Autolus

Third Quarter Financial Results and Operational Progress

November 3 2022

Disclaimer

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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 20-F filed with the Securities and Exchange Commission on March 10, 2022, 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 release, 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.

Agenda

- Welcome and Introduction: Olivia Manser, Director, Investor Relations
- 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

Pipeline highlights – third quarter 2022

Continued progress against strategic and operational goals

- **obe-cel in relapsed / refractory (r/r) adult ALL**
  - FELIX pivotal Phase 2 trial on track to report initial results in Q4 2022; data presentation planned for medical conference in mid-2023
  - ALLCAR19 Phase 1 trial longer follow up data expected at ASH, December 2022

- **obe-cel in other indications**
  - ALLCAR19 extension study of obe-cel in r/r B-NHL - longer follow up data expected at ASH, December 2022; CAROUSEL study of obe-cel in peripheral CNS Lymphoma update expected in 2023

- **Other pipeline updates**
  - CARPALL Phase 1 trial of AUTO1/22 in pediatric ALL - Longer follow up data expected at ASH, Dec 2022
  - LibrA T1 Phase 1 trial of AUTO4 in Peripheral T Cell Lymphoma – longer follow up data expected at ASH, Dec 2022
  - MCARTY Phase 1 trial of AUTO8 in Multiple Myeloma continuing to enroll patients – first data expected H2 2023
  - MCARGD2 Phase 1 trial of AUTO6NG in Neuroblastoma – first patient expected to be dosed in H1 2023

Operational highlights – third quarter 2022

Continued progress against strategic and operational goals

- **Two technology agreements announced (post-period end)**
  - Bristol Myers Squibb agreement with Autolus for access to the Company's proprietary RQR8 rituximab-induced safety switch for incorporation into a set of selected cell therapy programs
  - Moderna exercised an option on one of the proprietary binders being developed against an undisclosed immuno-oncology target for the delivery of pioneering messenger RNA (mRNA) therapeutics

- **Build of the commercial manufacturing facility in Stevenage, UK progressing on track with schedule**
  - Phase 1 of build scheduled to complete in Q4 2022 - remains on track for Good Manufacturing practice Operations commencing in H2 2023
  - Development work for CMC package on track, in preparation for potential submission of BLA

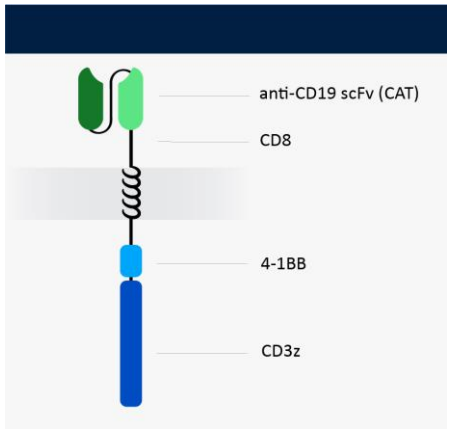
- **Cash of $163m at 30 September 2022, not including $19.1M in R&D tax credits from HMRC received in October 2022**

LEAD CLINICAL PROGRAM

obe-cel

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

We believe obe-cel has a unique mechanism of action



CD19 binder with fast off-rate

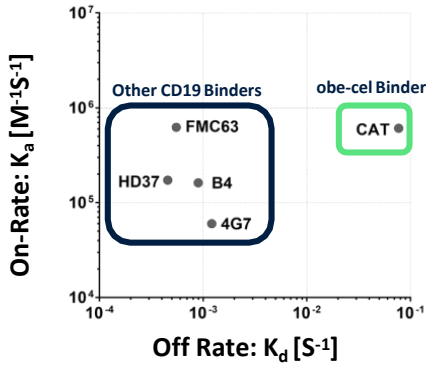
- **Potential for improved potency, reduced toxicity**

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

Increased CAR T peak expansion
-> Improved persistence

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

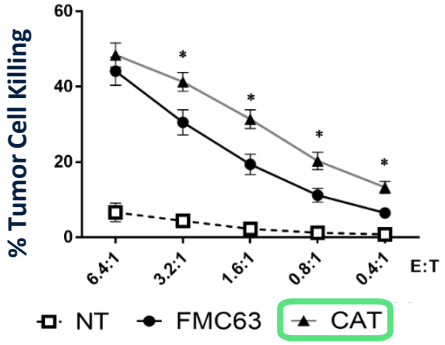
- **Fast off-rate**

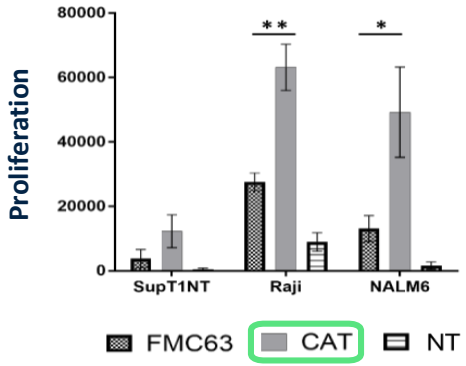


obe-cel has a shorter half-life of interaction compared to binders used in approved products

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

- **Enhanced cytotoxicity and proliferation**





Ghorashian et al. *Nature Medicine* 2019

obe-cel for adult Acute Lymphoblastic Leukemia (ALL): high unmet need

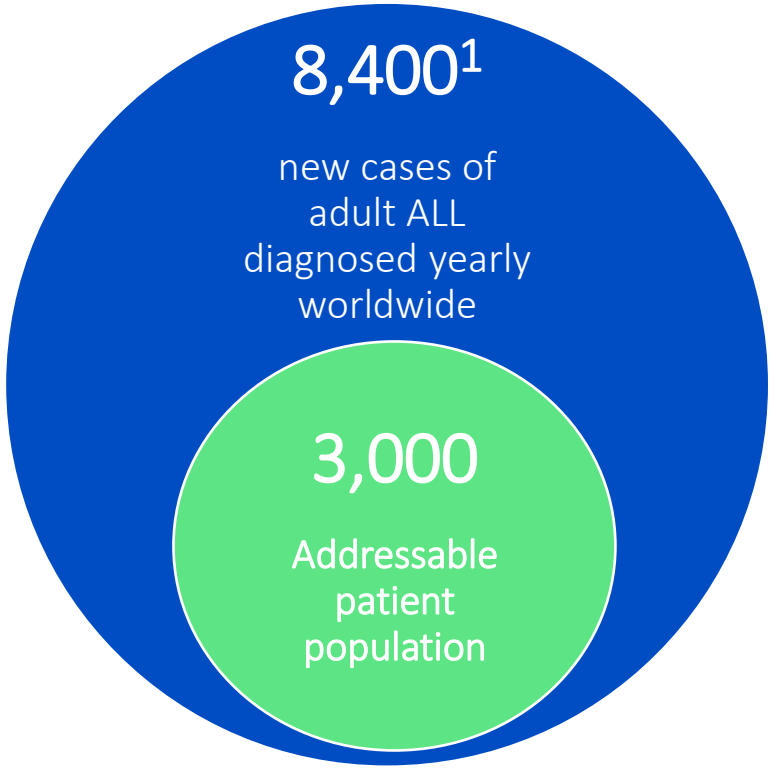
Successful therapy requires high level of activity and sustained persistence paired with good tolerability

- 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 in for adult patients are Blincyto® and Tecartus™ [2]
  - 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
2. Currently approved in US only

obe-cel is a potentially transformational therapy for adult ALL

Unique CAR T design drives differentiated product profile

- Unique mechanism of action built on a fast off-rate from CD19 target antigen
- High Overall Response Rate (ORR) across all patient populations evaluated[1]
- Sustained morphological Event Free Survival (EFS) of 46% with a median follow-up of 29.3 months[2]
- Long term CAR T persistence may drive durability of response
- Favorable tolerability profile:
  - No high-grade Cytokine Release Syndrome (CRS)[2]
  - Limited immune effector cell-associated neurotoxicity syndrome (ICANS)

obe-cel

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

Next steps: obe-cel initial results (FELIX) expected in Q4 2022

obe-cel is the first Autolus program to move into a pivotal program

FELIX 19

Pivotal Phase 2 trial in adult ALL ongoing since mid-2021 with sites in UK, Spain and US

Up to 100 relapsed/refractory adult ALL patients

Phase 1b run-in component, prior to single arm Phase 2 potential pivotal trial

Pre-determined futility analysis passed in Q1 2022

Q4 2022
Initial results

Primary endpoint: overall complete response rate (CR/Cri)

Mid 2023
Data at medical conference

Secondary endpoints: include MRD-negative CR EFS and DoR

Data in MRD population expected to maximise outcomes from the study

- Expansion arm initiated for Minimal Residual Disease (MRD) disease cohort of up to 50 additional patients
- Patients enrolled in parallel to the main Felix cohort
- The additional data aims to evaluate the profile of obe-cel in patients across all levels of disease burden in adult ALL
- Data from the population has potential to support adoption as earlier line treatment

Building the obe-cel opportunity

Deep value program with potentially broad applicability

Capitalising on the unique profile of obe-cel

- Clinical data supports differentiated product profile
  - High degree of activity and persistence -> potential to drive long term outcomes
  - Attractive tolerability profile -> has potential to drive adoption of obe-cel across B-cell malignancies
  - Initial NHL data is consistent with this profile

- Solid foundation for onward development

PRODUCT	INDICATION	TARGET	STUDY NAME	PHASE
obe-cel	Adult ALL	CD19	FELIX	Pivotal
obe-cel	B-NHL & CLL	CD19	ALLCAR19*	Phase 1
obe-cel	Primary CNS Lymphoma	CD19	CAROUSEL*	Phase 1
AUTO1/22	Pediatric ALL	CD19 & CD22	CARPALL*	Phase 1

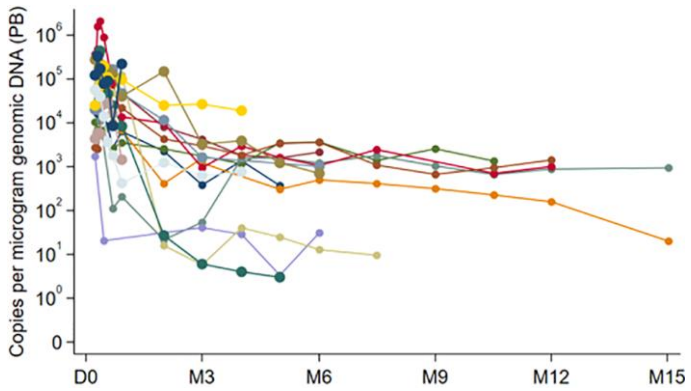
B Cell Malignancies

* Collaboration with UCL

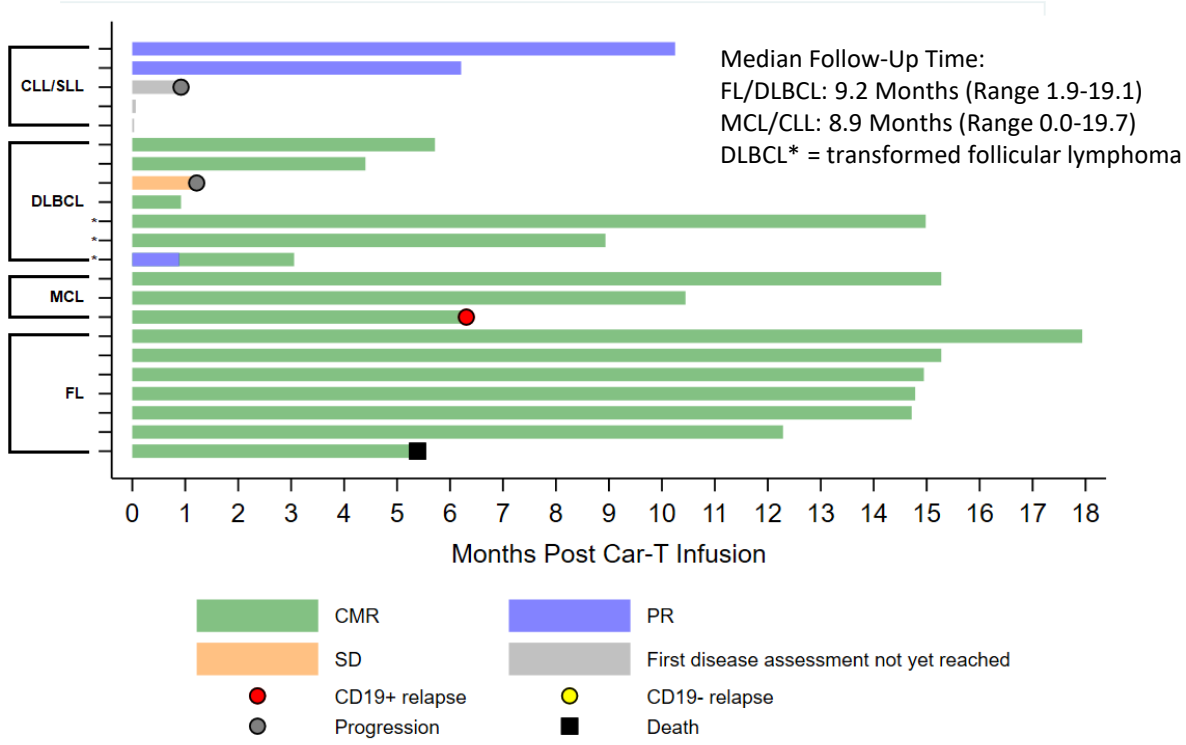
NHL/CLL: ALLCAR19 Phase 1 Study

High level of clinical activity with favorable tolerability profile – follow up at ASH, December 2022

ALLCAR19 – B-NHL and CLL	
n	20
ORR	
All patients	90%
Follicular Lymphoma	100%
Mantle Cell Lymphoma	100%
DLBCL	84%
CLL/SLL	67%
CRS ≥ Grade 3	0%
CRS any grade	50%
Neurotox/ICANS ≥ Grade 3	0%
Neurotox/ICANS any Grade	0%



CAR-T cell levels in peripheral blood



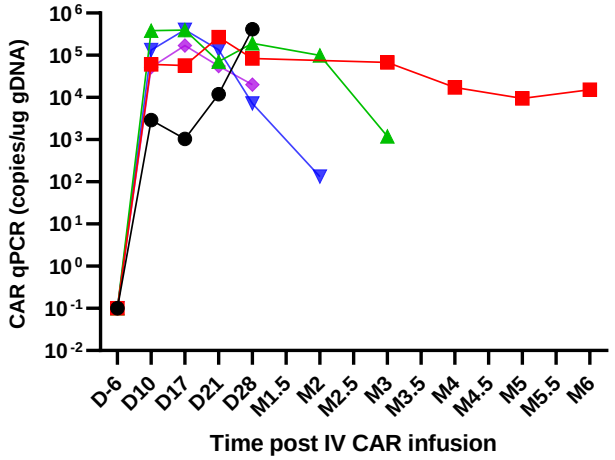
- **High ORR, with long term persistence driving durable outcomes.**
- **Favorable tolerability profile with no ICANS and no high grade CRS**

Roddie et al., EHA 2022 abstract #P1459

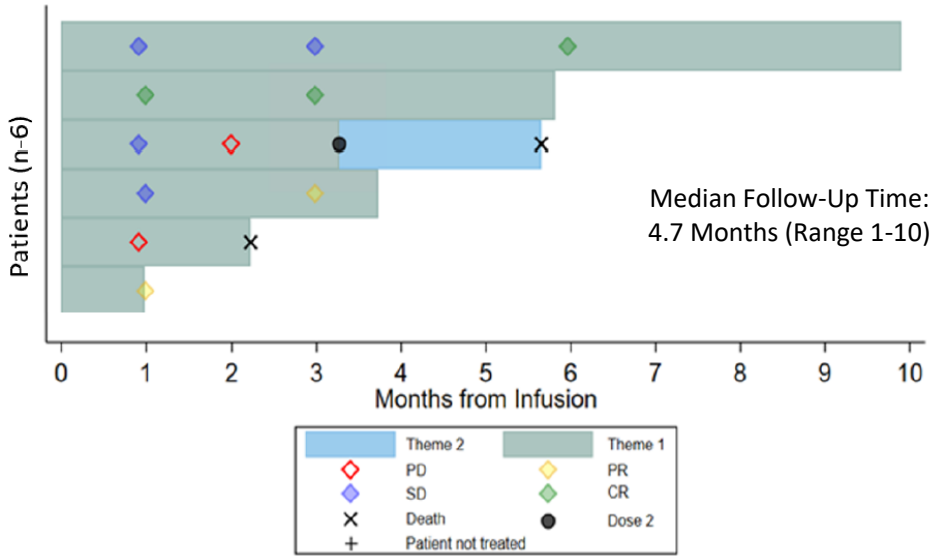
Primary CNS Lymphoma: CAROSUEL Phase 1 Study

Favorable tolerability profile with encouraging initial response rates and durability – follow up expected 2023

CAROSUEL – PCNSL	
n	6
CR + PR	4 (67%)
CR	2 (33%) (1 SD -> CR)
PR	2 (33%) (1 SD -> PR)
CRS [2] ≥ Grade 3	0 (0%)
Neurotox/ICANS ≥ Grade 3	2* (33%)



CAR-T cell levels in peripheral blood



- **Excellent T cell expansion and engraftment**
- **Favourable tolerability profile**
  - No high grade CRS via IV or intraventricular delivery
  - Limited high grade ICANS
- **Encouraging initial response rates and durability with 4/6 patients in ongoing responses at last follow up**

* One patient improved with steroids / toci the second patient had several neurological deficits consistent with progressive disease and didn't respond to steroids / toci

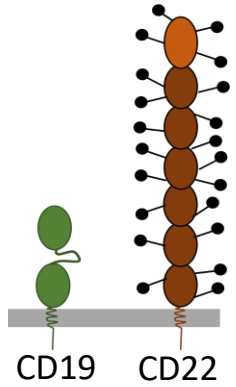
Roddie et al., EHA 2022 abstract #P1460

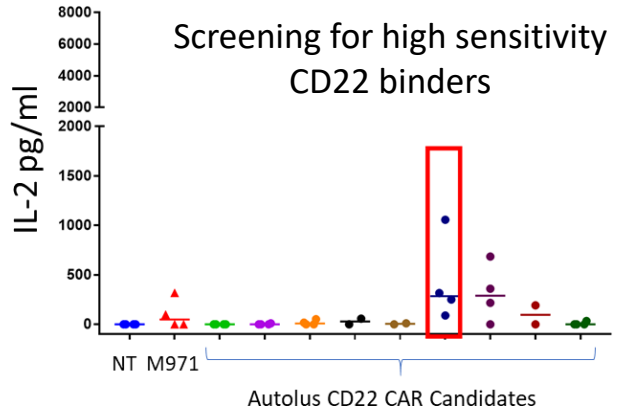
Pediatric Acute Lymphoblastic Leukemia: AUTO1/22 CARPALL study

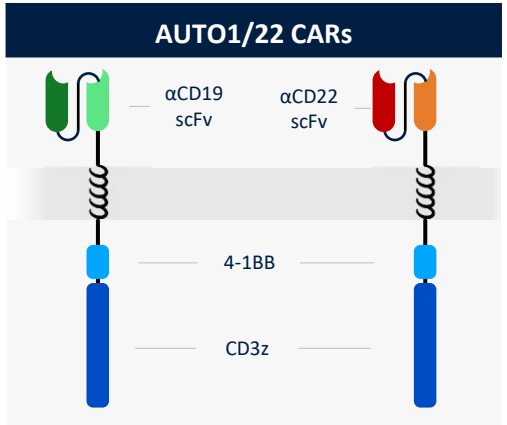
CD19 negative antigen escape is a common cause of treatment failure

CARPALL Study	
n	14
CR Rate	86%
EFS 12m	52% (95% CI, 16% to 72%)
No. of CD19 negative relapses	5/6
CRS ≥ G3	0%

- obe-cel (AUTO1) in r/r pALL was highly active and had a favourable tolerability profile - CARPALL study[1,2]
- Medical need in pALL is to minimize rates of antigen-loss–driven relapses and improve long-term outcomes[3] – points to need for a dual targeting CAR T







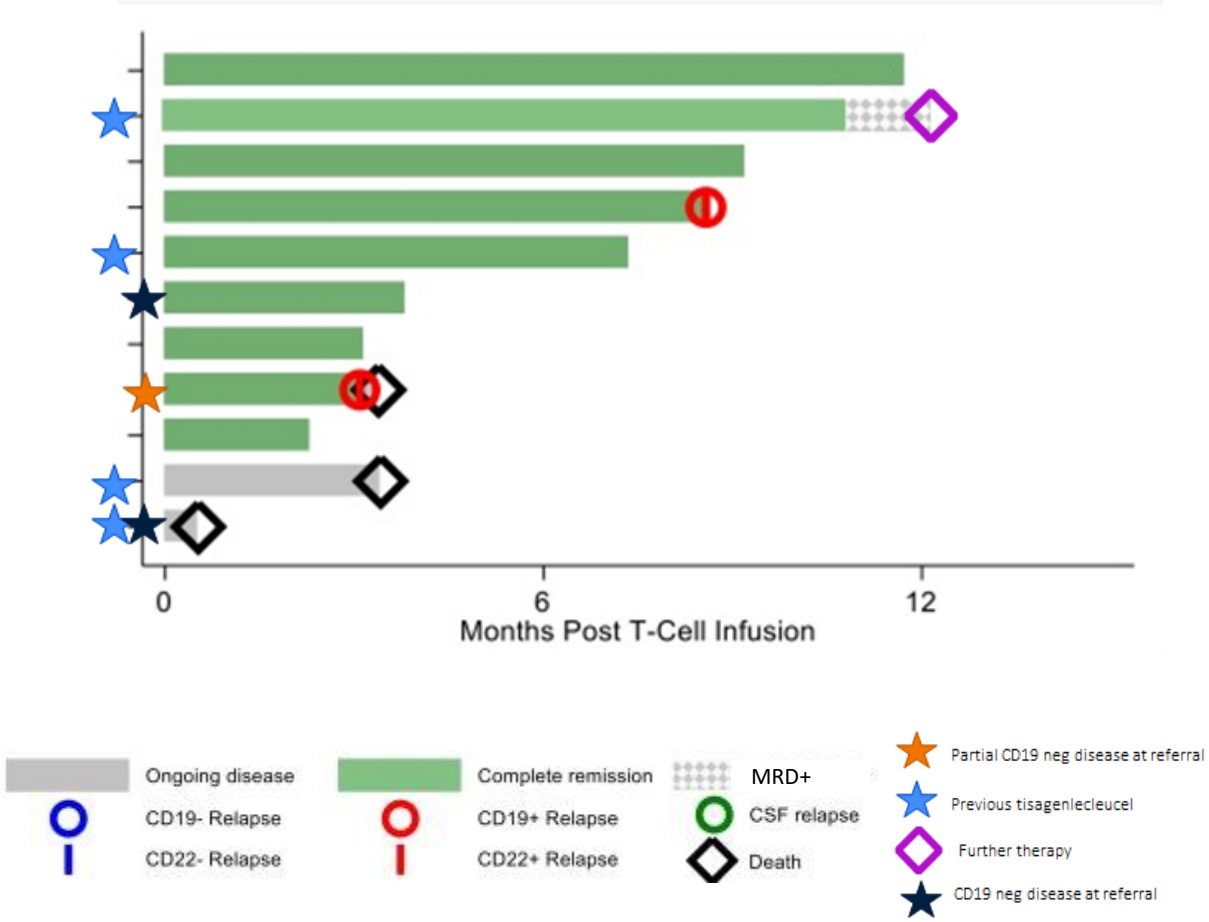
AUTO1/22 is a next generation program that builds on obe-cel and adds a highly potent CD22 CAR, capable of targeting low levels of CD22

- AUTO1/22 is being evaluated in Phase 1 study in r/r paediatric patients

(1) NCT02443831 (2) Ghorashian et al., Nat Med 2019, (3) Shah et al., JCO 2020, Spiegel et al., Nat Med 2021

Pediatric Acute Lymphoblastic Leukemia: AUTO1/22

Efficacy data presented at EHA June 2022 – longer follow up at ASH, December 2022



Total	N=11
Molecular MRD neg CR/Cri by d60	9 (82%)
Disease progression	2 (18%)
Events in responders	3
Emergence of molecular MRD	1
CD19+/CD22+ relapse	2

- The study results demonstrated that dual CD19/22 targeting CAR T cells showed a favourable tolerability profile, with robust expansion/persistence and early activity in a heavily pre-treated cohort
  - Favourable tolerability profile to date: no severe CRS, 1 Grade 4 ICANS but atypical
  - No antigen negative relapse was seen in responding patients
  - At median follow up of 8.7 months, 6 of 9 responding patients were in MRD-ve complete response (1-12 mo)

Data Cut-off: 27-May-2022

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

Viral Vector	Advanced Targeting Modules	Pharmacological Control Modules	Activity Enhancement Modules	Allogeneic Programming Modules	Viral Vector
	TARGET	**CONTROL**	**SHIELD**	**ENHANCE**	
	Fast off Rate CARs	Rituximab Safety Switch (RQR8)	Checkpoint Shielding (dSHP2)	Chimeric Cytokine Receptors (CCRs)	
	Dual Targeting CARs	Rapamycin Safety Switch (RapaCasp9)	TGFβ Shielding (dTGRβRII)	Host Immune Cell Recruitment (ssIL12)	
		Tetracycline Controllable (TetCAR)			
	obe-cel AUTO1/22 AUTO8	AUTO4 AUTO5 AUTO6NG	AUTO3NG AUTO6NG	AUTO3NG AUTO6NG	

Pipeline beyond obe-cel

Designed to address limitations of current T cell therapies

PRODUCT	INDICATION	TARGET	STUDY	PRE CLINICAL	PHASE 1	PHASE 2/ PIVOTAL	BLA
AUTO4	TRBC1+ Peripheral TCL	TRBC1	LibrA T1				
AUTO5	TRBC2+ Peripheral TCL	TRBC2					
AUTO6NG	Neuroblastoma; Other tumour types	GD2					
AUTO8	Multiple Myeloma	BCMA & CD19	MCARTY*				

*Collaboration with UCL

Three key elements to address T Cell Lymphomas

A companion diagnostic: AUTO4 and AUTO5

Multiple approaches de-risked for development

Companion Diagnostic

Stratify into TRBC1 + and TRBC2 + lymphoma

> ~40% of T cell lymphomas are TRBC1+

AUTO4 – TRBC1+ TCL

AUTO5 – TRBC2+ TCL

> ~60% of T cell lymphomas are TRBC2+

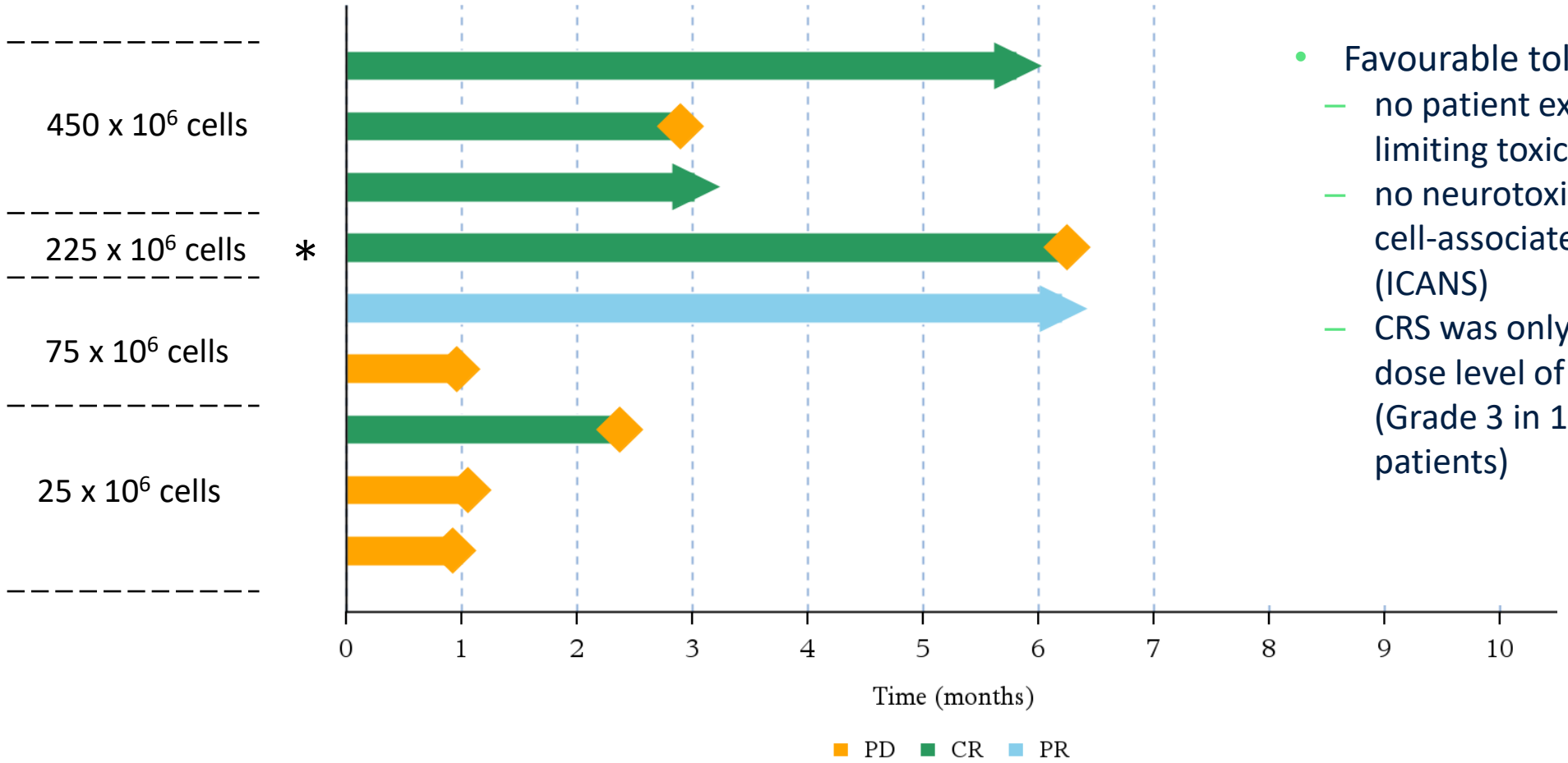
Current Development Milestone

Phase 1 dose escalation

Candidate selected

AUTO4 in T cell lymphoma: Initial data encouraging

All patients treated at highest dose level had a complete metabolic response – follow up to be presented at ASH



- Favourable tolerability profile
  - no patient experienced any dose limiting toxicity
  - no neurotoxicity/immune effector cell-associated neurotoxicity (ICANS)
  - CRS was only seen at the highest dose level of 450 x 10^6 CAR T cells (Grade 3 in 1 patient; Grade 1-2 in 3 patients)

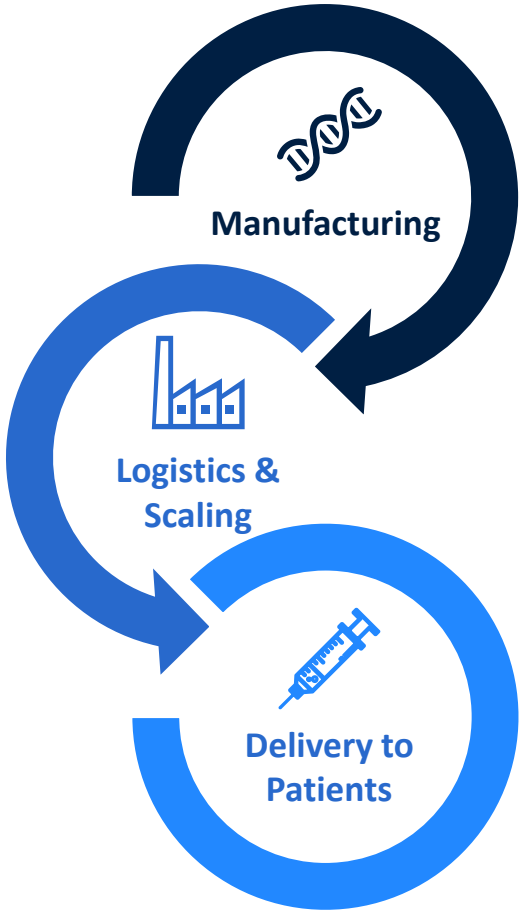
Efficacy assessments were performed by the Investigators according to the Lugano Classification.
† Evaluable Set consists of patients who have received an infusion of AUTO4 treatment and completed the Day 28 evaluation.
All patients had relapsed/refractory disease at time of Part B screening and enrolment.
* Patient was PET-negative at the start of pre-conditioning therapy.

Data Cut off: 26 April 2022

Manufacturing

Build of facility in Stevenage, UK, progressing on track

Building a fully integrated manufacturing and logistics platform



- Phase 1 of build project on schedule to complete in Q4 2022
- CMC package for submission to FDA progressing per plan
- Equipment installations and qualification by Autolus on track for GMP operations by H2 2023
- Tried and tested manufacturing process within an established regulatory framework

Financial Results

Financial summary

Cash runway into 2024, assuming Blackstone milestones received

USD m	Q3 2022	Q3 2021	Variance
Grant Income	-	0.2	(0.2)
License Income	2.4	-	2.4
R&D	(37.6)	(32.3)	(5.3)
G&A	(8.2)	(8.3)	0.1
Total Op Expense, Net	(43.5)	(40.4)	(3.1)
Interest Income	0.2	-	0.2
Other (expense) income, net	(3.7)	1.0	(4.7)
Interest expense	(1.9)	-	(1.9)
Tax Benefit	6.2	5.4	0.8
Net Loss after tax	(42.8)	(34.0)	(8.8)
USD m	**Q3 2022**	**Q4 2021**	**Variance**
Cash Balance	163.1	310.3	(147.2)

- R&D tax credit of $19.1m received post-period end
- Foreign currency: 83% of cash at 30 September 2022 held in GBP

Summary

Multiple catalysts in H2 2022

Autolus Planned Newsflow

- **obe-cel**
  - FELIX - Phase 2 trial in adult ALL first update expected in Q4 2022; data in mid-2023
  - ALLCAR19 Phase 1b trial in adult ALL trial follow up data expected at ASH, Dec 2022
  - ALLCAR19 Phase 1 extension trial in r/r B-NHL and CLL ongoing, follow up data expected at ASH, Dec 2022
  - CAROUSEL Phase 1 trial in Primary CNS Lymphoma ongoing, follow up data expected in 2023

- **Pipeline**
  - CARPALL - Phase 1 trial of AUTO1/22 in Pediatric ALL ongoing; follow up data at ASH, Dec 2022
  - LibrA T1 Phase 1 study of AUTO4 in peripheral T cell lymphoma ongoing; follow up data at ASH, Dec 2022
  - AUTO8 Phase 1 study dosed first patient, first data expected H2 2023
  - AUTO6NG in Neuroblastoma – start Phase 1 H1 2023

- Manufacturing
  - Phase 1 of manufacturing site on schedule for handover to Autolus in Q4 2022
  - Final equipment installations on track for commencement of Good Manufacturing Practice (GMP) operations in H2 2023

- **Cash balance at September 30, 2022, $163.1million**

Autolus

Thank you