

Commitment to a Cure

Corporate Presentation

May 2023

NASDAQ: CLLS

EURONEXT GROWTH: ALCLS.PA



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 "designed to", "anticipate," "expected," "on track," "plan," "scheduled," "should", 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, including information provided or otherwise publicly reported by our licensed partners. Forward-looking statements about advancement, timing and progress of clinical trials (including with respect to patient enrollment and follow-up), the timing of our presentation of data and submission of regulatory filings, the adequacy of our supply of clinical vials, the 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.

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, 2022 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.



Cellectis at a Glance



Clinical Trials¹

50+ patients dosed in Cellectis-sponsored trials



Global GMP Facilities

End-to-end manufacturing autonomy



Near-Term Clinical Catalysts

UCART clinical data updates



Diversified Partnerships with Industry Leaders



~220 patients dosed to date

- Revenues > \$4B in milestones + royalties
- **5 clinical trials** sponsored by Cellectis' licensed partners













A Highly-Experienced Executive Committee



André Choulika, Ph.D. Founder & CEO



Steven Doares, Ph.D. SVP, US Manufacturing & Site Head



Phillippe Duchateau, Ph.D. Chief Scientific Officer



Mark Frattini, M.D., Ph.D. Chief Medical Officer



Kyung Nam-Wortman EVP, Chief Human Resources Officer



Stephan Reynier
Chief Regulatory & Compliance Officer



David Sourdive, Ph.D. EVP CMC & Manufacturing & Co-Founder



Arthur Stril Chief Business Officer



Marie-Bleuenn Terrier General Counsel



Bing Wang, Ph.D., MBA Chief Financial Officer



UCARTs are designed to be "Off-The-Shelf"

Scalable Manufacturing



Reduced cost
Scalable manufacturing:
1 batch = 100s doses

Robustness



The goal is to provide potency and consistency to each patient

Market Access



Immediately available to all eligible patients

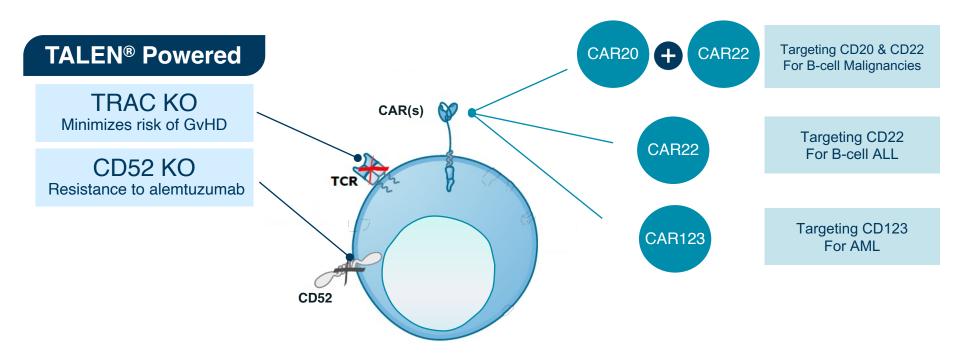
Control Production & Costs for Patients Safety and Profitability



Experts in Gene-Editing Use TALEN®



Cellectis' UCART Candidate Platform





Differentiated Targets & Near-Term Catalysts

Candidate / Target	Indication	Study	Preclinical	Phase 1 Dose Escalation	Phase 1 Dose Expansion	Pivotal Phase ²	Upcoming Expected Milestones		
UCART22 CD22	ALL	BALLI-01 NCT04150497					Data update with in-house manufactured product		
UCART123 CD123	AML	AMELI-01 NCT03190278					Data update with 2-dose regimen		
UCART20x22 Dual Target CD20, CD22	NHL	NatHaLi-01 NCT05607420					First in-human data update		
							Licensed to:		
ALLO-501A ¹ CD19	LBCL	ALPHA2 NCT04416984					* Allogene U.S. rights		
ALLO-715 ³ BCMA	ММ	UNIVERSAL NCT04093595							
ALLO-605 ³ BCMA	ММ	IGNITE NCT05000450					Allogene [®]		
ALLO-316 ⁴ CD70	RCC	TRAVERSE NCT04696731							

ALL, Acute Lymphoblastic Leukemia; AML, Acute Myeloid Leukemia; NHL, Non-Hodgkin's Lymphoma; RCC, Renal Cell Carcinoma, LBCL, Large B-Cell Lymphoma

¹ ALLO-501A is exclusively licensed to Servier and under a joint clinical development program between Servier and Allogene. The ALPHA2 study targets Large B-Cell Lymphoma (LBCL)

² Phase 3 may not be required if Phase 2 is registrational.

³ ALLO-715 and ALLO-060 utilize 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.

4 CD70 is a licensed target from Cellectis. ALLO-316 utilize TALEN® gene-editing technology pioneered and owned by Cellectis. Allogene has an exclusive license to the Cellectis technology for allogeneic products directed at the CD70 target. Allogene holds global development and commercial rights for this investigational candidate.

Cellectis' UCART Platform



UCART22 – BALLI-01 Trial Design

Phase I/IIa, Open Label Dose-escalation and Dose-expansion Study to Evaluate the Safety, Expansion, Persistence and Clinical Activity of UCART22 in Patients with Relapsed or Refractory CD22* B-cell Acute Lymphoblastic Leukemia

Dose Escalation

Determine MTD and/or RP2D

Dose Expansion LD regimen: FCA

Up to 30 pts; mTPI design; 2-4 pts/cohort

Up to 53 pts; binomial exact study design; LD regimen: FCA

Objectives

Primary/Secondary

- · Safety and tolerability
- MTD/RP2D
- Response (Investigator assessed)

Exploratory

- UCART22 expansion and persistence,
 VCN and chimerism in WB and BM
- Immune reconstitution

Key Eligibility Criteria

- Patients aged 15 years to 70 years
- Adequate organ function
- ECOG PS ≤1
- B-ALL blast CD22 expression ≥70%
- Received ≥1 standard chemotherapy regimen and ≥1 salvage regimen

Dose Levels

- DL-1 1 x10⁴ cells/kg
- DL1 1 ×10⁵ cells/kg
- DL2 1 ×10⁶ cells/kg
- DL2i 2.5 x 10⁶ cells/kg
- DL3 5 ×10⁶ cells/kg

F: $30 \text{ mg/m}^2/d \times 4d$; C: $1 \text{ g/m}^2/d \times 3d$;

F: $30 \text{ mg/m}^2/d \times 3d$; C: $500 \text{ mg/m}^2/d \times 3d$

A: 20 mg x 3d



UCART22 Administration Shows Promising Tolerable Safety Profile

Patient Characteristics (N=17)

Median age: 28 (17-61)

WHO classification:

- B-ALL with recurrent genetic abnormalities: 7 (41%);
- CRFL2 rearrangement: 4 (24%)

Median prior lines of therapy: 4 (2-7)

- Prior blinatumomab: 11 (65%)
- Prior inotuzumab: 8 (47%)
- Prior CD19 CART: 7 (41%)
- Prior HSCT: 7 (41%)

Safety: FCA Cohorts (N=12)

- 0 dose limiting toxicity
- **0** ICANS (immune effector cell associated neurotoxicity)
- o severe UCART22-related TEAEs (treatment emergent adverse events)
- 6 patients with mild to moderate CRS (cytokine release syndrome), Grade 1/2
- 1 patient with Grade II GvHD; skin only*



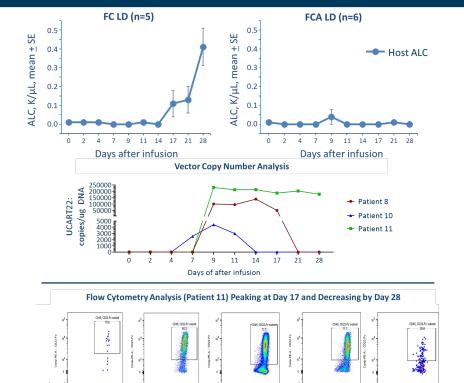
^{*}not confirmed by biopsy; in context of re-activation of prior allogeneic bone marrow donor stem cells

Promising Clinical Responses with UCART22 and FCA Lymphodepletion

Comp-APC-H7-A: CD45

D28

D21



- Host lymphocytes remained suppressed using FCA lymphodepletion
- 2/7 patients in DL2 and DL2i achieved blast reductions to < 5% by day 28 using FCA lymphodepletion
 - 1 patient in DL2: 0.4% BM blast
 - 1 patient in DL2i: 0% BM blast
- 60% ORR observed in DL3 (3/5 patients)* with FCA lymphodepletion
 - 1 patient MRD negative CR
 - 1 patient MRD negative CRi
 - 1 patient MLFS



Data Source: ASH 2021 Conference Presentation and Cellectis' Live Webcast on 13th December 2022

D14

FC: Fludarabine + Cyclophosphamide; FCA: Fludarabine + Cyclophosphamide + Alemtuzumab;

D11

CR: Complete Response: CRi: Complete Response with Incomplete Count Recovery: MLFS: Morphologic Leukemia-Free

D17

Days after infusion

^{*}All 3 of the DL3 responders failed multiple lines of prior therapy including chemotherapy, CD19 directed autologous CAR T cell therapy, and allogeneic stem cell transplant. Additionally, 1 of the 3 also failed prior blinatumomab and inotuzumab.

LD: Lymphodeoletion: DL2: Dose Level 2: DL2: Intermediate Dose Level 2: DL3: Dose Level 3: BM: Bone Marrow: MRD: Minimal Residual Disease:

UCART123 – AMELI-01 Trial Design

Phase I, Open Label Dose-escalation and Dose-expansion Study to Evaluate the Safety, Expansion, Persistence and Clinical Activity of UCART123 in Patients with Relapsed or Refractory Acute Myeloid Leukemia

Key Eligibility Criteria

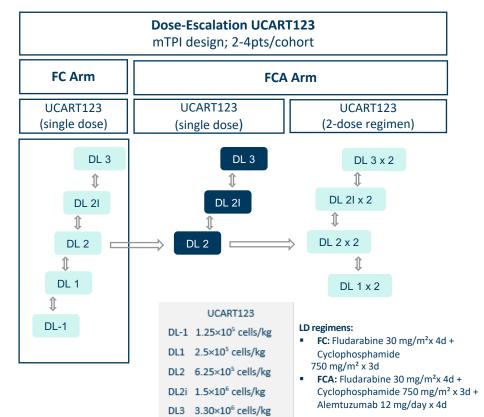
- Relapsed or primary refractory AML (>5% bone marrow blasts)
- Blasts expressing CD123
- ECOG PS of ≤1 and adequate organ function

Primary Objective

Safety, tolerability, & MTD/RP2D of UCART123

Additional Objectives

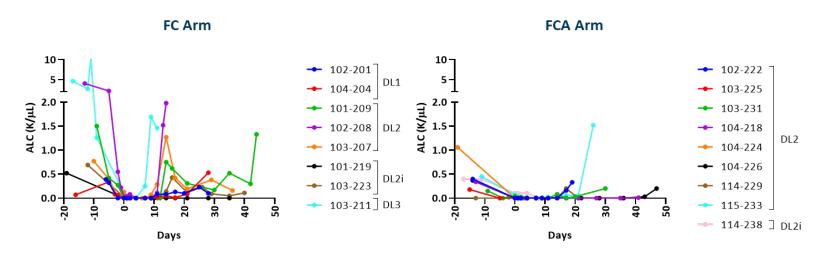
- Investigator-assessed response
- UCART123 expansion, trafficking, persistence in PB and BM
- Immune reconstitution





Addition of Alemtuzumab Results in Prolonged Host Lymphodepletion in AMELI-01

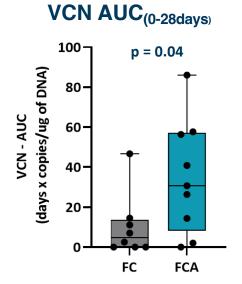
Absolute Lymphocyte Counts





Anti-Leukemic Activity and Robust CAR T-Cell Expansion Observed using FCA Lymphodepletion

Addition of alemtuzumab resulted in increased UCART123 expansion



2 responses observed in FC arm

- Patient 101-219 (DL2i): SD
- Patient 103-223 (DL2i): MLFS

2 responses observed in FCA arm

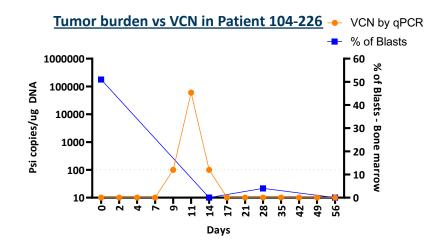
- Patient 114-229 (DL2): SD
 - Achieved greater than 90% BM blast reduction (60% to 5%) at Day 28
- Patient 104-226 (DL2): MRD negative CR
 - Achieved CRi at Day 28 followed by MRD negative CR at Day 56 that has remained durable for over 1 year



Patient 104-226 Achieved a Durable MRD Negative Complete Response

Clinical Characteristics	
Age, Race, Sex	64-year-old white female
ECOG PS	1
ELN 2017 Classification; WHO Classification	Adverse risk; AML with myelodysplasia-related changes
Cytogenetic and Molecular Abnormalities	45,XX,-7,t(10;12)(q24;p13)[5]; IDH1, EZH2
Number of prior treatments	5 - including allogeneic HSCT 2016
Past Medical History	MDS, 2011; Focal nodular hyperplasia of the liver, 2016

Response Summary	BM Biopsy Blast %	BM Aspirate Blast %	MRD	ELN Response	
Screening Day -14	51%	Not done			
Day 14	0%	Not done			
Day 28	3.8%	4%	Pos 0.6%	CRi	
Day 56	2.8%	0%	Neg	CR	
Day 84	0%	0%	Neg	CR	
FU 1, Day 181	2%	0%	Neg	CR	
FU 2, Day 270	1%	0%	Neg	CR	
FU 3, Day 365	0%	0%	Neg	CR	

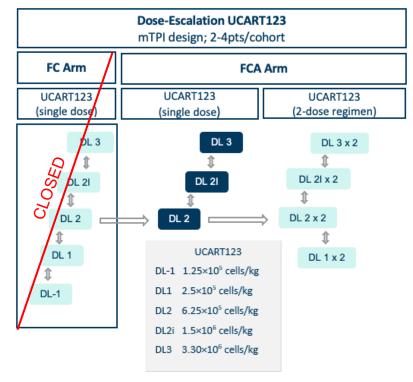




Translational Data Supports Use of a Two-Dose Regimen of UCART123

- UCART123 expansion correlates with reduction in tumor burden at DL2 (6.25 x 10⁵ cells/kg) but at this dose, UCART123 cell function is not sufficient for sustained anti-leukemic activity in all patients
- A second dose would then be given to allow for additional UCART123 expansion and clinical activity after 10-14 days without the use of additional lymphodepletion
- The second peak of expansion in the setting of reduced disease burden is expected to be safe and should allow for clearance of residual disease
- AMELI-01 study has commenced enrolling patients in the FCA 2-dose regimen arm at DL2, a dose that has already been administered and cleared for safety as a single dose, and incorporate the use of prophylactic tocilizumab prior to UCART123 cell dosing

AMELI-01 Amended Protocol with Two-Dose Regimen Design

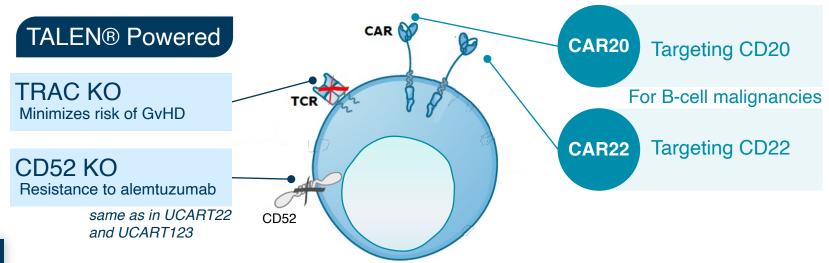




UCART20x22: Overcoming CAR T Challenges with Next Generation Dual Antigen Target

UCART20x22

- Strong alternative to CD19 (highly competitive/crowded/CD19 negative relapses)
- CD22 and CD20 are validated targets in B-cell malignancies
- Dual targeting designed for better killing & prevent escape
- Strong in vitro and in vivo preclinical results & fast to develop



UCART20x22 - NATHALI-01 Trial Design

Open-Label Dose-Finding and Dose-Expansion Study to Evaluate the Safety, Expansion, Persistence, and Clinical Activity of UCART20x22 In Subjects with Relapsed or Refractory B-Cell Non-Hodgkin's Lymphoma (B-NHL)

Dose Escalation LD regimen: FCA

Determine MTD and/or RP2D

Dose Expansion LD regimen: FCA

Objectives

Primary

- Safety and tolerability
- MTD/RP2D

Secondary

- Investigator assessed overall response rate (ORR)
- Duration of response
- Progression-free survival (PFS)
- Overall survival (OS)

Key Eligibility Criteria

- Patients aged 18 years to 80 years
- ECOG PS ≤1
- Relapsed or refractory (R/R) mature B-NHL per 2016 WHO criteria and positive for CD20 and/or CD22
- R/R disease after at least 2 lines of prior treatment

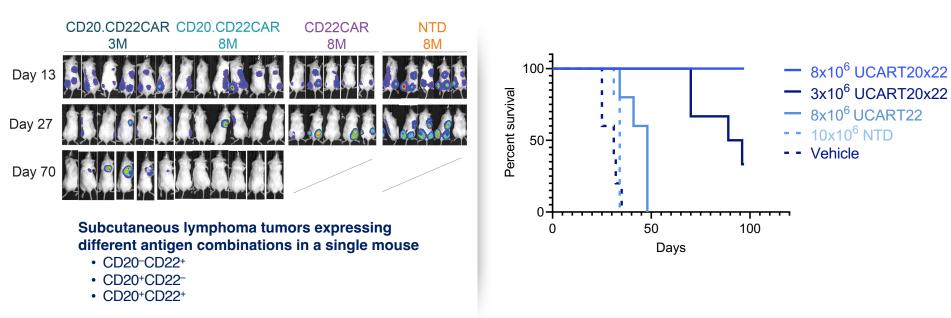
Dose Levels

Dose Level(s)	Subjects ≥50 kg	Subjects ≤50 kg		
DL-1	20 x 10 ⁶	14 x 10 ⁶		
DL1	50 x 10 ⁶	35 x 10 ⁶		
DL2	150 x 10 ⁶	105 x 10 ⁶		
DL3	450 x 10 ⁶	315 x 10 ⁶		

FCA1: F: 30 mg/m²/d x 3d; C: 500 mg/m²/d x 3d; A: 12 mg x1d, 24 mg x2d



UCART20x22 – Efficient Activity in vivo Against Multiple Target Combinations

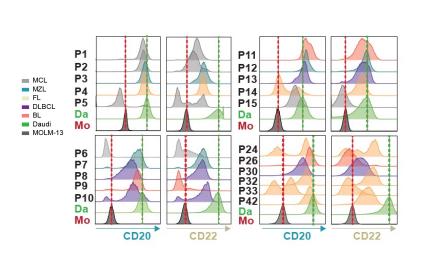


UCART20x22 efficiently eradicates *in vivo tumors expressing different CD20/CD22 antigen combinations* in a dose dependent manner

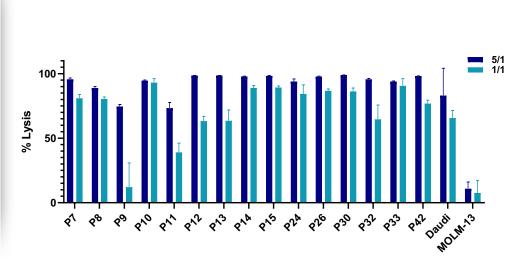


Efficient B-NHL Primary Sample Targeting with UCART20x22

Primary B-NHL tumors expressing CD20 and CD22



Cytotoxic activity against B-NHL primary samples



UCART20x22 efficiently targets primary samples of B-NHL cells



UCART Platform Takeaways from ~200 Patients*

GvHD

TRAC KO results in safe, non-alloreactive UCART cells

Expansion

CD52 KO + alemtuzumab use in LD has the potential to provide a safe, effective & controllable therapeutic window

Persistence

Encouraging clinical activity in ALL, AML and NHL

Safety

Profile on par with approved autologous CAR T therapies

Efficacy

Anti-tumor activity consistent with autologous products



Discover, Create, Develop, Produce and Test







New York, New York

Innovation, Clinical Development

25,000 sq ft. facility

- Gene Editing platform TALEN®
- ✓ I/O discovery platform
- Gene therapy discovery platform
- ✓ Clinical development



Paris, France

HQ, PD/AD, Starting Materials

55,000 sq ft. facility

- ✓ Process & analytical development
- Raw materials manufacturing
- ✓ QC labs
- ✓ Warehouse
- ✓ Cryogenic Storage rooms



Raleigh, North Carolina

UCART – Clinical & potential for Commercial

82,000 sq ft. facility

- ✓ Cell therapy GMP manufacturing
- ✓ QC labs
- Warehouse
- ✓ Cryogenic Storage rooms



Expected 2023 Milestones

UCART22 r/r B-ALL

Data update with inhouse manufactured product

UCART123 r/r AML

Data update with 2-dose regimen

UCART20x22 r/r NHL

First in-human data update

Partnerships

Updates from licensed partners (Servier/Allogene, Iovance, Cytovia and Primera)



Key Takeaways – Why Cellectis?



Innovative Allogeneic CAR T

Breaking Paradigms with Life-Saving Therapies



End-to-End In-House Manufacturing

Owning Manufacturing is Owning the Product



Best-In-Class Gene Editing Platform

Safe, Precise & Efficient, Backed by Strong IP



Strong Partnerships

Anticipated Milestones, Diversified Financial Upsides



Thank You

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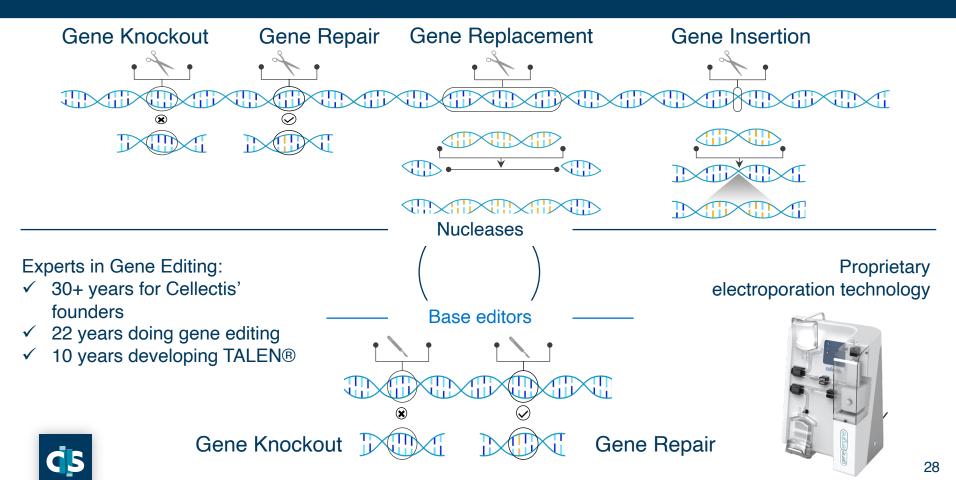




Appendix



Powerful and Comprehensive Gene Editing Platform



Why TALEN®?

	Maturity	Genome Outreach	Recognition Site # base pairs	Chromotrypsis	Precision	Vectorization	IP •
TALEN®	In clinic since 2015	Euchromatin & heterochromatin	32	Not reported	Every 7 base pairs	mRNA	Strong for CLLS
CRISPR	In clinic since 2018	Euchromatin only	~20	Yes	Every 64 base pairs	RNP	Scatter ed



Diversified Partnerships with Industry Leaders (1/2)



Exclusive worldwide license to CD19directed allogeneic CAR T-cells

CAR T CD19

Up to \$410M in Development & Sales Milestones

+ Low Double-Digit Royalties on Sales

 2015^{1} Allogene U.S. rights sublicensed to Allogene by Servier



Exclusive worldwide license to 15 allogeneic CAR T-cell targets

CART BCMA CD70

Up to \$2.8B in Development & Sales Milestones

+ High Single-Digit Royalties on Sales



Research collaboration and exclusive worldwide license agreement to develop gene-edited TILs

TILs

Undisclosed Financials



Worldwide research collaboration and license agreement to develop gene-edited iPSC-derived NK and CAR-NK cells

iPSCderived NK

\$20M Upfront Convertible Note Up to \$805M in Development & Sales Milestones + Single-Digit Royalties on Sales



1 Initially granted to Pfizer, Inc. In 2018, Pfizer and Allogene Therapeutics, Inc. entered into an asset contribution agreement pursuant to which Allogene purchased Pfizer's portfolio of assets related to allogeneic CAR T-cell therapy, including the CD19 US rights sublicensed by Servier, and the exclusive worldwide license to 15 allogeneic CAR-T targets.

Diversified Partnerships with Industry Leaders (2/2)

2022



Collaboration agreement to develop mtDNA gene editing for mitochondrial diseases + option for exclusive worldwide license agreement on up to 5 product candidates

mtDNA editing

19% equity upfront Option for up to \$750M in Development & Sales Milestones + High Single-Digit Royalties on Sales

