Autolus

First Quarter Financial Results and Operational Progress

May 5 2022

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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

Autolus Overview

Building a fully integrated CAR T company

Best-in-class lead asset

- Lead product obe-cel potentially best-in-class for relapsed/ refractory adult acute lymphoblastic leukemia (ALL)
- Phase 2 FELIX adult ALL initial data expected H2 2022
- Updated exploratory data in NHL from Phase 1 studies expected in 2022

Pipeline

- Pipeline built on modular innovation addressing cancers with limited treatment options
- AUTO1/22 in paediatric ALL
- AUTO4 /5 in T cell lymphoma
- AUTO6NG in neuroblastoma
- AUTO8 in multiple myeloma

Scalable manufacturing

- In house cell manufacturing for clinical trial conduct
- Commercial fit-for-purpose cell manufacturing facility under construction with planned annual capacity of 2000 patient products

Collaboration

- Collaboration with Blackstone Life Sciences to develop obe-cel in adult ALL
- Moderna granted exclusive license for binders to up to four IO targets
- Pipeline programs not partnered

Program updates – first quarter 2022

Strong progress, with multiple clinical readouts in 2022

- **obe-cel in relapsed / refractory (r/r) adult ALL** – continuing to enroll patients into the FELIX study
  - FELIX study passed futility analysis
  - Planning to include a Minimal Residual Disease (MRD) cohort of up to 50 additional patients
  - Orphan Medical Product Designation granted by the European Medicines Agency (EMA) for the treatment of ALL
  - Post period, Regenerative Medicine Advanced Therapy (RMAT) designation granted by FDA for obe-cel

- **obe-cel in r/r B-NHL – ALLCAR19 extension – continuing to enroll patients into the ALLCAR19 study**
  - Clinical data at the European Hematology Association (EHA) Congress in June

- **AUTO1/22 in pediatric ALL – continuing to enroll patients into the CARPALL study**
  - First clinical data as an oral presentation at the EHA Congress in June

- **AUTO4 in Peripheral T Cell Lymphoma – continuing to enroll patients into the LibrA T1 study**
  - First clinical data as an oral presentation at the EHA Congress in June

- **AUTO8 in Multiple Myeloma** – Initiated Phase 1 study
  - Next-generation product candidate comprising two independent CARs targeting BCMA and CD19
  - Designed to induce deep and durable responses and extend the durability of effect

Key operational updates – first quarter 2022

Continued progress on building a leading ALL company

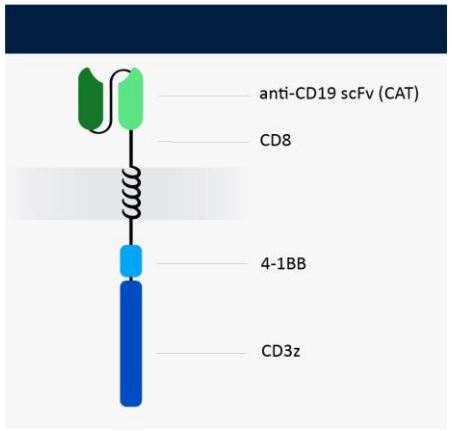
- Good progress on the build phase of the Company's new manufacturing facility in Stevenage, UK
- Dr. Lucinda Crabtree replaced Andrew Oakley as CFO on his retirement on March 31, 2022
- Brent Rice was promoted to Senior Vice President, Chief Commercial Officer, effective January 1, 2022
- Post period, published three novel technologies to enhance CAR T therapies, to be presented at the American Society of Gene & Cell Therapy (ASGCT)

LEAD CLINICAL PROGRAM

obe-cel

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

obe-cel has a unique mechanism of action



CAT binder with lower affinity for CD19

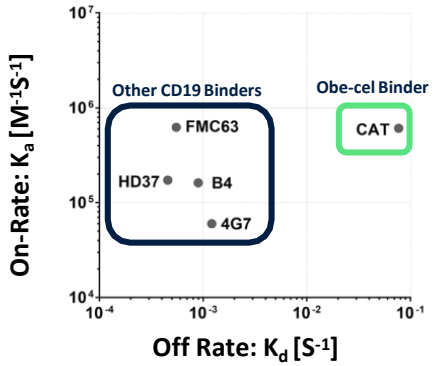
- **Improved potency, reduced toxicity**

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

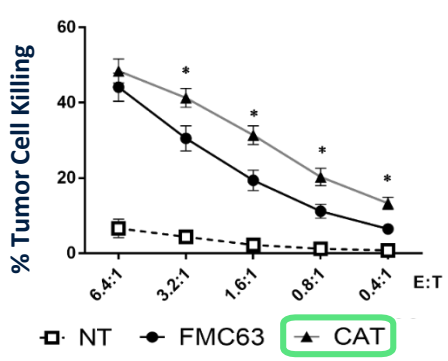
- **Fast off-rate**

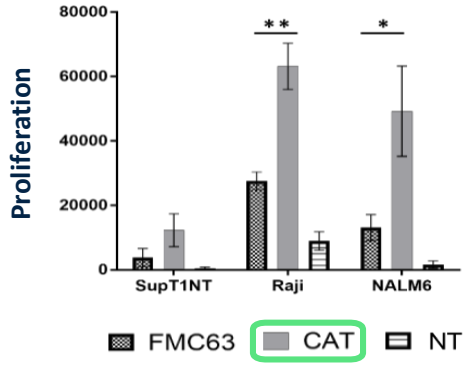


obe-cel has lower CD19 affinity and shorter half-life of interaction compared to binders used in approved products

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

- **Enhanced cytotoxicity and proliferation**



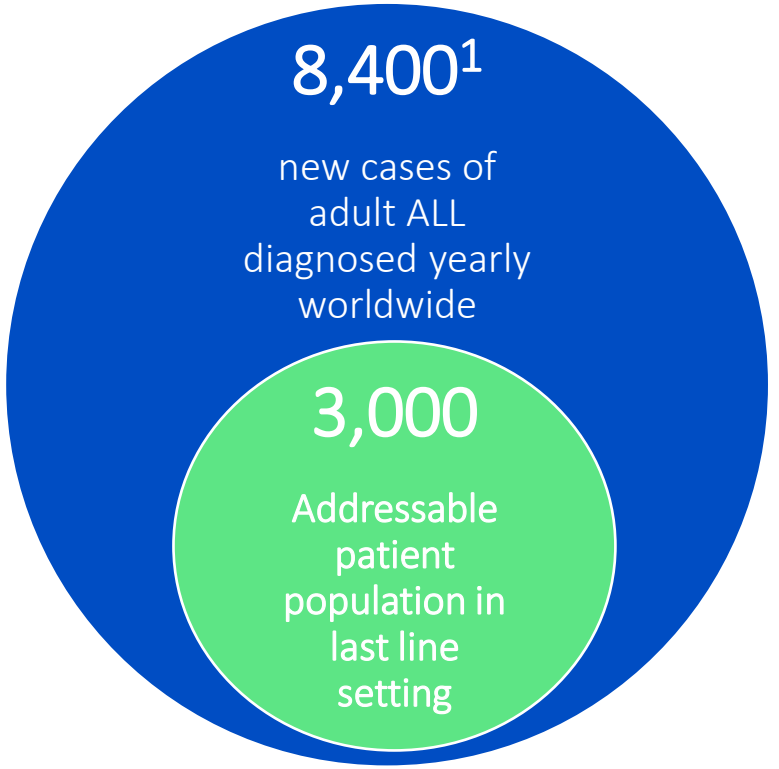


Ghorashian S, Pule MA, Amrolia P et al. *Nature Medicine* 2019

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

- Combination chemotherapy enables 90% of adult ALL patients to experience Complete Response (CR)
  - Only 30% to 40% achieve long-term remission
- Median overall survival is < 1 year in r/r adult ALL
- Current T cell therapies for adult patients are Blincyto® and Tecartus™
  - Therapies are highly active, but require subsequent allograft to achieve durability
  - Notable toxicity with high incidences of severe CRS and cases of fatal neurotoxicity
- Opportunity to expand the addressable patient population in earlier lines of therapy



NOTES

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

obe-cel is a potentially transformational therapy for adult ALL

Unique CAR T design built on a fast off-rate from CD19 target antigendrives differentiated product profile

- Initial FELIX Phase 1b data presented at ASH, December 2021
- 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 month[2]
- Long term CAR T persistence drives durability of effect
- Favorable safety profile:
  - No high-grade Cytokine Release Syndrome (CRS)
  - Limited immune effector cell-associated neurotoxicity syndrome (ICANS)

obe-cel

Orphan Drug designation by FDA for B-ALL

Orphan Medical 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 data (FELIX) expected in H2 2022

obe-cel is the first Autolus program to move into a potential pivotal program: futility analysis passed during the quarter

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

H2 2022
Initial data

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

H1 2023
Full data

Secondary endpoints: include MRD-negative CR, EFS and DoR

Building obe-cel into a franchise

Deep value program with broad applicability

Capitalising on the obe-cel profile in additional indications

Unique profile allows applicability in a broad range of indications

Clinical data supports differentiated product profile

- High degree of activity and persistence -> drives long term outcomes
- Best-in-class safety profile -> will drive adoption of obe-cel in all clinical settings
- 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

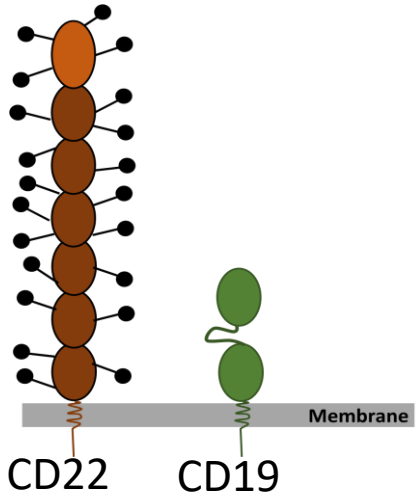
* Collaboration with UCL

AUTO1/22: Pediatric Acute Lymphoblastic Leukemia

CD19 negative antigen escape is a common cause of treatment failure

- obe-cel (AUTO1) in relapsed / refractory pediatric ALL is highly active and has a favourable safety profile - CARPALL study[#1,2]
- Medical need in pediatric ALL is to minimize rates of antigen-loss–driven relapses and improve long-term outcomes – points to need for a dual targeting CAR-T
- CD22 is challenging to target with a CAR as it is a rigid bulky molecule, expressed at a low density and can be downregulated further in response to CD22 targeting[#3]
- 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 pediatric patients and data will be presented as an oral presentation at the EHA Congress in June 2022

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%



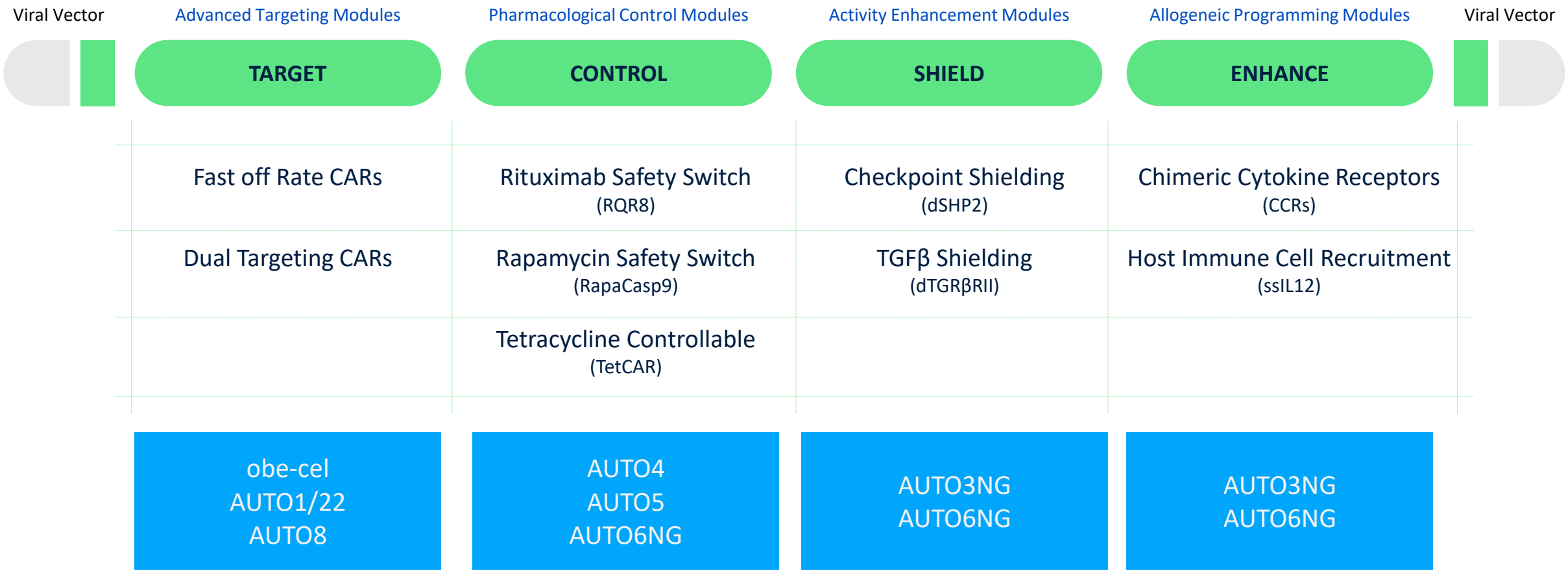
#1 NCT02443831 #2 Ghorashian et al., Nat Med 2019 #3 Shah et al., JCO 2020, Spiegel et al., Nat Med 2021

Pipeline

A broad portfolio of next generation modular T cell therapies

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

Advanced T cell programming



Pipeline beyond obe-cel

Designed to address limitations of current T cell therapies

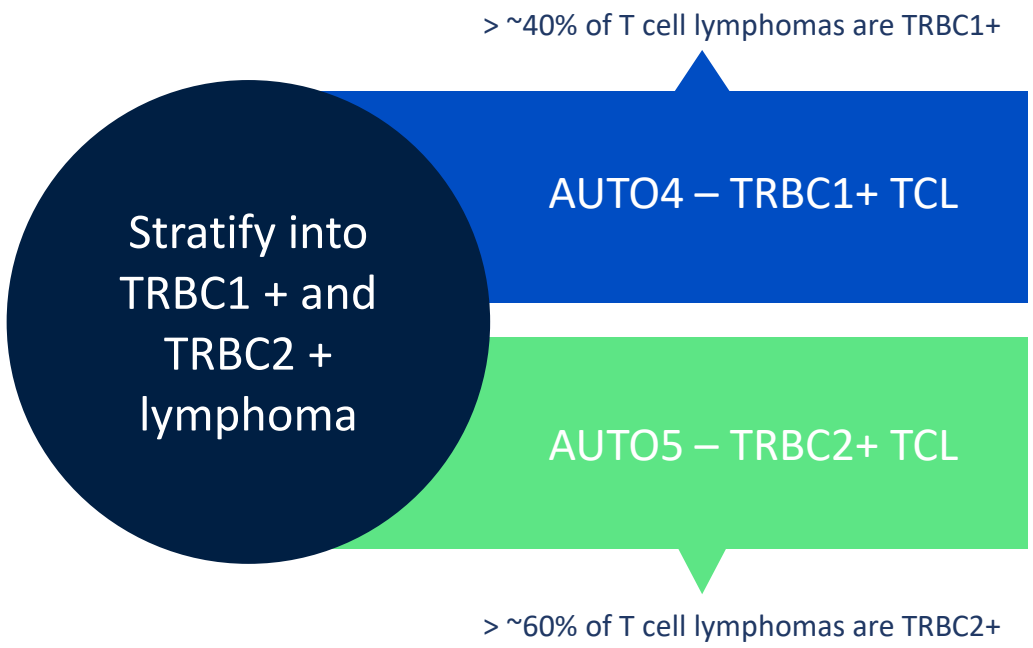
PRODUCT	INDICATION	TARGET	STUDY	PRE CLINICAL	PHASE 1	PHASE 2/ PIVOTAL	BLA
AUTO4	TRBC1+ Peripheral TCL	TRBC1	LibrA T1				
AUTO5	TRBC2+ Peripheral TCL	TRBC2					
AUTO6NG	Neuroblastoma; Other tumour types	GD2					
AUTO8	Multiple Myeloma	BCMA & CD19	MCARTY*				

*Collaboration with UCL

AUTO4: T Cell Lymphoma

No standard of care after first relapse and no T cell therapy approved

Three key elements to address T cell lymphomas: AUTO4, AUTO5 and a companion diagnostic test



- T cell lymphoma is an aggressive disease with a very poor prognosis for patients
- Median 5 yrs OS: 32%
- Standard of care is variable and often based on high-dose chemotherapy and stem cell transplants
- A large portion of T cell lymphoma patients are refractory to or relapsed following treatment with standard therapies
- T cell lymphomas have not, so far, benefited from advances in immunotherapeutic approaches
- AUTO4 first Phase 1 data to be presented as an oral presentation at the EHA Congress in June 2022

Financial Results

Financial summary

Cash runway into 2024, assuming Blackstone milestones received

USD m	Q1 2022	Q1 2021	Variance
Grant Income	0.2	0.3	(0.1)
License Income	-	-	-
R&D	(34.0)	(30.7)	(3.3)
G&A	(8.0)	(8.7)	0.7
Loss on disposal of leasehold improvements	-	(0.7)	0.7
Total Op Expense, Net	(41.8)	(39.9)	(1.9)
Interest Income	-	-	-
Other (Expense)/Income	0.9	0.8	0.1
Interest expense	(1.8)	-	(1.8)
Tax Benefit	5.6	5.7	(0.1)
Net Loss	(37.1)	(33.3)	(3.8)
USD m	**Q1 2022**	**Q4 2021**	**Variance**
Cash Balance	268.6	310.3	(41.7)

Summary

Multiple catalysts in H2 2022

Autolus poised for potential value inflection

obe-cel pivotal data in adult ALL in 2022

- obe-cel
  - FELIX Phase 2 study in adult ALL ongoing; initial data expected in H2 2022 and full data in H1 2023
  - Evaluation in r/r B-NHL and CLL ongoing; next data update at the EHA Congress in June
  - Evaluation in Primary CNS Lymphoma ongoing; initial Phase 1 data (CAROUSEL study) at the EHA Congress in June
- AUTO1/22
  - AUTO1/22 Phase 1 (CARPALL) initial data in Pediatric ALL to be presented as an oral at the EHA Congress in June
  - Longer term follow-up data in H2 2022
- AUTO4 /AUTO5
  - AUTO4 Phase 1 (LibrA T1) initial data in Peripheral T cell lymphoma to be presented as an oral at EHA in June
- Pipeline transitioning to Phase 1 in 2022
  - AUTO8 Phase 1 study has started
  - AUTO6NG in Neuroblastoma – start Phase 1 H2 2022
- Cash balance at March 31, 2022, $268.6 million

Autolus

Thank you