EDITING LIFE

COMMITMENT TO A CURE

Investor Presentation

June 2021

FORWARD-LOOKING STATEMENTS

This presentation contains "forward-looking" statements within the meaning of applicable securities laws, including the Private Securities Litigation Reform Act of 1995. Forward-looking statements may be identified by words such as "at this time," "anticipate," "believe," "expect," "on track," "plan," "scheduled," and "will," or the negative of these and similar expressions.

These forward-looking statements, which are based on our management's current expectations and assumptions and on information currently available to management, include statements about our research and development projects and priorities, our pre-clinical project development efforts, the timing and progress of clinical trials (including with respect to patient enrollment and follow-up), the timing of our presentation of data, the adequacy of our supply of clinical vials, the timing of completion of construction of our Raleigh, North Carolina manufacturing facility, and operational capabilities at our manufacturing facilities, and the sufficiency of cash to fund operations.

These forward-looking statements are made in light of information currently available to us and are subject to numerous risks and uncertainties, including with respect to the numerous risks associated with biopharmaceutical product candidate development as well as the duration and severity of the COVID-19 pandemic and governmental and regulatory measures implemented in response to the evolving situation.

With respect to our cash runway, our operating plans, including product development plans, may change as a result of various factors, including factors currently unknown to us. Furthermore, many other important factors, including those described in our Annual Report on Form 20-F and the financial report (including the management report) for the year ended December 31, 2020 and subsequent filings Cellectis makes with the Securities Exchange Commission from time to time, as well as other known and unknown risks and uncertainties may adversely affect such forward-looking statements and cause our actual results, performance or achievements to be materially different from those expressed or implied by the forward-looking statements. Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons why actual results could differ materially from those anticipated in the forward-looking statements, even if new information becomes available in the future.

WRITING THE HISTORY OF ALLOGENEIC CAR T-CELLS

21 years
of expertise in gene editing

9 years
of experience in allogeneic CAR-T manufacturing

8 clinical trials
ongoing as of 2021;
3 Cellectis-sponsored
7 partnered

INVENTORS / PIONEERS OF GENE EDITING & ALLOGENEIC CAR T-CELLS

In 2012 . .
Mission to develop allogeneic CAR T-cells begins

In 2015 . .
First-in-man compassionate use of an allogeneic CAR-T product candidate occurs

ADVANTAGES OF ALLOGENEIC VS. AUTOLOGOUS CAR-T

Autologous process:

Manufacturing variability + several weeks before treatment is available

1. CANCER TREATMENT DECISION
2. CANCER PATIENT APHERESIS
3. MANUFACTURING OF A SINGLE PATIENT PRODUCT
4. INDIVIDUAL CAR-T THERAPY

Allogeneic process:

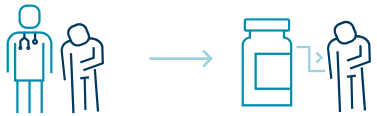
Consistent manufacturing + quality

Immediate treatment

HEALTHY DONOR APHERESIS

SCALABLE MANUFACTURING OF 100+ DOSES/BATCH

MASS PRODUCED ALLOGENEIC CAR-T THERAPIES



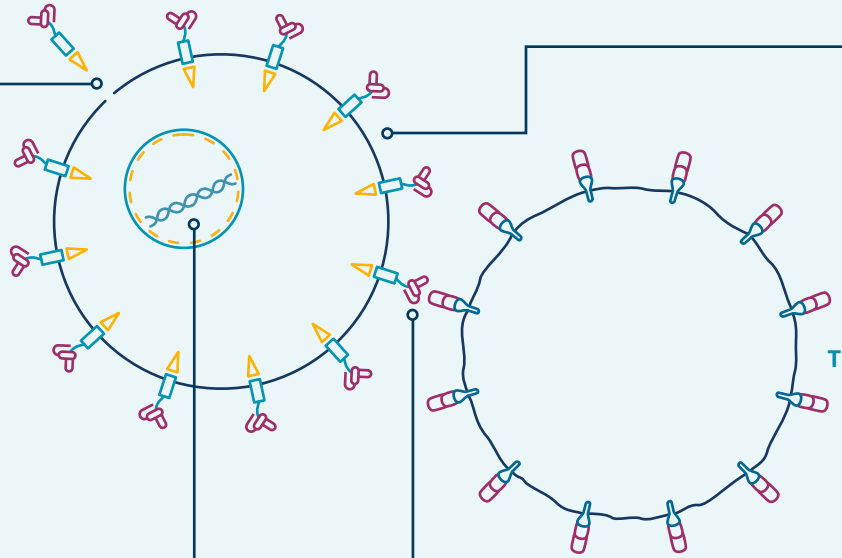
1. CANCER TREATMENT DECISION
2. OFF-THE-SHELF CAR-T THERAPY

- TIME SAVED
- COST EFFECTIVE
- MARKET ACCESS

UCARTs – ALLOGENEIC CAR T-CELLS THROUGH PRECISION GENE EDITING

RATIONAL
Engineering
via accurate insertion of best CAR

UCART
Universal Chimeric Antigen Receptor T-cell



TUMOR CELL

EFFECTIVE
Persistence
via knock-out of CD52 or β2-microglobulin

SAFE
Administration
Avoid GvHD via knock-out of T-Cell Receptor (TCR)

SMART
Action
CAR linked to suicide switch and other cell engineering features (e.g. PD-1 KO)

TALEN®: A Versatile Gene Editing Platform

Gene KO

Gene Repair

Gene replacement

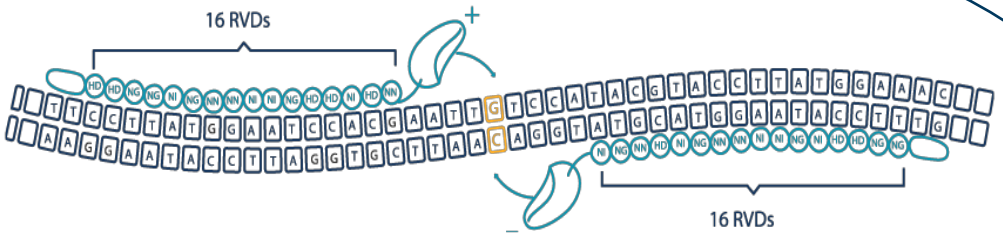
Gene insertion

KI with KO

KI without KO

KI with controlled ex on

Nuclease



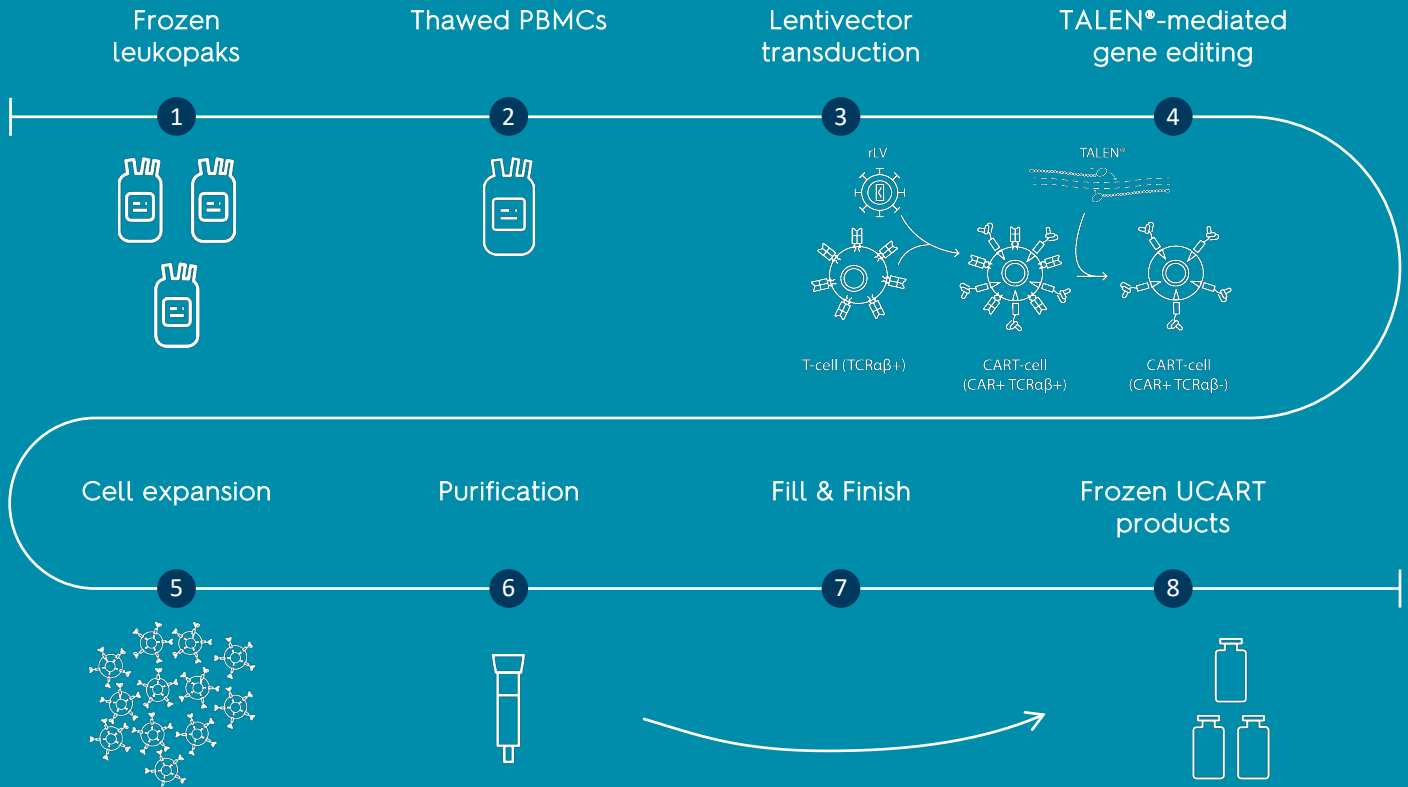
Base editor

Gene KO

Gene Repair

UCART MANUFACTURING

9 years of experience in allogeneic CAR-T manufacturing



PARTNERSHIPS WITH INDUSTRY LEADERS

CAR-T Partnerships

Up to $3.2B in potential milestone payments plus royalties

Partner	License	Geography	Most Advanced Targets	Status	Economics to Cellectis
Servier → Allogene Therapeutics	Exclusive license to CD19-directed allogeneic CAR T-Cells	Ex-US	ALLO-501 ALLO-501A (Anti-CD19)	Ph1	**Up To $410M In Development & Sales Milestones** + Low Double-Digit Royalties on Sales
	Sublicensed by Servier to CD19-directed allogeneic CAR T-Cells	US		Ph1	
Allogene Therapeutics	Exclusive license to 15 allogeneic CAR T-Cell targets	Global	ALLO-715 ALLO-605 (Anti-BCMA)	Ph1	**Up To $2.8B In Development & Sales Milestones** + High Single-Digit Royalties on Sales
			ALLO-316 (Anti-CD70)	Ph1	

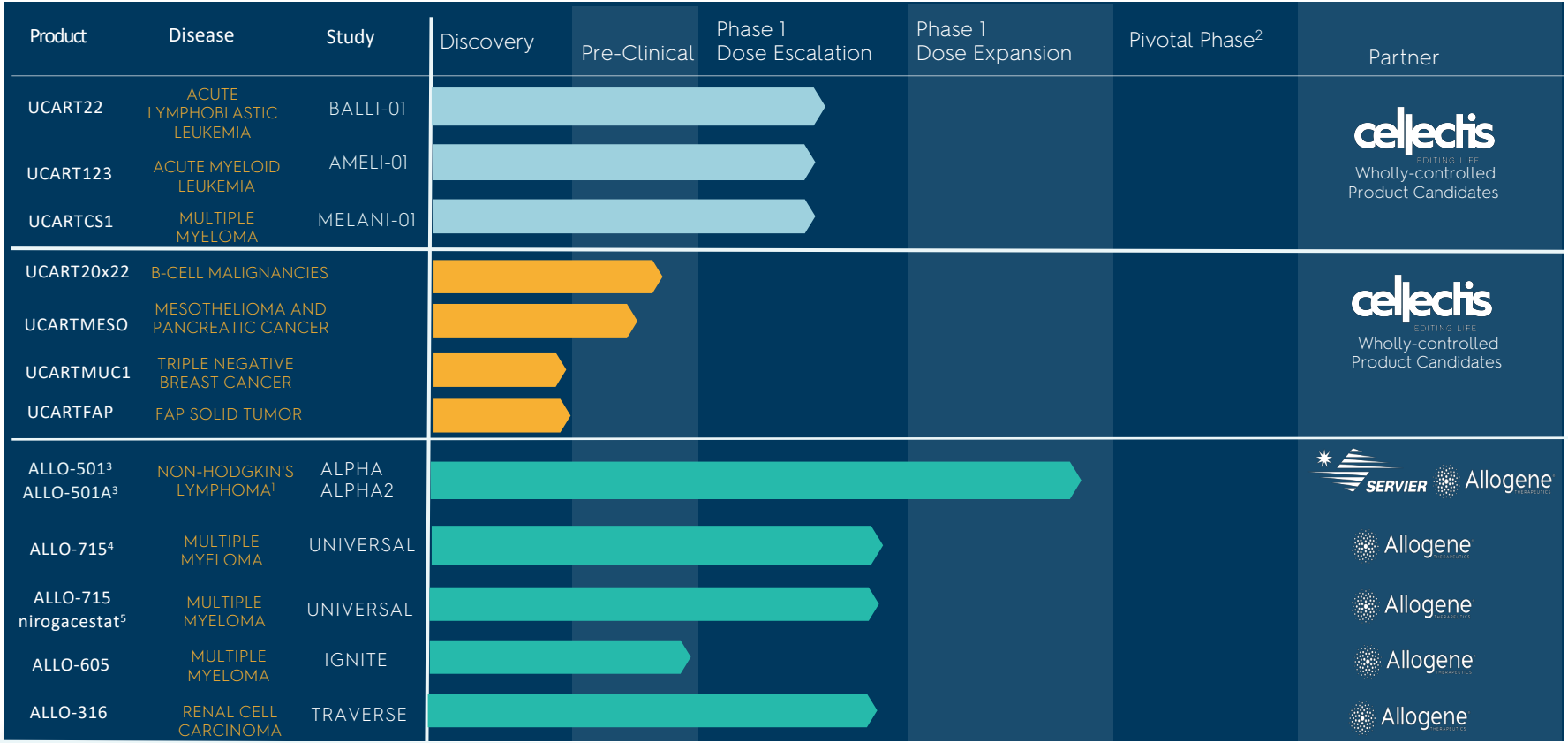
SANOFI	**Clinical partnership on Alemtuzumab**

PARTNERSHIPS WITH INDUSTRY LEADERS

Partnerships- leveraging our TALEN® gene editing platform with additional cell types.

Partner	License	Geography	Most Advanced Targets	Status	Economics to Cellectis
IOVANCE BIOTHERAPEUTICS	Exclusive license agreement to use specific TALEN® technology to develop gene-edited TILs	Worldwide	Undisclosed	Pre-IND	Undisclosed Development & Sales Milestones + Royalties on Sales
Cytovia Therapeutics	Research Collaboration and Non-Exclusive license and agreement to develop TALEN® gene-edited iPSC-derived NK and CAR-NK cells.	Worldwide	Undisclosed; solid- and liquid tumor targets	Pre-IND	$15M upfront equity and up to $760M of development, regulatory, and sales milestones + Single Digit % Royalties on Sales

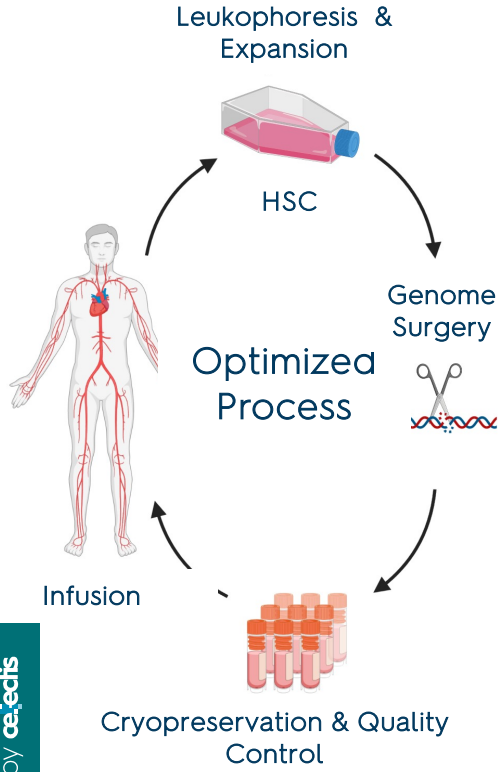
CAR T-CELL PIPELINE: INNOVATIVE CANCER THERAPIES

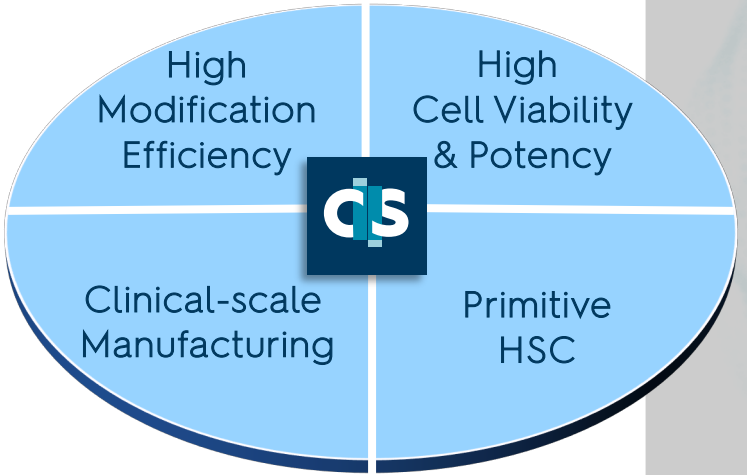


1 The ALPHA study targets Diffuse Large B-Cell Lymphoma (DLBCL) and Follicular Lymphoma (FL) indications, which are subtypes of NHL
2 We expect the pivotal phase to be the last clinical phase before commercialization
3 ALLO-501 /ALLO-501A is exclusively licensed to Servier and under a joint clinical development program between Servier and Allogene
4 BCMA is a licensed target from Cellectis. ALLO-715 utilizes TALEN® gene-editing technology pioneered and owned by Cellectis. Allogene has an exclusive license to the Cellectis technology for allogeneic products directed at the BCMA target. Allogene holds global development and commercial rights for this investigational candidate
5 Allogene sponsored trial in combination with SpringWorksTherapeutics.

HSC GENOME SURGERY PLATFORM

.HEAL





- **75-96% modification efficiency** in multiple loci
- **>80% cell viability** & preserve differentiation potential
- **>4-fold increase** in primitive HSC
- **Clinical-scale manufacturing** without affecting key parameters

.HEAL by cellectis

.HEAL PIPELINE - fully-owned by Cellectis

HSC genome surgery FOR multiple genetic DISEASES

Candidate	Indication	Cell Type	Target
TALGlobin-01	Sickle Cell Anemia	CD34+	HBB
TalX-05	Lysomal Storage Disease	CD34+	Undisclosed
TalX-03	Primary Immunodeficiency	T-Cell	STAT3
TalX-02	Primary Immunodeficiency	CD34+	RAG1
TalX-04	Primary Immunodeficiency	T-Cell	Undisclosed

UCART22: Initial Anti-Leukemic Activity in BALLI-01 Phase 1 in R/R B-ALL

Preliminary data from **5** patients who received UCART22 at DL1 or DL2 after FC lymphodepletion regimen

Median prior lines of therapy: **3**

Median bone marrow blasts: **35%** prior to lymphodepletion

Safety – Primary Objective

0 Patients reported DLT, GvHD, AESI, ICANS, or Treatment related SAE[1]

Efficacy – Secondary Objective

2 Patients at DL1 achieved **CRi[2] at Day 28;** of which one patient attained **CR at Day 42** and proceeded to HSCT after receiving *inotuzumab*.

1 Patient at DL2 achieved bone marrow blast reduction (**60% at screening to 13% at Day 28**)

Enrollment into DL2 cohorts with FCA[3] lymphodepletion regimen is ongoing

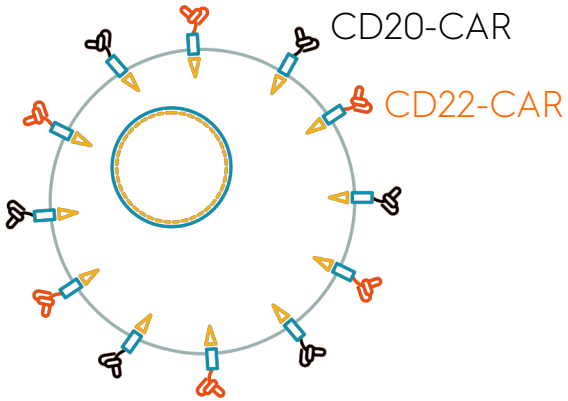
Data Source: ASH 2020 Conference Presentation

[1] DLT: Dose Limiting Toxicity; GvHD: Graft versus Host Disease; AESI: adverse event of special interest; ICANS: immune effector cell-associated neurotoxicity syndrome; SAE: Serious Adverse Event

[2] CR: Complete Remission; CRi: Complete Remission with incomplete hematologic recovery

[3] FCA: Fludarabine, Cyclophosphamide and Alemtuzumab

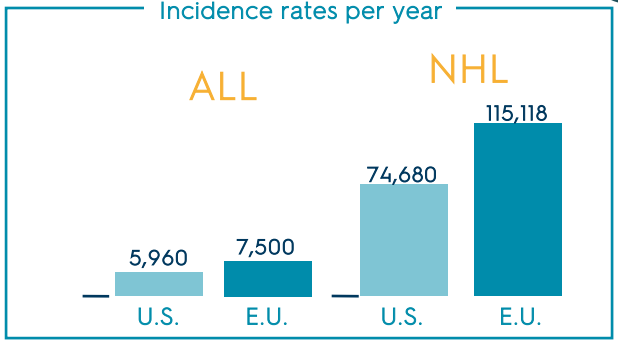
UCART20x22 – a Dual-Targeted CAR T-cell product candidate for Lymphoma



- Alternative to single target: CD19
- CD22 and CD20, both validated targets in B cell malignancies
- Expected to prevent target escape and strengthen contact

TALEN® attributes:

TALEN® for TRAC and CD52 KO, same as UCART22 and UCART123



CD22 expressed in >90% B-ALL

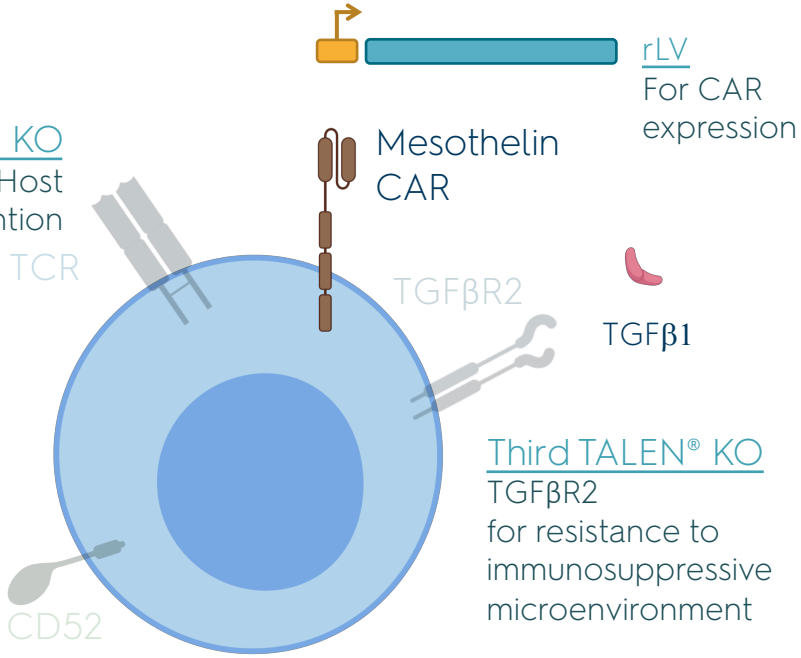
CD20 expressed in >90% NHL >50% B-ALL

* UCART20x22 product candidate is under pre-clinical development

UCARTMESO – ALLOGENEIC CAR T-CELL PRODUCT CANDIDATE IN SOLID TUMORS

MESOTHELIN IS AN ATTRACTIVE SOLID TUMOR TARGET

- ✓ Mesothelin is a tumor-associated antigen broadly overexpressed on various malignant tumor cells
- ✓ Mesothelin is one of the most studied targets for solid tumor treatment
- ✓ Promising preliminary clinical results were obtained with mesothelin-targeted agents

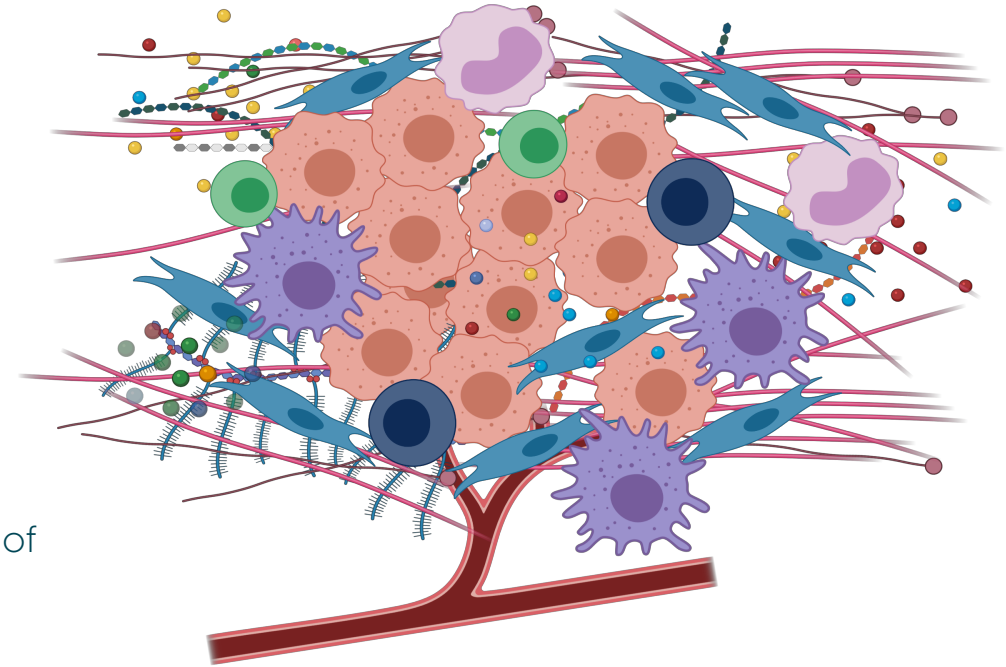


* UCARTMESO product candidate is under pre-clinical development

OUTSMARTING THE TUMOR WITH GENE EDITED CAR T-CELLS

Immunosuppressive cells and factors

Physical barriers



Negative regulation of effector cells

Intratumoral milieu

Treg

B cell

CAF

cytokines

M2 macrophage

Myeloid-derived suppressor cell

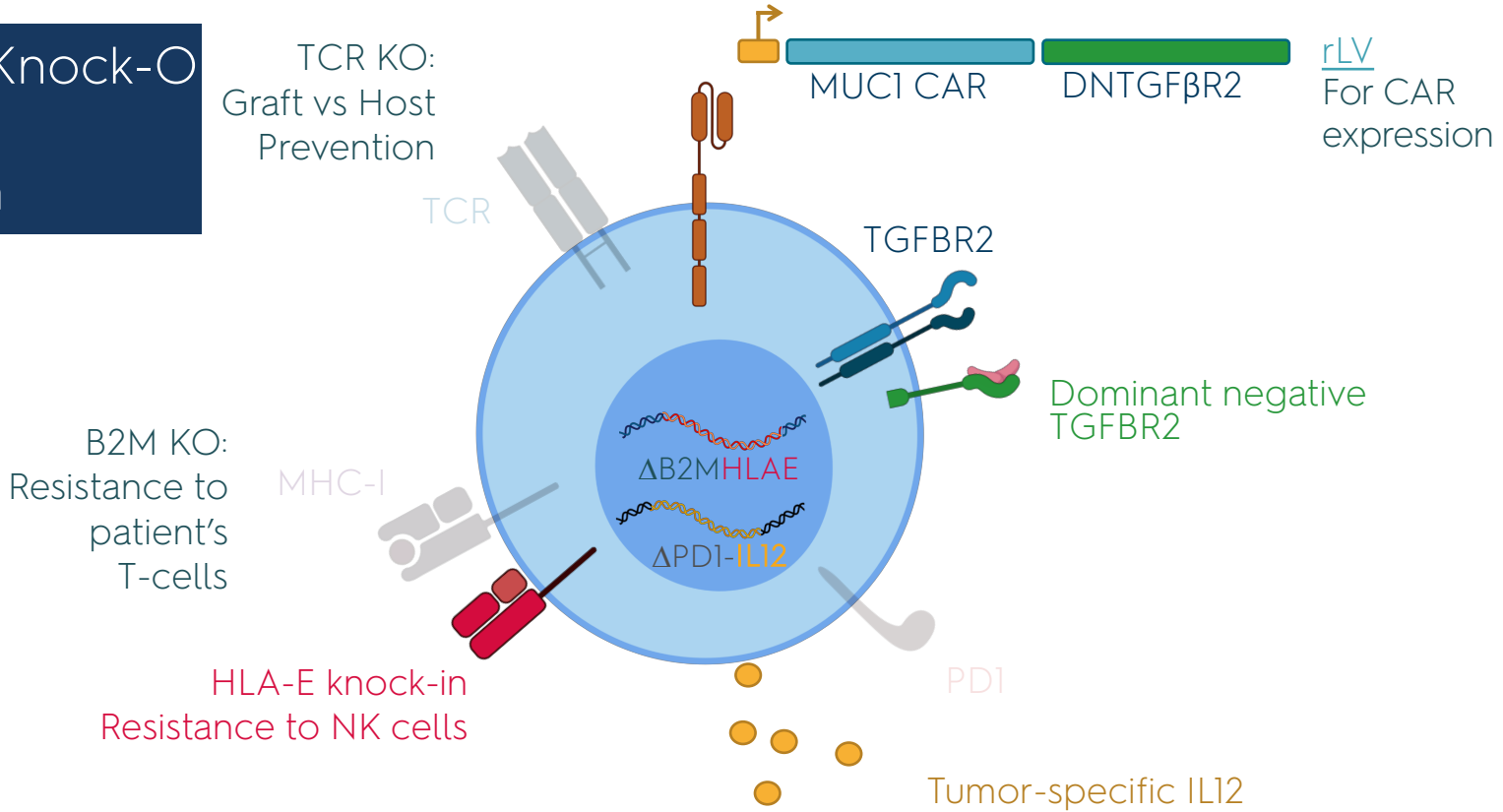
Extracellular matrix

* UCARTMUC1 product candidate is under pre-clinical development

NEXT-GEN CAR T-CELLS – UCARTMUC1* PRODUCT CANDIDATE WITH MULTIPLE EDITS

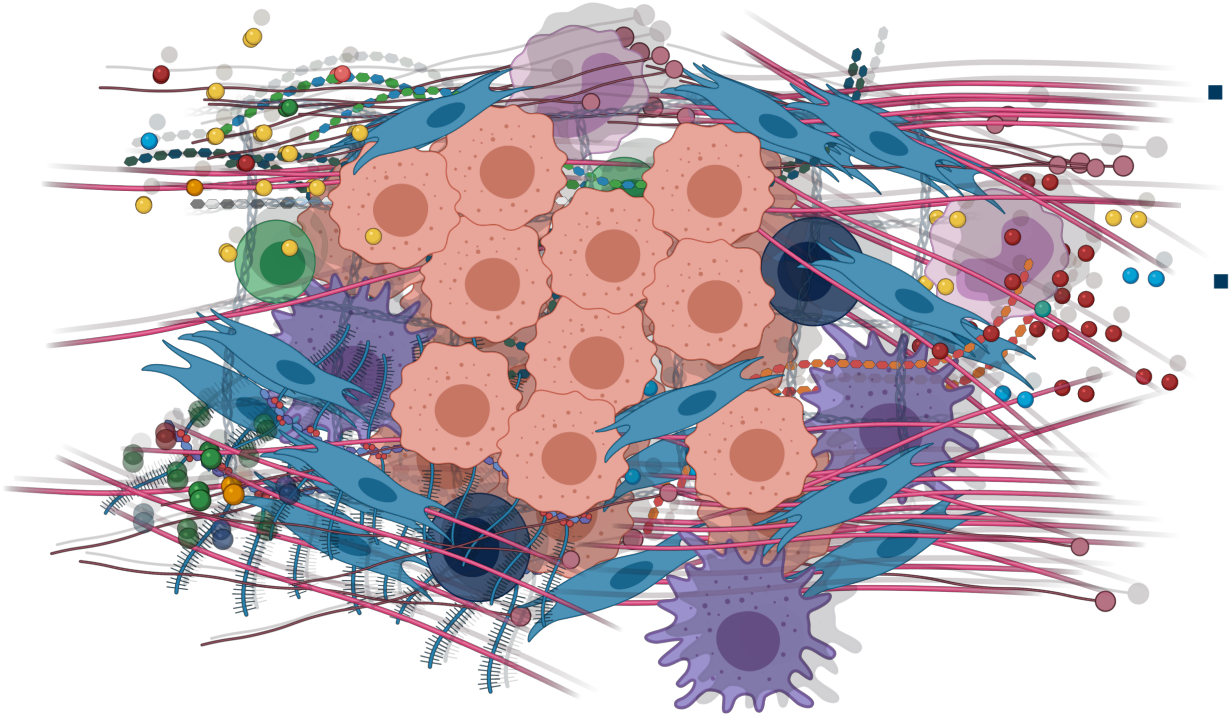
3 TALEN® Knock-O

2 Knock-In



* UCARTMUC1 product candidate is under pre-clinical development

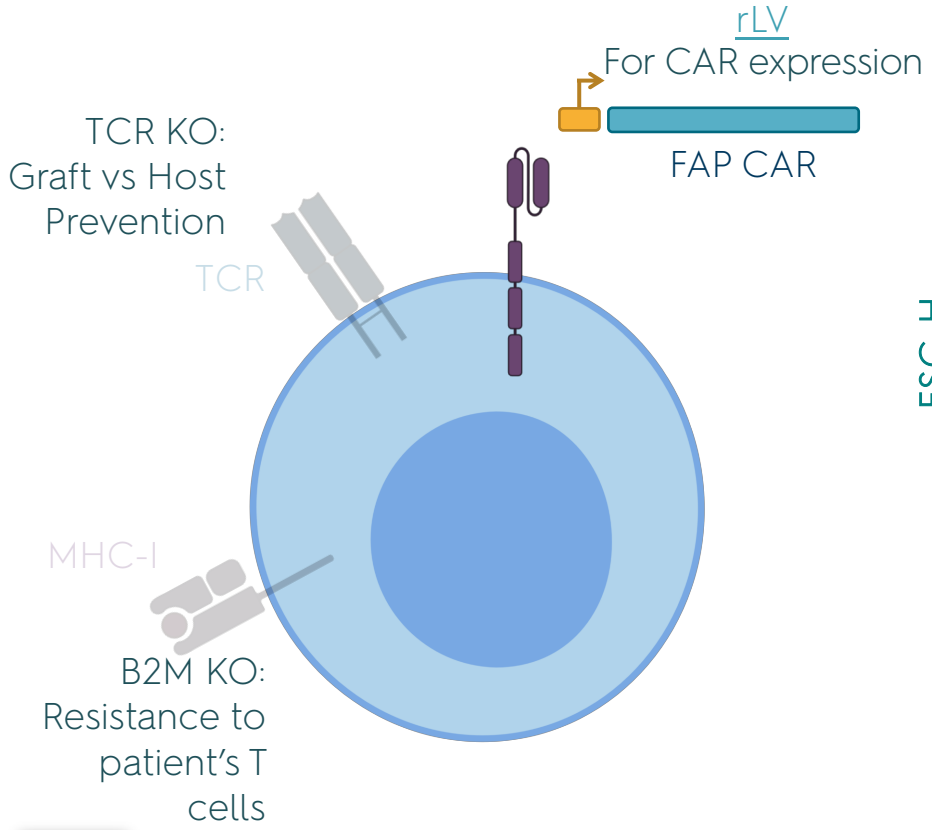
OVERCOMING ‘COLD TUMOR’ OBSTACLE BY TARGETING CAFS

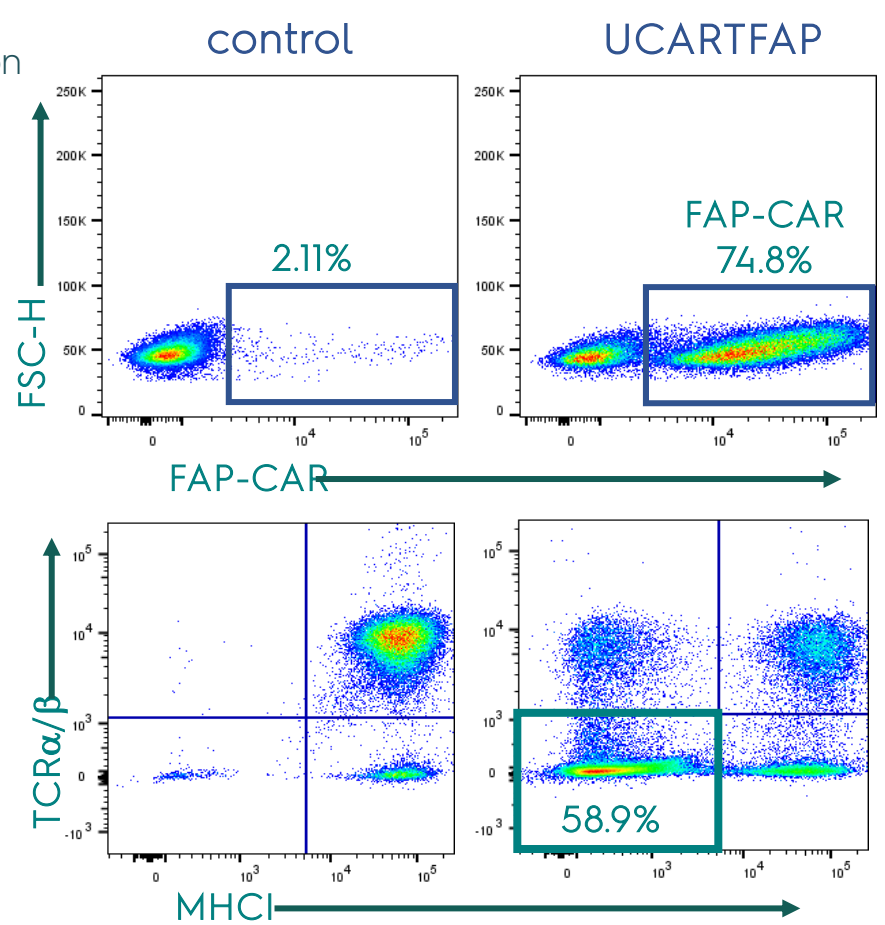


- ECM deposition forming physical barrier
- Cytokine secretion forming chemical barrier

Cancer-associated Fibroblasts (CAFs): central role for T-cell exclusion and immune suppression in solid tumors

UCARTFAP: AN ALLOGENEIC CART PRODUCT CANDIDATE FOR FAP+ SOLID TUMORS

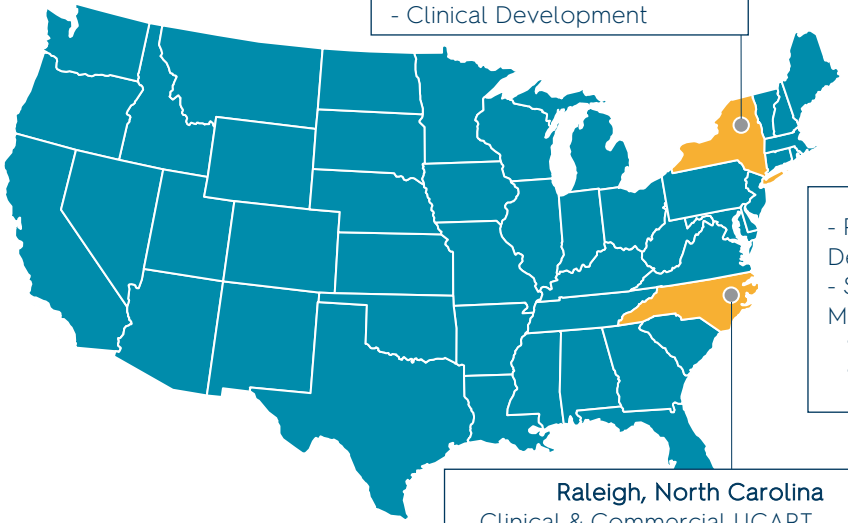




* UCARTFAP product candidate is under early stage of pre-clinical development

A CROSS-ATLANTIC ORGANIZATION

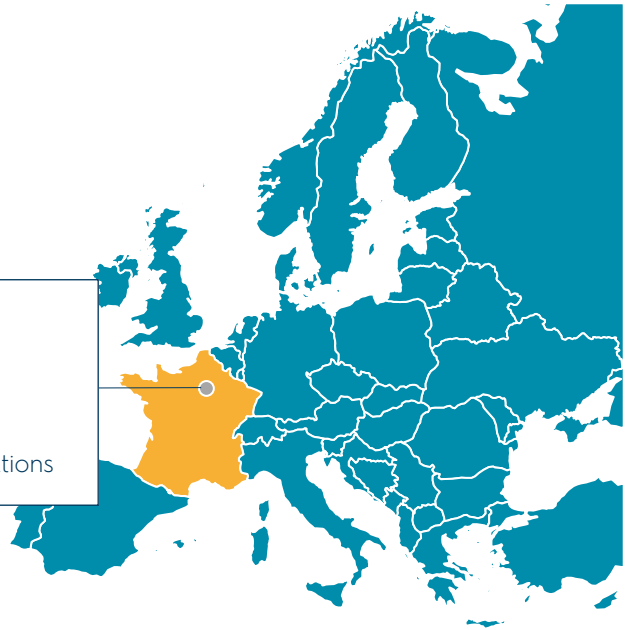
US Footprint



New York, NY
- Gene Editing Platform
- Innovation
- Clinical Development

Raleigh, North Carolina
- Clinical & Commercial UCART Manufacturing
  - **82,000 sq ft. facility**
  - **Operational "go-live" in 2021**

EU Footprint



Paris, France
- Process & Analytical Development
- Starting Materials Manufacturing
  - **14,000 sq ft.** facility
  - Manufacturing operations went live in 2020

THE CELLECTIS GROUP

~64.5%* ownership

NASDAQ: CLLS | EURONEXT GROWTH: ALCLS

- ~$211M** cash and cash equivalents, not including $45.5M proceeds through ATM program in April 2021
- Cash runway into early 2023
- Patient focused
- Based in Paris, France, New York & Raleigh, USA

NASDAQ: CLXT

- $20M* cash and cash equivalents
- Cash runway into H2 2022
- 2020 revenue of $23.9M
- Plant-based technology company
- Based in Minnesota, USA

Equity Investor
6.51%* ownership
in Cellectis

Gene editing is the link

* As of March 31, 2021
** $231M of consolidated cash, cash equivalents, current assets and restricted cash (Cellectis + Calyxt)

ACHIEVED MILESTONES

Proprietary clinical programs

UCART22: Phase 1 in R/R ALL ongoing; data presented at ASH 2020

UCARTCS1: Phase 1 R/R MM ongoing

UCART123: Phase 1 for R/R AML ongoing

Partnered clinical programs

ALLO-**501**/ALLO-**501A**[1]: Phase 1 in R/R NHL ongoing; data will be presented at ASCO 2021

ALLO-715[2]: Phase 1 in R/R MM ongoing; data presented at ASH 2020

ALLO-316 : Phase 1 Dose Escalation Ongoing in Renal Cell Carcinoma; Preclinical data presented at ASH 2020

Manufacturing

2 in-house GMP manufacturing plants:

Paris, France facility has started manufacturing of starting material supply

Raleigh, North Carolina facility on track for GMP UCART manufacturing in 2021

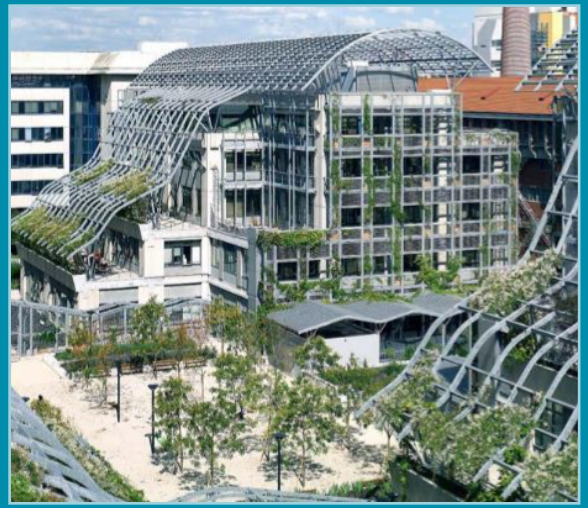
CURRENT CLINICAL STATUS

UCART22:	Enrollment and dosing ongoing at DL2 with Alemtuzumab+FC lymphodepletion.
UCARTCS1:	Enrollment and dosing ongoing at Dose Level -1.
UCART123:	Enrollment and dosing ongoing at DL2 with Alemtuzumab+FC lymphodepletion.

1 ALLO-501/ALLO-501A is exclusively licensed to Servier and under a joint clinical development program between Servier and Allogene.
2 BCMA is a licensed target from Cellectis. ALLO-715 utilizes TALEN® gene-editing technology pioneered and owned by Cellectis. Allogene has an exclusive license to the Cellectis technology for allogeneic products directed at the BCMA target. Allogene holds global development and commercial rights for this investigational candidate.

THANK YOU

Reach us at: investor@cellectis.com



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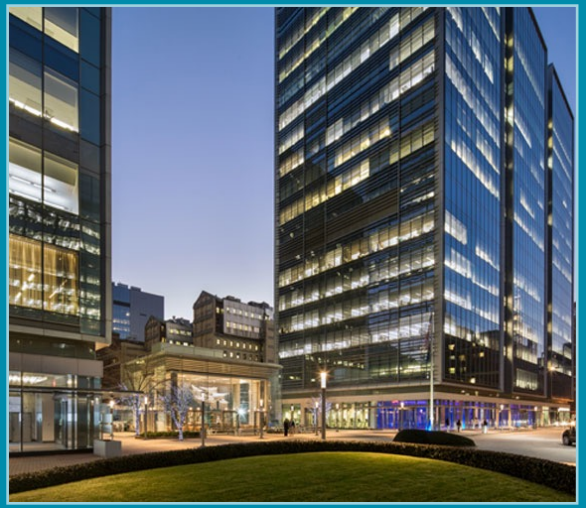

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