



First Quarter Financial Results and Operational Progress

May 4, 2023



Disclaimer

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Agenda

- Welcome and Introduction: Alexandra Deschner, IR Consultant
- Operational Highlights: Dr. Christian Itin, CEO
- Financial Results: Dr. Lucinda Crabtree, CFO
- Upcoming Milestones and Conclusion: Dr. Christian Itin, CEO
- Q&A: Dr. Christian Itin and Dr. Lucinda Crabtree

Obe-cel pipeline summary

Continued progress against strategic and operational goals

- **obe-cel in relapsed / refractory (r/r) adult ALL**
 - Long term follow up data from ALLCAR19 was presented at Tandem Meetings with 35% of r/r adult ALL patients in ongoing remission with a median f/u of 36 months (range 24 to 47 months)
 - On track for FELIX data presentation from all patients treated at ASCO as well as data at EHA, both in June, and the filing for a Biologics License Application (BLA) to the U.S. Food and Drug Administration (FDA) at the end of 2023
 - Longer term follow up data and subgroup analysis data expected at ASH in late 2023 as well as at medical conferences in H1 2024
- **obe-cel in other indications and AUTO1/22**
 - ALLCAR19 extension study of obe-cel in r/r B-NHL and CLL will complete enrolment in 2023 and results expected to be published in a peer-reviewed journal
 - CAROUSEL study of obe-cel in peripheral CNS Lymphoma is fully enrolled and data will be submitted for publication in a peer-reviewed journal
 - CARPALL Phase 1 trial of AUTO1/22 in pediatric ALL – updated data presented at EBMT in April 2023 showing molecular ORR of 83% and no indication of antigen loss-driven relapses
 - AUTO1/22 design and non-clinical characterization was published in Molecular Therapy

Other pipeline updates

Continued progress against strategic and operational goals

- **LibrA T1 Phase 1 trial of AUTO4 in Peripheral T Cell Lymphoma – data at ASH demonstrated high metabolic CR rate**
 - AUTO4 update accepted for an oral presentation at ICML in June
- **MCARTY Phase 1 trial of AUTO8 in Multiple Myeloma continuing to enroll patients**
 - First data expected end of 2023
- **Phase 1 trial of AUTO6NG in Neuroblastoma**
 - First patient expected to be dosed in 2023

Operational highlights – first quarter 2023

Continued progress against strategic and operational goals

- **Commercial manufacturing facility in Stevenage, UK progressing on track**
 - Qualification and validation of the commercial manufacturing facility is on track for commencement of Good Manufacturing practice Operations in H2 2023
 - Initial capacity of up to 2,000 batches per year, sufficient to serve global demand in ALL
 - Preparation of CMC package on track, in preparation for submission of BLA to the U.S. FDA by the end of the year
- **Collaboration announced in January with Cabaletta Bio for use of Autolus' Safety Switch System in Cell Therapies for Autoimmune Disease**
- **Board and Management Transitions**
 - John H. Johnson, non-executive Chairman, will not stand for re-election at Autolus' upcoming AGM
 - Dr. Jay T. Backstrom stepped down at end of February 2023
 - Dr. Lucinda Crabtree will step down as CFO in August 2023
 - Searches for replacements are under way
- **Cash of \$343.4m at March 31, 2023, including restricted cash**
 - Post period Autolus moved funds to additional highly rated liquid money market funds
 - Limit to any one counterparty is <25% of our total cash and cash equivalents balance

Operational highlights – post period end

Continued progress against strategic and operational goals

- **Establishing core distribution capabilities required to commercialize a CAR T-cell therapy in the US including selecting distributor, Cardinal Health**
 - Depot model
 - Continuing to build out Autolus' own commercial infrastructure
 - Working towards on-boarding centers over the course of this year
- **Hosted Capital Markets Day presenting obe-cel potential positioning and commercial opportunity, if approved**
- **Published paper in *Molecular Therapy*, 'Dual targeting of CD19 and CD22 against B-ALL using a novel high sensitivity aCD22 CAR'**
 - Suggests AUTO1/22 may offer potential to improve outcomes in B-cell malignancies
- **Published paper in *Molecular Therapy Nucleic Acids*, 'Novel Fas-TNFR chimeras that prevent Fas ligand-mediated kill and signal synergistically to enhance CAR T-cell efficacy'**
 - Expanding the Autolus toolkit of T-cell engineering modules against complex and immunologically hostile cancers, including solid cancer applications

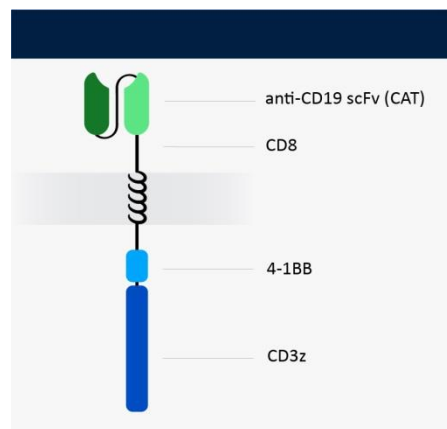


LEAD CLINICAL PROGRAM

Obe-cel

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

Obe-cel has a unique mechanism of action



CD19 binder with fast off-rate

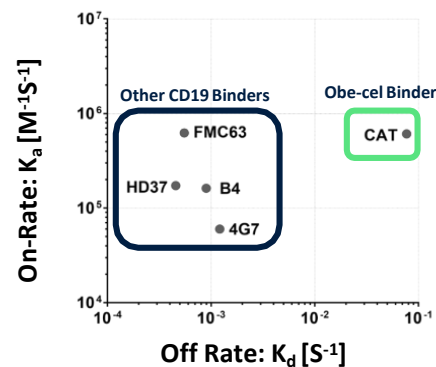
Potential for improved potency, reduced toxicity

Avoided over-activation of CAR T cells
-> Reduced toxicities

Increased CAR T peak expansion
-> Improved persistence

Avoided exhaustion of CAR T cells
-> Improved engraftment
-> Improved persistence

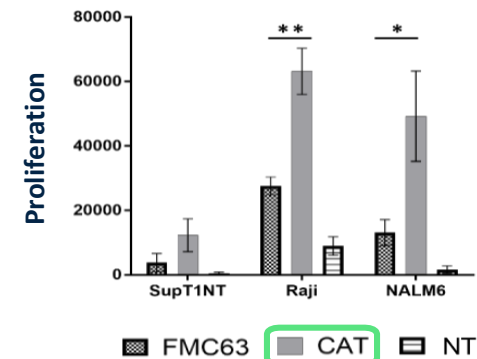
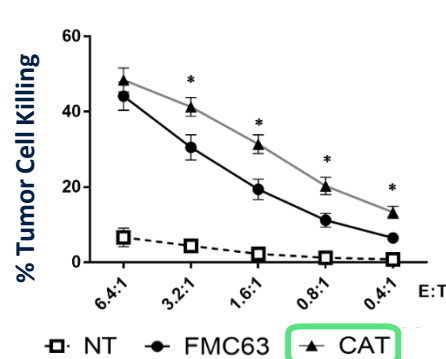
Fast off-rate



Obe-cel has a shorter half-life of interaction compared to binders used in approved products

- obe-cel = 9.8 seconds
- Kymriah® = 21 minutes

Enhanced cytotoxicity and proliferation



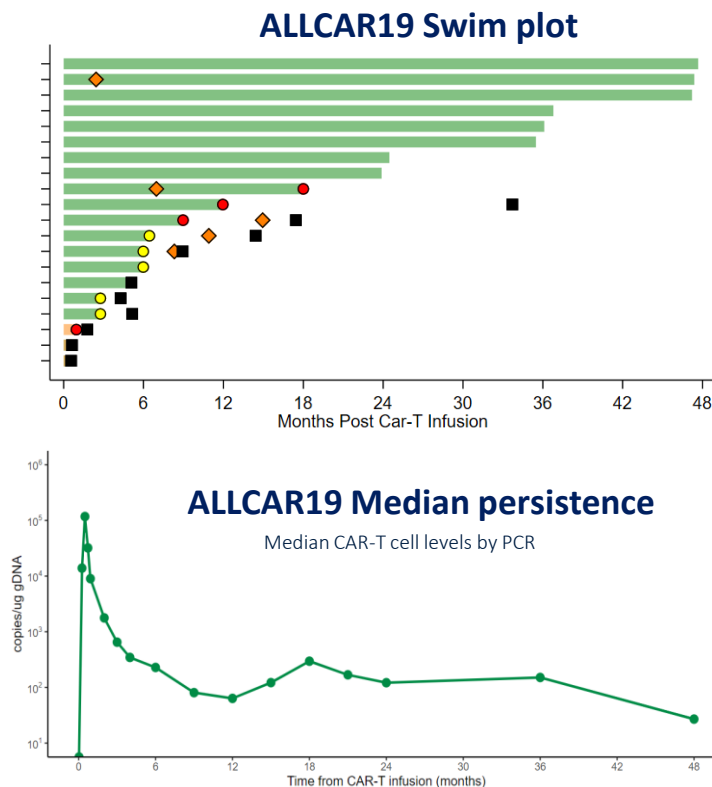
Obe-cel is a potentially transformational therapy for adult ALL

Unique CAR T design to drive differentiated product profile

Obe-cel – Key Properties

- Target engagement with fast off-rate drives unique product properties
- High Overall Remission Rate (ORR) across all patient populations evaluated^{1,2}
- 35% of patients with long-term remission, without any further therapy²
- All patients with long term remissions have long-term persisting CAR T cells²
- Well manageable safety profile

Obe-cel – Key Data



Regulatory Designations

Orphan Drug designation
by FDA for B-ALL

Orphan Medicinal Product designation
by EMA in ALL

RMAT designation
by FDA in R/R B-ALL

Prime designation
by EMA in R/R B-ALL

ILAP designation by MHRA
in Adult R/R B-ALL

NOTES

1. FELIX study
2. ALLCAR19 study

FELIX Phase 2 Study Overview

Interim analysis completed Q4 2022 – **met primary endpoint** – next data readout at ASCO & EHA

FELIX

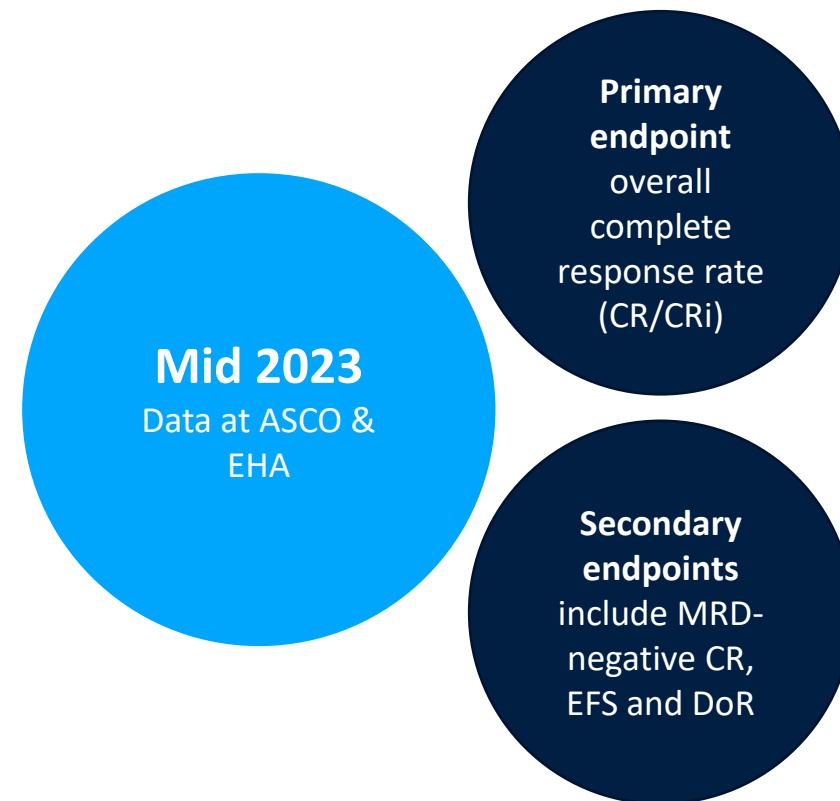


Pivotal phase 2 trial in relapsed / refractory (r/r) adult ALL patients (NCT04404660)

Phase 2 has up to 100 relapsed/refractory adult ALL patients with morphological disease:

- 34 sites in US, UK and Spain
- Phase 1b run-in study – completed
- Phase 2 study morphological cohort fully enrolled
- Phase 2 study interim analysis completed in Q4 2022 – primary end point reached
- Phase 2 study data presentation planned for mid 2023

Patients with minimal residual disease (MRD) evaluated in separate study arm



FELIX Phase 2 Pivotal trial met primary endpoint

Positive data is a catalyst for the next stage of growth and preparation for commercialization

- Phase 2 pivotal FELIX study of obe-cel in r/r adult ALL has met its primary endpoint, based on an interim analysis of 50 patients with morphological disease, as verified by an IDMC
- The primary endpoint for the FELIX Phase 2 trial is the ORR, defined as CR and CRi
- Obe-cel demonstrated ORR of 70% in interim analysis of 50 patients with r/r ALL
- Encouraging tolerability data observed, with 3% \geq Grade 3 Cytokine Release Syndrome (CRS) and 8% \geq Grade 3 Immune effector cell-associated neurotoxicity syndrome (ICANS) in 92 patients evaluable for safety
- Screening completed for patients for entry into the morphological cohort
- Blackstone paid a development milestone of \$35 million, earlier than anticipated, at this interim analysis

Obe-cel showed consistent clinical profile across three clinical studies

Data from 3 studies - range of ages and patient conditions

Obe-cel demonstrated a favourable tolerability profile: no high-grade CRS and limited ICANS

	CARPALL #1 Peds ALL	ALLCAR19 #2 Adult ALL	FELIX P1b #3 Adult ALL	FELIX P2 Adult ALL
n	14	20	16	50 (92)*
ORR (CR & CRi) (95% CI)	86% (57%, 98%)	85% (62%, 97%)	75% (48%, 93%)	70%
CRS ¹ ≥ Grade 3	0%	0%	0%	3%
CRS ¹ any Grade	93%	55%	56%	ND
Neurotox ² ≥ Grade 3	7%	15%	6%	8%
Neurotox ² any Grade	50%	20%	13%	23%
Median Age	9	42	42	ND
Bone marrow blast >20% at LD	21%	60%	75%	ND
Bone marrow blast <5% at LD	71%	35%	25%	ND
Prior blinatumomab	7%	25%	56%	ND

¹ CRS grading based on Lee et al (2014) for CARPALL and ALLCAR19, and ASTCT grading (Lee et al 2019) for FELIX

² Neurotoxicity grading based on CTCAE v4.03 for CARPALL and ALLCAR19, and ASTCT ICANS grading (Lee et al 2019) for FELIX

* Efficacy analysis for FELIX 2 trial conducted in 50 patients whereas safety analysis conducted in 92 patients

#1 Ghorashian et al. Nature Medicine 2019

#2 Roddie et al. J Clin Oncol, 2021

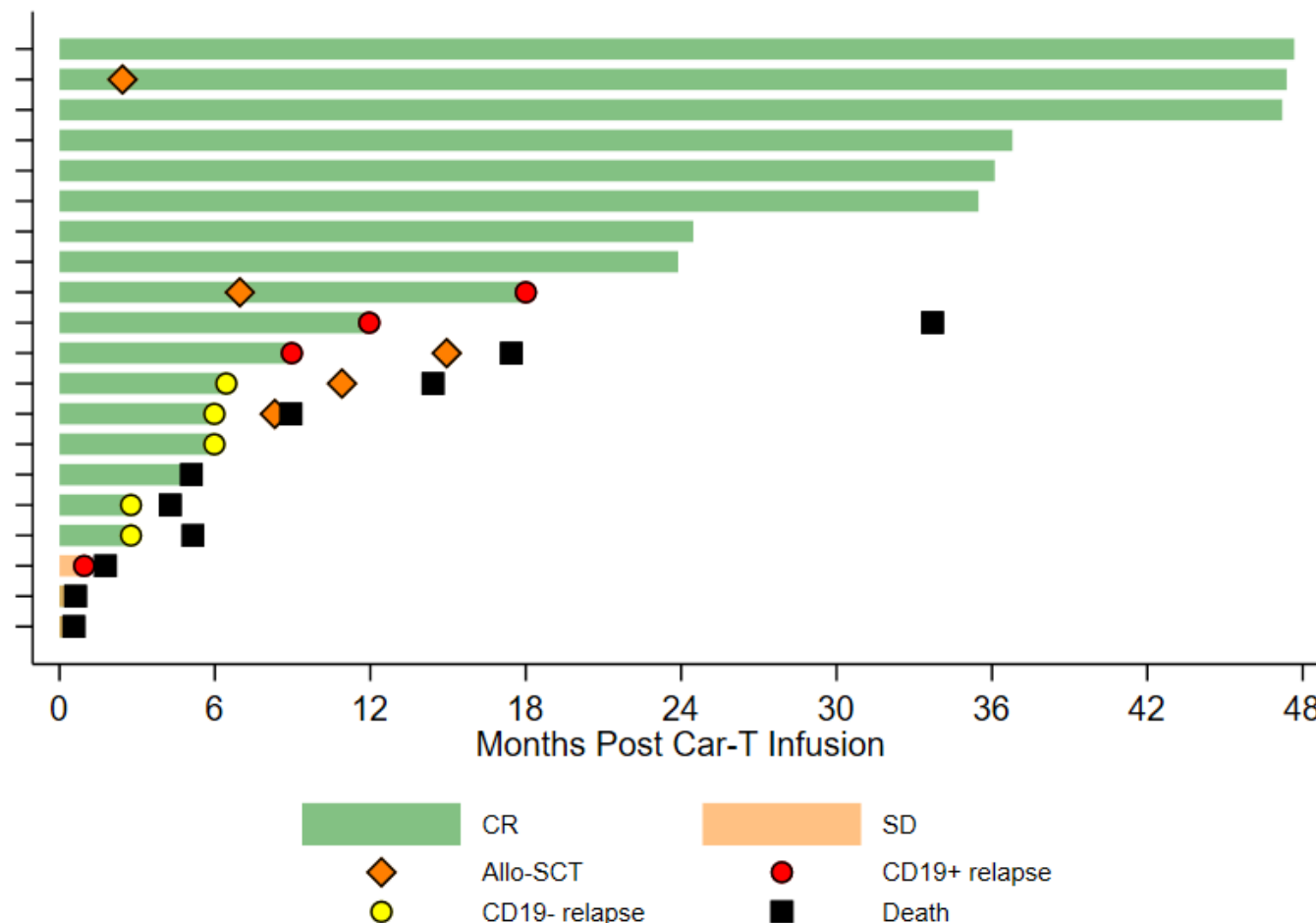
#3 Culshaw et al, ASH 2021, abstract #477

Obe-cel at ASH 2022 – B-ALL long term follow up from Ph1 ALLCAR19 trial

‘Safety, Efficiency and Long-Term Follow-up of obe-cel, a Fast-Off Rate CD19 CAR in Relapsed/Refractory B-Cell Acute Lymphoblastic Leukaemia and Other B-Cell Malignancies’

B-ALL patients

- Of the 20 infused B-ALL patients, 8/20 (40%) are in ongoing CR at a median FU of 36 months (IQR 24-47) post obe-cel
- 7/20 (35%) maintain remission without any further therapy (including TKI)
- All patients with long term remissions have long term persisting CAR T cells



Treatment landscape is changing with the introduction of immuno-therapies

However, allo SCT continues to be 'Gold Standard' for long term remission and/or curative therapy

BLINATUMOMAB

Standard of Care

A bi-specific CD19-directed CD3 T-cell engager (BiTE)

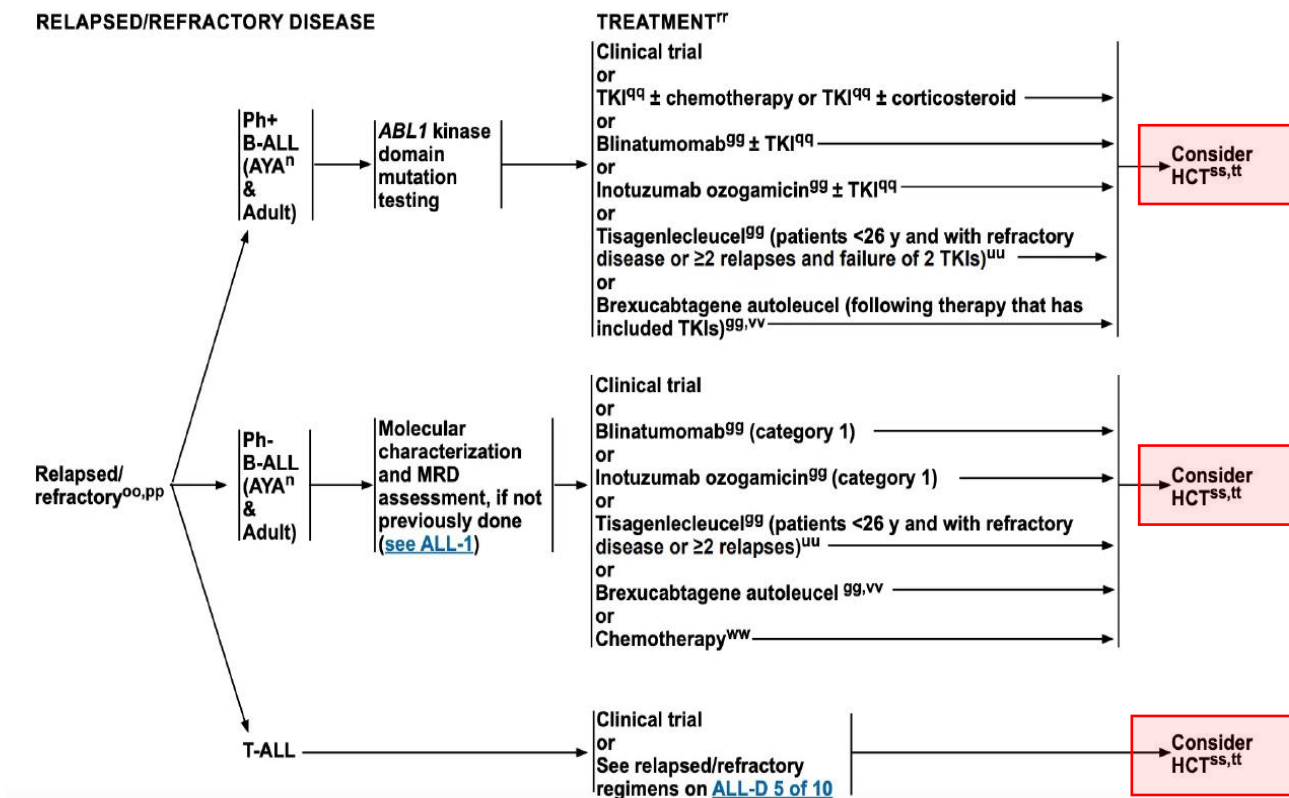
INOTUZUMAB OZOGAMICIN

A CD22-directed Antibody-drug conjugate with calicheamicin

BREXUCABTAGENE AUTOLEUCEL

Recently approved

A CD19-directed autologous CAR T cell immunotherapy



New innovative options needed in r/r adult ALL despite approved agents

Current standard of care and recently approved agents in r/r adult ALL¹

	STANDARD OF CARE		RECENTLY APPROVED
	Blincyto ^{®2} (blinatumomab)	Besponsa ^{®3} (inotuzumab ozogamicin)	Tecartus ^{™4} (brexucabtagene autoleucel)
N	271	109	54
ORR	44%	81%	65%
EFS/PFS	31% @ 6m ~10% @ 18m	~45% @ 6m ~20% @ 18m	~65% @ 6m ~25% @ 18m
median DoR	7.3m	4.6m	13.6m
median OS	7.7m	7.7m	18.2m
CRS ≥ Grade 3	5%	Not reported	26%
Neurotox any Grade	65%	Not reported	87%
Neurotox ≥ Grade 3	13%	Not reported	35%
Subsequent SCT post treatment	24%	41%	18%
Other notable observations	NA	14% Hepatic VoD	40% vasopressor use ⁵

1. Data are not from head-to-head clinical testing and should not be viewed as comparative data

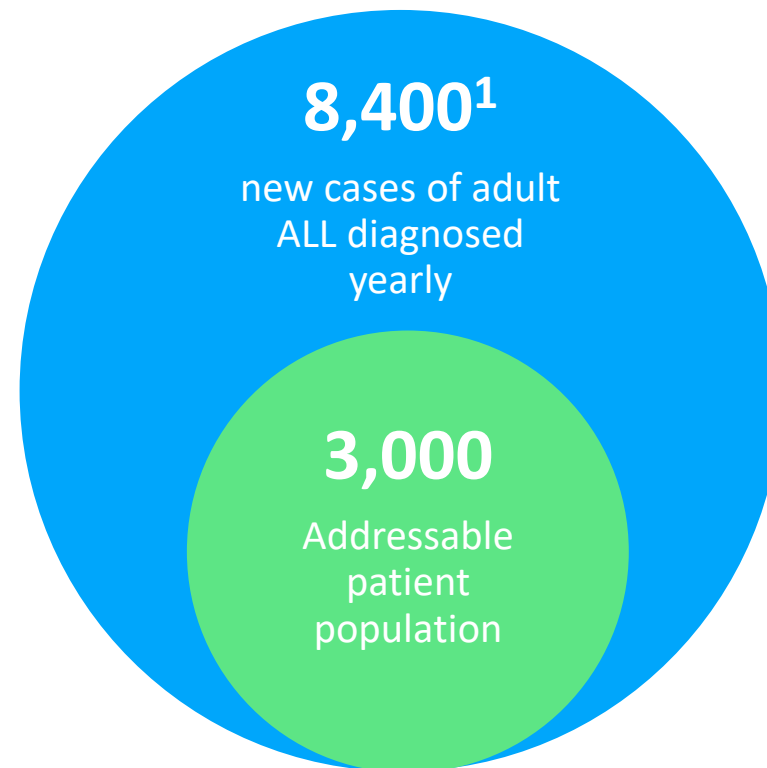
2. Kantarjian et al., 2017/ USPI (product label) 3. Kantarjian et al., 2016/ USPI (product label) 4. Shah et al. Lancet 2021/ USPI (product label) 5. Shah et al. ASCO 2021

The estimates of EFS/PFS are read from the KM curves. The efficacy data in ZUMA-3 evaluating brexucabtagene autoleucel are based on the modified ITT population while the blinatumomab and inotuzumab ozogamicin data are based on the ITT population

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
- Combination chemotherapy enables 90% of adult ALL patients to experience Complete Response (CR)
 - Only 30% to 40% achieve long-term remission
- Current T cell therapies for adult patients are Blincyto® and Tecartus™
 - Both therapies are highly active, but frequently followed by subsequent treatments (e.g. alloSCT)
 - Blincyto®: favourable safety profile, few patients experiencing severe CRS and ICANS, but limitations on convenience - continuous i.v. infusion during 4-week treatment cycles
 - Tecartus™: more challenging to manage - induces elevated levels of severe CRS, a high level of ICANS, and requires vasopressors for many patients
- Opportunity to expand the addressable patient population in earlier lines of therapy



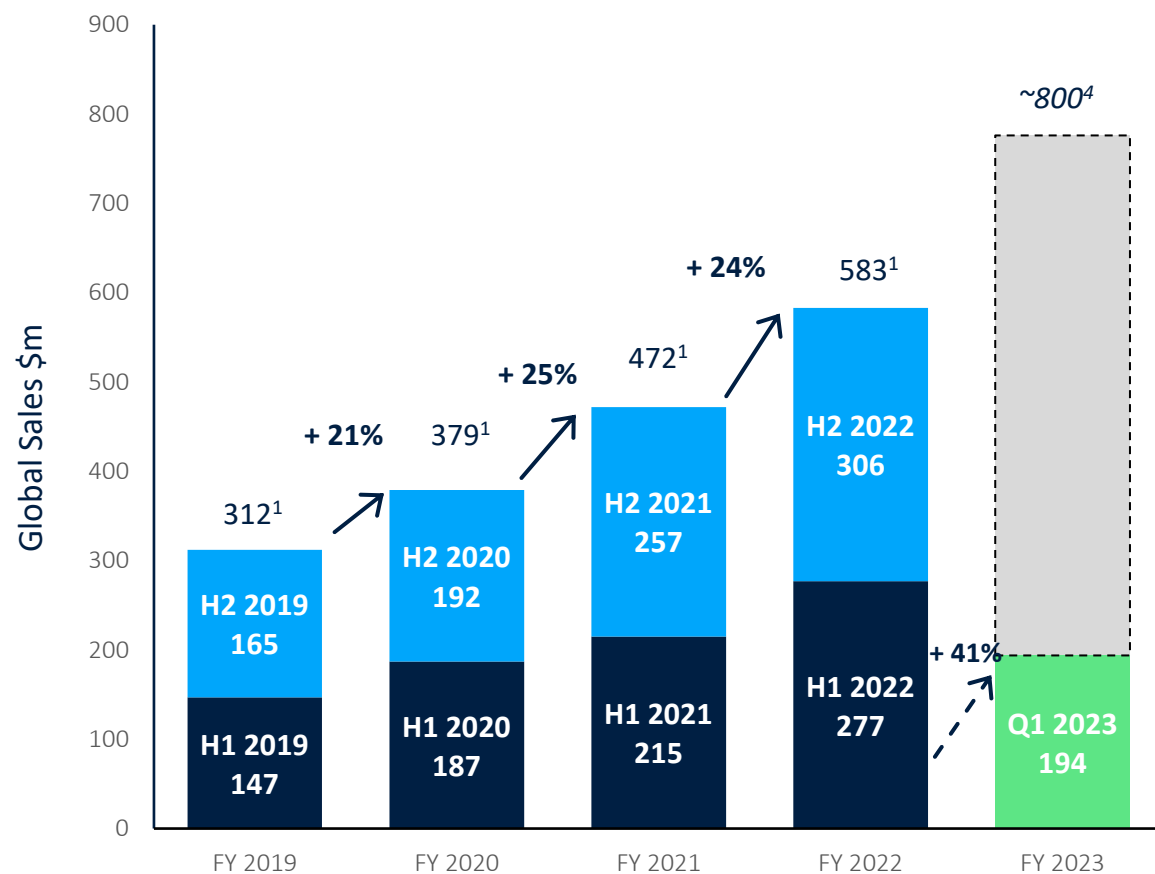
NOTES

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

Obe-cel could launch into an expanding ALL market if approved

Blincyto[®], current market leader, shows annual revenue growth of c.24%

Reported Blincyto[®] sales¹



- Blincyto[®] sales price estimated to be \$207k² (for 2 cycles) supporting approx. >2,000 commercial adult ALL patients, growing at a rate of 24%
- Kymriah[®] is priced at \$508k in pediatric ALL. Breyanzi[®] is priced at \$447k in DLBCL³. Tecartus[™] is priced at \$424k³ for adult ALL
- Breyanzi[®] and other CAR T cell therapies are expanding delivery center footprint
- Tecartus[™] is expected to establish CAR T use in adult ALL
- If approved, obe-cel has the potential to be best-in-class curative therapy and expanding use beyond academic transplant centers

NOTES

1. As per Amgen quarterly SEC filings
2. <https://www.cms.gov/medicare/medicare-part-b-drug-average-sales-price/2022-asp-drug-pricing-files>
3. Red Book pricing database <https://www.ibm.com/products/micromedex-red-book/pricing>
4. Autolus crude extrapolation from Q1 2023, based on sustaining \$194m for Q2, Q3, Q4 2023

Obe-cel next steps to commercialization

Data and path to approval

- FELIX – clinical data presentations at ASCO and EHA
- Filing of Biologics License Application (BLA) to U.S. Food and Drug Administration (FDA) planned for end of 2023
- Filings of EU and UK marketing authorization applications planned for H1 2024

Manufacturing

- Bespoke commercial manufacturing facility built in Stevenage, UK
- Operational start up in 1H 2023 (qualification and validation)
- GMP license from MHRA planned for Q3 2023
- Facility has initial capacity to produce up to 2,000 batches PA; sufficient for global demand in ALL

Commercialization

- Focus in 2023 on Medical affairs, HTA dossier compilation and center onboarding
- Focus in 2024 on launch preparation and execution
- Consider EU partner for launch

Building the obe-cel opportunity

Deep value program with potentially broad applicability

Obe-cel lifecycle outlook - NHL/CLL and Pediatric ALL - ASH 2022

High level of clinical activity with well manageable safety profile

- Clinical data supports differentiated product profile in Adult ALL, B-NHL (obe-cel) and Pediatric ALL (AUTO 1/22)
- Potential to drive adoption of obe-cel across B-cell malignancies

ALLCAR19 – B-NHL and CLL

N	25										
ORR	<table border="0"> <tr> <td>All patients</td> <td>92%</td> </tr> <tr> <td>Follicular Lymphoma</td> <td>100%</td> </tr> <tr> <td>Mantle Cell Lymphoma</td> <td>100%</td> </tr> <tr> <td>DLBCL</td> <td>88%</td> </tr> <tr> <td>CLL/SLL</td> <td>80%</td> </tr> </table>	All patients	92%	Follicular Lymphoma	100%	Mantle Cell Lymphoma	100%	DLBCL	88%	CLL/SLL	80%
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CLL/SLL	80%										
CRS ≥ Grade 3	0%										
CRS any grade	56%										
Neurotox/ICANS ≥ Grade 3	0%										
Neurotox/ICANS any Grade	4%										

- Median Follow-Up time from infusion in NHL/CLL cohort: 12.9 months (IQR 7.4-18.0)
- High ORR, with long term persistence driving durable outcomes
- Favourable safety profile with low ICANS and no high grade CRS

CARPALL (AUTO1/22 cohort (n=12))

Molecular MRD neg CR/Cri by d30	10 (83%)						
Disease progression	2						
Relapse	<table border="0"> <tr> <td>Antigen negative relapse</td> <td>0</td> </tr> <tr> <td>Emergence of molecular MRD</td> <td>0</td> </tr> <tr> <td>CD19+/CD22+ relapse</td> <td>5</td> </tr> </table>	Antigen negative relapse	0	Emergence of molecular MRD	0	CD19+/CD22+ relapse	5
Antigen negative relapse	0						
Emergence of molecular MRD	0						
CD19+/CD22+ relapse	5						
CRS ≥ Grade 3	0						
Neurotox/ ICANS ≥ Grade 3	1 (8%)						

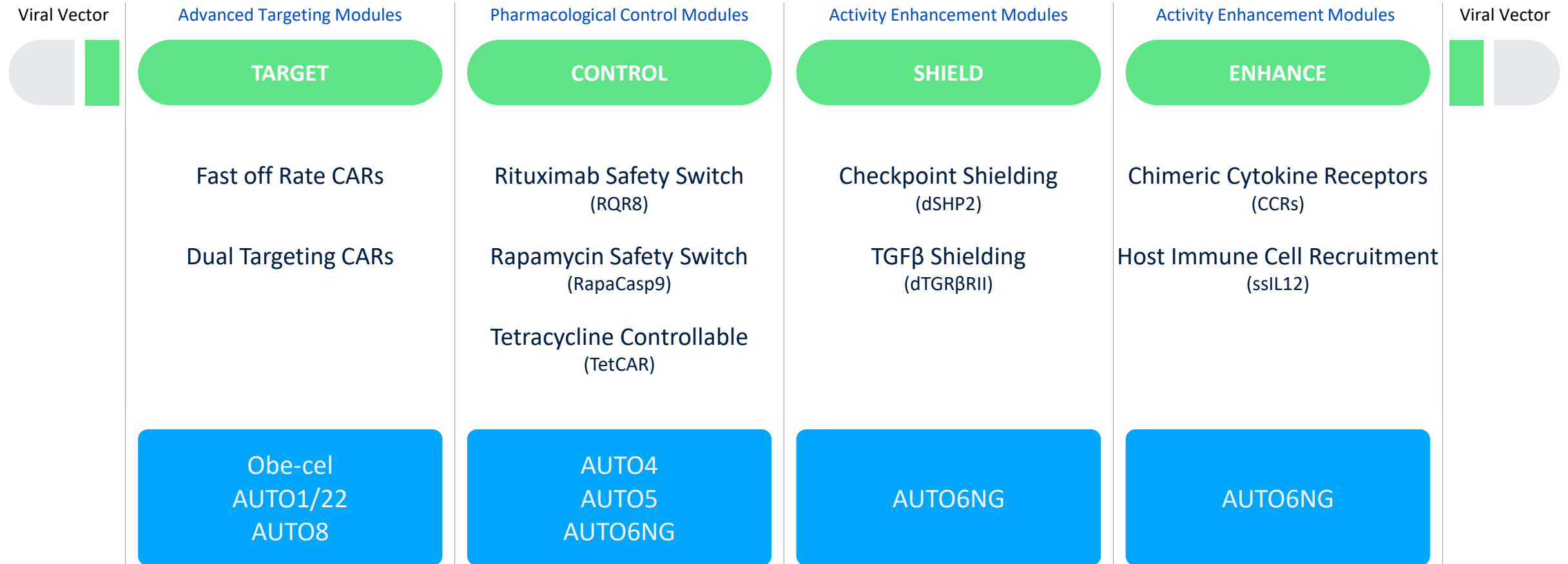
- Patient population ineligible for commercial CAR T therapy
 - Including prior CAR-T failure, patients with CD19-ve disease and patients with isolated extramedullary disease
- Est. molecular CR rate for obe-cel in this patient group approx. 40%
- 2 of 3 patients who had CD19 negative disease achieved MRD negative CR demonstrating the efficacy of the CD22 CAR.
- 1 year EFS 60% despite the high-risk patient cohort
- At median FU 8.7 months, no cases of leukemic relapse or emergence of MRD related to antigen escape.

Pipeline

A broad portfolio of potential next generation modular T cell therapies

A broad toolkit which is core to our strategy of modular innovation

Advanced T cell programming



Early-stage pipeline

Leveraging academic collaborations to generate opportunity for non-dilutive funding opportunities

PRODUCT	INDICATION	TARGET	STUDY NAME	PHASE
AUTO4	TRBC1+ Peripheral TCL	TRBC1	LibrA T1	Phase 1
AUTO5	TRBC2+ Peripheral TCL	TRBC2		Preclinical
AUTO6NG	Neuroblastoma; Other tumor types	GD2		Preclinical
AUTO8	Multiple Myeloma	BCMA & CD19	MCARTY*	Phase 1

 T-Cell Lymphoma

 Solid Tumors

 Multiple Myeloma

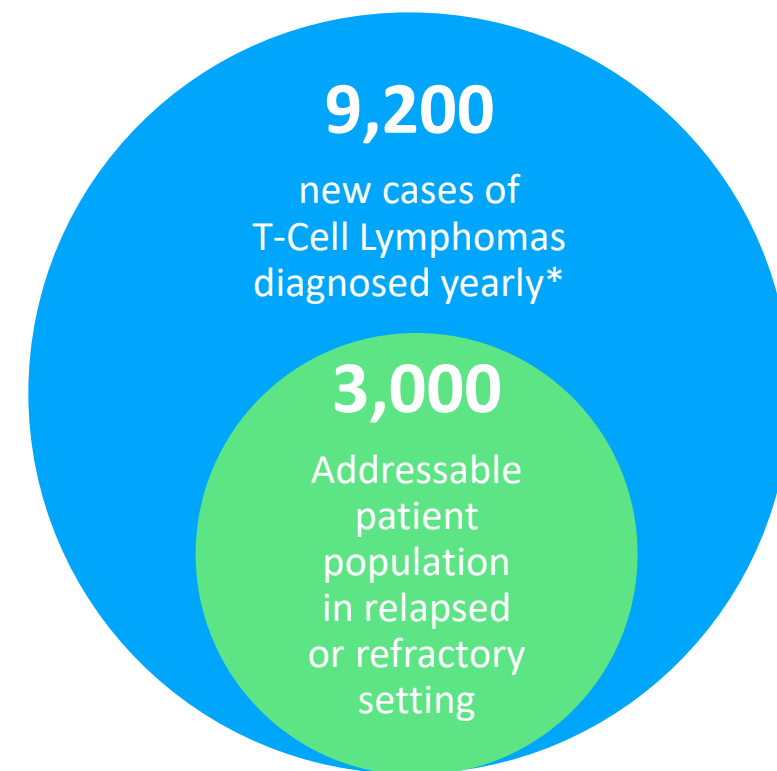
* Collaboration with UCL

Next data readouts expected in 2023/2024

AUTO4 and AUTO5 for Peripheral T-Cell Lymphoma

T-Cell Lymphoma is an aggressive disease with a very poor prognosis

- A large portion of T-Cell Lymphoma patients are refractory/relapse following first-line treatment (68%)¹
- Standard of care is variable and often based on high-dose chemotherapy and stem cell transplants:
 - Median 5 yrs OS: 32%²
- Relapsed/refractory patients have a worse prognosis
 - Median PFS approximately 3 months/ Median OS < 6 months^{1,3}
- Brentuximab survival benefit restricted to CD30 positive ALCL subtype⁴
 - approx. 12% of total PTCL patient population^{4,5}
- T cell lymphoma has not benefited from advances in immunotherapy
 - Pan T-cell depletion highly toxic; few/no tumor-specific antigen targets

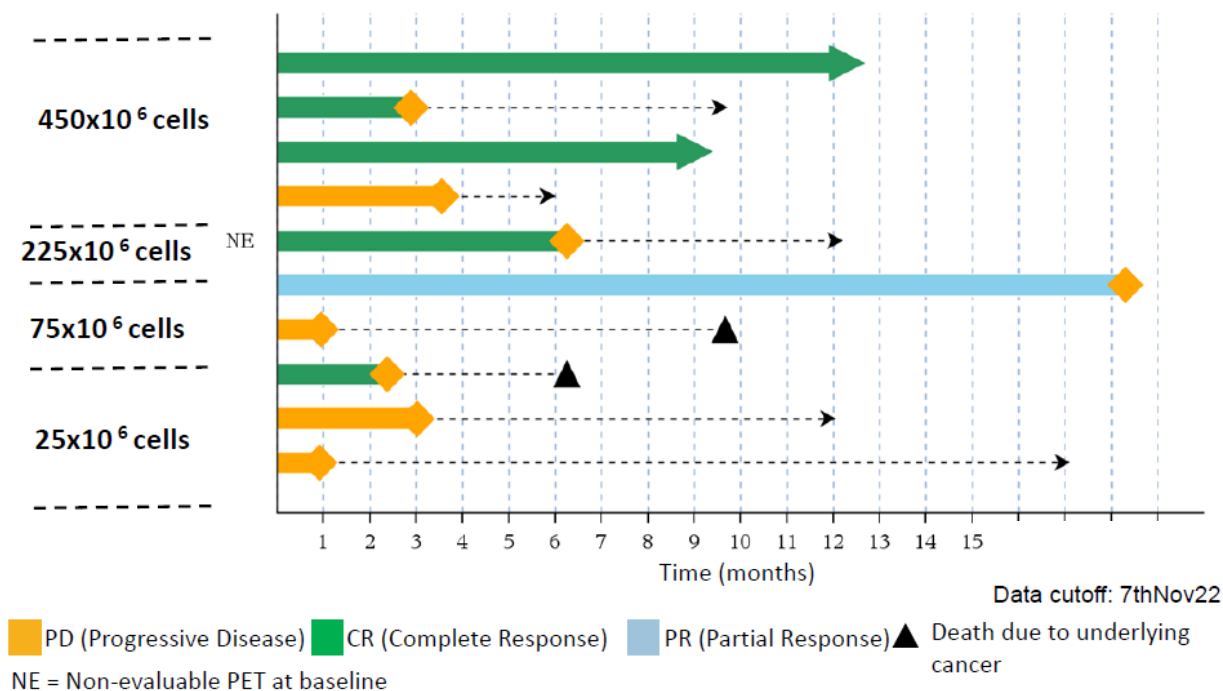


*Japan, US and EU5 (2020 DRG Epidemiology Data)

AUTO4 for Peripheral T-Cell Lymphoma: ASH 2022

Patients achieve durable metabolic complete responses

- AUTO4 treatment was well tolerated with no dose-limiting toxicities
- Ongoing responses at 9 and 12 months post-dosing at the highest dose tested (450x10⁶) are encouraging
- No CAR T cell expansion was seen in peripheral blood but CAR T cells were detected in an on-treatment lymph node biopsy
- The study is ongoing, with additional patients due to be treated to define the recommended phase 2 dose

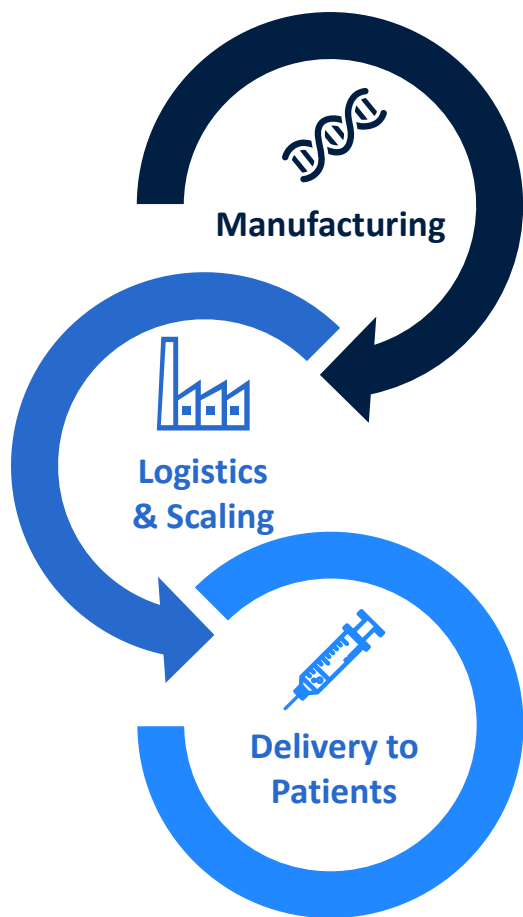




Manufacturing

Commercial manufacturing facility on track

Building a fully integrated manufacturing and logistics platform



- Phase 1 of build project completed in Q4 2022 – handover of first clean rooms to Autolus on Nov 25, 2022
- Equipment installations and qualification by Autolus on track for Good Manufacturing Practice (GMP) operations by H2 2023
- Tried and tested manufacturing process within an established regulatory framework
- Planned annual capacity of at least 2,000 batches per year to service global demand in ALL
- CMC package for submission to FDA progressing per plan



Financial Results

Financial summary

Cash runway into 2025

USD	Q1 2023 (\$ '000)	Q1 2022 (\$ '000)	Variance (\$ '000)
Grant Income	0	166	(166)
License Income	1,292	0	1,292
R&D	(31,344)	(33,963)	2,619
G&A	(9,284)	(7,987)	(1,297)
Loss on disposal of property and equipment	(3,768)	0	(3,768)
Total Operating expense, net	(43,104)	(41,784)	(1,320)
Other income, net	782	860	(78)
Interest Income	3,446	28	3,418
Interest expense	(4,905)	(1,790)	(3,115)
Income tax benefit	3,970	5,624	(1,654)
Net Loss after tax	(39,811)	(37,062)	(2,749)
USD	Q1 2023 (\$ '000)	Q4 2022 (\$ '000)	Variance (\$ '000)
Cash Balance (including restricted cash)	343,355	382,761	(39,406)

- Foreign currency: 59% of cash at 31 March held in GBP

Summary

Autolus planned news flow

Obe-cel

- FELIX - Phase 2 clinical presentation ASCO and EHA in June
- Biologics License Application (BLA) to FDA by end of 2023
- Longer term follow up data planned for ASH 2023 and medical conferences in 1H 2024

Pipeline

- Updates on AUTO1/22 and AUTO 4 planned for 2023
- Multiple academic clinical studies ongoing expected to generate additional news flow in 2023/2024
- Opportunity for news flow related to collaborations and technology licensing

Manufacturing

- Qualification of Nucleus facility in H1 2023
- Commencement of GMP operations in H2 2023

The Autolus opportunity

Building a fully integrated CAR T company - Expanding excellence in R&D and manufacturing to commercialization

- Obe-cel, a potentially best in class product candidate, met primary endpoint of ORR in adult patients with r/r ALL
 - Planned BLA filing end of 2023
 - Additional opportunity for obe-cel in B-NHL indications
 - Highly valuable pipeline with potential broad applicability in cancers with limited treatment options
- Purpose-built commercial manufacturing facility ready for qualification and validation activities in 1H 2023 with an initial capacity of up to 2,000 batches per year, sufficient to serve global demand in ALL
 - Strong technology foundation, validating collaborations with leading pharma and biotech companies – BMS, Moderna and Cabaletta Bio
 - Strong cash position with \$343.4 million (March 31, 2023)

Thank you

