Autolus

Developing Next Generation Programmed T Cell Therapies

August 2025

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Autolus.com

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These slides contain forward-looking statements within the meaning of the “safe harbor” provisions of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are statements that are not historical facts, and in some cases can be identified by terms such as “may,” “will,” “could,” “expects,” “plans,” “anticipates,” and “believes.” These statements include, but are not limited to: statements regarding Autolus’ development and commercialization of its product candidates; Autolus' manufacturing, sales and marketing plans for AUCATZYL, including expectations regarding the commercial launch in the United States and the ability to reach patients in a timely manner; the amount and timing of milestone payments under Autolus' collaboration and license agreements; and future development plans of obe-cel, including the timing or likelihood of expansion into additional markets or geographies and related regulatory approvals. Any forward-looking statements are based on management’s current views and assumptions and involve risks and uncertainties that could cause actual results, performance, or events to differ materially from those expressed or implied in such statements. Actual results and the timing of events could differ materially from those anticipated in such forward-looking statements as a result of various risks and uncertainties, which include, without limitation: Autolus' ability to maintain regulatory approval of AUCATZYL; its ability to execute its commercialization strategy for AUCATZYL; its ability to develop, manufacture and commercialize its other product candidates and the timing or likelihood of expansion of AUCATZYL into additional markets or geographies; Autolus' ability to establish and expand a commercial infrastructure and to successfully launch, market and sell AUCATZYL; actions of regulatory agencies, which may affect the initiation, timing and progress of clinical trials or future regulatory approval; the labelling for AUCATZYL/obe-cel in any future indication or patient population, if approved; the potential for payors to delay, limit or deny coverage for AUCATZYL; Autolus' ability to obtain, maintain and enforce intellectual property protection for AUCATZYL or any product candidates it is developing; the results of clinical trials are not always being predictive of future results; the cost, timing and results of clinical trials; that many product candidates do not become approved drugs on a timely or cost effective basis or at all; the ability to enroll patients in clinical trials; and possible safety and efficacy concerns. For a discussion of other risks and uncertainties, and other important factors, any of which could cause Autolus’ actual results to differ from those contained in the forward-looking statements, see the section titled “Risk Factors” in Autolus' Annual Report on Form 10-K filed with the Securities and Exchange Commission, or the SEC, on March 20, 2025, as well as discussions of potential risks, uncertainties, and other important factors in Autolus’ subsequent filings with the Securities and Exchange Commission. All information in this presentation is as of the date of the presentation, and Autolus undertakes no obligation to publicly update any forward-looking statement, whether as a result of new information, future events, or otherwise, except as required by law. You should, therefore, not rely on these forward-looking statements as representing the Company’s views as of any date subsequent to the date of this presentation.

Autolus is positioned for value creation

Obe-cel product franchise supports multiple growth opportunities

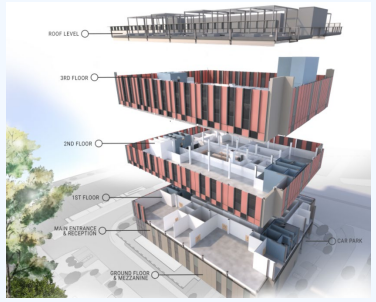
- Highly active, fast off-rate CD19 CAR T therapy with well managed safety profile
- Approved in US, UK* and EU†
- Commercial presence anticipated in 60 US centers by end 2025
- Developing early-stage pipeline of novel CAR-T therapies

Product	Indication	Target	Preclinical	Phase 1	Phase 2/Pivotal	Approved
AUCATZYL®	Adult ALL	CD19				
obe-cel	Pediatric ALL	CD19				
obe-cel	Lupus Nephritis	CD19				
obe-cel	Progressive Multiple Sclerosis	CD19				

Commercial execution and market expansion supported by:

In-house, purpose-built manufacturing facility

Design



Build

Operations

Strategic collaborations and strong cash position

$454.3M‡
as of June 30, 2025

BIONTECH

moderna

Bristol Myers Squibb

*Conditional marketing authorization, †European Commission (EC) conditional approval, ‡Cash, cash equivalents and marketable securities

AUTOLUS' FIRST APPROVED PRODUCT

AUCATZYL®

A potentially best-in-class, standalone CD19 CAR T cell therapy

AUCATZYL® now approved in US, UK and EU

AUCATZYL indicated for the treatment of adults with relapsed or refractory B-cell precursor acute lymphoblastic leukemia (B-ALL)

- Highly active, fast off-rate CD19 CAR T therapy with a well managed safety profile
- First FDA-approved CAR T therapy without a REMS obligation – building on a substantial safety data base
- First and currently only approved CAR T therapy with customized, tumor-burden guided dosing
- Established infrastructure for manufacturing and commercialization
- Commercial presence in key US centers – building to 60 centers in H2 2025
- Recently approved in UK* and EU†; pricing and reimbursement evaluation ongoing on a country-by-country basis

AUCATZYL®
obecabtagene autoleucel
suspension for IV infusion

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Obecabtagene Autoleucel in Adults with B-Cell Acute Lymphoblastic Leukemia

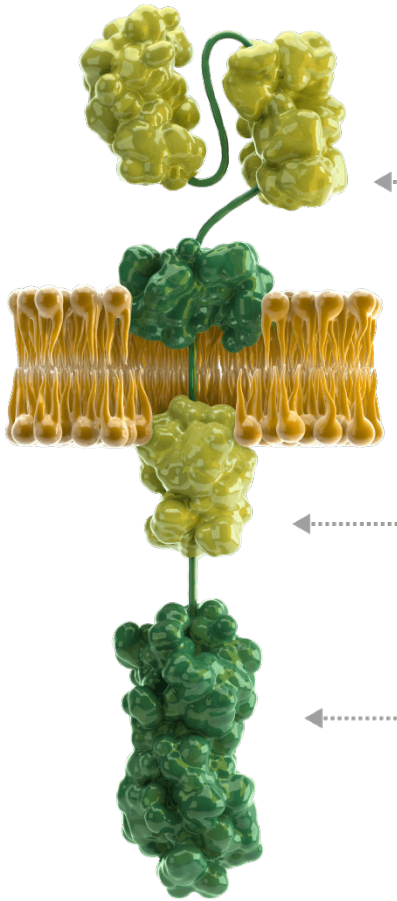
Roddie C, et al "Obecabtagene autoleucel in B-cell acute lymphoblastic leukemia" N Engl J Med 2024; DOI: 10.1056/NEJMoa2406526; *Conditional marketing authorization, †European Commission (EC) conditional approval

Safety Information

- The safety of AUCATZYL includes a boxed warning for CRS, neurologic toxicities, and secondary hematological malignancies. ICANS, including fatal or life-threatening reactions, occurred in patients receiving AUCATZYL. T-cell malignancies have occurred following treatment of hematologic malignancies with BCMA- and CD19-directed genetically modified autologous T-cell immunotherapies.
- In the FELIX trial, severe, including life-threatening and fatal infections occurred in patients after AUCATZYL infusion. The non-COVID-19 infections of all grades occurred in 67% (67/100) of patients. Grade 3 or higher non-COVID-19 infections occurred in 41% (41/100) of patients.
- Please see full Prescribing Information, including **BOXED WARNING** and Medication Guide.

We believe AUCATZYL® has a unique mechanism of action

Clinical data show increased activity and reduced toxicity



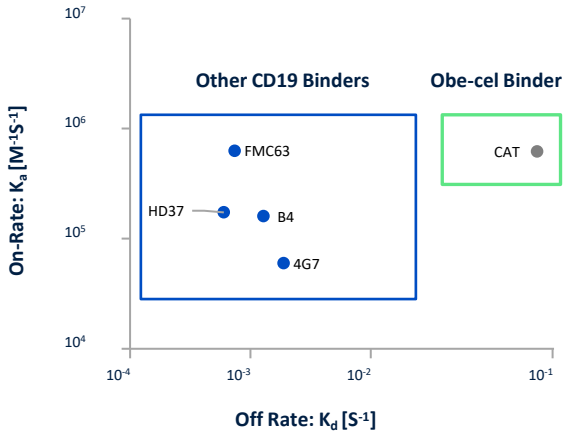
CAT19 fast off-rate binder[2]

CD8-derived hinge region/ transmembrane domain[2]

4-1BB co-stimulatory domain[1,4]
Shown to enhance CAR T-cell expansion and reduce exhaustion compared with CD28 CARs in preclinical studies

CD3Ζ activation domain[1]

Fast off-rate



Shorter half-life of interaction compared to binders used in other approved products

- AUCATZYL® = 9.8 seconds
- Kymriah® = 21 minutes

Potential for improved potency, reduced toxicity

Avoided over-activation of CAR T cells	→	Reduced toxicities
Increased CAR T peak expansion	→	Improved peak activity and persistence
Avoided exhaustion of CAR T-cells	→	Improved engraftment Improved persistence

References:1. AUCATZYL. Prescribing Information. Autolus, Inc. 2024. 2. Ghorashian S, Kramer AM, Onuoha S, et al. Enhanced CAR T cell expansion and prolonged persistence in pediatric patients with ALL treated with a low-affinity CD19 CAR. Nat Med. 2019;25:1408-1414. 3. Data on file. Autolus, Inc. 2024. 4. Zhao X, Yang J, Zhang X, et al. Efficacy and safety of CD28- or 4-1BB-based CD19 CAR-T cells in B cell acute lymphoblastic leukemia. Mol Ther Oncolytics. 2020;18:272-281.

AUCATZYL was approved based on results from the FELIX trial

FELIX 19

FELIX Phase 1b/2

Cohort IA ≥5% BM blast	Cohort IIA ≥5% BM blast
Cohort IB <5% BM blast MRD+	Cohort IIB <5% BM blast MRD+
	Cohort IIC Isolated EMD at screening

Patients (N)	Ph1b/2 pooled[1]
Enrolled	153
Infused	127

Background

- Open-label, multinational, single-arm Phase 1b/2 trial in adult patients with R/R B-ALL[1-2]; largest CAR T cell therapy trial in R/R B-ALL to date (N=153 enrolled)
- Conducted during COVID-19 pandemic with highly immune compromised patients

Summary of Trial Experience

- High ORR, encouraging EFS/OS and favorable tolerability with low levels of high-grade CRS and ICANS
- Timely and reliable clinical product supply and logistics despite COVID-19 pandemic restrictions
- Across all Phase 1b/2 cohorts, 40% of responders in ongoing remission without subsequent stem cell transplant/other therapy[1]
- Survival outcomes suggesting potential of long-term plateau[1]

[1,2] **Roddie C, et al "Obecabtagene autoleucel in B-cell acute lymphoblastic leukemia" N Engl J Med 2024; DOI: 10.1056/NEJMoa2406526**

FELIX trial published in New England Journal of Medicine[1]

Favourable response rate and tolerability, despite challenging patient population

High overall response rate with deep molecular responses

- Durable responses, particularly in patients with a low-to-intermediate bone marrow burden

Response by disease status at lymphodepletion	Overall Remission Rate (CR/CRi)
All patients (n=127)	77%
Morphological disease (n=91)	75%
Measurable residual disease (n=29)	96%
Isolated extramedullary disease (n=7)	71%

Excellent tolerability profile

- Very low rates of high-grade immunotoxicities
- No high-grade events in low disease burden patients

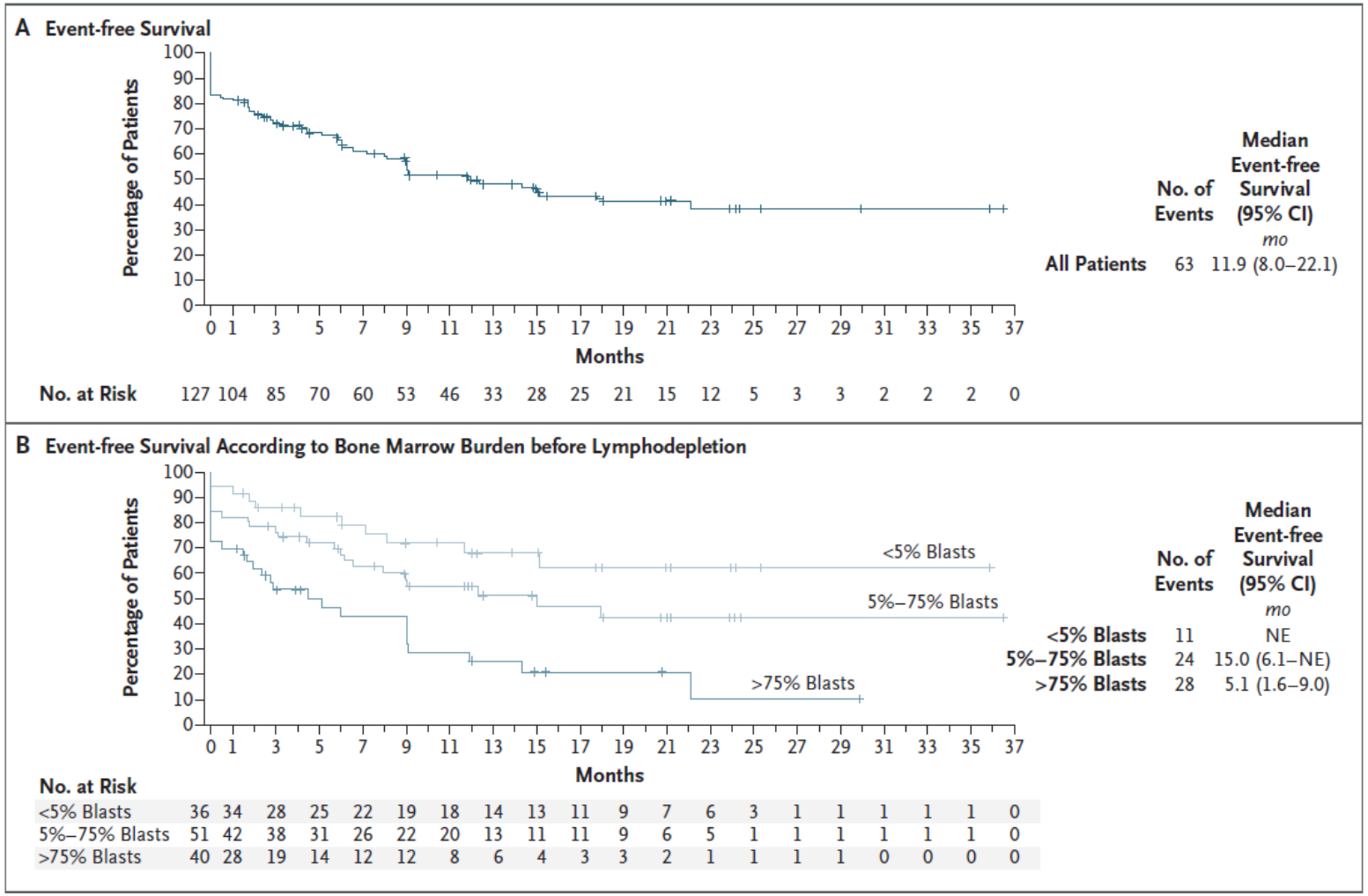
Safety by disease burden at lymphodepletion	Grade ≥3 CRS	Grade ≥3 ICANS
All patients (n=127)	2%	7%
>75% Blasts (n=40)	2%	12%
5-75% Blasts (n=51)	4%	8%
<5% Blasts (n=36)	0%	0%

1. Roddie C, et al "Obecabtagene autoleucel in B-cell acute lymphoblastic leukemia" N Engl J Med 2024; DOI: 10.1056/NEJMoa2406526

FELIX trial: Tumor burden impact on event-free survival in adult ALL

Survival outcomes show potential of long-term plateau with 12-month EFS rates 49.5%

- In all patients, the median EFS was 11.9 months
- Lower disease burden at lymphodepletion was associated with better outcomes

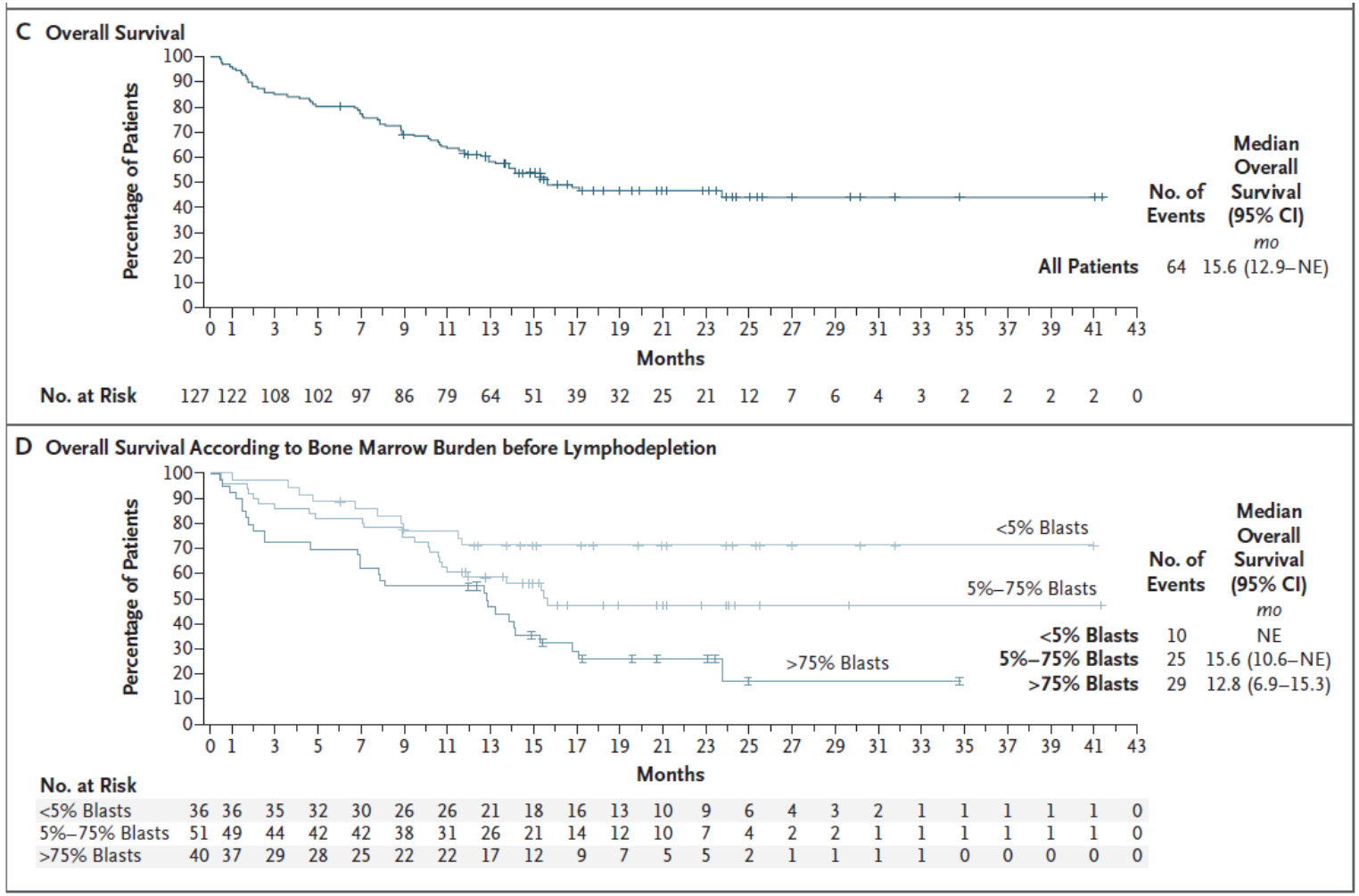


1. Roddie C, et al "Obecabtagene autoleucel in B-cell acute lymphoblastic leukemia" N Engl J Med 2024; DOI: 10.1056/NEJMoa2406526

FELIX trial: Tumor burden impact on overall survival in adult ALL

Estimated 6- and 12-month overall survival rates were 80.3% and 61.1%, respectively

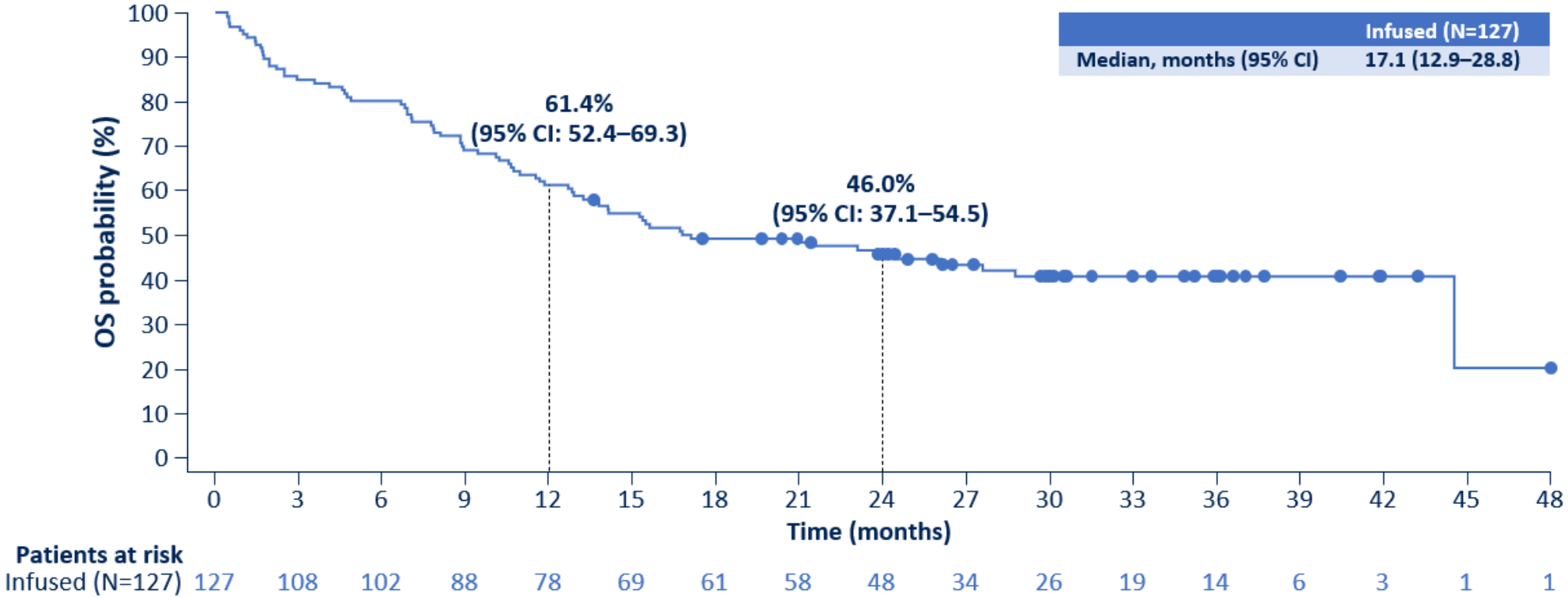
- In all patients, the median OFS was 15.6 months
- Lower disease burden at lymphodepletion was associated with better outcomes



1. Roddie C, et al "Obecabtagene autoleucel in B-cell acute lymphoblastic leukemia" N Engl J Med 2024; DOI: 10.1056/NEJMoa2406526

Data continue to show long term remissions in r/r adult B-ALL

At 24 months, overall survival probability was 46.0%



AUTOLUS' FIRST APPROVED PRODUCT

AUCATZYL® Launch progress

A potentially best-in-class, standalone
CD19 CAR T cell therapy

Strong momentum in second quarter of the U.S. AUCATZYL® launch

AUCATZYL Net Product Sales

Q2 2025: $20.9 million

Six Months Ended June 30, 2025:
$29.9 million

Physician interest based upon product profile and unmet patient need is driving encouraging uptake

46 Treatment Centers Authorized as of 08/12/25

- >90% of total U.S. medical lives covered
- Permanent HCPCS code effective July 1, 2025

Building Value with Obe-Cel

Initial Launch:

Top line growth trajectory

Strong execution on:

- ✓ Authorized treatment center onboarding
- ✓ Physician engagement
- ✓ Reimbursement / market access
- ✓ Product delivery

Launch Phase 2:

Optimization

Turning focus to:

- Manufacturing process efficiencies focused on margin improvements
- Expanding the CAR T market in adult B-ALL
- Driving continued top line growth

Launch Phase 3:

Market expansion

Launching in new indications:

- Pediatric ALL
- Lupus nephritis
- Multiple sclerosis

Ongoing clinical execution generating data to support market growth and expansion

AUCATZYL geographic growth opportunities in ALL

Expansion

Potential New Markets

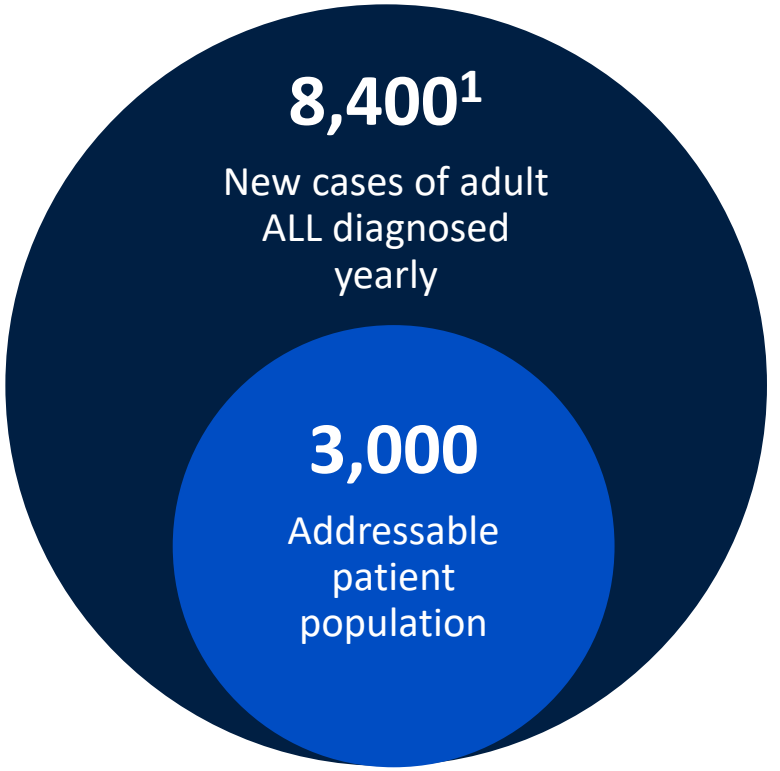
- ✓ Conditional marketing authorization in the UK received April 2025
  - NICE pricing and reimbursement process ongoing

- ✓ European Commission (EC) conditional approval received July 2025
  - Ongoing country-by-country evaluation of pricing and reimbursement decisions to assess feasibility of market entry; no anticipated EU sales in 2025 or 2026
  - Continuing to work with German Multicenter Study Group for Adult Acute Lymphoblastic leukemia (GMALL) and regulators, enable ISTs, and generate more real-world data in support of pricing negotiations

Over 8,000 new cases of adult ALL annually worldwide

Successful therapy requires high level of activity and sustained persistence paired with good tolerability

- Median overall survival is < 1 year in r/r adult ALL
- 1st line therapy is based on high dose chemotherapy cycles given over a period of 12 – 36 months
- In 1st line therapy approx. 90% of patients achieve a CR, but most patients relapse
- Blincyto® is incorporated into frontline therapy as an additional component
- Aucatzyl® offers opportunity as a standalone therapy for patients in 2nd and subsequent lines of therapy



1. SEER and EUCAN estimates (respectively) for US and EU

AUCATZYL® is poised to fill the unmet need for r/r ALL patients

- We believe AUCATZYL is a transformative product in the r/r B-ALL space
- Unique MOA designed to deliver potency and persistency that results in deep and durable efficacy
- Favorable tolerability profile
- Customized tumor-burden guided dosing
- Well-positioned to deliver therapy globally with Autolus' proven reliable manufacturing

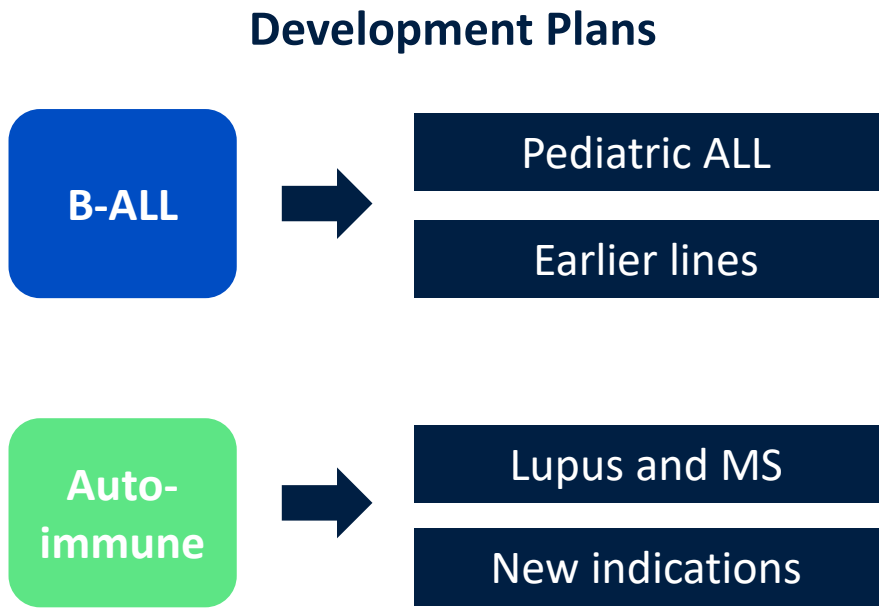
Expanding the obe-cel opportunity

Deep value program with potentially broad applicability

Plans for obe-cel development in oncology and autoimmune diseases

Obe-cel characteristics borne out across multiple studies

INDICATION	STUDY	PHASE
Adult B-ALL	FELIX	Approved
Pediatric B-ALL	CATULUS	Phase 1
Systemic Lupus Erythematosus	CARLYSLE	Phase 1
Lupus Nephritis	TBD	Pivotal
Multiple Sclerosis	TBD	Phase 1
B-NHL (DLBCL, FL, MCL) and CLL	ALLCAR19 Ext.	Phase 1
B-NHL (PCNSL)	CAROUSEL	Phase 1
Pediatric B-ALL	CARPALL	Phase 1
Adult B-ALL	ALLCAR19	Phase 1



- ✓ Data from over 200 patients treated across different indications with obe-cel reported to date

Roddie C, et al N Engl J Med 2024; DOI: 10.1056/NEJMoa2406526, Ghorashian et al., Nat Med. 2019;25:1408-1414, Roddie et al., J Clin Oncology 2021 39(30):3352-3363; Roddie et al., EHA 2022; Roddie et al., ASH 2023.

MOA and established commercial capabilities are key differentiators

Obe-cel is the only CD19 CAR with an FDA approval outside of autoimmune disease

Autolus Potential Advantage

- Favorable tolerability to drive acceptability in non-oncology indications
- Deep cut into the CD19+ B and plasma cell
- Robust, economical and scalable manufacturing and established commercial infrastructure
- Potential for accelerated clinical program
- Only FDA-approved CAR-T therapy in development for autoimmune indications

Supports differentiated approach and potential for obe-cel in autoimmune disease areas

Initial data from CARSLYLE SLE P1 trial in patients with severe disease

Baseline SLEDAI-2K score ranges from 16 to 28

Severe patient population

- Patients aged 19 to 50 years had 3 to 23 years of disease history and exhausted prior therapy options
- All patients had prior B-cell depleting agent exposure, 2 also BAFF inhibitors, 3/6 also calcineurin inhibitors
- Lupus nephritis: 5/6 patients had a class IV disease, 4/6 had also a class V component
- Kidney function was significantly impaired in 4 of 6 patients (<60 ml/min/SA)

No high-grade CRS, No ICANS observed
No DLTs observed

Transient hypertension, including G3, due to abnormal kidney function prior to start of therapy according to PI's judgement nor pre-existing hypertension (3/6)

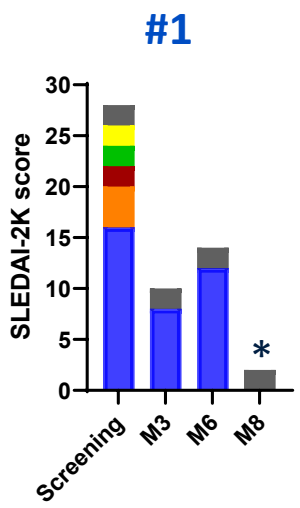
Highest grade of treatment-emergent adverse event observed by patient:

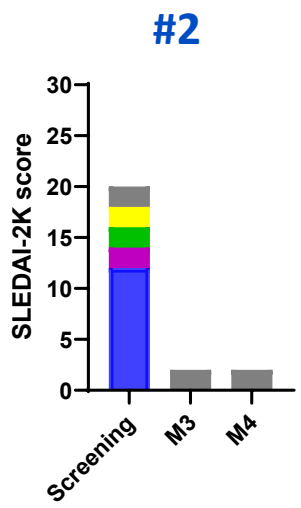
TEAE, Grade	#1	#2	#3	#4	#5	#6	Patients, n (%)
CRS	-	-	1	-	1	1	3 (50%)
ICANS	-	-	-	-	-	-	0 (0%)

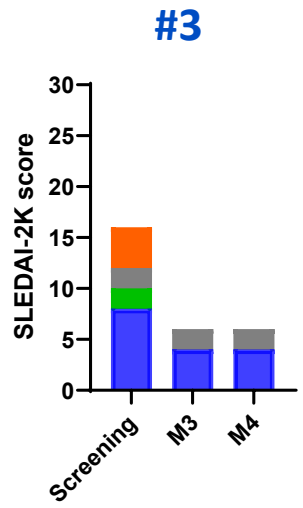
Preliminary CARLYSLE results; additional follow up planned for H2 2025

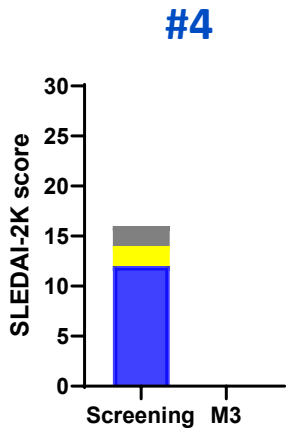
10+ point drop in SLEDAI-2K scores and 3 of 6 patients with renal CRs by month 3

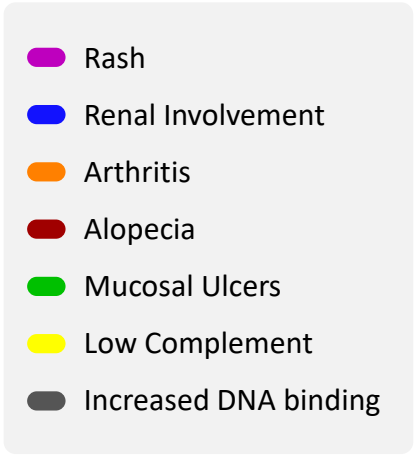
M3+ follow up



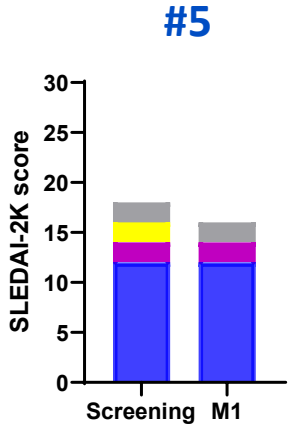


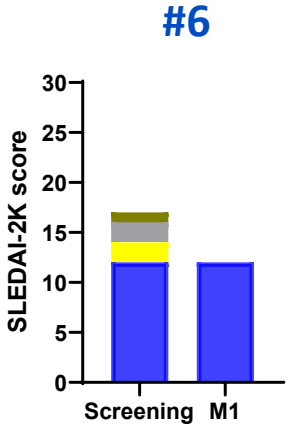






M1 follow up





- All patients benefited significantly from obe-cel
- Skin: rash, alopecia and mucosal ulcers resolved by M3
- Musculoskeletal: Arthritis resolved by M1
- Complement normalized in all patients by M1
- 3 of 6 patients with complete renal response by M3
- Two patients had only one month follow up

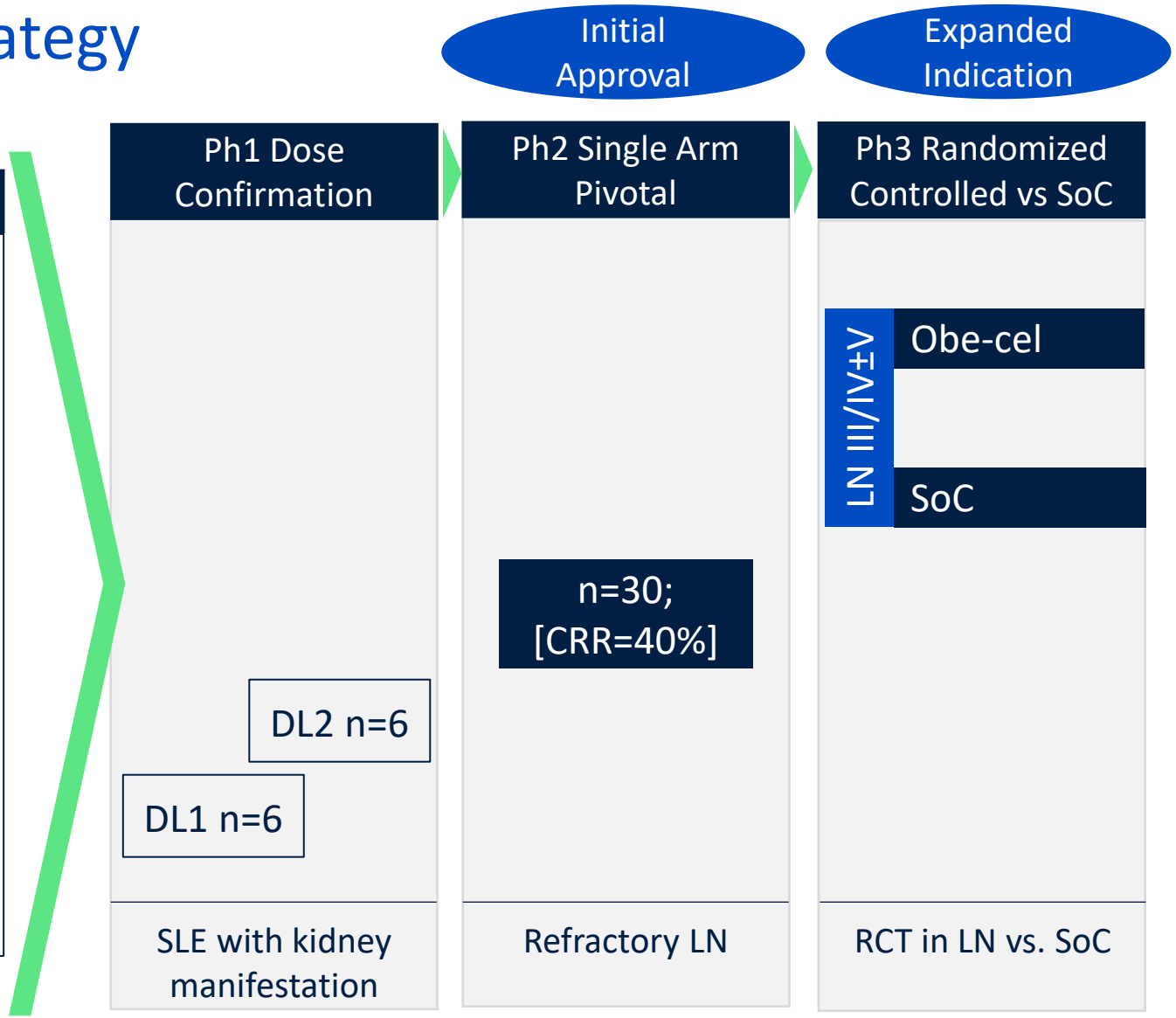
*Kidney biopsy on month 7 showed no disease activity

Lupus nephritis development strategy

Leveraging a fast to market strategy

Development Rationale

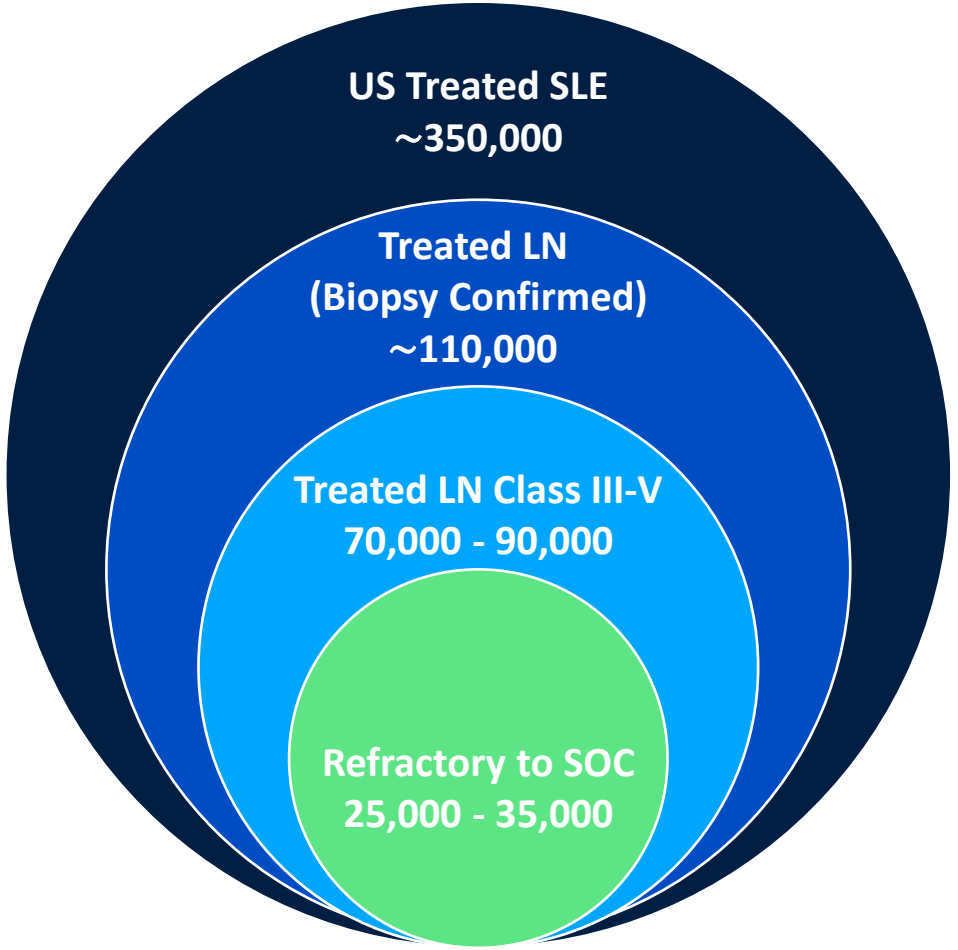
- LN is assessed by quantitative lab- parameter based endpoints (CRR) vs. SLE with a composite endpoint depending on clinical assessments
- Current guidelines require for Class III/IV LN triple therapy including B-cell modifier or CNI, without any treatment options for those being refractory to both
- Lack of SOC for refractory LN opens the possibility to single arm trial path for initial approval
- Outcome of refractory LN single arm trial serves as good predictor for RCT in earlier LN vs. SOC



Anticipate dosing first patient in Phase 2 pivotal trial by year end 2025

Refractory lupus nephritis is a high unmet medical need

- Kidneys are one of the most common organs involved in SLE - 30% – 40% are lupus nephritis patients
- High disease activity is associated with inflammatory processes
- Uncontrolled inflammation leads to high chronicity due to accumulated kidney damage
- Despite treatment advances including regulatory approvals of belimumab and voclosporin the goal to sufficiently improve short and long-term outcomes in patients with LN remains unmet
- There are no treatment options for refractory patients



Clarivate/DRG Epidemiology, Arthritis Rheumatol. 2023 Apr;75(4):567-573, Arthritis & Rheumatology. 2017;69(10):2006-2017

Multiple sclerosis development strategy

Establish Phase 1 Clinical Proof of Concept in MS

- 3 x 6 dose escalation design - a higher dose may be required for CNS effect
- Biomarker readouts to provide nearer term evidence of biological effect at 6 months +
- Definitive clinical outcomes based on clinical disability progression at 12 months +

Initiate Phase 2/3 study in progressive MS patients exhibiting PIRA

- Anticipate a randomised phase 2/3 study design as path to approval
- Phase 1 clinical PoC is derisking for initiation of development in other neurology indications

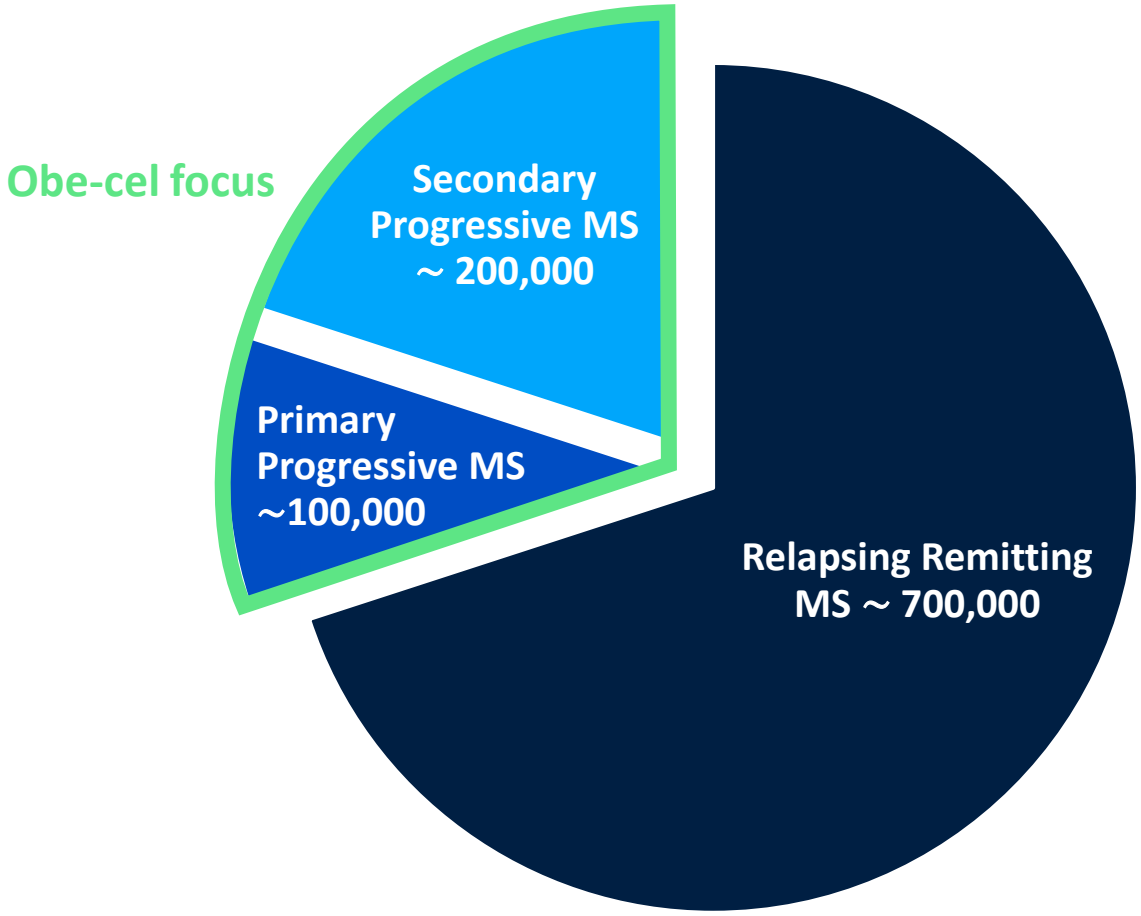
Anticipate dosing first patient in Phase 1 trial by year end 2025

Progressive multiple sclerosis is a high unmet medical need

- MS impacts approximately 1,000,000 individuals in the US[1] and there is currently no known cure

- Around 30% of patients have progressive disease and more than half of Progressive MS patients experience disability progression despite receiving disease modifying agents[2]

- Highest unmet need for patients who continue to progress despite being treated with highly effective agents for at least 6 months



1: GlobalData MS Market Forecast 2020-2030 April 2023
2:Watson, C., Thirumalai, D., Barlev, A. et al. Treatment Patterns and Unmet Need for Patients with Progressive Multiple Sclerosis in the United States: Survey Results from 2016 to 2021. Neurol Ther 12, 1961–1979 (2023). https://doi.org/10.1007/s40120-023-00532-2

Partnerships, pipeline programs and technologies

A broad portfolio of potential next generation modular T cell therapies

Pipeline supports growth with multiple development opportunities

Product	Indication	Target	Preclinical	Phase 1	Phase 2/Pivotal	Approved	Status
AUCATZYL®	**Adult ALL**	**CD19**					**FDA, MHRA^ & EC approved†**
obe-cel	Pediatric ALL	CD19					**Initial data H2 2025**
obe-cel	Lupus Nephritis	CD19					**Enrolling H2 2025**
obe-cel	Progressive Multiple Sclerosis	CD19					**Enrolling H2 2025**

Early-stage Pipeline opportunities

Product	Indication	Target	Preclinical	Phase 1	Status
obe-cel*	B-NHL & CLL	CD19			**Data in peer reviewed journal**
obe-cel*	Primary CNS Lymphoma	CD19			**Data in peer reviewed journal**
AUTO8*	Multiple Myeloma	CD19 & BCMA			**Phase 1 Enrolling**
AUTO8*	Light chain Amyloidosis	CD19 & BCMA			**CTA approved; first patient expected by YE 2025**
AUTO1/22*	Pediatric ALL	CD19 & CD22			**Initiating new cohort in Q2 2025**
AUTO6NG*§	Neuroblastoma	GD2			**Patient dosing ongoing; preliminary data expected in 2026**
AUTO4/5	TRBC1/2+ Peripheral TCL	TRBC1/2			**Moving back into translational research**
AUTO9*	Acute Myeloid Leukemia	CD33,123,CLL1			**Preclinical work ongoing**

^Conditional marketing authorization; †European Commission (EC) conditional approval; *UCL Collaboration; § BioNTech holds option to co-fund and co-commercialise

Oncology Autoimmune

Leveraging our industry leading technology platform via partnerships

Technology partnerships

Leveraging our modular programming technology to generate safer and more effective therapies

Tumor targeting, pharmacological control and activity enhancement for cellular therapies

Validating collaborations with leading pharma and biotech companies

Potential for value creation through near term option exercise fees, milestone payments and royalties from net sales

BIONTECH

Leveraging technology platform for BioNTech's programs

Bristol Myers Squibb

Access to the RQR8 safety switch for selected cell therapy programs for the treatment of cancer

moderna

Access to proprietary binders for the development of mRNA-based therapeutics for the treatment of cancer

Upcoming news flow

Upcoming milestones

Anticipated Milestone or Catalyst	Anticipated Timing
Initial data from PY01 trial in pediatric ALL	H2 2025
SLE Phase 1 trial presentation at American College of Rheumatology (ACR)	Q4 2025
First patient dosed in Phase 2 trial in lupus nephritis	By YE 2025
First patient dosed in progressive MS Phase 1 trial	By YE 2025
First patient dosed in AL amyloidosis Phase 1 trial (UCL collaboration)	By YE 2025

Obe-cel Oncology | Obe-cel Autoimmune/B cell Mediated Disease

Summary

Autolus is positioned for value creation

Obe-cel product franchise supports multiple growth opportunities

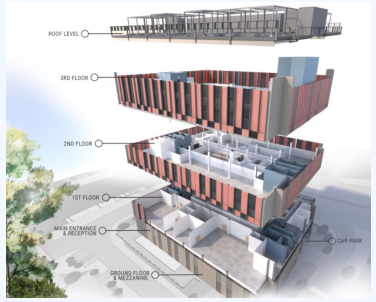
- Highly active, fast off-rate CD19 CAR T therapy with well managed safety profile
- Approved in US, UK* and EU†
- Commercial presence anticipated in 60 US centers by end 2025
- Developing early-stage pipeline of novel CAR-T therapies

Product	Indication	Target	Preclinical	Phase 1	Phase 2/Pivotal	Approved
AUCATZYL®	Adult ALL	CD19				
obe-cel	Pediatric ALL	CD19				
obe-cel	Lupus Nephritis	CD19				
obe-cel	Progressive Multiple Sclerosis	CD19				

Commercial execution and market expansion supported by:

In-house, purpose-built manufacturing facility

Design



Build

Operations

Strategic collaborations and strong cash position

$454.3M‡
as of June 30, 2025

BIONTECH moderna Bristol Myers Squibb

*Conditional marketing authorization, †European Commission (EC) conditional approval, ‡Cash, cash equivalents and marketable securities

Autolus

Thank you

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Executive Director, Investor Relations & External Communications