
cellectis
EDITING LIFE
COMMITMENT TO A CURE
cellectis.com

FORWARD-LOOKING STATEMENTS

This presentation contains "forward-looking" statements that are based on our management's current expectations and assumptions and on information currently available to management.

Forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.

The risks and uncertainties include, but are not limited to the risk that the preliminary results from our product candidates will not continue or be repeated, the risk that our clinical trials will not be successful. The risk of not obtaining regulatory approval to commence clinical trials on additional UCART product candidates, the risk that any one or more of our product candidates will not be successfully developed and commercialized.

Further information on the risk factors that may affect company business and financial performance, is included in our annual report on form 20-F and other filings Cellectis makes with the securities and exchange commission from time to time and its financial reports.

Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons 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

20 years

of expertise in gene editing

8 years

of experience in allogeneic CAR-T manufacturing

6 clinical trials

ongoing as of 2020;
3 Cellectis-sponsored
3 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:

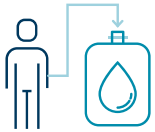
Manufacturing variability + several weeks before treatment is available

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

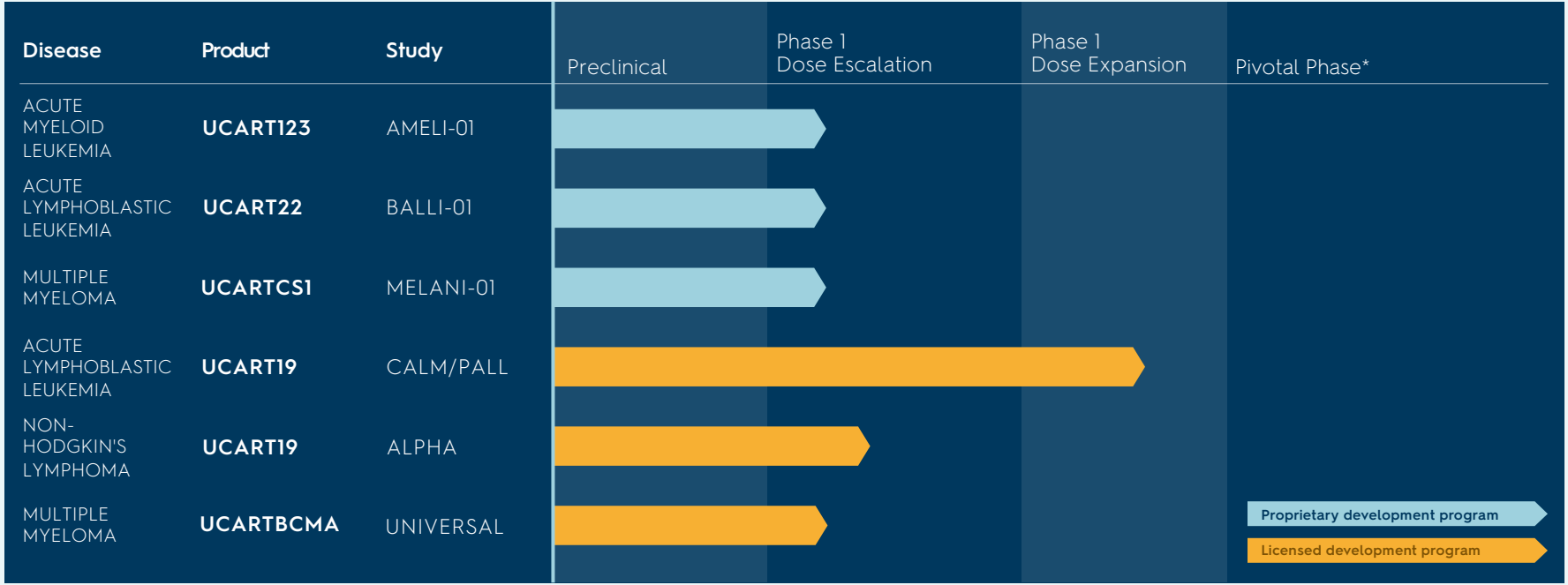
PARTNERSHIPS WITH INDUSTRY LEADERS

Up to $3.2B in potential milestone payments plus royalties

Allogene Therapeutics	**Exclusive license to 15 allogeneic CAR T-Cell Targets** Including UCARTBCMA/ALLO-715[1]	**Up To $2.8B in Development & Sales Milestones** + High Single Digit Royalties on Sales
Servier	**Exclusive license to CD19-directed allogeneic CAR T-Cells (subject to execution of the long form amendment)** Including UCART19/ALLO-501 and ALLO-501A[2]	**Up To $410M in Development & Sales Milestones** + Low Double Digit Royalties on Sales
Iovance Biotherapeutics	**Exclusive license Agreement to use TALEN® technology to develop gene-edited TILs**	Regulatory & Sales Milestones + Royalties on Sales
Pfizer	**Equity Investor**	**6.57% ownership in Cellectis** As of December 31, 2019

[1]UCARTBCMA/ALLO-715 is exclusively licensed to Allogene from Servier.
[2]UCART19/ALLO-501 and ALLO-501A are exclusively licensed to Servier and under a joint clinical development program between Servier and Allogene.

PIPELINE: INNOVATIVE CANCER THERAPIES FOR UNMET NEEDS



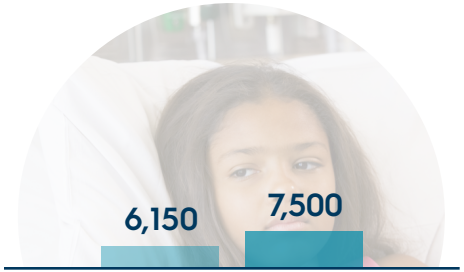
Cellectis and its partners are also working on a number of other preclinical targets

*We expect the pivotal phase to be the last clinical phase before commercialization
UCART19/ALLO-501 is exclusively licensed to Servier and under a joint clinical development program between Servier and Allogene.
UCARTBCMA/ALLO-715 is exclusively licensed to Allogene.

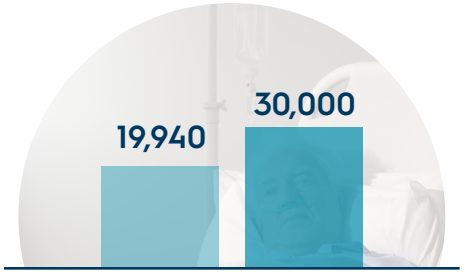
PIPELINE TARGETS MULTIPLE UNMET NEEDS IN CANCER

Estimated numbers of new cases in 2020

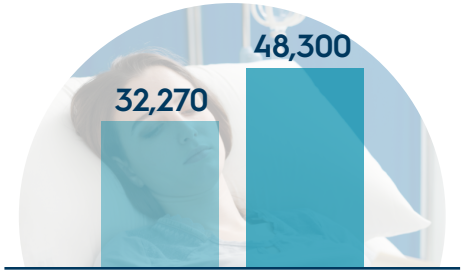
ALL



AML



MM



Survival data

20% 5-year OS* in adults

<6 months median disease-free survival in pediatric patients

UCART22

27% 5-year OS in adults

6% 5-year OS in adults >55 years old

UCART123

50% 5-year OS in adults

43-83 months median OS for stages 2-3

UCARTCS1

* Overall Survival

CLINICAL TRIAL: DESIGN OF PHASE 1 STUDIES (DOSE FINDING)

Primary Objectives:

Safety and Identification of Optimal Dose

Secondary Objectives:

Efficacy and Correlative Studies

Dose Escalation:

Optimal dose definition

DL: Dose Level

UCART19: PROOF OF CONCEPT / FIRST ALLOGENEIC CAR-T

Safety – Primary Objective

0% Grade ≥2 skin Graft vs Host Disease

0% Grade 3-4 neurotoxicity

14% Grade 3-4 Cytokine Release Syndrome

Efficacy – Secondary Objective

82% **CR/CRi rate** with optimal lymphodepletion

67% **overall CR/CRi rate**

71% **of these patients were MRD-**

Re-dosing with UCART19 resulted in cell expansion and MRD- status in 2/3 patients

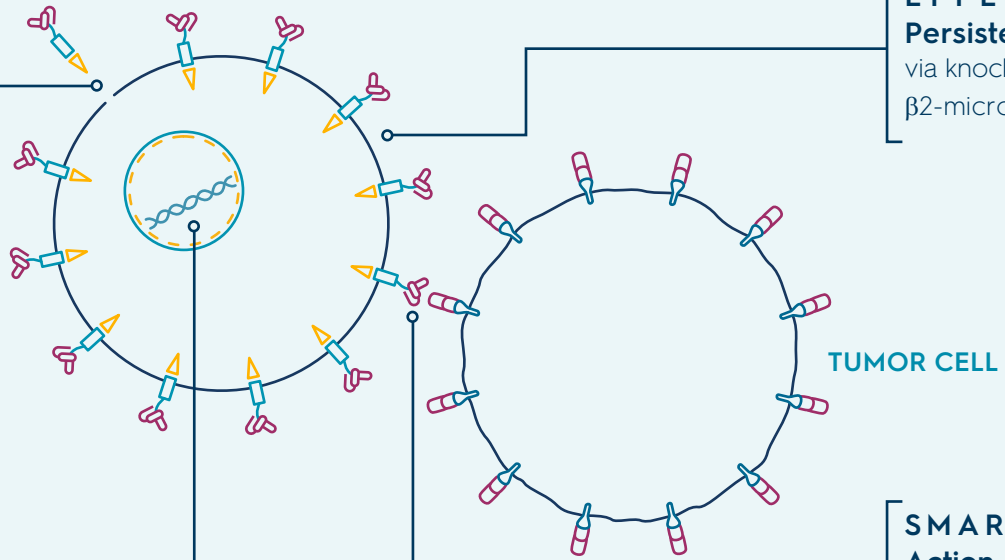
Peak expansion observed mostly at Day 14

Please note: this slide contains pooled data.
UCART19 is exclusively licensed to Servier and under a joint clinical development program between Servier and Allogene.
Lymphodepletion regimen consisting of fludarabine, cyclophosphamide and an anti-CD52 mAb.

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® GENE EDITING – ADVANTAGES

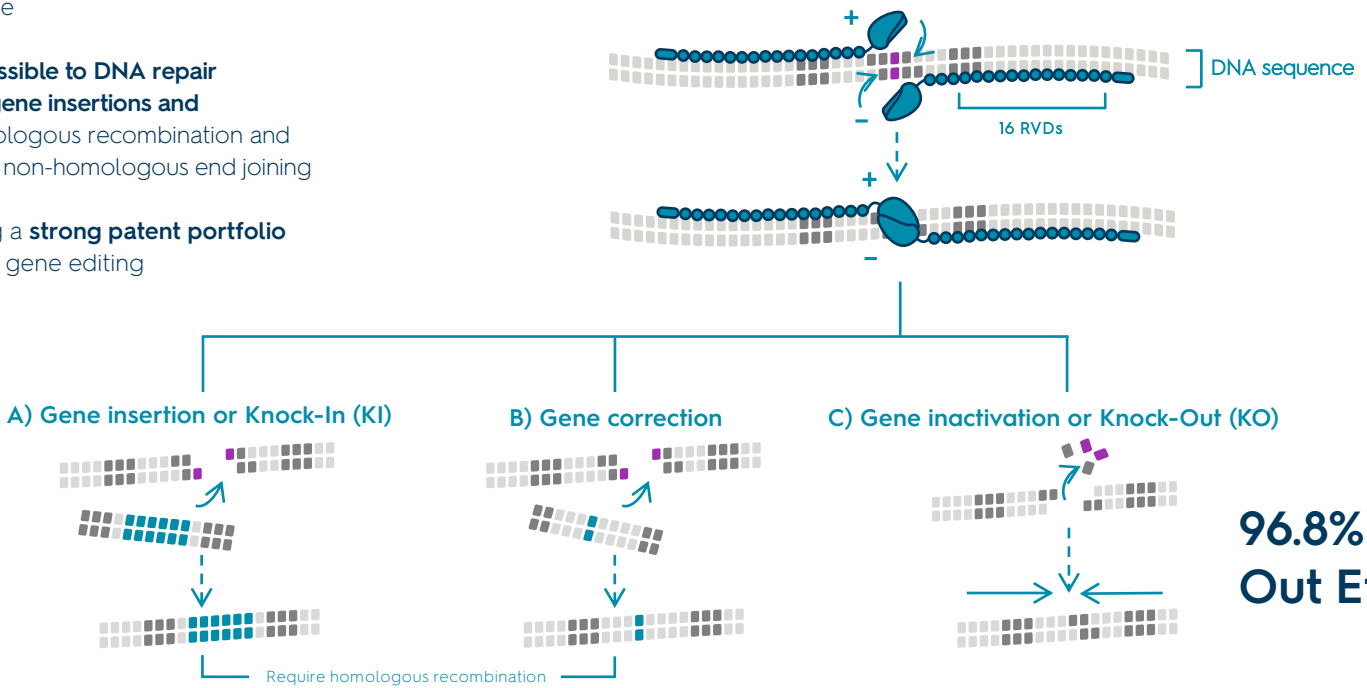
TALEN®:

Driven by protein/DNA interactions to work on potential off-site cleavage

Releases DNA ends **accessible to DNA repair mechanisms to perform gene insertions and corrections** through homologous recombination and gene inactivation through non-homologous end joining

Over 20 years of building a **strong patent portfolio** with umbrella patents on gene editing

Our nucleases act like DNA scissors to edit genes at precise target sites:

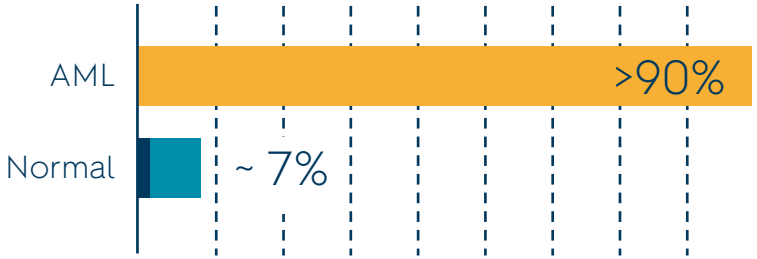


>65% Knock-In Efficiency

96.8% Knock-Out Efficiency

CD123 TARGET: RATIONALE FOR THERAPY IN ACUTE MYELOID LEUKEMIA

High expression on malignant cells



Limited expression on healthy cells

- CD123 is expressed **>90%** on malignant cells in AML
- Total bone marrow cells **~ 7%** CD123 positive
- Only **~ 1%** expresses the antigen at high levels

CD123 expression in cells

Also expressed on BPDCN and Hodgkin's lymphoma

Cellectis Trial Recruitment Sites

MOFFITT CANCER CENTER

THE UNIVERSITY OF TEXAS MD Anderson Cancer Center Making Cancer History®

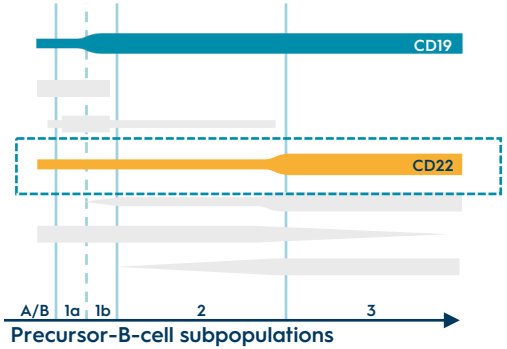
Dana-Farber Cancer Institute

Weill Cornell Medicine

CD22 TARGET: RATIONALE FOR THERAPY IN ACUTE LYMPHOBLASTIC LEUKEMIA

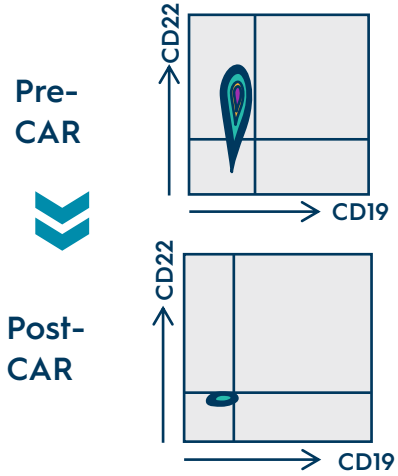
CD22 Expression in B-cells

Flow cytometric analysis of B-cell differentiation



CD22 is expressed in >95% B-ALL cells

Potential in disease space



Relapses following CD19-directed CAR T-cell therapy can show loss of CD19 antigen but **persistent expression of CD22**

Anti-CD22 CAR T-cells can induce remissions **in CD19 negative B-cells**

Cellectis Trial Recruitment Sites

Weill Cornell Medicine

THE UNIVERSITY OF TEXAS MD Anderson Cancer Center
Making Cancer History®

THE UNIVERSITY OF CHICAGO MEDICINE

CS1-SLAMF7 TARGET: RATIONALE FOR THERAPY IN MULTIPLE MYELOMA

High expression on malignant cells

>95%

expression in MM cells

- CS1 expression is **high and uniform** on MM cells

Clinical validation

→ **Elotuzumab** is a monoclonal antibody targeting CS1

→ Elotuzumab is **safe and effective** in MM patients

→ Elotuzumab (in combination with lenalidomide and dexamethasone in R/R MM patients) shows: **5% CR rate and 45% partial remissions**

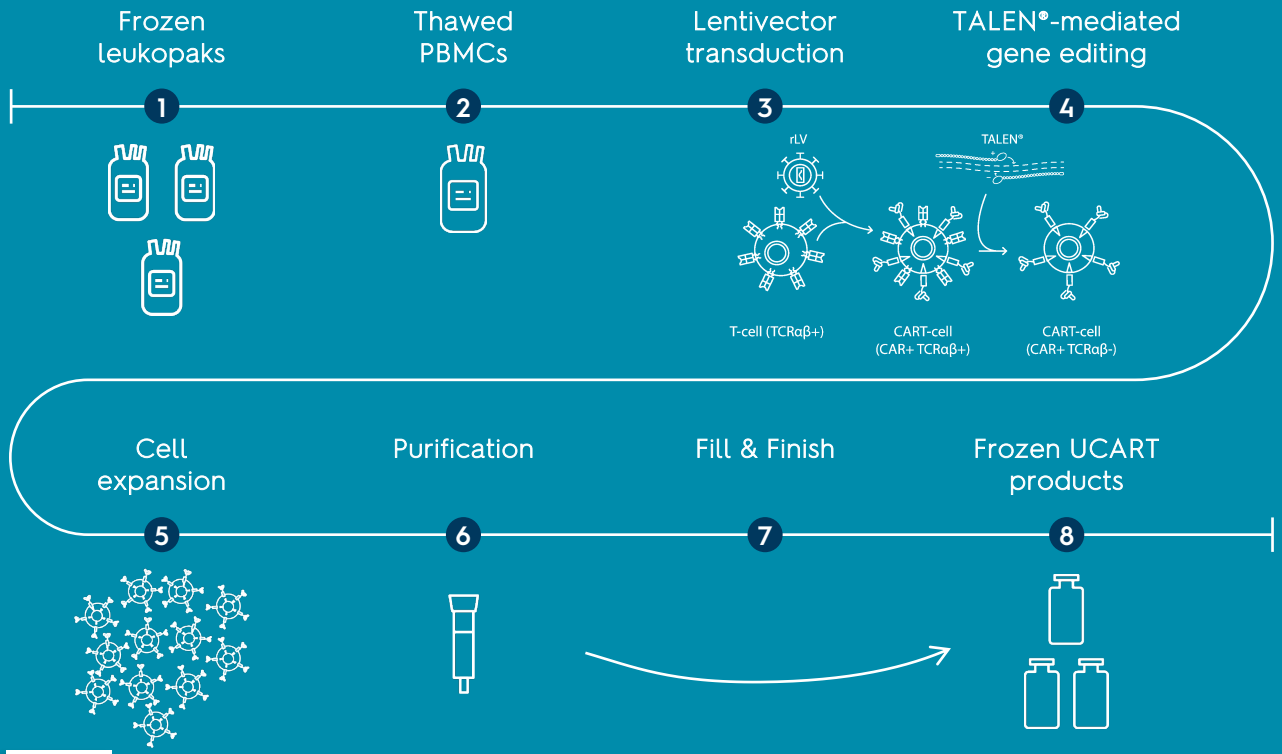
Cellectis Trial Recruitment Sites

Weill Cornell Medicine

THE UNIVERSITY OF TEXAS MD Anderson Cancer Center
Making Cancer History®

Hackensack Meridian *Health*

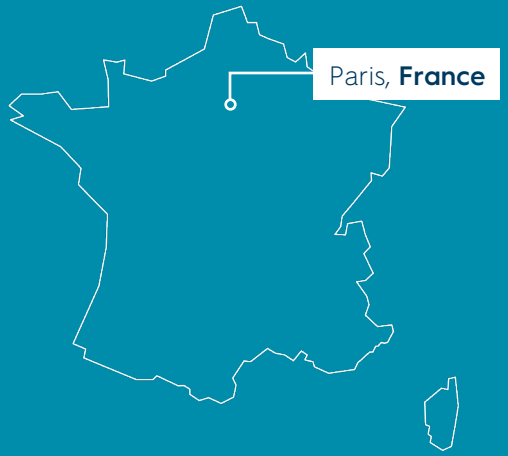
UCART MANUFACTURING



- 8 years of experience in allogeneic CAR-T manufacturing
- Validated gene editing technology for cell manufacturing
- 4 UCART product candidates manufactured so far
- Full QC system in place
- 3 wholly controlled product candidates cleared for 3 clinical trials by the U.S. FDA

IN-HOUSE MANUFACTURING

Raw materials



Clinical & Commercial UCART Product Candidates

14,000 sq ft. facility

Production of clinical starting materials

Operational “go-live” targeted **in 2020**

82,000 sq ft. facility

Production of clinical & commercial UCART product candidates

Operational "go-live" targeted in **2021**

THE CELLECTIS GROUP

cellectis
EDITING LIFE

NASDAQ: CLLS

EURONEXT GROWTH: ALCLS

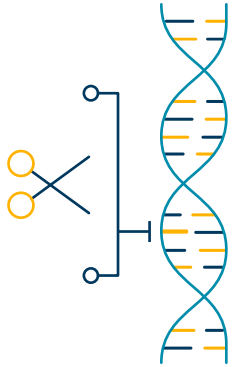
~$300M** cash as of September 30, 2019

Expected to fund operations into 2022

Based in Paris, France, New York & Raleigh, USA

Patient focused

~69.1%* ownership



calyxt™

NASDAQ: CLXT

$68M cash as of September 30, 2019

Expected to fund operations into mid-2021

Based in Minnesota, USA

Consumer focused

High value asset

Gene editing is the link

* As of September 30, 2019
** $367M of consolidated cash, cash equivalents, current assets and restricted cash (Cellectis + Calyxt)

ACHIEVED MILESTONES IN 2019

Proprietary clinical programs

UCARTCS1: Phase 1 R/R MM ongoing; first patient dosed in Q4 2019

UCART22: Phase 1 in R/R ALL ongoing; first patient dosed in Q4 2019

UCART123: Phase 1 for R/R AML ongoing; New IND granted by FDA in Q3 2019

Partnered clinical programs

UCART19: Phase 1 in R/R ALL ongoing

UCART19 (ALLO-**501**): Phase 1 in R/R NHL ongoing, first patient dosed in H1 2019

UCARTBCMA (ALLO-715): Phase 1 in R/R MM ongoing, first patient dosed in H2 2019

Manufacturing

Ongoing construction of 2 in-house manufacturing plants:

Facility in Paris, France for raw material supply

Facility in Raleigh, North Carolina for GMP, commercial scale UCART manufacturing

EXPECTED MILESTONES IN 2020

Clinical programs

Provide interim clinical data on completed dose cohorts for proprietary and partnered programs at relevant scientific conferences

Manufacturing

Go-live with Paris facility

Construction complete for Raleigh facility

UCART19/ALLO-501 is exclusively licensed to Servier and under a joint clinical development program between Servier and Allogene.
Product candidates exclusively licensed to Allogene

THANK YOU

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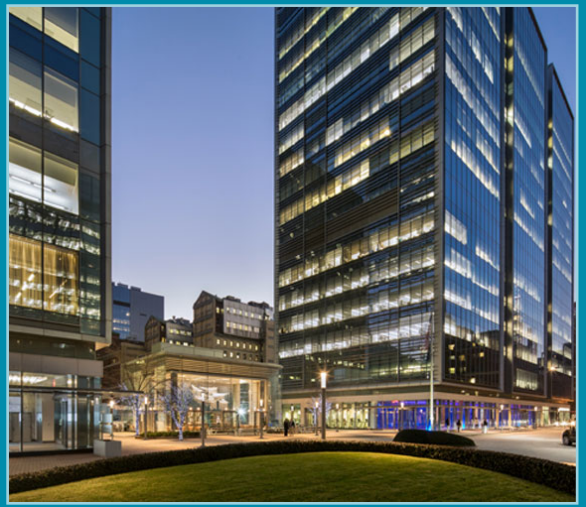

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