Investor Relations Event at the 64th ASH Annual Meeting

December 11, 2022

Forward-Looking Statements

This presentation contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended and Section 21E of the Securities Exchange Act of 1934, as amended, that are based on our management's beliefs and assumptions and on information currently available to our management. All statements other than statements of historical facts contained in this presentation, including statements regarding the anticipated completion of our proposed collaboration with Kite and the proposed concurrent equity investment by Kite; the potential benefits, value, synergies and results that may be achieved through the proposed collaboration; the anticipated payments that may be received by us in connection with the collaboration, including potential milestones and royalties; our and Kite's respective rights and obligations under the transaction agreements; expectations of our ability to benefit from Kite's capabilities, including operational, manufacturing and commercialization expertise and infrastructure; expected costs and expenses to be incurred and shared with Kite; our future financial condition, results of operations, business strategy, operations, timelines and prospects; the potential of and expectations regarding our product candidates and programs; the mission, plans and objectives of management; industry trends, are forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as "anticipate," "believe," "can," "contemplate," "continue," "could," "design," "estimate," "expect," "imagine," "intend," "likely," "may," "might," "objective," "ongoing," "plan," "potential," "predict," "project," "should," "target," "will" or "would," or the negative of these terms or other similar expressions or other comparable terminology are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

We have based these forward-looking statements largely on our current expectations and projections about future events and trends that we believe may affect our financial condition, results of operations, business strategy and financial needs, and these statements represent our views as of the date of this presentation. We may not actually achieve the plans, intentions or expectations disclosed in these forward-looking statements, and you should not place undue reliance on these forward-looking statements. Forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified. Information regarding certain risks, uncertainties and assumptions may be found in our filings with the Securities and Exchange Commission. New risk factors emerge from time to time and it is not possible for our management team to predict all risk factors or assess the impact of all factors on the business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in, or implied by, any forward-looking statements. While we may elect to update these forward-looking statements at some point in the future, we specifically disclaim any obligation to do so. These forward-looking statements should not be relied upon as representing our views as of any date subsequent to the date of this presentation.

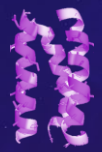
This presentation discusses product candidates that are under preclinical or clinical evaluation and that have not yet been approved for marketing by the U.S. Food and Drug Administration or any other regulatory authority. The presentation also includes select interim and preliminary results from an ongoing clinical trial as of specific data cutoff dates. Such results should be viewed with caution as final results may differ as additional data becomes available. Until finalized in a clinical study report, clinical trial data presented herein remain subject to adjustment as a result of clinical site audits and other review processes. No representation is made as to the safety or effectiveness of these product candidates for the use for which such product candidates are being studied.

This presentation also contains estimates and other statistical data made by independent parties or publicly available information, as well as other information based on our internal sources. These data involve a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. We have not independently verified the accuracy or completeness of the data contained in these industry publications and other publicly available information. Accordingly, we makes no representations as to the accuracy or completeness of that data.

Agenda

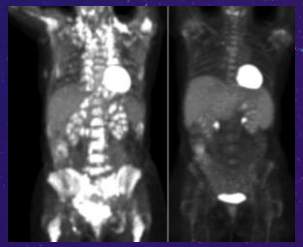
Opening Remarks	**Rami Elghandour** Chairman and Chief Executive Officer, Arcellx	15 Minutes
Phase I Study of CART-ddBCMA: A CART-Therapy Utilizing a Novel Synthetic Binding Domain for the Treatment of Subjects with Relapsed or Refractory Multiple Myeloma	**Matthew J. Frigault, M.D., M.S.** CART-ddBCMA and ACLX-001 Clinical Study Investigator, Assistant Director of the Cellular Therapy Service at Mass General Cancer Center and Instructor at Harvard Medical School	15 Minutes
Panel Discussion and Q&A	Panelists **Matthew J. Frigault, M.D., M.S.** **Krina K. Patel, M.D., M.Sc.** Associate Professor, Department of Lymphoma/Myeloma, Division of Cancer Medicine at the University of Texas MD Anderson Cancer Center Moderator: **Chris Heery, M.D.** Chief Medical Officer, Arcellx	45 Minutes

Reimagining Cell Therapy



Novel Synthetic Binding Domain

Single-infusion ddCAR and dosable, controllable ARC-SparX platforms



Positive Preliminary Clinical Results

Demonstrated 100% overall response rate and deep durability in multiple myeloma Phase 1 study.

Pivotal study enrolling

ARCELLX

Kite
A GILEAD Company

Partnered Lead Program

Combining potential best in class program with Kite's commercial and manufacturing expertise

Platform Potential

ARC-SparX Phase 1 clinical trial in multiple myeloma initiated in 2Q22

ARC-SparX Phase 1 clinical trial in acute myelogenous leukemia / myelodysplastic initiated in 4Q22

Built for Success

Strong investor base

Exceptional team

Wholly owned IP

Well capitalized

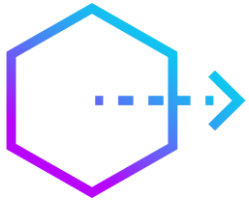
Maximizing the Value of MM Opportunity with Kite Partnership

Positioned for Leadership in CAR-T Space

- Combining a potential best-in-class therapy with Kite's operational capabilities
- Proven manufacturing and commercial infrastructure with global cell therapy leader, Kite
- Leveraging synergies across both companies to accelerate patient access

Global Collaboration

- Co-development and co-commercialization of CAR-T ddBCMA with split profits in the U.S.
- Arcellx to receive low to mid-teen royalties ex-U.S.
- Arcellx and Kite to collaborate on next generation autologous and non-autologous programs incorporating ddBCMA
- Kite to have exclusive option rights to ARC-SparX programs targeting BCMA or CS1 for use in myeloma



Long-term Value

- Arcellx to receive $225M upfront payment and $100M equity investment
- Kite will manufacture following tech transfer and bear the CMC commercial readiness costs
- Arcellx will continue to independently progress its development pipeline for new product candidates beyond myeloma
- Arcellx is well capitalized to fund operations through BLA filing

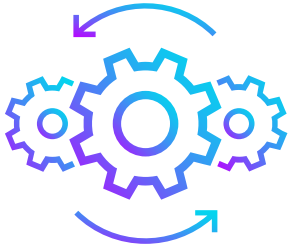
Kite – The Cell Therapy Partner of Choice

Manufacturing

- Largest dedicated in-house global cell therapy manufacturing network
- Investing in internal vector development and manufacturing
- 96% manufacturing success rate
- 16-day median turnaround time in U.S.
- Continues to increase its manufacturing network capacity to meet demand

Commercial

- More than 11,000 patients treated (clinical trial and commercial patients)
- +315 ATCs globally with leading support hub: Kite Konnect®
- 5 indications launched in multiple geographies
- CAR-T reimbursement in more than 20 countries
- Gilead commercial operations in over 40 countries worldwide



Pipeline Investment

- Kite may integrate complementary technologies with Arcellx's platform to create next-generation autologous and allogenic candidates across various cell types

Kite Partnership Summary

- Topline economics:
  - Total upfront consideration: $325Mn
    - Upfront payment: $225Mn
    - Equity Investment (3,478,261 shares): $100Mn
  - Contingent milestones across all programs
    - Up to $335M, $635M and $508M for each ddBCMA, next-generation autologous, and non-autologous product, respectively
  - Royalties in tiered, low-to-mid-teens percentages for co-promote products outside the US and for non-co-promote products worldwide (including next-gen autologous products if Arcellx does not elect to co-promote)
- For Co-promote products, including CART-ddBCMA and any next-generation autologous products that Arcellx elects to co-promote:
  - Development:
    - Joint development
    - Arcellx will continue to run iMMagine-1 pivotal trial
    - Out-of-pocket development costs will be shared (including clinical manufacturing costs):
      - 50/50 in the US
      - 40/60 (Arcellx/Kite) outside the US, only for global studies
      - Kite will be solely responsible for the costs for country-specific clinical studies outside the US
  - CMC (commercial readiness):
    - Kite will solely bear the CMC commercial readiness costs and any associated capital expenses
    - Following tech transfer, Kite will manufacture
  - Commercialization:
    - In the US, Arcellx and Kite will be jointly responsible for commercialization
    - In the US, from time of commercialization, Arcellx and Kite will equally share profits and losses from directly-related myeloma commercialization activities
    - Outside the US, Kite will be responsible (at its sole cost) for commercialization activities

Partnership Structure Creates Value While Maximizing Runway

- **Limiting outflows of capital related to CMC:** CMC commercial readiness are borne by Kite; leveraging Kite's prior investments in CMC helps us realize downstream benefits in COGS and timelines to scale-up to meet demand
- **Reducing costs prior to commercialization:** Cost split for development includes Kite and Arcellx each contributing to funding 50% of-out-of-pocket costs in the US, including 50% of iMMagine-1
- **Managing P&L while leveraging Kite infrastructure:**
  - Cost split for development is limited to out-of-pocket costs and batch costs for clinical manufacturing
  - Cost split for commercial is limited to only directly-related myeloma activities with defined expense categories
- **Accelerating global timelines:** Utilizing existing Kite infrastructure to achieve quicker access to ex-US markets at tiered low-to-mid teen royalty rates without any upfront Arcellx investments required to build global infrastructure
- **Maximizing Cash runway:** Along with upfront cash infusion and reducing CapEx, other mechanisms are built into both stretch our runway and limit development and commercial expenses

A Rich Development Pipeline with Growth in Mind

Stage of Development						
Indication	Platform	Discovery/ Preclinical	Phase 1	Phase 2	Phase 3	Partnered
Clinical and Preclinical Pipeline						
Multiple Myeloma	ddCAR	*iMMagine-1 pivotal/ CART-ddBCMA*				Kite A GILEAD Company
	ddCAR	*iMMagine-2 (earlier lines) / CART-ddBCMA*				Kite A GILEAD Company
	ARC-SparX	*ACLX-001: BCMA **				
AML/MDS	ARC-SparX	*ACLX-002: CD123*				
	ARC-SparX	*ACLX-003*				
Solid Tumors	ARC-SparX	*SCLC*				
	ddCAR	*HCC*				

**Kite retains an option for select ARC-SparX programs in multiple myeloma*

2022 Achievements and Upcoming Milestones

Multiple Myeloma	Projected Date
ddCAR- FDA End-of-Phase 1 meeting	4Q21
ddCAR- ASH 2021 Data Update	4Q21
ARC-SparX - Initiate Phase 1 Enrollment in ACLX-001	1H22
ddCAR- Present Data Update	1H22
ddCAR- Present Data Update	Q422
ddCAR- Initiate Pivotal Study	YE22
ddCAR- Partnered lead clinical program with Kite	YE22
ARC-SparX – Present interim clinical data from ACLX-001	2023
ddCAR- Initiate iMMagine-2, earlier line clinical trial	2023
ddCAR- Anticipated BLA filing for the treatment of BCMA	1H25

AML/MDS	Projected Date
ARC-SparX – Initiate ACLX-002 Phase 1 clinical trial in AML/MDS	2H22

ARCELLX

Abstract 3313
Phase 1 Study of CART-ddBCMA for the Treatment of Subjects with Relapsed and/or Refractory Multiple Myeloma

Matthew Frigault, MD, MS[1], *Jacalyn Rosenblatt, MD*[2], *Binod Dhakal, MBBS*[3], *Noopur Raje, MD*[4], *Daniella Cook, BS*[5*], *Mahmoud R. Gaballa, MD*[6], *Estelle Emmanuel-Alejandro*[7*], *Danielle Nissen*[8*], *Christine Cornwell*[9*], *Kamalika Banerjee*[9*], *Anand Rotte, PhD*[9*], *Christopher R. Heery, MD*[9], *David Avigan, MD*[10], *Andrzej Jakubowiak, MD, PhD*[11] *and Michael R. Bishop, MD*[12]

Background and Methods

CART-ddBCMA is an autologous CAR-T containing a novel synthetic protein[1,2] binding domain (non-scFv) engineered to reduce the risk of immunogenicity and is highly stable

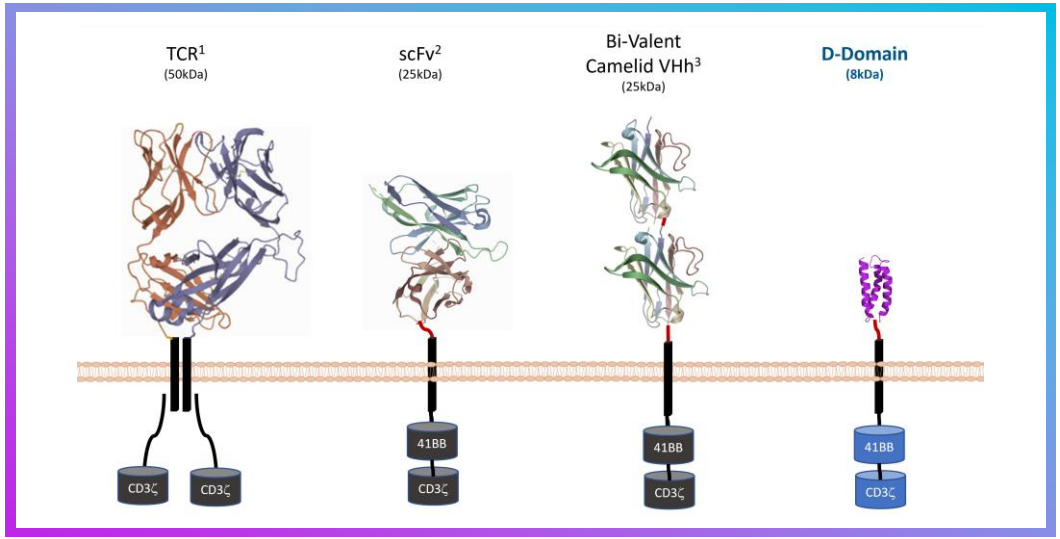
Phase 1 first-in-human trial has completed enrollment of relapsed and/or refractory myeloma

- Prior IMiD, PI, and CD38-targeted therapy required
- Received ≥3 prior therapies or triple refractory

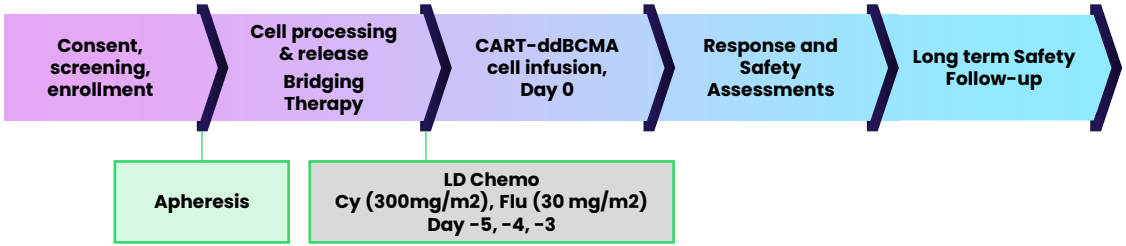
2 Dose Levels evaluated, 6 subjects in each dose escalation cohort

- DL1 = 100 x 10^6 CAR+ cells;
  DL2 = 300 x 10^6 CAR+ cells

Expansion cohort is enrolled at DL1

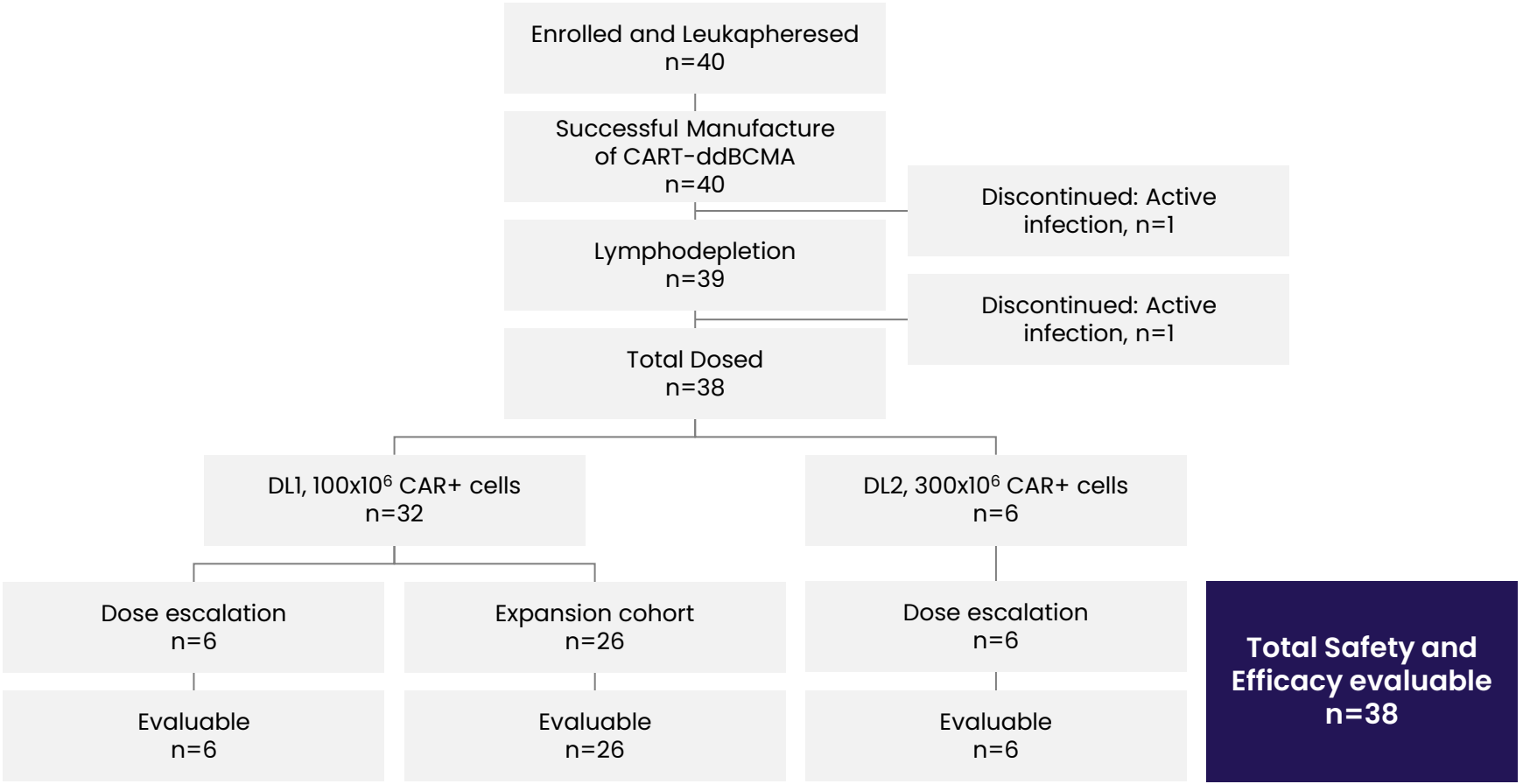


[1] Chan, KF. et al. 2018.,Nat Commun 9:1026-1026
[2] Bjerragaard-Anderson, K., et al 2018. Sci. Rep., 8:10836-10836.
[3] https://commons.wikimedia.org/wiki/File:113V_(Lama_VHH_domain_unligated).png#file



[1]Rotte, et al. "BCMA targeting CAR T cells using a novel D-domain binder for multiple myeloma: clinical development update." *Immuno-Oncology Insights 2022; 3(1), 13–24*
[2]Frigault et al. "Phase 1 Study of CART-ddBCMA for the treatment of subjects with relapsed and refractory Multiple Myeloma." Blood Advances 2022; bloodadvances.2022007210. doi: https://doi.org/10.1182/bloodadvances.2022007210.

Patient Disposition



Patient Demographics (as of 31 Oct 2022)

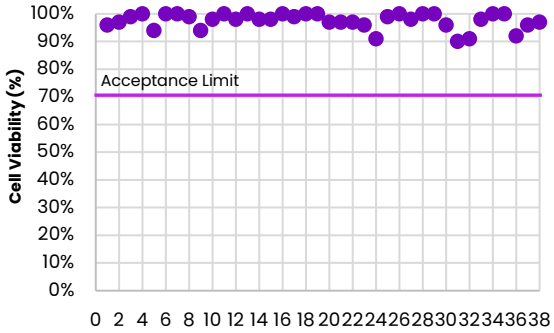
Characteristics	Dose Level 1 100 million CAR-T (n=32)	Dose Level 2 300 million CAR-T (n=6)	Total (n=38)
Age, median (min - max)	66 (44 - 76)	60 (52 - 65)	66(44 - 76)
Gender	18 Male (56%) 14 Female (44%)	5 Male (83%) 1 Female (17%)	23 Male (61%) 15 Female (39%)
ECOG PS*			
0	9/32 (28%)	3/6 (50%)	12/38(32%)
1	23/32 (72%)	3/6 (50%)	26/38 (68%)
High Risk Prognostic Feature	16/32 (50%)	6/6 (100%)	22/38 (58%)
BMPC ≥60%	6/32 (19%)	3/6 (50%)	9/38 (24%)
ISS Stage III (B2M ≥ 5.5)	3/32 (9%)	2/6 (33%)	5/38 (13%)
Extra-medullary disease	10/32 (31%)	3/6 (50%)	13/38 (34%)
High Risk Cytogenetics**	9/32 (28%)	2/6 (33%)	11/38 (29%)
Prior Lines of Therapy, Median (min - max)	5 (3 - 7)	4 (3 - 16)	4 (3 - 16)
Triple refractory***	32/32 (100%)	6/6 (100%)	38/38 (100%)
Penta refractory	21/32 (66%)	5/6 (83%)	26/38 (68%)
IgG myeloma	19	5	24
IgA myeloma	6	0	6
Light chain only	5	1	6

*Eastern Cooperative Oncology Group Performance Status Scale
**Defined as Del 17p, t(14;16), t(4;14).
***Note: modified from ASCO 2022 due to data cleaning efforts.

CART-ddBCMA Manufacturability: Reliable Process, Consistent Product

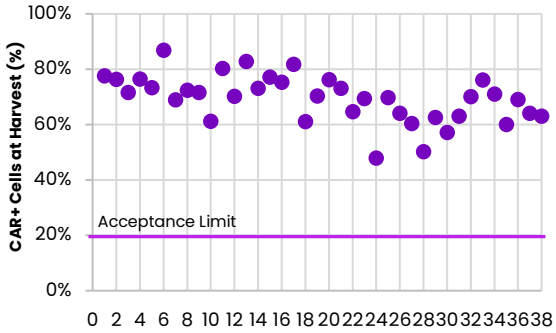
100% of initiated cell product runs released to date

Cell Viability

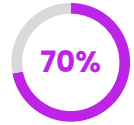


High cell viability: median 98% viable cells

CAR Positivity



Low inter-patient variability in CAR⁺ cells: median 70% CAR⁺ cells



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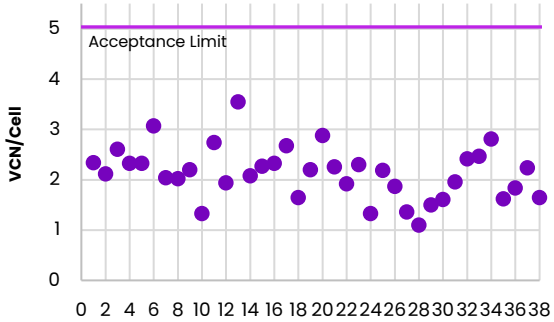
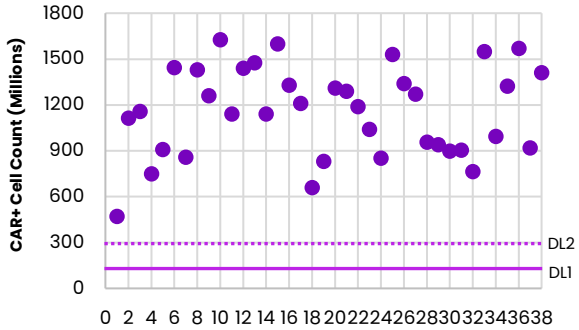


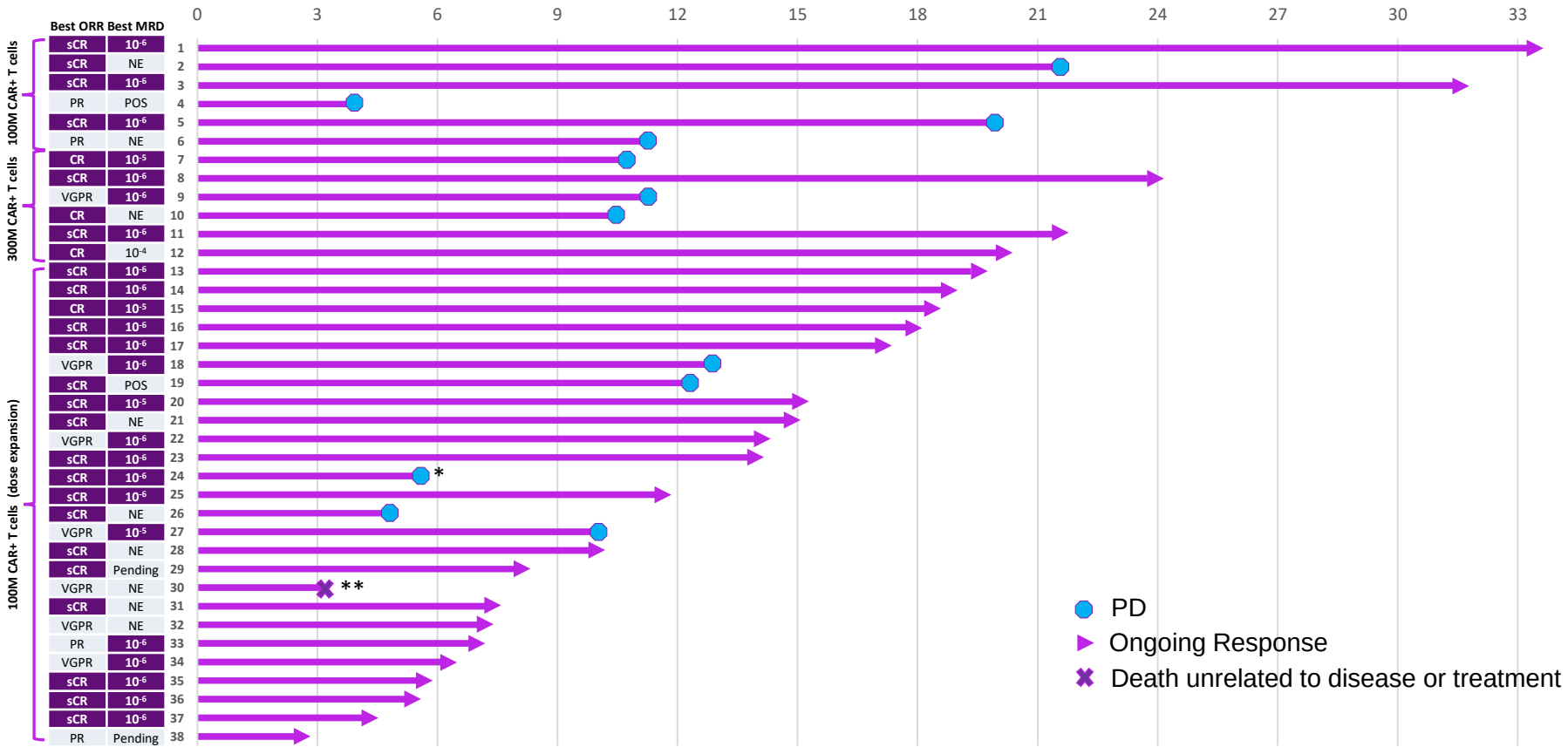
Low inter-patient variability in CAR expression/cell: median 2.2 copies/cell

Total Manufactured Cells



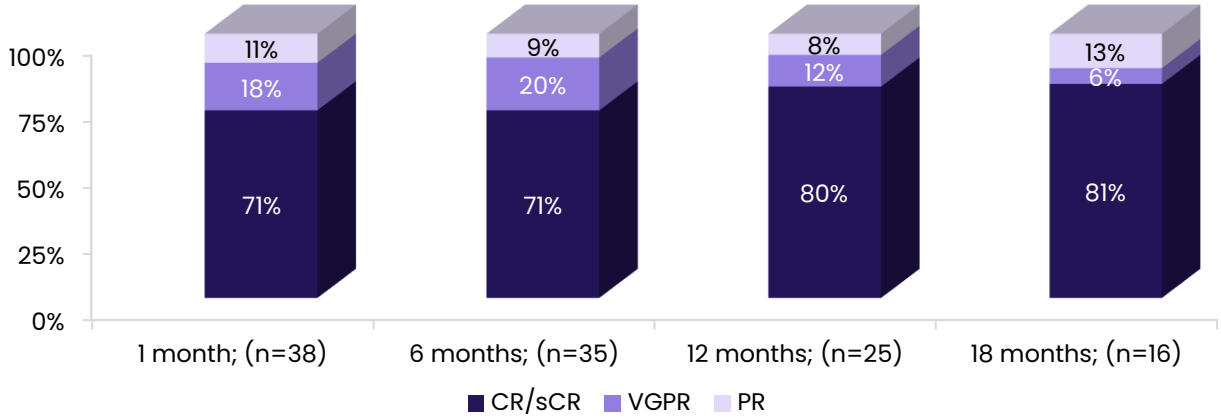
High yield: ≥3 doses of DL1 can be administered from a single manufacture run

Potential for Best-in-Class Treatment



*Patient initiated subsequent therapy prior to official PD.
**Subject 30 died of cardiac arrest secondary to drug overdose.
MRD abbreviations: NE = not evaluable, failed calibration; POS = positive; Pending = sample being analyzed

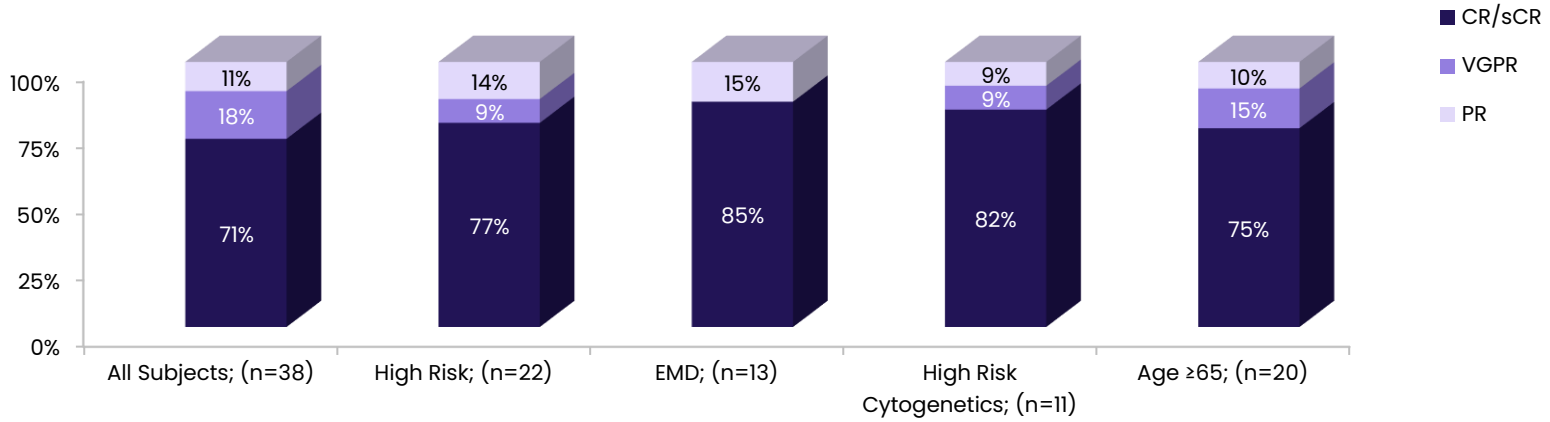
CART-ddBCMA Responses Deepen Over Time



Minimum months since infusion (M)	1	6	12	18
Sample Size (n)*	38	35	25	16
Median Follow-up (mo)	15.0	16.4	18.9	22.9
High Risk Features** # (%)	22 (58%)	21 (60%)	19 (76%)	13 (81%)
ORR	100%	100%	100%	100%
CR/sCR rate***	27 (71%)	25(71%)	20 (80%)	13 (81%)

*Includes patients who were dosed at least M months prior or have had follow visit at Mth-month as of 11/22/22.
**High risk features defined as presence of EMD, BMPC ≥ 60, or B2M ≥ 5.5
***Calculated using number of patients who reached CR/sCR divided by number treated at least 1, 6, 12, or 18 months prior

Responses in Subgroups



	Patients n (%)	6-month PFS % (95% CI)	12-month PFS % (95% CI)	18-month PFS % (95% CI)
Overall	38 (100%)	91.8% (76.7%, 97.2%)	72.7% (52.2%, 85.5%)	64.6% (43.7%, 79.4%)
≥ 65 years	20 (52.6%)	95.0% (69.4%, 99.3%)	82.3% (54.3%, 94.0%)	75.4% (46.7%, 90.1%)
Complete Responders	27 (71.1%)	96.2% (75.7%, 99.4%)	86.0% (62.3%, 95.3%)	80.7% (55.9%, 92.4%)
High Risk Features*	22 (57.9%)	90.5% (67.0%, 97.5%)	69.2% (43.7%, 84.9%)	63.4% (38.0%, 80.7%)
Extramedullary disease	13 (34.2%)	91.7% (53.9%, 98.8%)	64.2% (30.2%, 84.8%)	64.2% (30.2%, 84.8%)
High Risk Cytogenetics	11 (28.9%)	80.8% (42.3%, 94.8%)	69.2% (31.1%, 89.1%)	69.2% (31.1%, 89.1%)

*High risk features defined as presence of EMD, BMPC ≥ 60, or B2M ≥ 5.5

CART-ddBCMA: 100% ORR, High CR Rate, and Durable Responses Demonstrate Potential for Best-in-Class Treatment

	CART-ddBCMA		LEGEND-2	CARTITUDE-1	
Minimum follow-up (mo.)	**1**	**18**	**1**	**1.5**	**13.5 (est.)**
Sample Size (n)	38	16	57	97	
Median Follow-up (mo.)	15.0	22.9	8	12.4	24
EMD %	34%	50%	30%	13%	13%
ORR	**100%**	**100%**	**88%**	**97%**	**98%**
CR rate	**71%**	**81%**	**68%**	**67%**	**83%**
Kaplan Meier Estimate PFS Rate	All subjects		LEGEND-2 All subjects	CARTITUDE-1 All subjects	
@ 6 months	91.8% (76.7%, 97.2%)		~82%	87%	
@ 12 months	72.7% (52.2%, 85.5%)		~70%	~75%	
@18 months	64.6% (43.7%, 79.4%)		~41%	~67%	

Based on preliminary data cut October 31, 2022
LEGEND-2 estimates are based on KM curves from Zhao BMC 2018 (Figure 2a) and CARTITUDE-1 estimates are based on KM curves from Martin JCO 2022 (Fig 2a).

Adverse Event Profile (as of 31 Oct 2022)

Grade 3/4 AEs (non-CRS/ICANS) ≥5% after cell infusion (N=38)	
Hematologic	
Neutrophil count decreased	29 (76.3%)
Anemia	22 (57.9%)
Thrombocytopenia	15 (39.4%)
Lymphocyte count decreased	13 (36.8%)
White blood cell count decreased	7 (18.4%)
Febrile Neutropenia	6 (15.8%)
Non-hematologic	
Hypertension	3 (7.9%)
Hyponatremia	2 (5.3%)
Pain in extremity	2 (5.3%)
Cellulitis	2 (5.3%)
Sepsis	2 (5.3%)

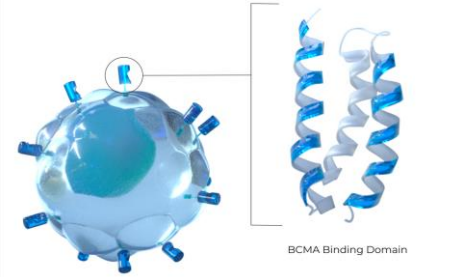
CAR-T-associated AEs Per ASTCT criteria	100 million (N=32)		300 million (N=6)	
Cytokine Release Syndrome (CRS)	**Grade 1/2**	**Grade 3**	**Grade 1/2**	**Grade 3**
	30 (94%)	**0**	**5 (83%)**	**1 (17%)**
Median onset (min-max)*	2 days (1-12 days)		2 day (1-2 days)	
Median duration (min-max)	8 days (2-14 days)		5 days (3-10 days)	
Neurotoxicity (ICANs)	**Grade 1/2**	**Grade 3**	**Grade 1/2**	**Grade 3**
	5 (16%)	**1 (3%)**	**0**	**1 (17%)**
Median onset (min-max)*	4.5 days (3-6 days)		7 days	
Median duration (min-max)	7.5 days (4 - 11 days)		23 days	
Toxicity Management				
Tocilizumab	27 (84%)		5 (83%)	
Dexamethasone	20 (63%)		2 (33%)	

*Infusion Day 0 is considered Study Day 1

CART-ddBCMA Phase 1: Conclusions

CART-ddBCMA utilizes a novel, synthetic highly stable binding domain

- 2 dose levels studied (100 and 300 million CAR+ T-cells); MTD not reached
- Consistency in manufacturing (100% success) highlighted by high CAR-T cell viability, low inter-patient variability in CAR+ cells and high CAR-T cell yield



100% ORR

per IMWG across both dose levels

Deep and durable responses

- **All Patients: 38/38 (100%) ORR; 27/38 (71%) CR/sCR**, 7/38 (18%) VGPR, 4/38 (11%) PR; ≥VGPR = 34/38 (89%)
- **Pts w/ 12 mo f/u: 25/25 (100%) ORR; 20/25 (80%) CR/sCR**, 3/25 (12%) VGPR, 2/25 (8%) PR; ≥VGPR = 23/25 (92%)
- **Pts w/ 18 mo f/u: 16/16 (100%) ORR; 13/16 (81%) CR/sCR**, 1/16 (6%) VGPR, 2/16 (13%) PR; ≥VGPR = 14/16 (88%)

Median Duration of Response Not Reached for Overall Population

- PFS Rate: @6 months 92%, @12 months 73%, @ 18 months 65%

Durable responses in patients with high-risk features

- PFS rate 63% @18 months in population defined by EMD, BMPC ≥ 60%, and/or B2M ≥ 5.5

24 of 27 (89%) of MRD evaluable subjects achieved Negativity at ≥10^{-5}

Adverse Event Profile appears potentially differentiated from other CAR T products

- No tissue-targeted toxicities observed
- No cases grade 3 (or greater) CRS, 1 case (3%) Grade 3 ICANS event at RP2D (n=32)
- No delayed neurotoxicity or parkinsonian-like events observed in entire population (n=38)

Pivotal Phase 2 Trial is now enrolling!
(RP2D, 115±10 million CAR+ T cells)

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Panel Discussion
Moderated by Dr. Chris Heery

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Q&A