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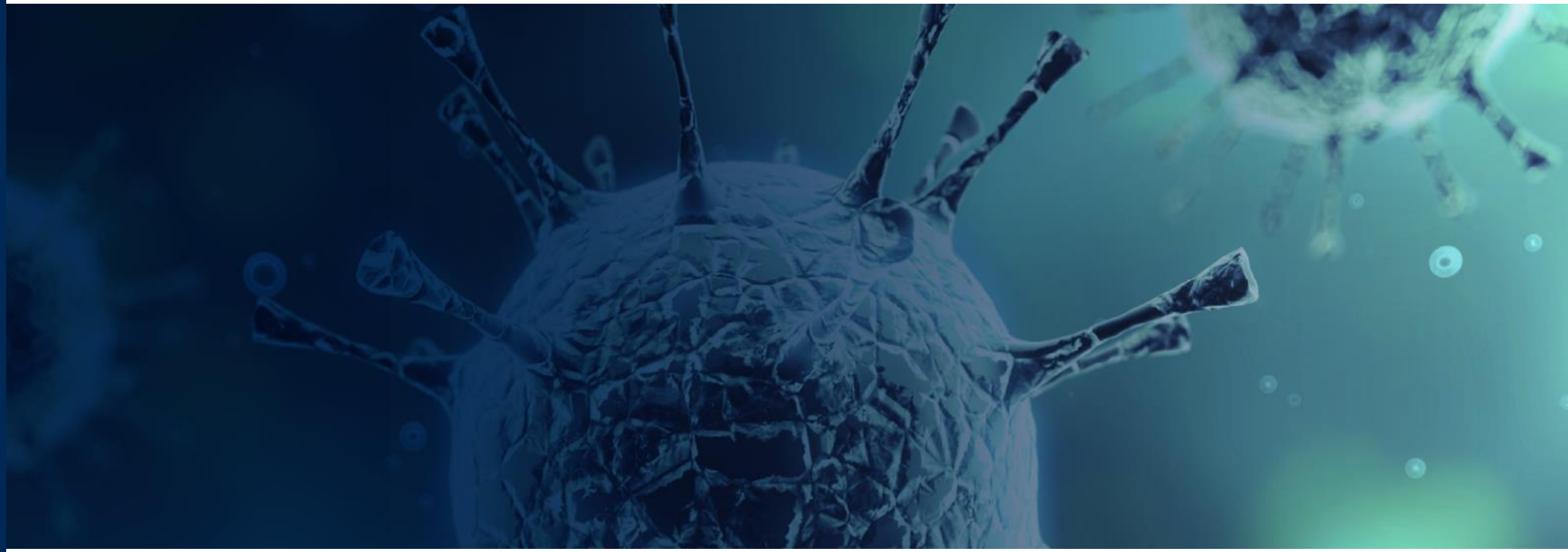
Nasdaq: AUTL



Third Quarter Financial Results and Operational Progress

November 5, 2020

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Agenda

1. Welcome and Introduction: Dr. Christian Itin, Chairman and CEO
2. Operational Highlights: Dr. Christian Itin
3. Financial Results and Overview: Andrew J. Oakley, CFO
4. Upcoming Milestones and Conclusion: Dr. Christian Itin
5. Q&A: Dr. Christian Itin and Andrew J. Oakley

Operational Highlights

Dr. Christian Itin
Chairman and CEO

Business update – third quarter 2020

Impact from COVID-19 has been limited to date, but situation poses a risk to AUTO1

- AUTO1 pivotal program currently on track
  - AUTO1 pivotal program was initiated in Q2 as planned
  - Potential impact of infection surges on timelines continues to be closely monitored
  - Potential for disruption if infection rates continue to increase
- AUTO3 outpatient extension cohort continued to enrol patients in Q3
  - Infection surges continue to be closely monitored to ensure continued enrolment
- Impact on AUTO4 Ph1 clinical trial stabilized
  - Continue to expect Ph1 interim data 2021
- Preclinical programs still minimally impacted

Corporate highlights – third quarter 2020

Advancing our clinical programs to value inflection

- AUTO1 in adult ALL;
  - AUTO1 pivotal program initiated and enrolling
  - Targeting data by end 2021, assuming no COVID-19 disruptions to clinical trial conduct
- AUTO3 in DLBCL
  - AUTO3 data at ESMO continue to show encouraging clinical profile
- Additional clinical data expected at ASH in December 2020
  - AUTO1 in adult ALL, presenting longer term follow up
  - AUTO3 in DLBCL, presenting updated data and longer term follow up from ALEXANDER study
  - Analyst call planned post ASH

No approved CAR T therapy for adult ALL patients

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

ALL is a significant opportunity:

Up to
8,400*
new cases of adult ALL diagnosed yearly worldwide

Projected R/R patients in US & EU
3,000
addressable patient population in last line setting

High unmet medical need

- Combination chemotherapy enables 90% of adult ALL patients to experience CR, but only 30% to 40% will achieve long-term remission
- Median overall survival is < 1 year in r/r ALL
- Only approved redirected T cell therapy approved for adults generally is blinatumomab
- CAR T therapies are highly active, but no clear sense of durability without subsequent allograft
- Patients are generally more fragile, more co-morbidities, yet CAR T toxicities in this setting have been notable with high incidences of severe CRS and cases of fatal neurotoxicity
- Opportunity to conduct further clinical study for second line treatment label increasing addressable patient population

FDA granted AUTO1 orphan drug designation for ALL

*SEER and EUCAN estimates (respectively) for US and EU epi

AUTO1 potentially has a superior efficacy profile compared to standard of care

Comparable and manageable safety profile

	[1]AUTO1		Standard of Care	
	All patients	Closed Process	[2]Blinatumumab	[3]Inotuzumab
Patient Numbers	19	13	271	218
CR Rate	84%	92%	44%	80.7%
EFS 6m	62%	76%	31%	mPFS 5m
CRS ≥ Grade 3	0%	0%	3%	0%
Neurotox ≥ Grade 3	16%*	15%*	13%	0%
Other notable toxicities				14% Hepatic VoD

- Approximately 50% of blinatumumab and inotuzumab patients received subsequent HSCT
- Veno-Occlusive Disease (VoD) during treatment and following subsequent HSCT, with the latter causing a higher post-HSCT non-relapse mortality rate, has limited inotuzumab uptake

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* Observed in patients with > 50% tumor burden

Roddie et al., EHA 2020
Kantarjian et al., 2017
Kantarjian et al., 2016

AUTO1 is the first Autolus program to move into a pivotal program

Preliminary Ph1 data supports development as a standalone therapy

Pivotal program, AUTO1-AL1, in adult ALL enrolling with data targeted by end 2021

CTA approved by the MHRA in January 2020 and US IND accepted by the FDA in April 2020

- Ph1b run-in component, prior to single arm Ph2 pivotal study
- 100 relapsed / refractory adult ALL patients
- Primary endpoint: Overall Complete Response Rate (CR/CRi)
- Secondary endpoints: include MRD-negative CR EFS and DoR

Capitalizing on the unique profile of AUTO1

AUTO1 in late phase development in adult ALL, with four related Ph1 trials enrolling by Q1 2021

PRODUCT	INDICATION	TARGET	CTA Enabling	Phase 1/2	Pivotal
AUTO1	Adult ALL	CD19		ALLCAR19	AUTO1-AL1
AUTO1	iNHL & CLL	CD19		ALLCAR19 ext.	Study ongoing
AUTO1	Primary CNS Lymphoma*	CD19	CAROUSEL	Q4 2020 study start	
AUTO1/22	Paediatric ALL	CD19 & CD22	CARPALL ext.	Q4 2020 study start	

*Primary CNS lymphoma annual incidence approx. 1400 cases in the US . Reference: Keva Green; Jeffery P. Hogg https://www.ncbi.nlm.nih.gov/books/NBK545145/.

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Current status of CAR T Cell therapies in DLBCL

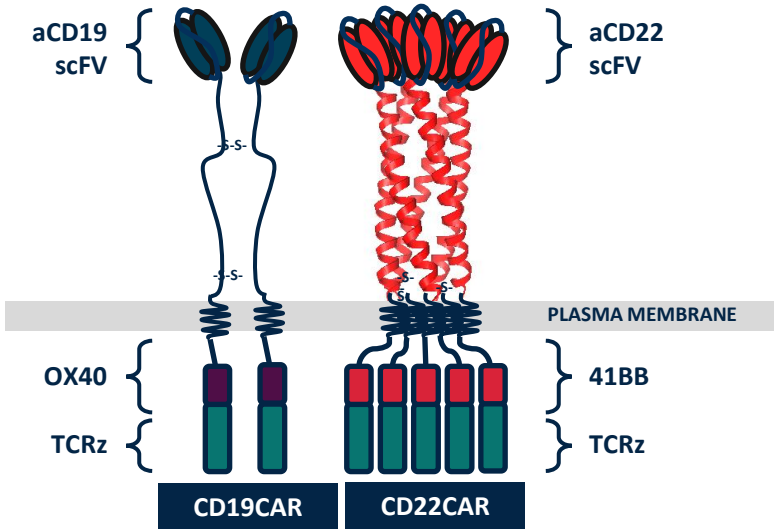
Two approved products (Yescarta® and Kymriah®) and one near to approval (liso-cel)

Efficacy

- Despite high ORR (70-80%) and high best CRR (40-55%), only 29-37% patients achieve durable CRR in DLBCL[1,2]
- Approximately a third of CRs are lost over time
- Loss of CRs are caused by PD-L1 upregulation[3] which contributes to CAR T exhaustion and CD19 antigen loss[4]

Safety

- High rates of severe cytokine release syndrome (13-22%) and severe neurotoxicity (12-28%)[2,4]
- Early onset and severity of toxicities requires intensive inpatient management



1. Locke F et al Lancet Oncol 2019
2. Schuster S et al NEJM 2019
3. Neelapu S et al ASCO 2018
4. Neelapu S et al NEJM 2017

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Complete Response Rate (CRR) - Completed Cohorts Only

Dose level ≥ 150 x 10^6 cells with day -1 pembro selected as Phase 2 dosing regimen (RP2D)

	50 x10^6 AUTO3 no pem (N=4)	50 x10^6 AUTO3 D14 pem (N=3)	150-450 x10^6 AUTO3 D14 pem (N=8)	150-450 x 10^6 AUTO3 D-1 pem RP2D (N=15)	Total (N=30)
N evaluable*	4	2	8	14	28
ORR (CR + PR)	2	2	5	10	19
CR	1	1	4	9	15
PR	1	1	1	1	4
PD	2	0	3	4	9

* Evaluable = PET positive disease prior to start of pre-conditioning

- Overall: ORR 68%, CRR 54%
- ≥ 150 x 10^6 CD19/CD22 CAR T cells , Day -1 pem (N=14 evaluable): ORR 71%, CRR 64%

Data as presented at ESMO (3 August 2020, Data cut). Next update at ASH 2020.

Cytokine Release Syndrome and Neurotoxicity – All Patients

No severe CRS and low rates of NT

	50 x10^6 AUTO3 no pem (N=4)	50 x10^6 AUTO3 D14 pem (N=3)	150-450 x10^6 AUTO3 D14 pem (N=8)	150-450 x 10^6 AUTO3 D-1 pem RP2D (N=20)	Total (N=35)
Grade 1 CRS	1	0	2	5	8 (22.9%)
Grade 2 CRS	0	0	2	2	4 (11.4%)
≥ Grade 3 CRS	0	0*	0	0	0 (0%)
≥ Grade 3 NT	1	0	0	1	2 (5.7%)
Total NT	1	0	0	2	3 (8.6%)

1 patient who had no CRS with primary infusion, developed G3 CRS (severe hypoxia) with re-treatment 1 year later which happened in a setting of no CAR T expansion and significant disease burden in lung that had been treated with radiation

- No prophylactic measures of any kind
- Median time to CRS 6 days (1-36), median duration of CRS 3 days (1-19), no Grade 3 or higher CRS* with primary infusion, 5 patients (14%) received tocilizumab for CRS
- No NT of any grade in patients that achieved CR (these patients had robust CAR T expansion), all NT atypical in context of tumour progression with zero to minimal CAR T expansion in peripheral blood

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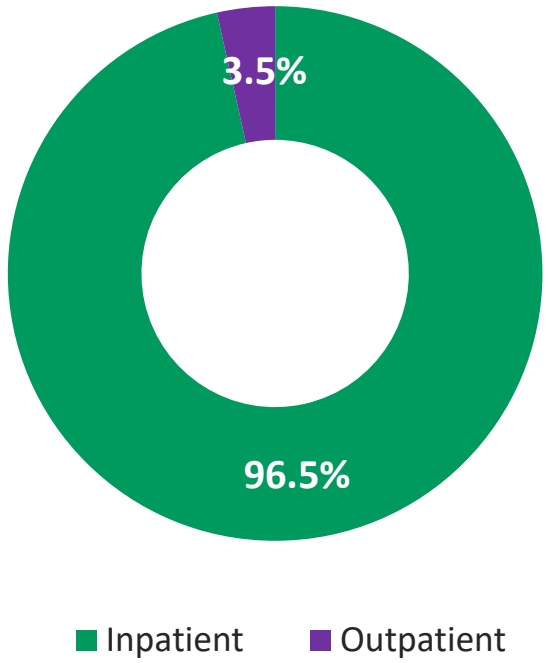
*CRS grading as ASCT/ASBMT (Lee et al 2019)
3 August 2020, Data cut

Approved CAR T's have not penetrated outpatient setting

Creates significant upside for AUTO3 with potential to go where patients reside

Percentage of patients who currently receive a CAR T in outpatient or inpatient setting



- 97% of patients receive approved CAR Ts as inpatients in CoEs because of the high rate and severity of toxicities and the need for intensive patient management
- 54% of patients required hospitalisation post – treatment when treated with liso-cel*. Reason for hospitalisation was mainly CRS and/or NEs (29%) or other AEs (25%)
- AUTO3 is designed to have best-in-class clinical profile potentially best suited for outpatient use
- AUTO3 stands to democratize use across all settings of care

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Source: Komodo Health
*ASCO 2020: 8037

Expansion cohort is assessing feasibility in outpatient setting

- Purpose of the ALEXANDER expansion cohort is to assess the feasibility of using AUTO3 in an outpatient setting
  - Opportunity to evaluate additional safety and efficacy data with more patients' data
  - Enables centers to broaden their experience with AUTO3 and gain confidence in use as an outpatient therapy
  - Drive early adopters in a potential pivotal study, planned to start H1 2021
  - Allows us to build an understanding of healthcare resource utilization, facilitating the design of a pivotal study
  - Enables early exploratory metrics to be considered (e.g. readmission rates), which may be relevant to supporting an outpatient profile

AUTO3 is designed for potential best-in-class clinical profile

Differentiated product profile should open access to full market opportunity

Outpatient cohort initiated with data planned for ASH 2020

Potential to move to a pivotal study H1 2021

First-in-class CD19 & CD22 CAR with novel signaling domains

- AUTO3 is designed to provide best-in-class clinical profile, which negates the need for intensive patient management
- Potential for true outpatient treatment across all settings of care
- AUTO3 has the potential to reach patients without the need for referrals to academic centers

Broad pipeline of next generation programs

Designed to address limitations of current T cell therapies

PRODUCT	INDICATION	TARGET	PRECLINICAL	PHASE 1
AUTO1/22	Pediatric ALL	CD19 & CD22		Q4 2020
AUTO3NG	DLBCL	CD19 & CD22		Life cycle mgmt
AUTO5	TRBC2+ Peripheral TCL	TRBC2		2021
AUTO6NG	Neuroblastoma; Melanoma; Osteosarcoma; SCLC	GD2		2021
AUTO7	Prostate Cancer	PSMA		2021
AUTO8	Multiple Myeloma	BCMA & CAR X		H1 2021

B Cell Malignancies T Cell Lymphoma GD2+ Tumors Prostate Cancer Multiple Myeloma

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NG = Next Generation, SCLC = Small Cell Lung Cancer

Financial Results

Andrew J. Oakley
CFO

Financial summary

USD m	3Q 2020	3Q 2019	Variance
Grant Income	0.4	0.3	0.1
License Revenue	0.2	-	0.2
R&D	(33.5)	(27.3)	(6.2)
G&A	(9.8)	(8.6)	(1.2)
Total Op Expenses, net.	**(42.7)**	(35.6)	**(7.1)**
Interest Income	0.0	0.5	(0.5)
Other Income	(2.5)	3.3	(5.8)
Tax Benefit	7.9	4.6	3.3
Net Loss	**(37.3)**	**(27.2)**	**(10.1)**

USD m	September 30, 2020	June 30, 2020	Variance
Cash Balance	**177.7**	**212.0**	**(34.3)**

*Variances due to rounding

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Cash runway into 2022

Upcoming Milestones and Conclusions

Dr. Christian Itin
Chairman and CEO

Multiple clinical milestones expected through Q4 2020 / 2021

PRODUCT	INDICATION	TARGET	EVENT
AUTO1	Adult ALL	CD19	Ph1 long-term follow up at ASH
AUTO1/22	Pediatric ALL	CD19 & CD22	Start Ph1 Q4 2020
AUTO3	DLBCL	CD19 & CD22	Ph1 data update at ASH
AUTO4	TRBC1+ Peripheral TCL	TRBC1	Ph1 interim data 2021
AUTO6NG	Neuroblastoma; Melanoma; Osteosarcoma; SCLC	GD2	Start Ph1 2021
AUTO7	Prostate Cancer	PSMA	Start Ph1 2021
AUTO8	Multiple Myeloma	BCMA & CAR X	Start Ph1 study H1 2021
Allo Product	Undisclosed	Undisclosed	Start Ph1 Q1 2021

B Cell Malignancies T Cell Lymphoma Solid Tumors Multiple Myeloma Allogeneic Approach

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Autolus poised for value inflection

- AUTO1 and AUTO1/22
  - Currently enrolling Autolus' first Ph1b / 2 pivotal program in adult ALL
  - Granted orphan drug designation by the FDA for treatment of ALL
  - Pediatric ALL – moving forward with AUTO1/22
  - ALLCAR study extension in iNHL and CLL ongoing
  - Opportunity to develop AUTO1 in Primary CNS Lymphoma, potential study start in Q4 2020
- AUTO3
  - Pivotal study could start H1 2021
- Key data updates next planned for ASH
  - AUTO3 ALEXANDER study update
  - AUTO1 – Update from ALLCAR with adult ALL patients
- Multiple Next Generation development candidates entering clinical development in 2021

Q&A

Dr. Christian Itin and Andrew Oakley

Thank you