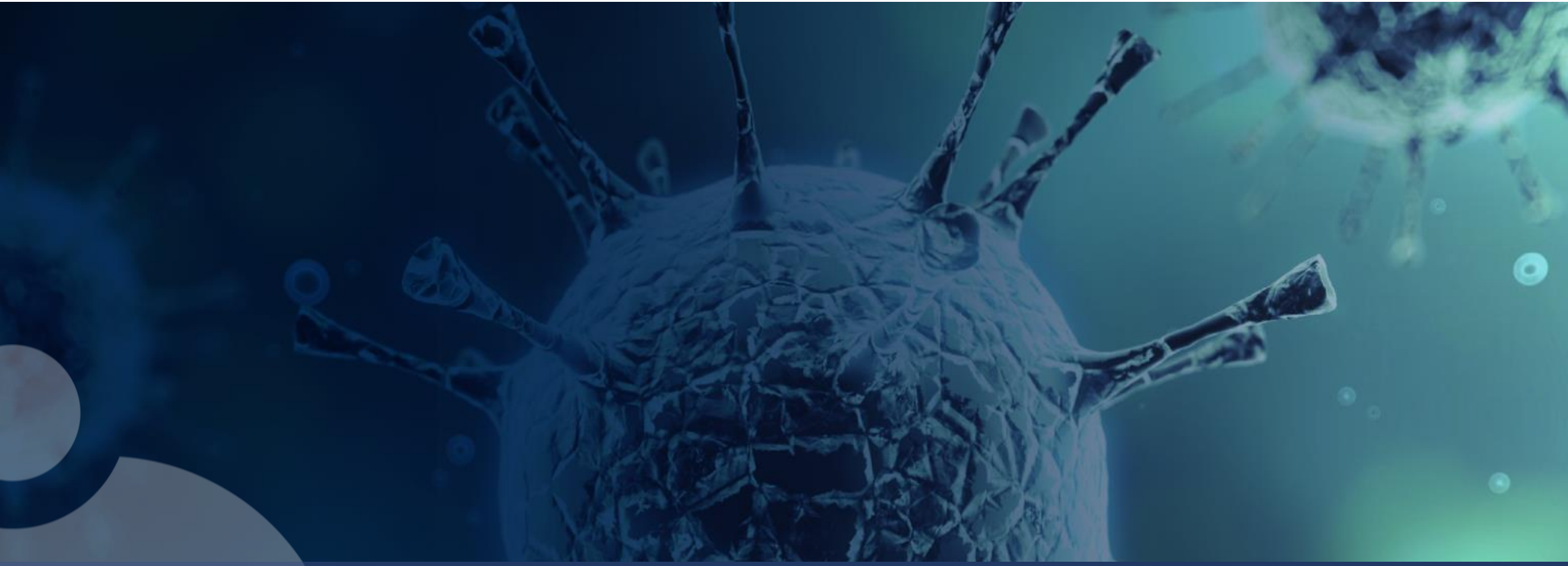
Autolus

Nasdaq: AUTL



Second Quarter Financial Results and Operational Progress

August 5, 2021

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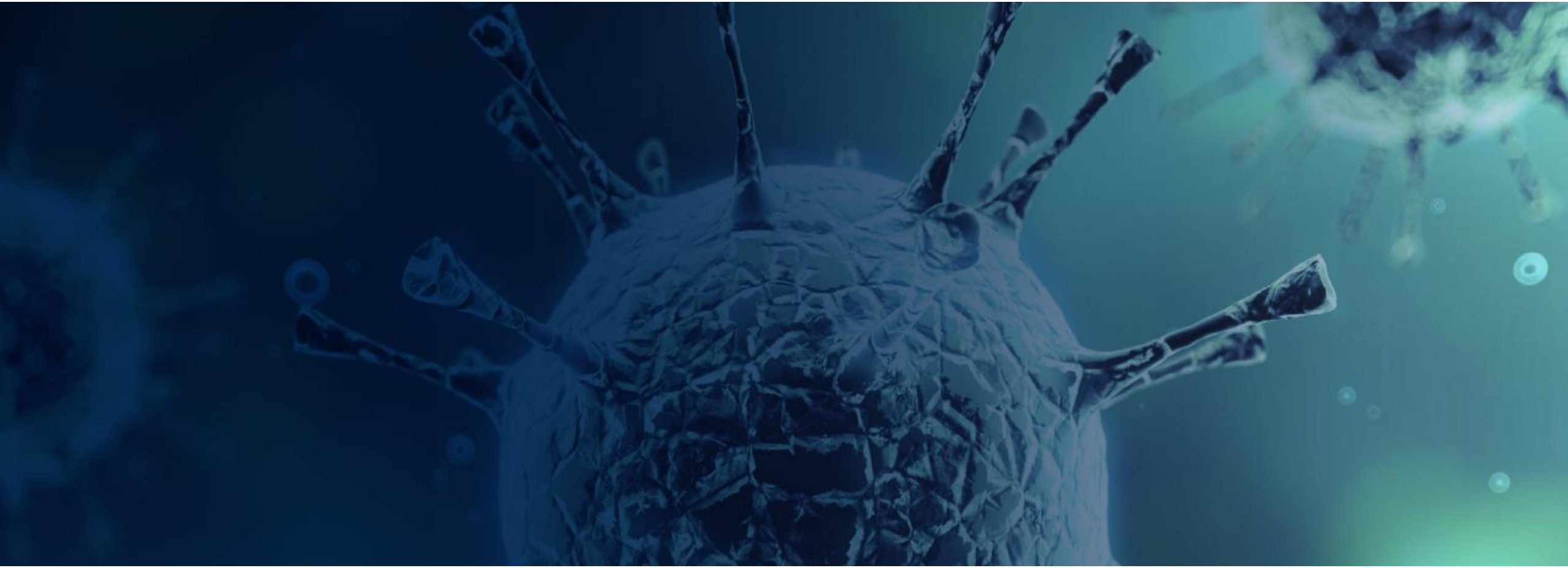
Agenda

- Welcome and Introduction: Dr. Christian Itin, CEO
- Operational Highlights: Dr. Christian Itin
- Financial Results: Andrew J. Oakley, CFO
- Upcoming Milestones and Conclusion: Dr. Christian Itin
- Q&A: Dr. Christian Itin and Andrew J. Oakley



Operational Highlights

Dr. Christian Itin – CEO

Pipeline update – second quarter 2021

FELIX study progressing on track, reiterate guidance for pivotal data in 2022

- Obe-cel in adult ALL
  - Data presented at the European Hemtaology Association (EHA) Virtual Congress from the Phase 1 ALLCAR study shows stabilization of event-free survival (EFS) at 50.2% at 12 months and maintained at 24 months of follow-up, supporting the curative potential of obe-cel as a standalone therapy for some adult ALL patients
  - Publication in Nature Cancer gives new insight into the mechanism of long-term durability of effect in ALL patients treated with obe-cel
  - Received PRIority MEdicines (PRIME) designation from the European Medicine's Agency (EMA)
  - Received innovative licensing and access pathway (ILAP) designation from the UK Medicines and Healthcare products Regulatory Agency (MHRA)
  - Reiterate guidance to expect data from the FELIX trial in 2022
- Obe-cel in relapsed / refractory (r/r) follicular and mantle cell lymphomas
  - Data presented at EHA shows obe-cel achieved 100% metabolic complete remission rate and excellent CAR engraftment and expansion in a cohort of r/r follicular and mantle cell lymphoma patients. No high-grade cytokine release syndrome or neurotoxicity was observed
- AUTO4 in Peripheral T Cell Lymphoma
  - Received ILAP designation from the MHRA

Corporate update – second quarter 2021

Continued progress on building a leading ALL company

- In the second quarter of 2021, Autolus sold an aggregate of 2,069,466 ADSs in offerings under its Open Market Sales Agreement[SM] for net proceeds, after underwriting discounts and offering expenses of $14.3 million

- Appointment of Martin Murphy as non-executive Chairman

- Post period updates:
  - Appointment of Edgar Braendle M.D., Ph.D., as CDO. Dr Braendle to lead the company's development organization. His initial focus is on driving obe-cel to registration, setting up the life cycle management plan and advancing the broader pipeline
  - In addition, Wolfram Brugger M.D., Ph.D. joined Autolus as VP, Head of Clinical Development in June 2021. Wolfram joined Autolus from MorphoSys, where he was Head of Global Clinical Programs and oversaw the development of Monjuvi (tafasitamab)
  - Option and License Agreement with Moderna. Autolus granted Moderna an exclusive license to develop and commercialize mRNA therapeutics incorporating Autolus' proprietary binders for up to four immuno-oncology targets in exchange for an upfront payment for each target licensed by Moderna and development and commercial milestone payments for each product successfully commercialized. In addition, Autolus is entitled to receive royalties on net sales of all products commercialized under the agreement

Driving value with potential best-in-class adult ALL program

Focused on delivering obe-cel, a potentially transformational treatment for Adult Acute Lymphoblastic Leukemia (ALL), as well as exploring activity in additional B-cell malignancies

Full data for obe-cel (FELIX) trial in adult expected in 2022

Obe-cel data in PCNSL and broader NHL indications expected in Q4 2021, AUTO1/22 in pALL expected in Q4 2021

- Additional value steps in T cell lymphoma and first solid tumor indication
- Broad preclinical pipeline of next generation programs expected to transition to clinical stage in 2021/2022
- Scalable, fully enclosed manufacturing platform

No approved CAR T therapy for adult ALL patients

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

Autolus

ALL is a significant opportunity

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

Estimated 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 redirected T cell therapy for adult patients is blinatumomab
- CAR T therapies are highly active, but require subsequent allograft to achieve durability
- Patients are generally more fragile with 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 progress to earlier lines of treatment and expand the addressable patient population

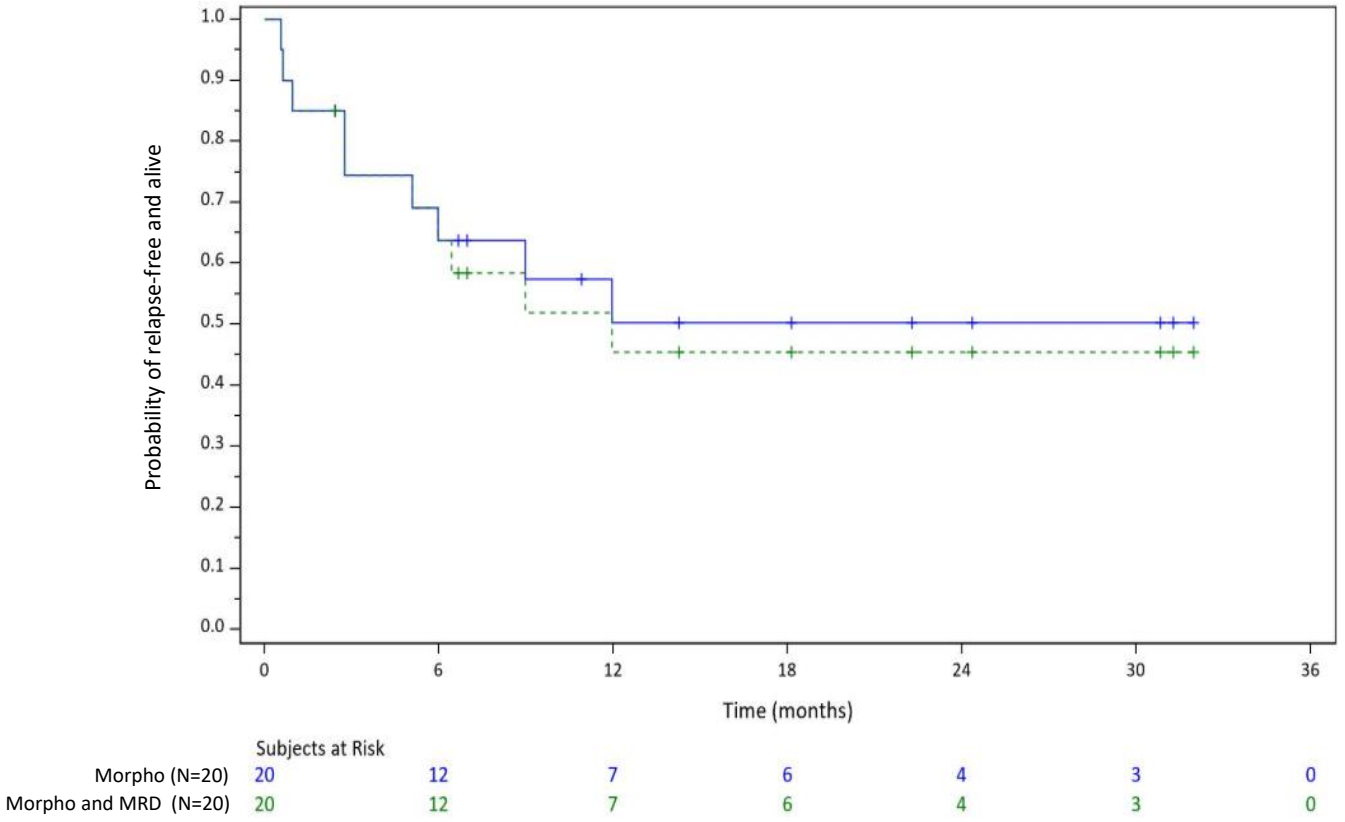
OBE-CEL GRANTED ORPHAN DRUG DESIGNATION BY FDA FOR ALL, PRIME DESIGNATION IN R/R B-ALL BY EMA AND ILAP DESIGNATION BY MHRA IN ADULT R/R B-ALL

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

Obe-cel morphological event-free survival of 50.2% at 24 months

MRD and morphological EFS curves are superimposable with a plateau seen from 12 months

Morphological and Molecular EFS among all infused patients in ALLCAR19



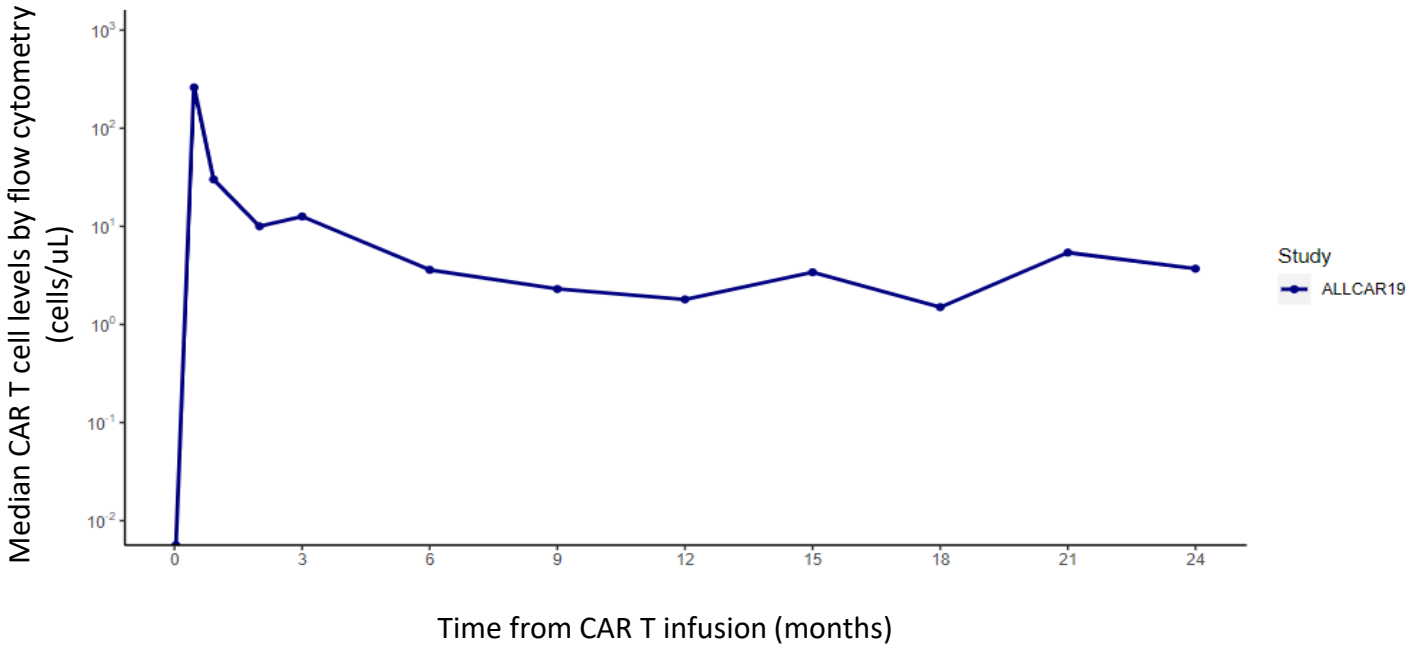
		All infused patients	Closed Process
	N	20	14
	ORR	85%	93%
	MRD Neg CR	85%	93%
DOR			
	Median	Not reached	Not reached
	12 months	64%	64%
Morph. EFS			
	Median	Not reached	Not reached
	12 months	50.2%	60%
	24 months	50.2%	60%
Molecular EFS			
	Median	12 months	Not reached
	12 months	45%	54%
	24 months	45%	54%

Event for morphological EFS = death or morphological relapse
Event for molecular EFS = death, morphological relapse, or molecular relapse (i.e. MRD > 0.01%)
Data Cut-off 17-May-2021

Obe-cel expansion characteristics support its differentiated profile

Data so far points to a transformational product with ability to maintain pressure on tumor

Median CAR T cell levels in peripheral blood



	ALLCAR-19 Phase 1
N	**20**
CRS Any Grade	**55%**
CRS Grade ≥ 3	**0**
NE / ICANS Any Grade	**20%**
NE / ICANS Grade ≥ 3	**15%**
Treatment for CRS and/or ICANS	
Tocilizumab	35%
Steroids	20%
Vasopressor	0

A cross study comparison of Tecartus ® vs current standard of care

Obe-cel showed 50.2% EFS at 24 months

	ZUMA-3[1] Phase 2	Standard of Care	
	Tecartus	Blinatumumab[2]	Inotuzumab[3]
N	55	271	109
ORR (CR/CRi)	71%	44%	80.7%
EFS	~45% (12 m), ~25% (18 m)	31% (6 m)	mPFS 5m
CRS ≥ Grade 3†	24%	3%	0%
Neurotox ≥ Grade 3†	25%	13%	0%
Other notable observations	40% vasopressor use	NA	14% Hepatic VoD

- Approximately 50% of blinatumomab 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

Duration of follow-up is calculated from CAR T infusion to data cutoff. EFS for ZUMA-3 were estimated based on the KM curve#

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

Preliminary Ph1 data supports development as a standalone therapy

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

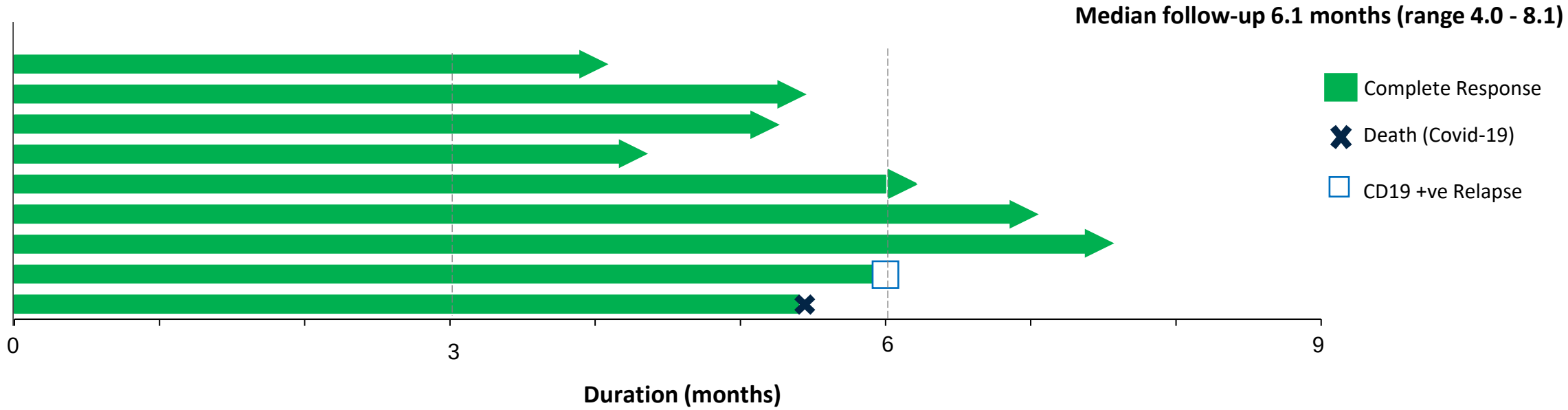
Pivotal program, FELIX, in adult ALL enrolling with full data targeted in 2022

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

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

ALLCAR-19 cohort D – clinical responses in other relapsed/refractory B-NHL

All patients treated achieved a metabolic Complete Response (CR)



- 9/9 patients in the indolent B-NHL cohort achieved metabolic CR by month 3
- 8/9 disease-free at last follow-up (median F/U = 6.1 months; range 4.0 - 8.1m)
- 1/9 patients died on study from COVID-19 whilst in remission at month 6 of follow-up
- 1/9 relapsed with small volume subcutaneous CD19+ disease, salvaged with radiotherapy
- 0/9 patients experienced ICANS of any grade or ≥ grade 3 CRS

Data cut-off date May 17, 2021

Unique profile of obe-cel offers potential across broader indications

Evaluation of obe-cel activity in additional B-Cell malignancies to capitalize on potential market opportunity

PRODUCT	INDICATION	TARGET	PHASE 1	PHASE 1B/2
Obe-cel	Adult ALL	CD19	**ALLCAR-19 ***	**FELIX**
Obe-cel	B-NHL & CLL	CD19	**ALLCAR-19 Ext ***	
Obe-cel	Primary CNS Lymphoma	CD19	**CAROUSEL ***	
AUTO1/22	Pediatric ALL	CD19 & CD22	**CARPALL ***	

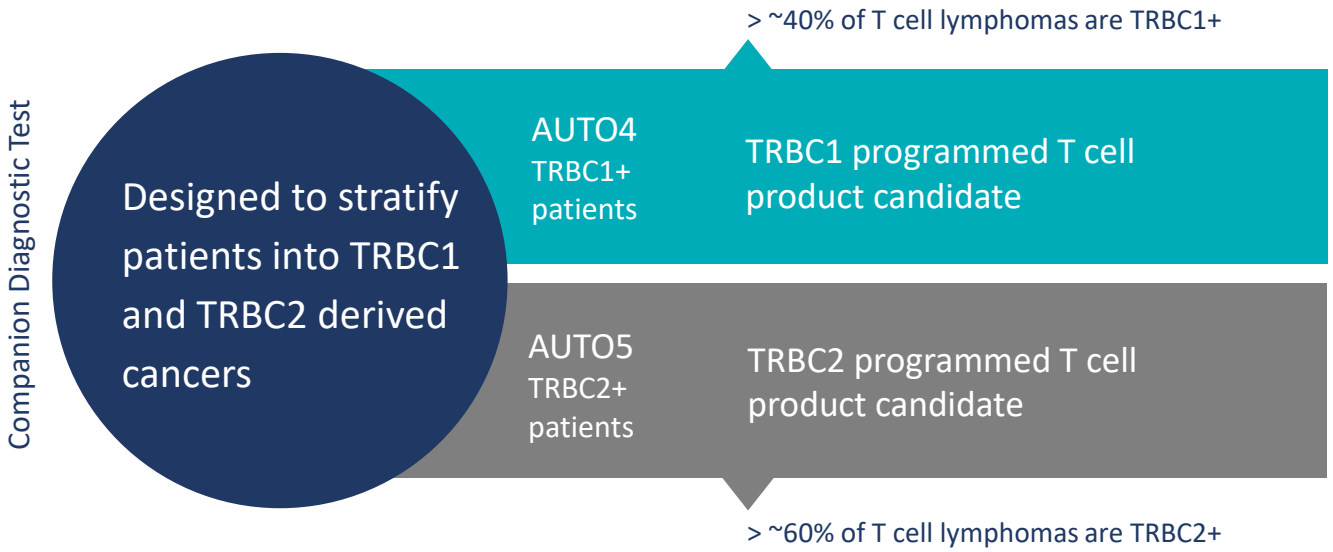
OPPORTUNITY TO PURSUE IN EARLIER LINES OF THERAPY AND INDICATIONS OF ADULT ALL

* Collaboration with UCL

T Cell Lymphoma

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

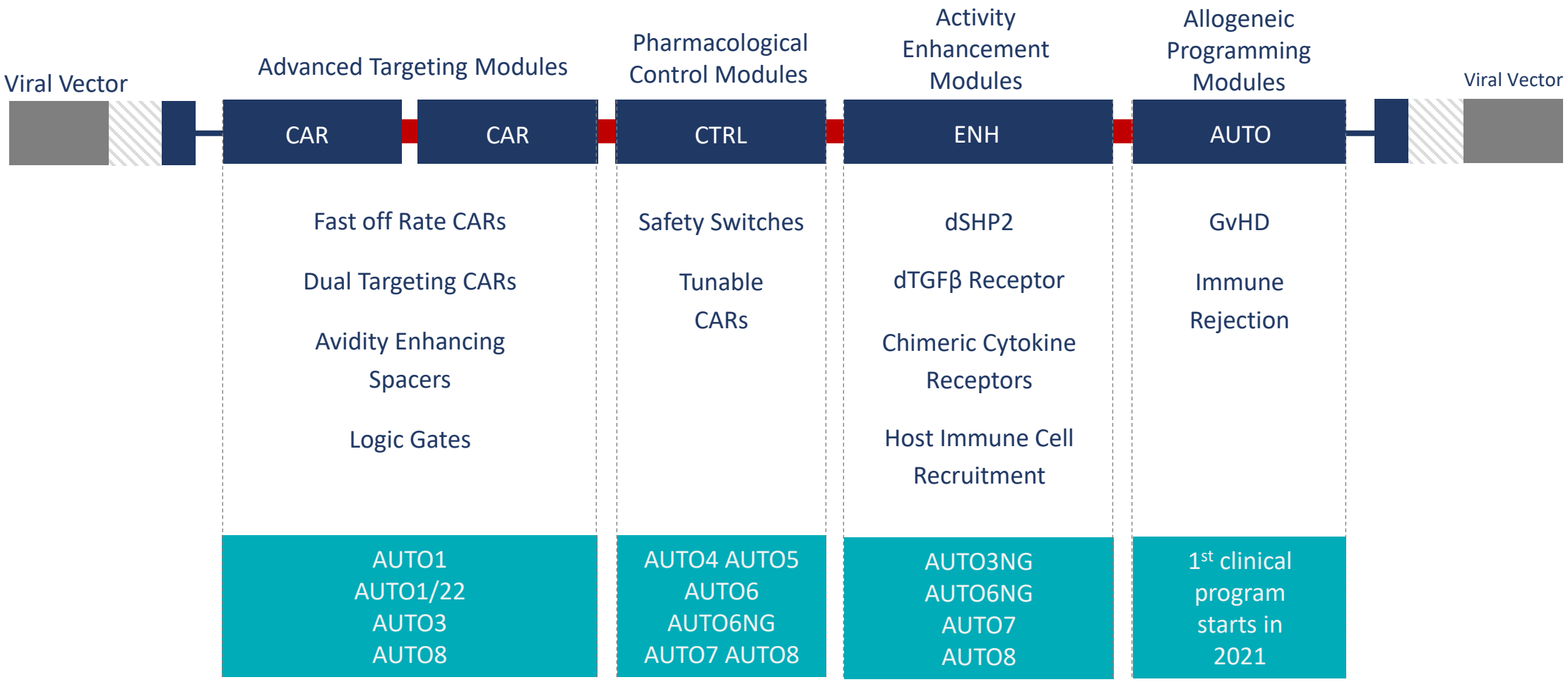
AUTOLUS USES THREE KEY ELEMENTS TO ADDRESS T CELL LYMPHOMAS—AUTO4, AUTO5 AND A COMPANION DIAGNOSTIC TEST



- 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 relapse following treatment with standard therapies
- T cell lymphomas have not, so far, benefited from advances in immunotherapeutic approaches
- AUTO4 Phase 1 interim data expected in H1 2022
- AUTO5 to enter Phase 1 study in H1 2022

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

Advanced T cell programming



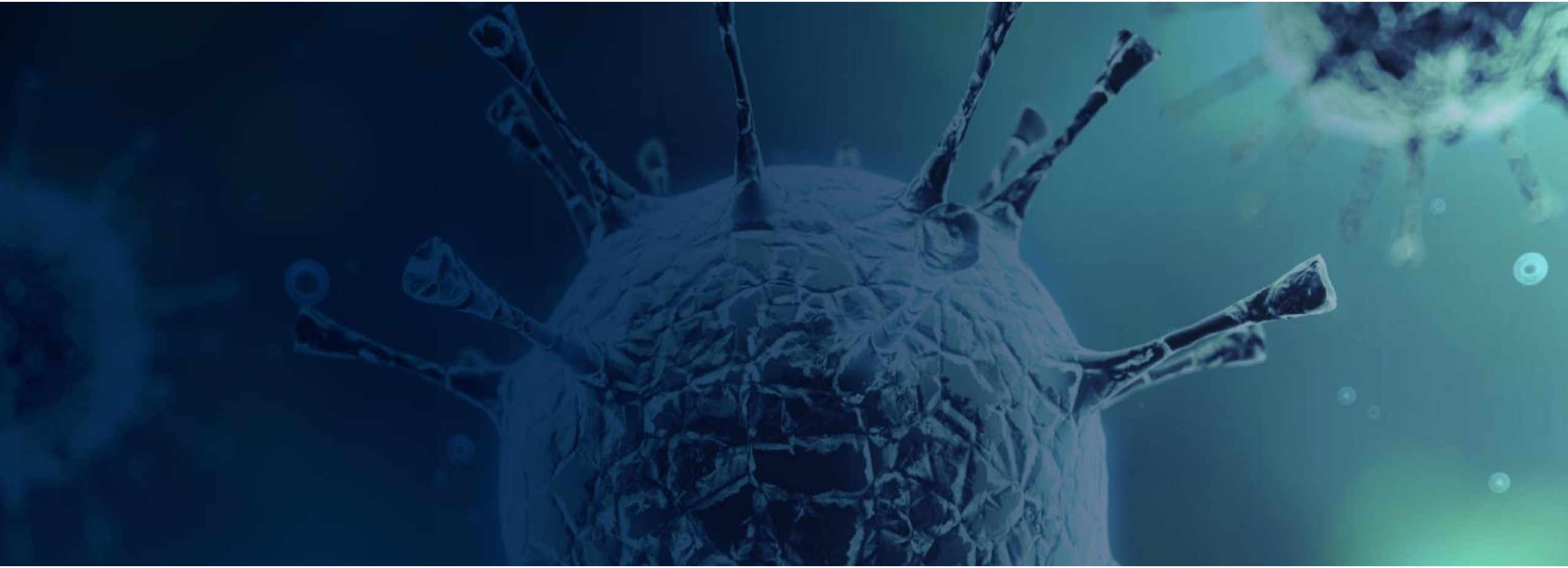
Broad pipeline of next generation programs

Designed to address limitations of current T cell therapies

PRODUCT	INDICATION	TARGET	PRECLINICAL	PHASE 1*
AUTO1/22 **	Pediatric ALL	CD19 & CD22		Started Q4 2020
AUTO5	TRBC2+ Peripheral TCL	TRBC2		H1 2022
AUTO6NG **	Neuroblastoma; Other tumor types	GD2		H1 2022
AUTO7	Prostate Cancer	PSMA		H1 2022
AUTO8 **	Multiple Myeloma	BCMA & CAR X		H2 2021

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

*Planned Trial Initiations
** Collaboration with UCL
NG = Next Generation, SCLC = Small Cell Lung Cancer



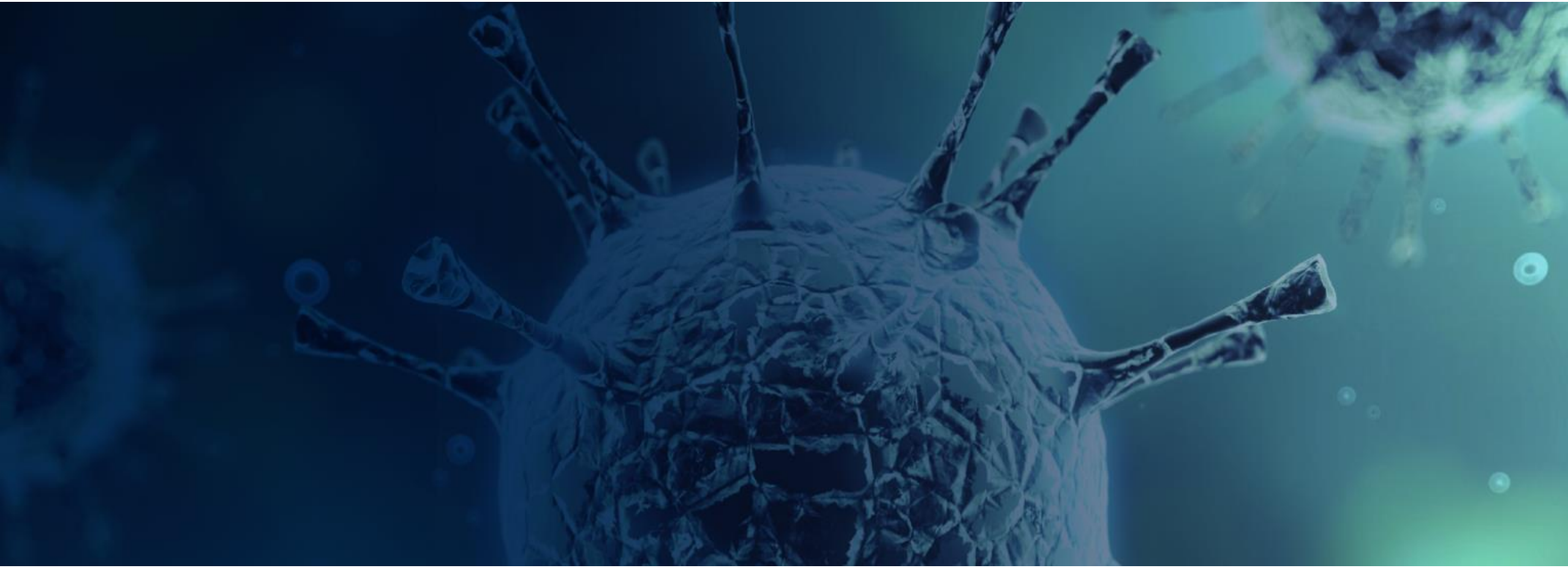
Financial Results

Andrew Oakley – CFO

Financial summary

USD m	2Q 2020	2Q 2021	Variance
Grant Income	0.3	0.1	(0.2)
License Income	-	1.5	1.5
R&D	(31.3)	(32.1)	(0.8)
G&A	(8.5)	(7.2)	1.3
Total Op Expense, Net**	(39.5)	(37.7)	1.8
Interest Income	-	-	-
Other Income	0.5	(1.8)	(2.3)
Tax Benefit	7.0	6.4	(0.6)
Net Loss	(32.1)	(33.2)	(1.1)
USD m	**1Q 2021**	**2Q 2021**	**Variance**
Cash Balance	239.0	216.4	(22.6)

Cash runway into H1 2023



Upcoming Milestones and Conclusions

Dr. Christian Itin – CEO

Autolus poised for potential value inflection

- Obe-cel and AUTO1/22
  - Autolus' first pivotal trial (FELIX) in adult ALL. Enrollment continues and company reiterates guidance to expect data in 2022
  - Pediatric ALL—AUTO1/22 Phase 1 study started in Dec 2020. Update expected Q4 2021
  - ALLCAR study extension in other relapsed/refractory B-NHL and CLL ongoing. Update expected Q4 2021
  - Opportunity to develop AUTO1 in Primary CNS Lymphoma, CAROUSEL study update expected Q1 2022
- AUTO4
  - AUTO4 continues in dose escalation in a Phase 1 trial, interim data expected in H1 2022
- Autolus' solid tumor program, AUTO6NG, to enter clinic in H1 2022
- Cash balance at Jun 30, 2021, was approx. $216 million, anticipate cash runway into H1 2023

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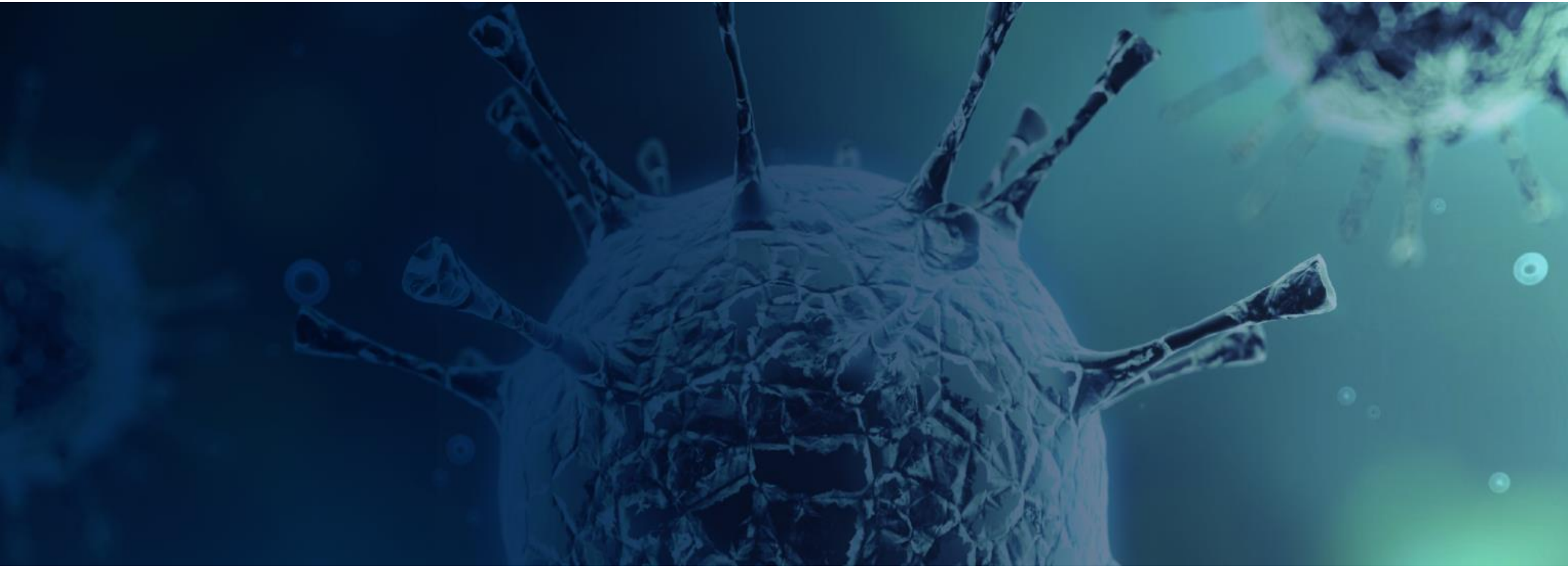

Thank you