout Milestone(s)	2027
Publication	TBD

ianalumab - BAFF-R inhibitor

NCT05624749 SIRIUS-SLE 2 (CVAY736F12302)

Indication	Systemic lupus erythematosus
Phase	Phase 3
Patients	280
Primary Outcome Measures	Proportion of participants achieving Systemic Lupus Erythematosus Responder Index -4 (SRI-4) [Time Frame: Week 60]
Arms Intervention	Experimental: ianalumab s.c. monthly Placebo Comparator: placebo s.c. monthly
Target Patients	Patients with active systemic lupus erythematosus (SLE)
Readout Milestone(s)	2027
Publication	TBD

LNA043 - ANGPTL3 agonist

NCT04864392 ONWARDS (CLNA043A12202)

Indication	Knee osteoarthritis
Phase	Phase 2
Patients	550
Primary Outcome Measures	Change from baseline in the cartilage thickness of the medial compartment of the knee as assessed by imaging
Arms Intervention	LNA043 injection to the knee with dosing regimen A LNA043 injection to the knee with dosing regimen B LNA043 injection to the knee with dosing regimen C LNA043 injection to the knee with dosing regimen D Placebo injection to the knee
Target Patients	Patients with Symptomatic knee osteoarthritis
Readout Milestone(s)	Primary 2024
Publication	TBD

remibrutinib - BTK inhibitor

NCT05030311 REMIX-1 (CLOU064A2301)

Indication	Chronic spontaneous urticaria
Phase	Phase 3
Patients	470
Primary Outcome Measures	Change from baseline in UAS7 (Scenario 1 with UAS7 as primary efficacy endpoint)
Arms Intervention	Arm 1: LOU064 (blinded) LOU064 (blinded) taken orally for 24 weeks, followed by LOU064 (open-label) taken orally open label for 28 weeks. Randomized in a 2:1 ratio (arm 1:arm 2) Arm 2: LOU064 placebo (blinded) LOU064 placebo (blinded) taken orally for 24 weeks, followed by LOU064 (open-label) taken orally for 28 weeks. Randomized in a 2:1 ratio (arm 1:arm 2)
Target Patients	Adult Chronic Spontaneous Urticaria (CSU) patients inadequately controlled by H1-antihistamines
Readout Milestone(s)	2024 (Final)
Publication	TBD

remibrutinib - BTK inhibitor

NCT05032157 REMIX-2 (CLOU064A2302)

Indication	Chronic spontaneous urticaria
Phase	Phase 3
Patients	455
Primary Outcome Measures	1. Change from baseline in UAS7 (Scenario 1 with UAS7 as primary efficacy endpoint) 2. Absolute change in ISS7 an absolute change in HSS7 (Scenario 2 with ISS7 and HSS7 as co-primary efficacy endpoints)
Arms Intervention	Arm 1: LOU064 (blinded) LOU064A (blinded) taken orally b.i.d. for 24 weeks, followed by LOU064 (open-label) taken orally open label for 28 weeks Arm 2: LOU064 placebo (blinded) LOU064A placebo (blinded) taken orally for 24 weeks, followed by LOU064 (open-label) taken orally open label for 28 weeks Eligible participants randomized to the treatment arms in a 2:1 ratio (arm 1: arm 2)
Target Patients	Adult participants suffering from chronic spontaneous urticaria (CSU) inadequately controlled by H1-antihistamines in comparison to placebo
Readout Milestone(s)	2024 (Final)
Publication	TBD

remibrutinib - BTK inhibitor

NCT05976243 (CLOU064M12301)

Indication	Chronic inducible urticaria
Phase	Phase 3
Patients	348
Primary Outcome Measures	1. Proportion of participants with complete response in Total Fric Score; symptomatic dermographism [Time Frame: Week 12] 2. Proportion of participants with complete response in critical temperature threshold; cold urticaria [Time Frame: Week 12] 3. Proportion of participants with itch numerical rating scale =0; cholinergic urticaria [Time Frame: Week 12]
Arms Intervention	All arms oral, twice daily: Arm 1 Experimental Remibrutinib, symptomatic dermographism group Arm 2 Placebo symptomatic dermographism group Arm 3 Experimental Remibrutinib, cold urticaria group Arm 4 Placebo cold urticaria group Arm 5 Experimental Remibrutinib, cholinergic urticaria group Arm 6 Placebo cholinergic urticaria group
Target Patients	Adults suffering from CINDU inadequately controlled by H1-antihistamines
Readout Milestone(s)	2026
Publication	TBD

Neuroscience

Mayzent® - S1P1,5 receptor modulator

NCT04926818 NEOS (CBAF312D2301)

Indication	Multiple sclerosis, pediatrics
Phase	Phase 3
Patients	180
Primary Outcome Measures	Annualized relapse rate (ARR) in target pediatric participants
Arms Intervention	Arm 1: Experimental ofatumumab - 20 mg injection/ placebo Arm 2: Experimental siponimod - 0.5 mg, 1 mg or 2 mg/ placebo Arm 3: Active Comparator fingolimod - 0.5 mg or 0.25 mg/ placebo
Target Patients	Children/adolescent patients aged 10-17 years old with Multiple Sclerosis (MS). The targeted enrollment is 180 participants with multiple sclerosis which will include at least 5 participants with body weight (BW) ≤40 kg and at least 5 participants with age 10 to 12 years in each of the ofatumumab and siponimod arms. There is a minimum 6 month follow up period for all participants (core and extension). Total duration of the study could be up to 7 years.
Readout Milestone(s)	2026
Publication	TBD

remibrutinib - BTK inhibitor

NCT05147220 REMODEL-1 (CLOU064C12301)

Indication	Multiple sclerosis
Phase	Phase 3
Patients	800
Primary Outcome Measures	Annualized relapse rate (ARR) of confirmed relapses [Core Part]. ARR is the average number of confirmed MS relapses in a year
Arms Intervention	Arm 1: Experimental; Remibrutinib - Core (Remibrutinib tablet and matching placebo of teriflunomide capsule) Arm 2: Active Comparator; Teriflunomide - Core (Teriflunomide capsule and matching placebo remibrutinib tablet) Arm 3: Experimental; Remibrutinib - Extension (Participants on remibrutinib in Core will continue on remibrutinib tablet) Arm 4: Experimental; Remibrutinib - Extension (on teriflunomide in Core) (Participants on teriflunomide in Core will switch to remibrutinib tablet)
Target Patients	Patients with relapsing Multiple Sclerosis
Readout Milestone(s)	Estimated primary completion 2026
Publication	TBD

remibrutinib - BTK inhibitor

NCT05156281 REMODEL-2 (CLOU064C12302)

Indication	Multiple sclerosis
Phase	Phase 3
Patients	800
Primary Outcome Measures	Annualized relapse rate (ARR) of confirmed relapses
Arms Intervention	Arm 1: Experimental; Remibrutinib – Core Remibrutinib tablet and matching placebo of teriflunomide capsule Arm 2: Active Comparator; Teriflunomide – Core Teriflunomide capsule and matching placebo remibrutinib tablet Arm 3: Experimental: Remibrutinib – Extension Participants on remibrutinib in Core will continue on remibrutinib tablet Arm 4: Experimental: Remibrutinib - Extension (on teriflunomide in Core) Participants on teriflunomide in Core will switch to remibrutinib tablet
Target Patients	Patients with relapsing Multiple Sclerosis
Readout Milestone(s)	Estimated primary completion 2026
Publication	TBD

Zolgensma® - SMN1 gene replacement therapy

NCT05089656 STEER (COAV101B12301)

Indication	Spinal muscular atrophy (IT administration)
Phase	Phase 3
Patients	125
Primary Outcome Measures	1. Change from baseline in Hammersmith functional motor scale - Expanded (HFMSE) total score at the end of follow-up period 1 in treated patients compared to sham controls in the ≥ 2 to < 18 years age group
Arms Intervention	Arm 1: Experimental OAV101. Administered as a single, one-time intrathecal dose Arm 2: Sham Comparator: Sham control. A skin prick in the lumbar region without any medication.
Target Patients	Patients Type 2 Spinal Muscular Atrophy (SMA) who are ≥ 2 to < 18 years of age, treatment naive, sitting, and never ambulatory
Readout Milestone(s)	2024
Publication	TBD

Zolgensma® - SMN1 gene replacement therapy

NCT05386680 STRENGTH (COAV101B12302)

Indication	Spinal muscular atrophy (IT administration)
Phase	Phase 3B
Patients	28
Primary Outcome Measures	Number and percentage of participants reporting AEs, related AEs, SAEs, and AESIs [Time Frame: 52 weeks]
Arms Intervention	Experimental: OAV-101 Single intrathecal administration of OAV101 at a dose of 1.2 x 10^14 vector genomes
Target Patients	Participants with SMA who discontinued treatment With Nusinersen or Risdiplam (STRENGTH)
Readout Milestone(s)	2024
Publication	TBD

Oncology

ianalumab - BAFF-R inhibitor

NCT05653349 VAYHIT1 (CVAY736I12301)

Indication	1L Immune Thrombocytopenia
Phase	Phase 3
Patients	225
Primary Outcome Measures	Time from randomization to treatment failure (TTF)
Arms Intervention	Arm 1: Experimental: Ianalumab Lower dose administered intravenously with corticosteroids oral or parentally (if clinically justified) Arm 2: Ianalumab Higher dose administered intravenously with corticosteroids oral or parentally (if clinically justified) Arm 3: Placebo Comparator administered intravenously with corticosteroids oral or parentally (if clinically justified)
Target Patients	Adult patients with primary ITP
Readout Milestone(s)	2025
Publication	TBD

ianalumab - BAFF-R inhibitor

NCT05653219 VAYHIT2 (CVAY736Q12301)

Indication	2L Immune Thrombocytopenia
Phase	Phase 3
Patients	150
Primary Outcome Measures	Time from randomization to treatment failure (TTF)
Arms Intervention	Arm 1: Experimental: eltrombopag and ianalumab lower dose Arm 2: Experimental: eltrombopag and ianalumab higher dose Arm 3: eltrombopag and placebo
Target Patients	Primary ITP patients who failed steroids
Readout Milestone(s)	2025
Publication	TBD

ianalumab - BAFF-R inhibitor

NCT05648968 VAYHIA (CVAY736O12301)

Indication	Warm autoimmune hemolytic anemia
Phase	Phase 3
Patients	90
Primary Outcome Measures	Binary variable indicating whether a patient achieves a durable response Durable response: hemoglobin level ≥10 g/dL and ≥2 g/dL increase from baseline, for a period of at least eight consecutive weeks between W9 and W25, in the absence of rescue medication or prohibited treatment
Arms Intervention	Arm 1: experimental Ianalumab low dose (intravenously) Arm 2: experimental Ianalumab high dose (intravenously) Arm 3: placebo Comparator (intravenously)
Target Patients	Previously treated patients with warm Autoimmune Hemolytic Anemia
Readout Milestone(s)	2026
Publication	TBD

iptacopan - CFB inhibitor

NCT04889430 APPELHUS (CLNP023F12301)

Indication	Atypical haemolytic uraemic syndrome
Phase	Phase 3
Patients	50
Primary Outcome Measures	Percentage of participants with complete TMA response without the use of PE/PI and anti-C5 antibody
Arms Intervention	Single arm open-label with 50 adult patients receiving 200mg oral twice daily doses of iptacopan
Target Patients	Adult patients with aHUS who are treatment naive to complement inhibitor therapy (including anti-C5 antibody)
Readout Milestone(s)	2026
Publication	TBD

opnurasib - KRAS inhibitor

NCT05132075 KontRASt-02 (CJDQ443B12301)

Indication	Non-small cell lung cancer, 2/3L
Phase	Phase 3
Patients	360
Primary Outcome Measures	Progression free survival (PFS)
Arms Intervention	Arm 1 Experimental: JDQ443 Arm 2 Active Comparator: Participant will be treated with docetaxel following local guidelines as per standard of care and product labels
Target Patients	Patients with advanced non-small cell lung cancer (NSCLC) harboring a KRAS G12C mutation who have been previously treated with a platinum-based chemotherapy and immune checkpoint inhibitor therapy either in sequence or in combination.
Readout Milestone(s)	2025
Publication	NA

Pluvicto® - Radioligand therapy target PSMA

NCT04689828 PSMAfore (CAAA617B12302)

Indication	Metastatic castration-resistant prostate cancer, pre-taxane
Phase	Phase 3
Patients	450
Primary Outcome Measures	Radiographic Progression Free Survival (rPFS)
Arms Intervention	Arm 1: Participants will receive 7.4 GBq (200 mCi) +/- 10% ^{177}Lu-PSMA-617 once every 6 weeks for 6 cycles. Best supportive care, including ADT may be used Arm 2: For participants randomized to the ARDT arm, the change of ARDT treatment will be administered per the physician's orders. Best supportive care, including ADT may be used
Target Patients	mCRPC patients that were previously treated with an alternate ARDT and not exposed to a taxane-containing regimen in the CRPC or mHSPC settings
Readout Milestone(s)	Primary Analysis: 2022 (actual) Final Analysis: 2025
Publication	H2 2023

Pluvicto® - Radioligand therapy target PSMA

NCT04720157 PSMAddition (CAAA617C12301)

Indication	Metastatic hormone sensitive prostate cancer
Phase	Phase 3
Patients	1126
Primary Outcome Measures	Radiographic Progression Free Survival (rPFS)
Arms Intervention	Arm 1: ^{177}Lu-PSMA-617 Participant will receive 7.4 GBq (+/- 10%) ^{177}Lu-PSMA-617, once every 6 weeks for a planned 6 cycles, in addition to the Standard of Care (SOC); ARDT +ADT is considered as SOC and treatment will be administered per the physician's order Arm 2: For participants randomized to Standard of Care arm, ARDT +ADT is considered as SOC and treatment will be administered per the physician's order
Target Patients	Patients with metastatic Hormone Sensitive Prostate Cancer (mHSPC)
Readout Milestone(s)	Primary Analysis: 2025
Publication	TBD

Rydapt® - Multi-targeted kinase inhibitor

NCT03591510 (CPKC412A2218)

Indication	Acute myeloid leukemia, pediatrics
Phase	Phase 2
Patients	20
Primary Outcome Measures	Occurrence of dose limiting toxicities Safety and Tolerability
Arms Intervention	Chemotherapy followed by Midostaurin
Target Patients	Newly diagnosed pediatric patients with FLT3 mutated acute myeloid leukemia (AML)
Readout Milestone(s)	2026
Publication	TBD

Scemblix® - BCR-ABL inhibitor

NCT04971226 ASC4FIRST (CABL001J12301)

Indication	Chronic myeloid leukemia, 1st line
Phase	Phase 3
Patients	402
Primary Outcome Measures	Major Molecular Response (MMR) at week 48
Arms Intervention	Arm 1: asciminib 80 mg QD Arm 2: Investigator selected TKI including one of the below treatments: - Imatinib 400 mg QD - Nilotinib 300 mg BID - Dasatinib 100 mg QD - Bosutinib 400 mg QD
Target Patients	Patients with newly diagnosed philadelphia chromosome positive chronic myelogenous leukemia in chronic phase
Readout Milestone(s)	2024 (actual)
Publication	TBD

TNO155 - SHP2 inhibitor

NCT03114319 (CTNO155X2101)

Indication	Solid tumors (single agent)
Phase	Phase 1
Patients	255
Primary Outcome Measures	Number of participants with adverse events Number of participants with dose limiting toxicities
Arms Intervention	Drug: TNO155 Drug: TNO155 in combination with EGF816 (nazartinib)
Target Patients	Adult patients with advanced solid tumors in selected indications
Readout Milestone(s)	2025
Publication	TBD

Vijoice® - PI3Ki

NCT05948943 EPIK-L1 (CBYL719P12201)

Indication	Lymphatic Malformation
Phase	Phase 2/3
Patients	230
Primary Outcome Measures	Stage 2: Radiological response rate at Week 24 of Stage 2 (adult and pediatric (6 - 17 years of age) participants) Time Frame: Baseline, Week 24
Arms Intervention	Arm 1: Experimental. Adult participants, alpelisib dose 1 (Stage 1) Arm 2: Experimental. Adult participants, alpelisib dose 2 (Stage 1) Arm 3: Experimental. Pediatric participants (6-17 years of age), alpelisib dose 2 (Stage 1) Arm 4: Experimental. Pediatric participants (6-17 years of age), alpelisib dose 3 (Stage 1) Arm 5: Experimental. Adult participants, alpelisib (Stage 2) Arm 6: Placebo comparator. Adult participants, placebo (Stage 2) Arm 7: Experimental. Pediatric participants (6-17 years of age), alpelisib (Stage 2) Arm 8: Placebo Comparator. Pediatric participants (6-17 years of age), placebo (Stage 2) Arm 9: Experimental. Pediatric participants (2-5 years of age), alpelisib (Stage 2)
Target Patients	Pediatric and adult patients with lymphatic malformations associated with a PIK3CA mutation
Readout Milestone(s)	2030
Publication	TBD

Other

Beovu® - VEGF Inhibitor

NCT04278417 CONDOR (CRTH258D2301)

Indication	Diabetic retinopathy
Phase	Phase 3
Patients	694
Primary Outcome Measures	Change from Baseline in BCVA
Arms Intervention	Arm 1: RTH258 (brolucizumab) 6 mg/50uL Arm 2: Panretinal photocoagulation laser initial treatment followed with additional PRP treatment as needed
Target Patients	Patients with proliferative diabetic retinopathy
Readout Milestone(s)	2024
Publication	TBD

Global Health

cipargamin - PfATP4 inhibitor

NCT04675931 KARISMA (CKAE609B12201)

Indication	Malaria severe
Phase	Phase 2
Patients	252
Primary Outcome Measures	Percentage of participants achieving at least 90% reduction in Plasmodium falciparum (P. falciparum) at 12 hours [Time Frame: Day 1 (12 Hours)]
Arms Intervention	Arm 1: experimental, IV KAE609 Dose regimen 1 Arm 2: experimental, IV KAE609 Dose regimen 2 Arm 3: experimental, IV KAE609 Dose regimen 3 Arm 4: active comparator, IV Artesunate Arm 5: Coartem, Standard of care
Target Patients	Patients with Malaria, severe
Readout Milestone(s)	2025
Publication	TBD

Coartem® - PGH-1 (artemisinin combination therapy)

NCT04300309 CALINA (CCOA566B2307)

Indication	Malaria, uncomplicated (<5kg patients)
Phase	Phase 3
Patients	44
Primary Outcome Measures	Artemether Cmax
Arms Intervention	Experimental: artemether lumefantrine (2.5 mg:30 mg) artemether lumefantrine (2.5 mg:30 mg) bid over 3 days, from 1-4 tablets per dose
Target Patients	Infants and Neonates <5 kg body weight with acute uncomplicated plasmodium falciparum malaria
Readout Milestone(s)	Primary (actual) 2024 (final)
Publication	TBD

ganaplacide/lumefantrine - Non-artemisinin plasmodium falciparum inhibitor

NCT05842954 KALUMA (CKLU156A12301)

Indication	Malaria, uncomplicated
Phase	Phase 3
Patients	1500
Primary Outcome Measures	PCR-corrected adequate clinical and parasitological response (ACPR) at day 29
Arms Intervention	Arm 1 experimental: KLU156 oral; 400/480 mg is the dose for patients with a bodyweight ≥ 35kg. Patients < 35kg will take a fraction of the dose according to weight group as defined in the protocol. Arm 2 active comparator: Coartem, oral, dosing will be selected based on patient's body weight as per product's label.
Target Patients	Adults and children ≥ 5 kg Body Weight with uncomplicated P. Falciparum Malaria
Readout Milestone(s)	2025
Publication	TBD

Abbreviations

AI	Auto-injector
AIH	Autoimmune hepatitis
aHUS	atypical Hemolytic Uremic Syndrome
ALL	Acute lymphoblastic leukemia
ALS	Amyotrophic lateral sclerosis
AML	Acute myeloid leukemia
BC	Breast cancer
C3G	C3 glomerulopathy
CART	Chimeric androgen receptor T
CLL	Chronic lymphocytic leukemia
CML	Chronic myeloid leukemia
CRC	Colorectal cancer
COPD	Chronic obstructive pulmonary disease
COSP	Chronic ocular surface pain
CSU	Chronic spontaneous urticaria
CVRR-Lp(a)	Secondary prevention of cardiovascular events in patients with elevated levels of lipoprotein (a)
CVRR-LDLC	Secondary prevention of cardiovascular events in patients with elevated levels of LDLC
DME	Diabetic macular edema
DLBCL	Diffuse large B-cell lymphoma refractory
ESCC	Esophageal squamous-cell carcinoma
FL	Follicular lymphoma
GCA	Giant cell arteritis
GVHD	Graft-versus-host disease
GRPR	Gastrin releasing peptide receptor
HCC	Hepatocellular carcinoma
HD	Huntington's disease
HR LBCL	High risk large B-cell lymphoma
IA	Interim analysis
iAMD	Intermediate age-related macular degeneration
IC-MPGN	Immune complex membranoproliferative glomerulonephritis
IgAN	IgA nephropathy
IPF	Idiopathic pulmonary fibrosis
ITP	Immune thrombocytopenia
LBCL	Large B-cell lymphoma
LN	Lupus nephritis
mCRPC	Metastatic castration-resistant prostate cancer
MDS	Myelodysplastic syndrome
mHSPC	Metastatic hormone sensitive prostate cancer
mPDAC	Metastatic pancreatic ductal adenocarcinoma
MS	Multiple sclerosis
NASH	Non-alcoholic steatohepatitis
nmCRPC	Non-metastatic castration-resistant prostate cancer
NPR1	Natriuretic peptide receptor 1
nr-axSpA	Non-radiographic axial spondyloarthritis
NSAI	Non-steroidal aromatase inhibitor
NSCLC	Non-small cell lung cancer
OS	Overall survival
PFS	Prefilled syringe
PNH	Paroxysmal nocturnal haemoglobinuria
PsA	Psoriatic arthritis
rHR	Resistant hypertension
rMS	Relapsing multiple sclerosis
rPFS	Radiographic progression free survival
SLE	Systemic lupus erythematosus
SMA Type 1	Spinal muscular atrophy (IV formulation)
SMA Type 2/3	Spinal muscular atrophy (IT formulation)
SpA	Spondyloarthritis
T1DM	Type 1 Diabetes mellitus
wAIHA	Warm autoimmune hemolytic anemia

References

Entresto® (slide 7 references)	
1	IQVIA National Prescription Audit.
2	Approved indications differ by geography. Examples include “indicated to reduce the risk of cardiovascular death and hospitalization for HF in adult patients with CHF. Benefits are most clearly evident in patients with LVEF below normal.” (US), HFrEF (EU), HFrEF and HTN (China) and CHF and HTN (JP). HTN is not an approved indication in the US and EU.
3	AHA/ACC/HFSA/ESC.
4	Extension of regulatory data protection to November 2026 in EU based on approval of pediatric indication.

Kesimpta® (slide 9 references)	
1	Data on file. Global data as of Nov 2023.
2	Data on file.
3	Kappos et al., AAN 2020, Ofatumumab Versus Teriflunomide in Patients with Relapsing Multiple Sclerosis: Phase 3 ASCLEPIOS I and II Trials.
4	As per stability technical specification data, when the patient is ready to inject, it typically takes less than 1 minute a month to administer. Once-monthly dosing begins after the initial dosing period, which consists of 20 mg subcutaneous doses at weeks 0, 1, and 2. Patient must take pen out of the refrigerator 15-30 minutes before self-administering.. Please see Instructions for Use for more detailed instructions on preparation and administration of KESIMPTA.
5	Ross AP, Nicholas J, Tai MH, et al. US Real-world satisfaction and experience with injection and autoinjector device for ofatumumab indicated for multiple sclerosis. LB09. Presented at: Consortium of Multiple Sclerosis Centers Annual Meeting; May 31-June 3, 2023; Aurora, CO.
6	Novartis KESIMPTA Sensoready® Pen survey HEORUSV201392 in US. June 2022.
7	Efficacy outcomes as measured by disability progression and brain volume change.
8	Cohen et al, Poster presented at American Academy of Neurology, Boston, 22-27 April 23.
9	Cohen et al, oral presentation at American Academy of Neurology, Boston, 22-27 April 23.