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HARNESSING THE POWER OF MACROPHAGES

January 2024

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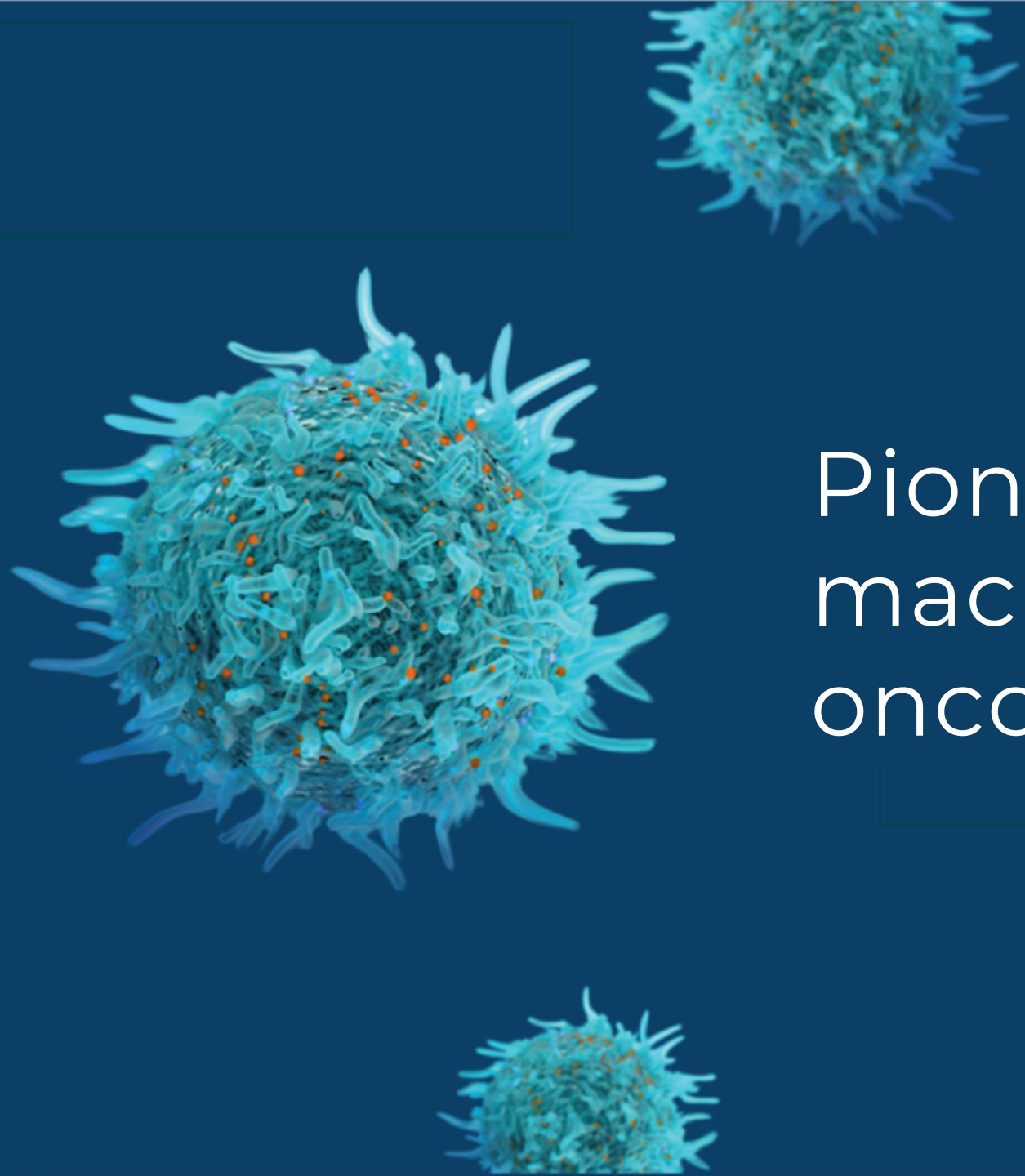
Any forward-looking statements are based on management's current expectations of future events and are subject to a number of risks and uncertainties that could cause actual results to differ materially and adversely from those set forth in, or implied by, such forward-looking statements. These risks and uncertainties include, but are not limited to, (i) Carisma's ability to obtain, maintain and protect its intellectual property rights related to its product candidates; (ii) Carisma's ability to advance the development of its product candidates under the timelines it anticipates in planned and future clinical trials; (iii) Carisma's ability to replicate in later clinical trials positive results found in preclinical studies and early-stage clinical trials of its product candidates; (iv) Carisma's ability to realize the anticipated benefits of its research and development programs, strategic partnerships, research and licensing programs and academic and other collaborations; (v) regulatory requirements or developments and Carisma's ability to obtain and maintain necessary approvals from the U.S. Food and Drug Administration and other regulatory authorities; (vi) changes to clinical trial designs and regulatory pathways; (vii) risks associated with Carisma's ability to manage expenses; (viii) changes in capital resource requirements; (ix) risks related to the inability of Carisma to obtain sufficient additional capital to continue to advance its product candidates and its preclinical programs; and (x) legislative, regulatory, political and economic developments. For a discussion of other risks and uncertainties, and other important factors, any of which could cause the Carisma's actual results to differ from those contained in the forward-looking statements, see the "Risk Factors" set forth in Exhibit 99.1 to Carisma's Current Report on Form 8-K filed with the Securities and Exchange Commission on November 9, 2023, Carisma's Quarterly Report on Form 10-Q for the quarter ended June 30, 2023 filed with the Securities and Exchange Commission on November 9, 2023, as well as discussions of potential risks, uncertainties, and other important factors in Carisma's most recent filings with the Securities and Exchange Commission. Any forward-looking statements that are made in this presentation speak as of the date of this presentation. Carisma undertakes no obligation to revise the forward-looking statements or to update them to reflect events or circumstances occurring after the date of this presentation, whether as a result of new information, future developments or otherwise, except as required by the federal securities laws.

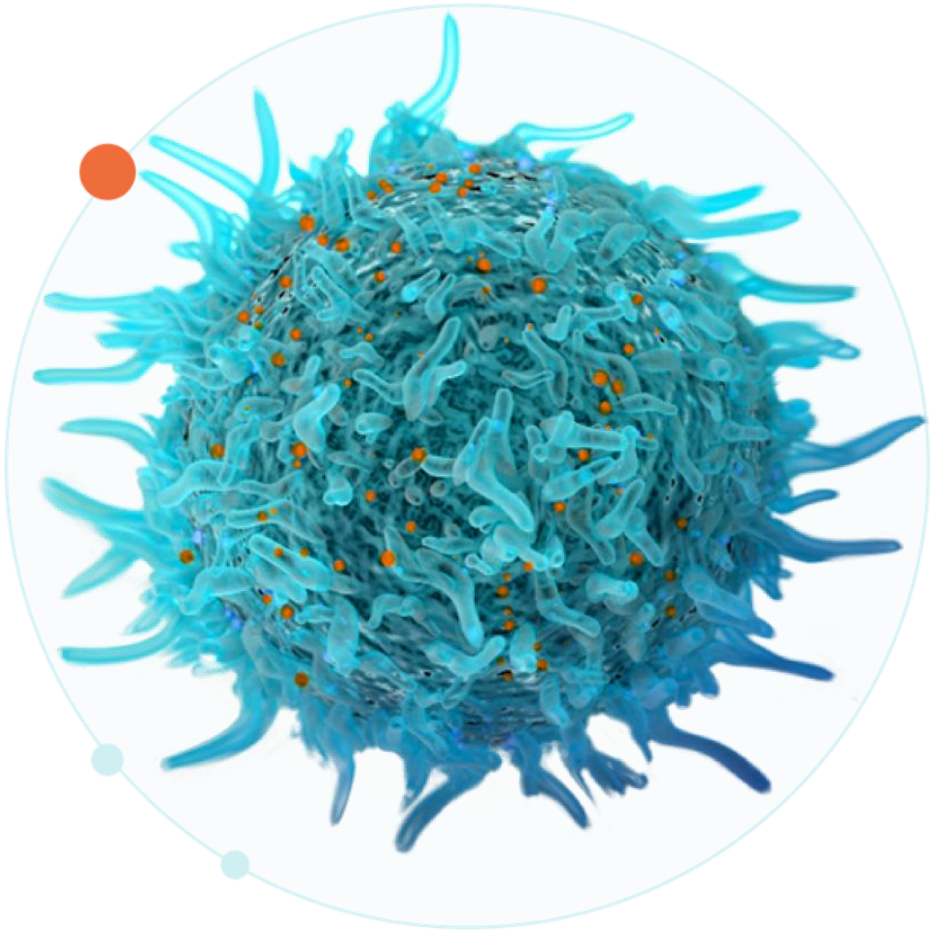


Pioneering engineered macrophages in oncology and beyond

Harnessing the Power of Macrophages

Developing unique and transformative cell therapies for patients with devastating diseases

- **CAR-M PLATFORM VALIDATION IN HER2 SOLID TUMORS**
- **DIVERSE PIPELINE**
- **STRONG FUNDAMENTALS**
- **MULTIPLE CATALYSTS THROUGHOUT 2024**



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CAR-M: Differentiated from CAR-T and CAR-NK

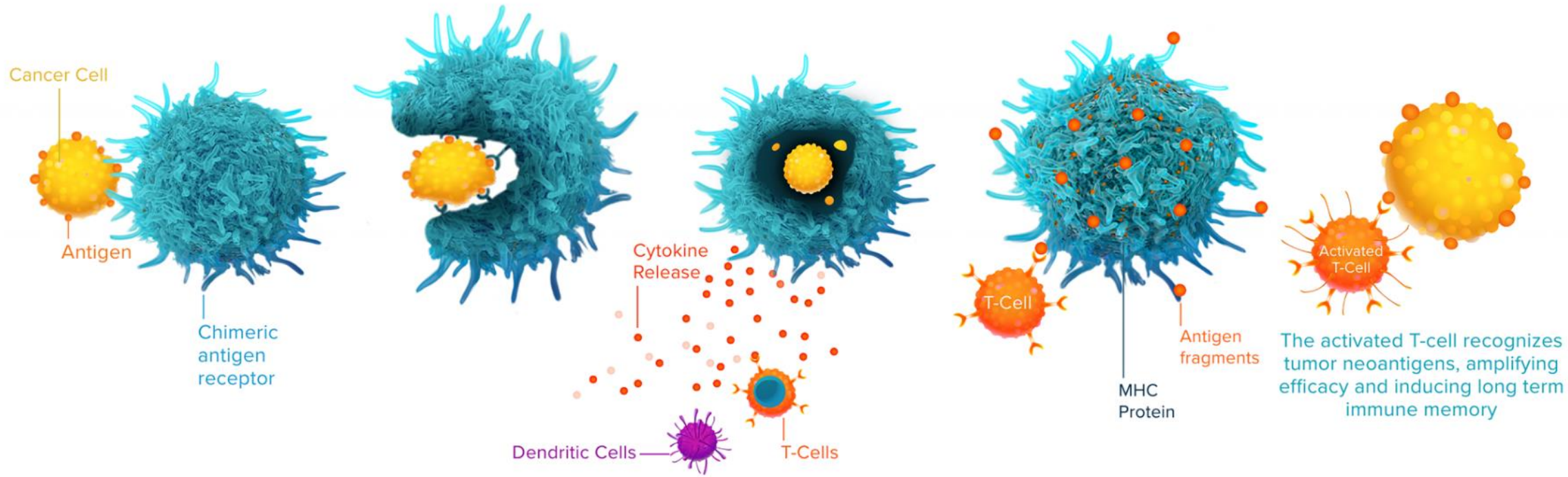
CAR-M has the potential for key solid tumor advantages over both

	CAR-T	CAR-NK	CAR-M
Mechanism of Action			
Effector Cell	CD4/CD8 T cells	Natural Killer Cells	Macrophages or Monocytes
Persistence	High	Low	Intermediate
Trafficking Potential	Low	Low	High
TME Activation	Low	Low	High
Antigen Presentation	None	None	High
Epitope Spreading	Low	Low	High
Safety			
Chemotherapy Conditioning	Yes	Yes	No
CRS / ICANS	High / High	Low / Low	Low / Low
Manufacturing			
Manufacturing Time	Days to weeks	Days to weeks	Macrophage: 1 week Monocyte: 1 day

CAR-M Mechanism of Action in Oncology

Potential to address the challenges of treating solid tumors with cell therapies

1 TRAFFICKING & PHAGOCYTOSIS	2 IMMUNE ACTIVATION	3 ANTIGEN PRESENTATION



MHC: Major Histocompatibility Complex

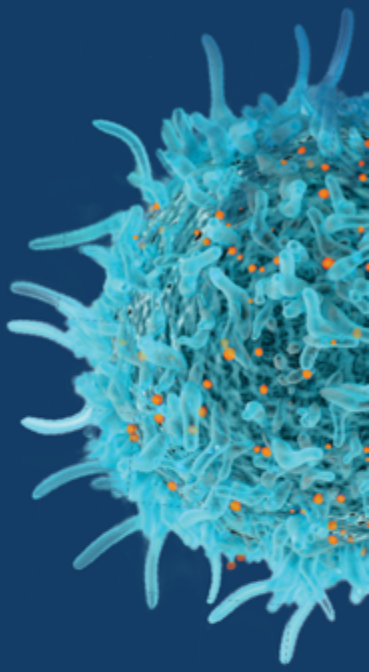
First-in-Class Pipeline

Multiple value inflection points across therapeutic areas and modalities

THERAPEUTIC AREA	PRODUCT	PLATFORM	DISCOVERY	PRE-CLINICAL	PHASE 1	PHASE 2	PHASE 3	PARTNER
***Ex Vivo* Oncology**								
HER2+ solid tumors	CT-0508	CAR-Macrophage *(1st Gen CAR)*						
	CT-0508 + pembrolizumab	CAR-Macrophage *(1st Gen CAR)*			1H 2024: Combo data[1]			
	CT-0525	CAR-Monocyte *(1st Gen CAR)*			1H 2024: First patient treated[1]			
Mesothelin+ solid tumors	CT-1119	CAR-Monocyte *(Next-Gen CAR[2])*			2025: IND[1]			
***In Vivo* Oncology**								
Oncology	5 Targets[3]	CAR-Macrophage + mRNA/LNP						moderna
Fibrosis and Immunology								
Liver Fibrosis	TBD	Engineered macrophage						

1. Anticipated milestones
2. Includes SIRPα knockdown technology
3. Moderna collaboration has identified 5 oncology targets, with the option to identify an additional 7 oncology targets; First lead candidate was nominated in 4Q 2023

Targeting HER2:
CT-0508 and CT-0525



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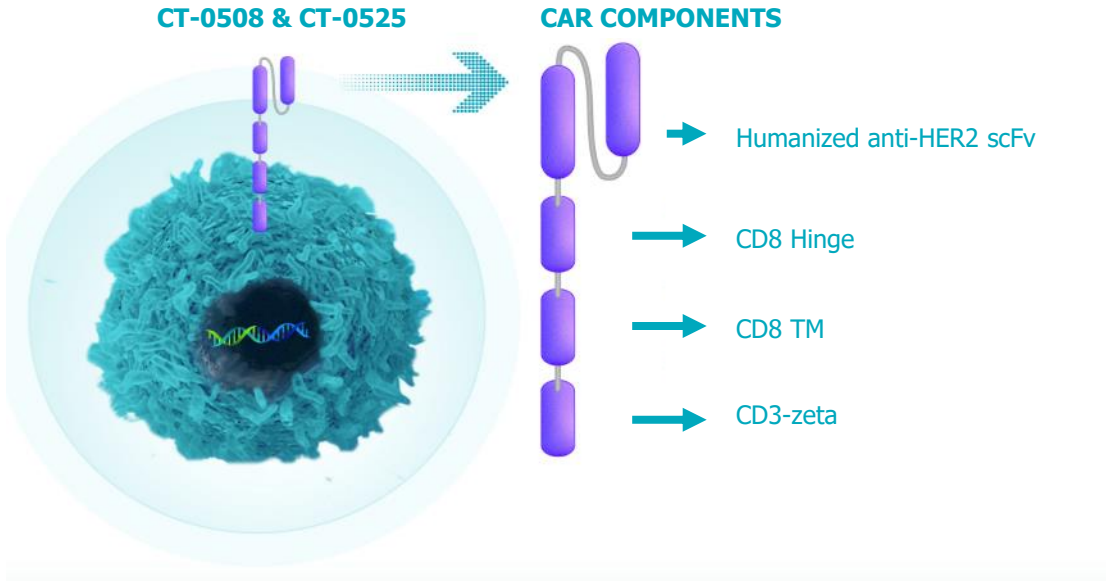
Lead Program: HER2 Targeted CAR-M

First CAR-M to be tested in human clinical trials

Highlights

- Significant unmet need for HER2+ solid tumors
- Development path initially focused in late-stage patients
- Two related product candidates in development
- Initial safety, tolerability and clinical evidence of mechanism achieved in Phase 1 clinical trial



	Product Description	
	CT-0508	**CT-0525**
Cells	Autologous monocyte derived macrophages	Autologous monocytes
Vector	Ad5f35	Ad5f35
Phenotype	M1	M1
CAR	1st Generation	1st Generation

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CT-0508 Study 101: First in Human Phase 1 Clinical Design

Assessing safety, tolerability, feasibility and TME impact of CT-0508 monotherapy

HER2 2+/3+ solid tumors (n≈27)

G-CSF mobilization and apheresis, CAR-Macrophage manufacture, bridging therapy, baseline staging

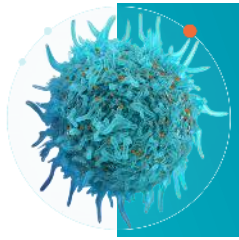
Group 1: CT-0508 fractionated dose D1,3,5 (n=9) — **Complete**

Group 2: CT-0508 bolus dose D1 (n≤9) — **Enrolling**

Pembro Substudy: CT-0508 + pembrolizumab (n≥9) — **Enrolling**

Demonstrated manufacturing feasibility, safe administration, cell trafficking from blood to tumor, cells resided in tumor for up to 4 weeks, positively modulated TME[1]

Anticipate presenting data from Pembro Substudy in 1H24



PRIMARY OUTCOMES[2]

- Safety and tolerability
- Manufacturing feasibility

SECONDARY OUTCOMES & ADDITIONAL ANALYSES[2]

- ORR (RECIST 1.1)
- PFS
- Trafficking
- TME activation
- T cell recruitment/activation
- T cell expansion/clonality

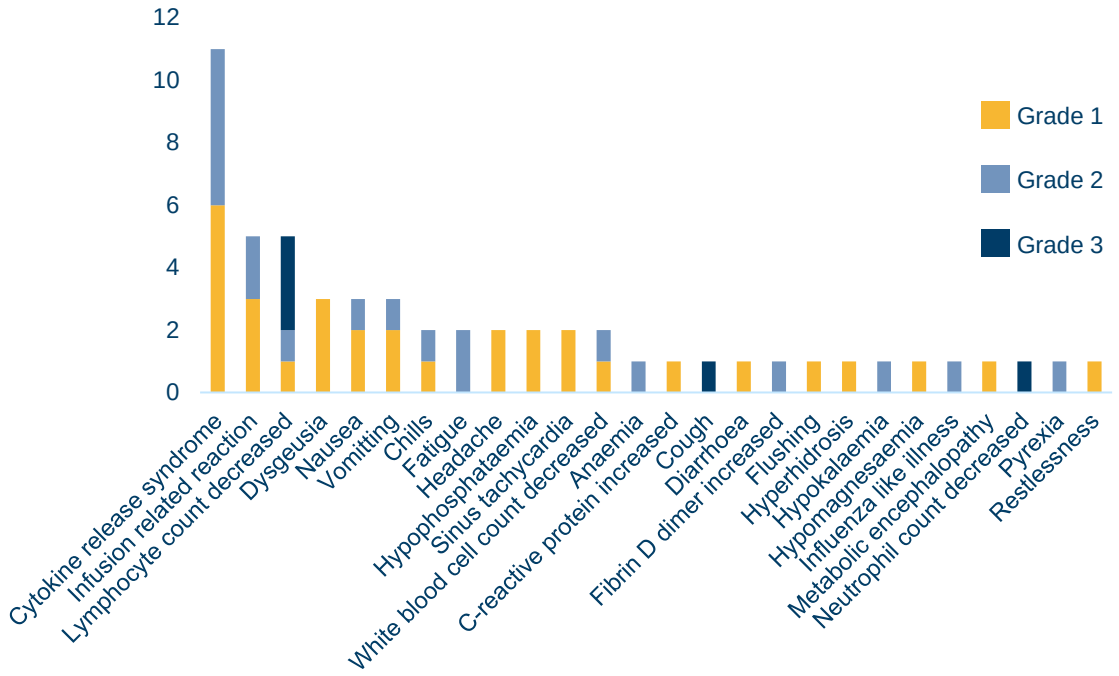
Biopsy performed at screening, Day 8, Week 4 and Week 6 or 7 RECIST v1.1

1. Data from Reiss, et al. SITC 2022; and Klichinsky, et al. CAR-TCR 2023. 2. Outcomes are specific to Group 1 and Group 2 study.

CT-0508 is Well Tolerated with No Dose Limiting Toxicities

Preliminary data supports a safe and tolerable product profile

Number of Adverse Events



Adverse Event Data by Patient

	G1: Fractionated	G2: Bolus	Combined
Patients Treated	**N=9 (%)**	**N=5 (%)**	**N=14 (%)**
Cytokine release syndrome (CRS)	**6** (67)	**3** (60)	**9** (64)
Grade 1-2	**6** (67)	**3** (60)	**9** (64)
Grade 3-4	**0** (0)	**0** (0)	**0** (0)
Infusion Reaction	**2** (22)	**1** (20)	**3** (21)
Grade 1-2	**2** (22)	**1** (20)	**3** (21)
Grade 3-4	**0** (0)	**0** (0)	**0** (0)
ICANS	**0** (0)	**0** (0)	**0** (0)
SAEs Related To Treatment[1]	**2** (22)	**3** (60)	**5** (36)

Similar safety profile between Group 1 and Group 2

No severe CRS or ICANS

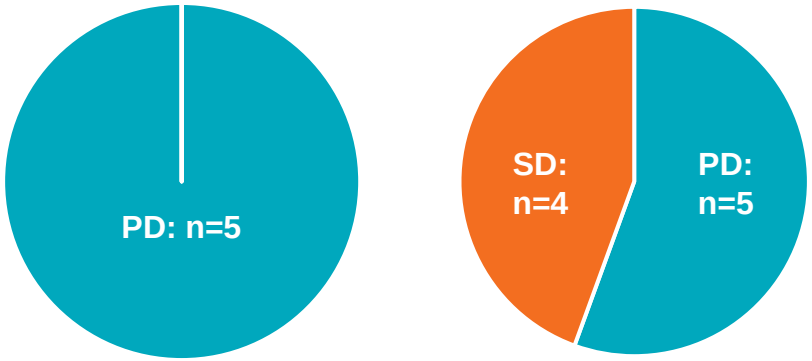
Majority of adverse events were Grade 1-2

Data from Reiss, et al. SITC 2022; and Klichinsky, et al. CAR-TCR 2023. Includes data from combined Group 1 and Group 2.
1. All SAEs related to treatment were due to hospitalization for monitoring of either Grade 2 CRS or Grade 2 infusion reaction.

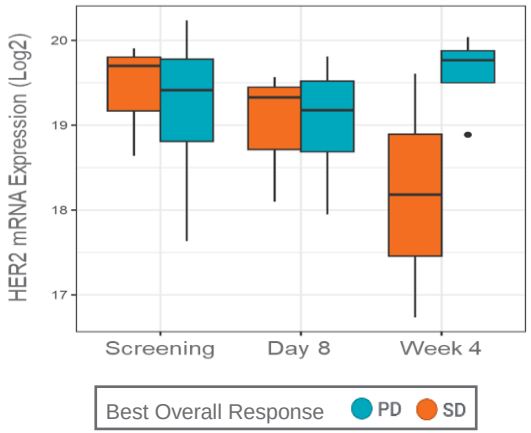
Clinically Active with Antigen Dependent MOA

Single agent CAR-M demonstrated target lesion shrinkage

Correlation between HER2 status and Best Overall Response



Trend Toward Decrease in HER2+ Tumor Cells in Patients with Stable Disease (SD)



KEY TAKEAWAYS

- Best Overall Response of Stable Disease in 4 of the 14 evaluated participants (28.6%)*+
- Largest reduction in target lesion include 20% reduction in breast cancer patient and 14% reduction in salivary gland cancer patient
- Stable Disease was enriched in HER2 3+ subpopulation (n=4/9, 44.4% SD)
- Stable Disease correlated with CT-0508 induced TME remodeling and T cell activation

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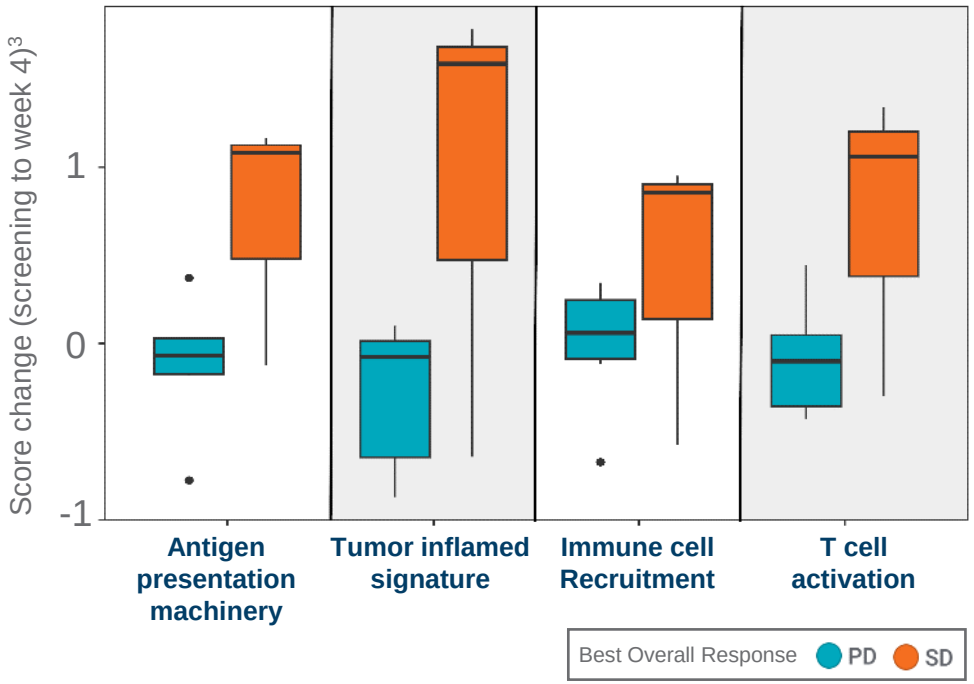
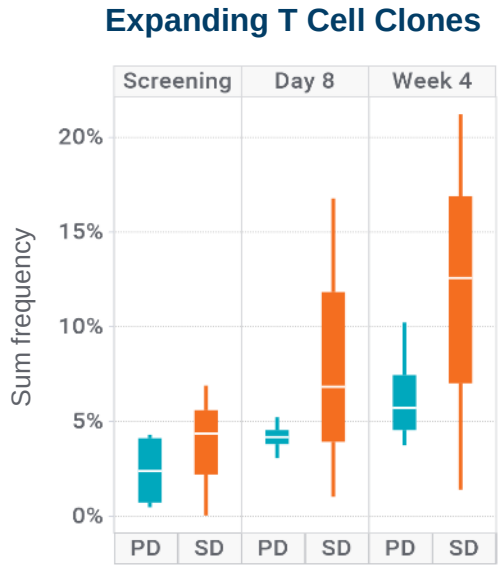
Data from Reiss, et al. SITC 2022; and Klichinsky, et al. CAR-TCR 2023. Includes data from combined Group 1 and Group 2.
SD=Stable Disease; PD = Progressive Disease; TME: Tumor Microenviroment
*Best Overall Response (RECIST 1.1); As of 08/02/2023, all patients discontinued to disease progression.
+1 patient in group 1 discontinued the study 2 weeks post infusion and never got a scan post infusion for re-staging, hence data is unavailable for this patient.

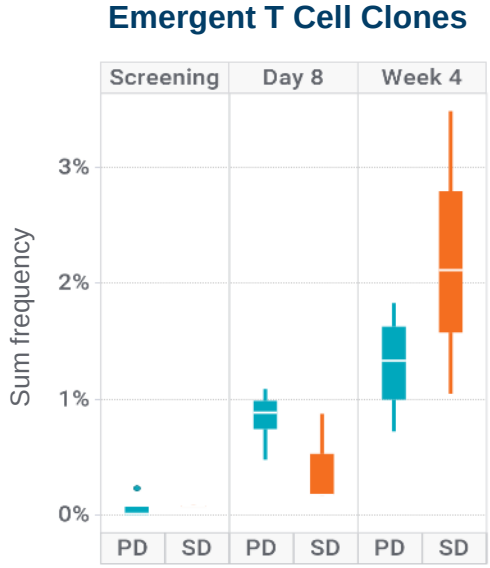
Stable Disease Accompanied by TME Remodeling

Observed across multiple TME biomarkers, including antigen presentation, inflammation and T-cell activation



TME activation, based on multiple gene sets, was enriched in patients that had Stable Disease





Accumulation of peripherally expanded and emergent T cell clones was increased in patients that had Stable Disease

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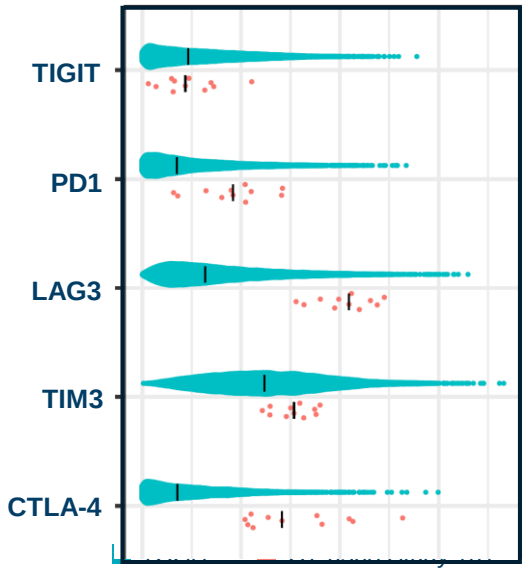
Data from Reiss, et al. SITC 2022; and Klichinsky, et al. CAR-TCR 2023. Includes data from combined Group 1 and Group 2.
SD=Stable Disease; PD = Progressive Disease, TME: Tumor Microenviroment

T cell Exhaustion is a Limiting Factor to CAR-Macrophage Efficacy

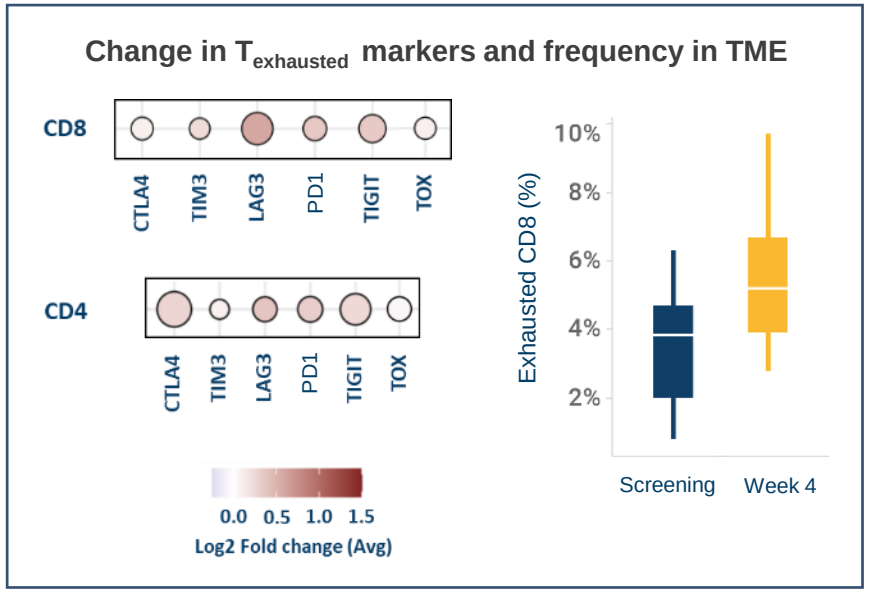
Study 101 patients show high baseline T cell exhaustion, and inhibitory pathways are further upregulated

T cell exhaustion markers in CT-0508 Study 101 pts compared to ~10,000 cancer patients in the TCGA database



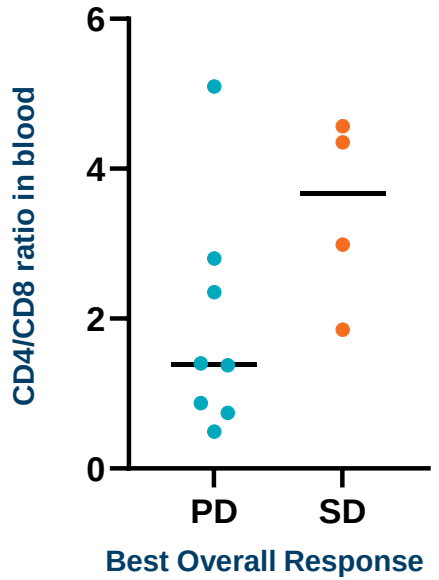
High T cell exhaustion in the TME of Study 101 pts

Changes in exhaustion markers (left) and exhausted CD8 T cell frequency (right) in the TME (Week 4 vs. Screening)



The pro-inflammatory effects of CT-0508 further upregulate inhibitory pathways

Correlation of outcomes with baseline peripheral blood T cell fitness



T cell fitness[1] correlates with clinical outcome

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Data from Reiss, et al. SITC 2022; and Klichinsky, et al. CAR-TCR 2023. Includes data from combined Group 1 and Group 2.
1. CD4/CD8 ratio and frequency of CD8+ T stem central memory in apheresis material were used as measures of T cell fitness.
SD=Stable Disease; PD = Progressive Disease

Identifying Improved CAR-M Therapy Regimen for HER2 Program

Enhancing CAR-M's therapeutic benefit by focusing on product profile variables

Demonstrate Safety, Tolerability, Feasibility & MOA:
CAR-Macrophage (CT-0508)

Phase 1 Ongoing

Increase Dose:
CAR-Monocyte (CT-0525)

Phase 1 Ready

Overcome T Cell Exhaustion:
CAR-Macrophage (CT-0508) + Pembrolizumab

Phase 1 Ongoing

Potential Registrational Profile

Cell Type	Dose	Monotherapy vs. Combo Therapy	Line of Therapy	Tumor Type

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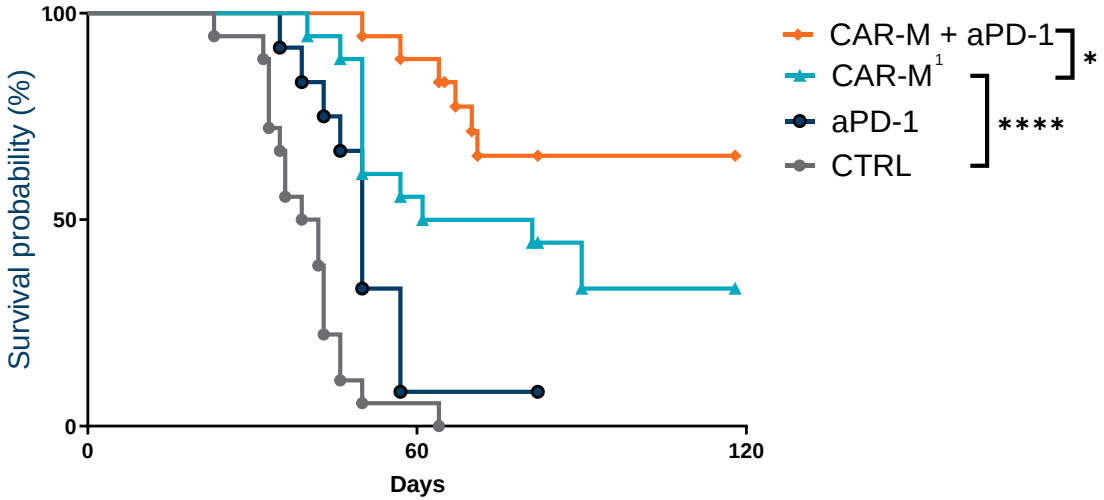
MOA: Mechanism of Action

CT-0508 + Anti-PD1: Robust Synergy

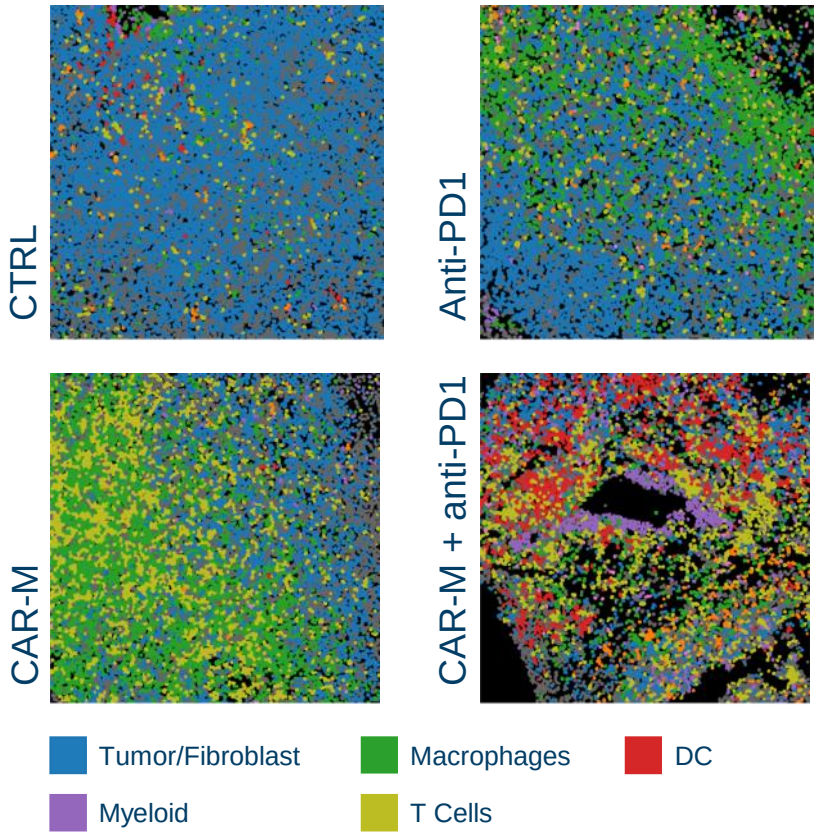
Synergy in a solid tumor model that is resistant to anti-PD1 monotherapy

Synergistic anti-tumor activity



Syngeneic CT26-HER2 solid tumor model.
Resistant to anti-PD1 monotherapy.

Synergistic TME modulation with combination

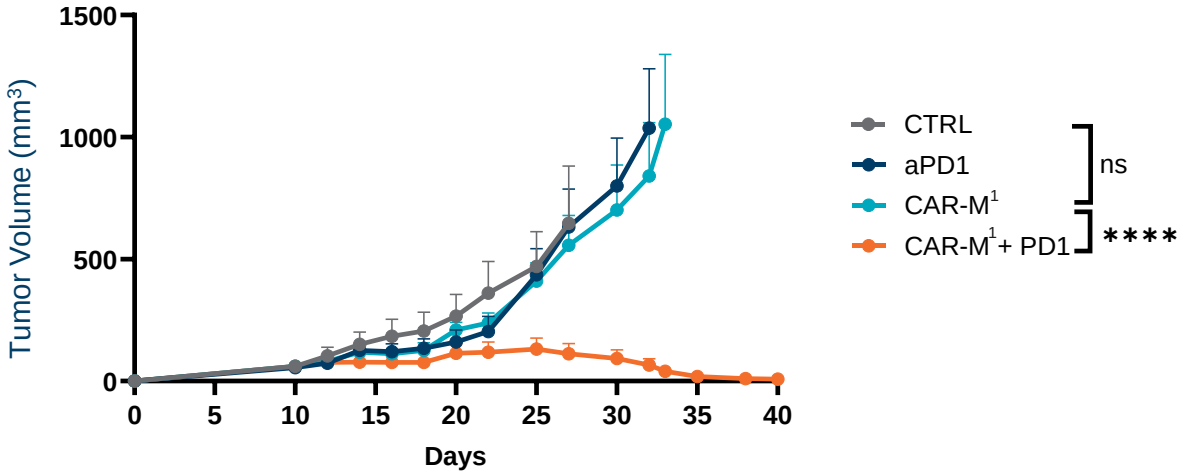


Data from preclinical models.
1: CAR-M: CAR-Macrophage
DC: Dendritic Cell; CTRL: Control

CT-0508 + Anti-PD1: Robust Synergy

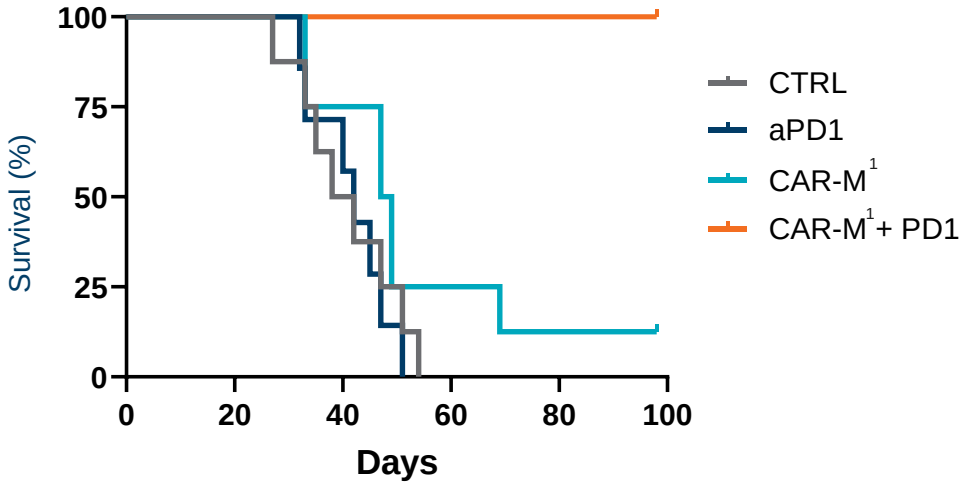
Synergy in a solid tumor model that is resistant to both CAR-Macrophage *and* anti-PD1 monotherapy

I.V. CAR-M + anti-PD1 leads to synergistic tumor control



Syngeneic CT26-HER2 solid tumor model.
Resistant to anti-PD1 monotherapy.

I.V. CAR-M + anti-PD1 leads to 100% survival



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Data from preclinical models.
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CT-0508 Study 101: CT-0508 + Pembrolizumab Substudy

Assessing safety, tolerability and TME impact of CT-0508 in combination with anti-PD1 pembrolizumab

HER2 2+/3+ solid tumors (n≈27)

G-CSF mobilization and apheresis, CAR-Macrophage manufacture, bridging therapy, baseline staging

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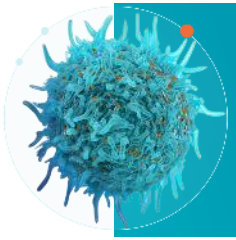
- Group 2: CT-0508 bolus dose D1 (n≤9) — Enrolling

→ Demonstrated manufacturing feasibility, safe administration, cell trafficking from blood to tumor, cells resided in tumor for up to 4 weeks, positively modulated TME[1]

Enrolling; All Regimens will receive Pembro 200mg every 21 days until tx completion

- **Pembro Substudy Regimen 1 (n=3):** CT-0508 C1D1,3,5 + Pembro 200mg C1D8
- **Pembro Substudy Regimen 2 (n=3):** CT-0508 C1D1,3,5 + Pembro 200mg C1D1
- **Pembro Substudy Regimen 3 (n≥3):** CT-0508 C1D1 + Pembro 200mg C1D1

Anticipate presenting data from Pembro Substudy in 1H24



PRIMARY OUTCOMES[2]

- Safety and tolerability

SECONDARY OUTCOMES & ADDITIONAL ANALYSES[2]

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- T cell expansion/clonality

Biopsy performed at screening, Day 8, Week 4 and Week 6 or 7 RECIST v1.1

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Phase 1 Ready

Overcome T Cell Exhaustion:
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Phase 1 Ongoing

Potential Registrational Profile

Cell Type	Dose	Monotherapy vs. Combo Therapy	Line of Therapy	Tumor Type

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MOA: Mechanism of Action

CT-0525: HER2 Targeted CAR-Monocyte (Macrophage Precursor)

Ability to increase dose up to 5x, enhance trafficking and persistence, and manufacture more rapidly

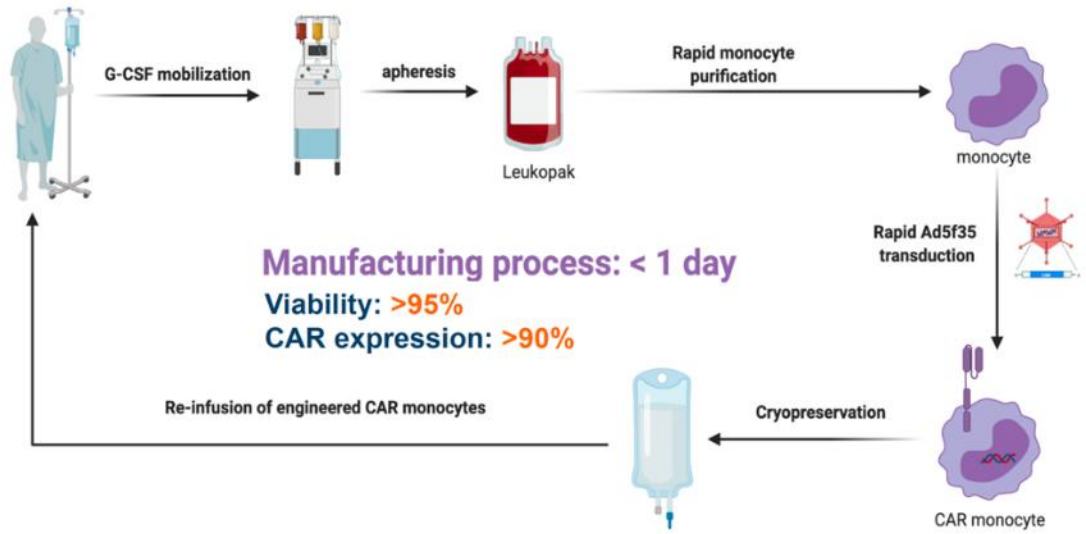
Highlights

Manufacturing Advantages Over CAR-Macrophage

Potential Biological Advantages Over CAR-Macrophage

IND Cleared
First patient expected to be treated in 1H 2024

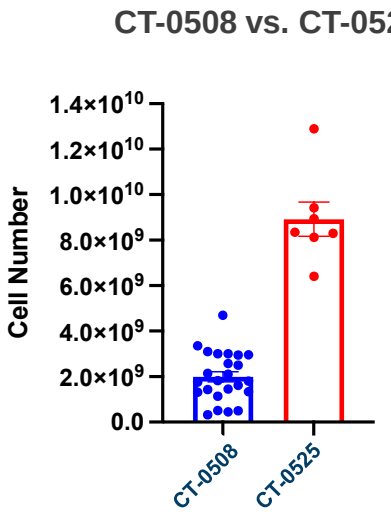
CAR-Monocyte Rapid Manufacturing Process



CT-0525: Multiple Improvements Over CT-0508

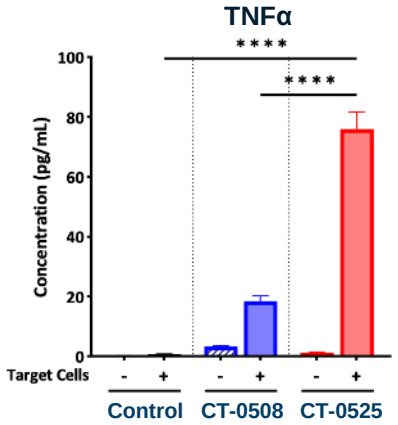
Pre-clinical models demonstrate increased dose, potency, trafficking, and persistence with CT-0525

~5x increase in cell number

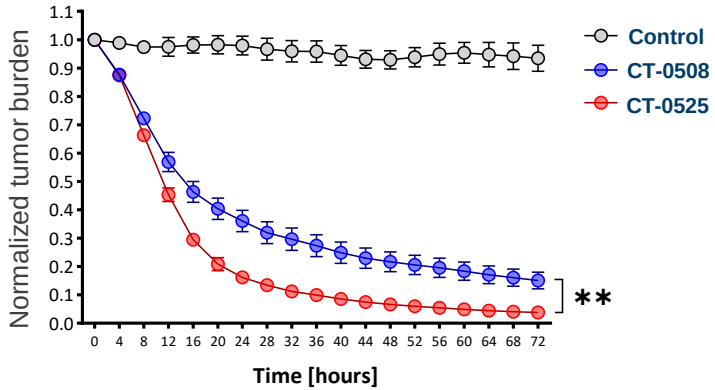


Increased cytokine release & killing[1]

Target dependent cytokine release

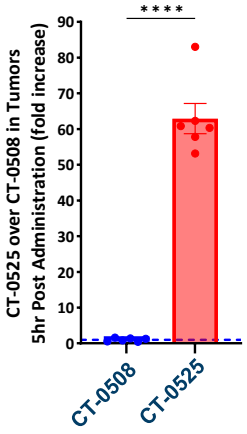


In vitro killing assay



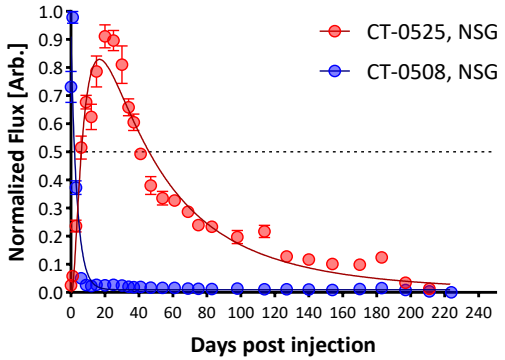
Increased trafficking and persistence

Trafficking (*in vivo*)



Trafficking data shown as CT-0525 fold-over CT-0508

Persistence (*in vivo*)



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Cell Number: In final formulation. Clinical CT-0508 runs vs. pre-clinical CT-0525 runs.
1: Cell analysis is 1:1 for CAR-macrophage and CAR-Monocyte

CT-0525 Study 102: Phase 1 Clinical Trial Design

Assessing safety, tolerability, and manufacturing feasibility of CT-0525; additional analyses on TME impact

HER2 2+/3+ solid tumors (n≥6)

G-CSF mobilization and apheresis, CAR-Monocyte manufacture, bridging therapy, baseline staging

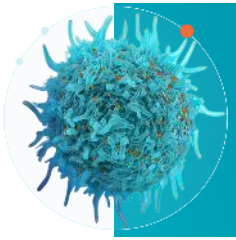
Cohort 1: Up to 3 billion cells of CT-0525 in bolus dose D1 (n≥3)

Cohort 2: Up to 10 billion cells of CT-0525 in bolus dose D1 (n≥3)

Manufacturing and clinical site activation being mobilized

Expect to treat first patient in 1H 2024

Potential subsequent development plans could include combination with a T cell checkpoint inhibitor, and additional dose-ranging and dose schedule (among others)



PRIMARY OUTCOMES

- Safety and tolerability
- Manufacturing feasibility

SECONDARY OUTCOMES[1]

- In vivo cellular kinetics profile (levels, persistence, trafficking)
- ORR (RECIST 1.1)
- DOR

Biopsy performed at screening, Day 8, and Week 6
ORR: Objective Response Rate; DOR: Duration of Response
1: Other tertiary/exploratory outcomes are being explored

Identifying Improved CAR-M Therapy Regimen for HER2 Program

Enhancing CAR-M's therapeutic benefit by focusing on product profile variables

Demonstrate Safety, Tolerability, Feasibility & MOA:
CAR-Macrophage (CT-0508)

Phase 1 Ongoing

Increase Dose:
CAR-Monocyte (CT-0525)

Phase 1 Ready

Overcome T Cell Exhaustion:
CAR-Macrophage (CT-0508) + Pembrolizumab

Phase 1 Ongoing

Potential Registrational Profile

Cell Type	Dose	Monotherapy vs. Combo Therapy	Line of Therapy	Tumor Type

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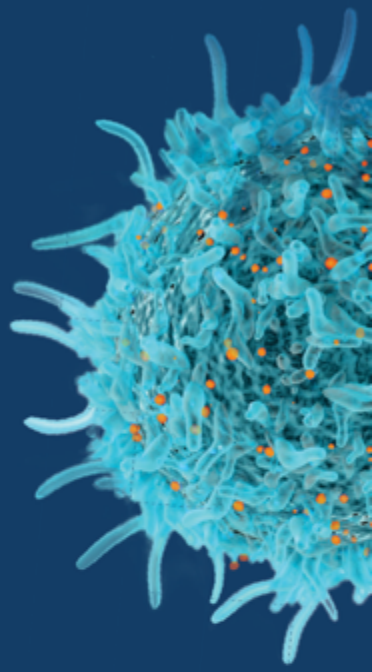
MOA: Mechanism of Action

Targeting Mesothelin:
CT-1119



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CT-1119: Anti-Mesothelin Autologous CAR-Monocyte

Highlights

Significant Unmet Need

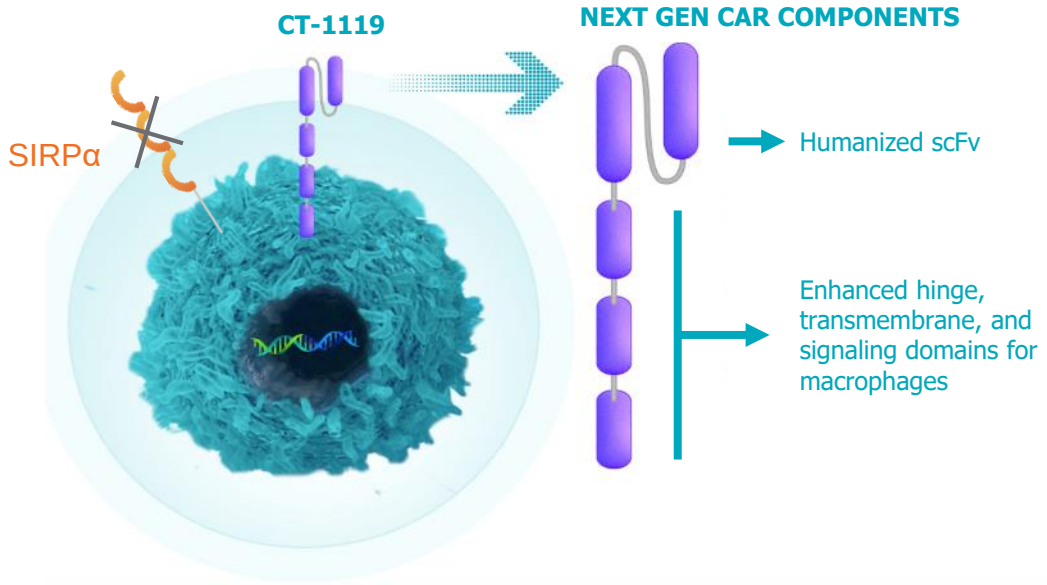
- Mesothelin is overexpressed in many solid tumors[1]
- No approved anti-mesothelin therapy

Program Summary

- Incorporating next-gen CAR and SIRPα knockdown
- Utilizing engineered monocyte manufacturing
- Preclinical stage: In vitro and *in vivo* PoC established

Development Plan & Timeline

- Multiple solid tumors
- Opportunity to evaluate systemic and regional treatment
- IND planned for 2025



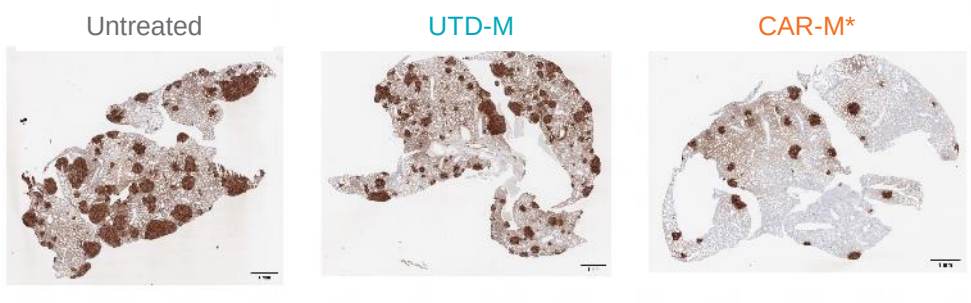
Product Description	
Cells	Autologous monocytes
Vector	Ad5f35
Phenotype	M1
CAR	Next Generation
Other Enhancements	SIRPα knockdown

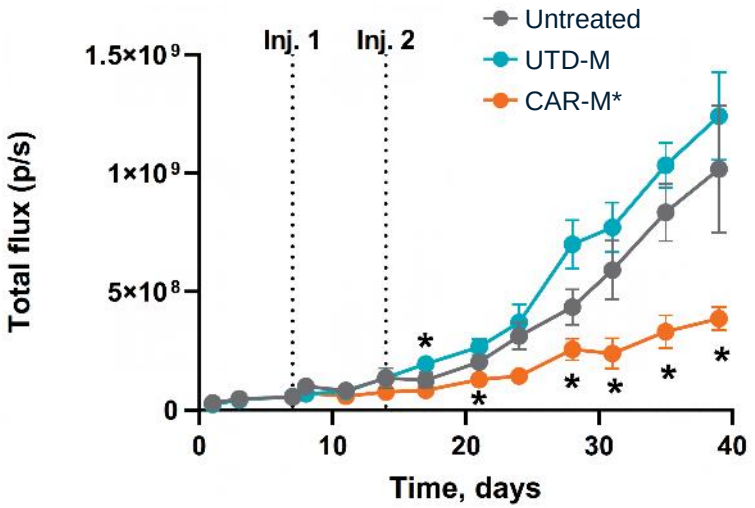
1. Mesothelin overexpression has been identified in mesothelioma, ovarian cancer, pancreatic cancer, lung cancers, and others.

Development of CT-1119: Anti-Mesothelin CAR-Monocyte

In vivo, CT-1119 significantly reduced tumor burden in a murine xenograft model of lung cancer

Mesothelin(+) NSCLC Xenograft Model:



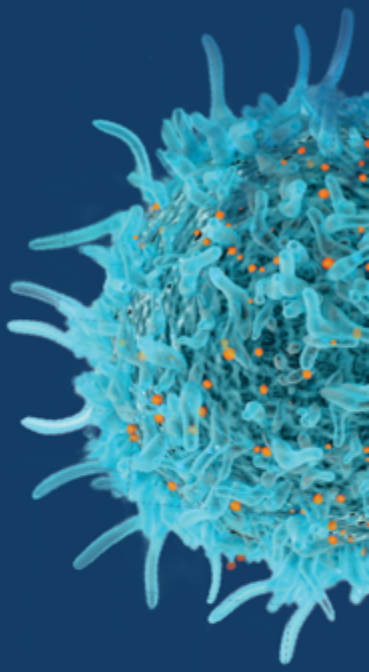


Key Takeaways

- CAR-M* significantly reduced tumor burden in a mesothelin overexpressing metastatic lung cancer xenograft model
- Lead candidate will incorporate multiple additional platform enhancements:
  - Next-gen CAR
  - SIRPα knockdown

In vivo data shown using human CAR-M in an immunodeficient xenograft model using MSLN(+) A549 cells; CAR-M were injected IV 8 days post tumor engraftment.
*CAR-M used in the CT-1119 preclinical models was a CAR-Macrophage, but the clinical product is expected to be a CAR-Monocyte.

In Vivo Oncology



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In Vivo CAR-M

Collaboration with Moderna to discover, develop and commercialize *in vivo* CAR-M in oncology

Highlights

Collaboration Overview

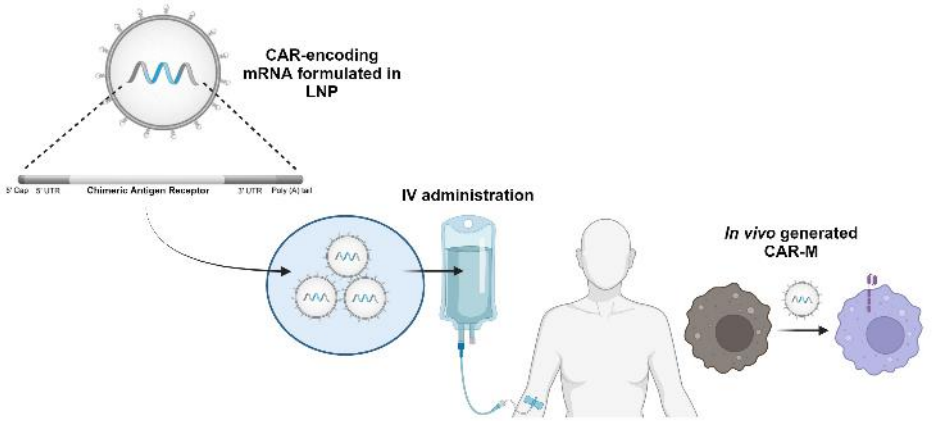
- Combines Carisma's engineered macrophage technology with Moderna's mRNA and LNP technologies

Key Advantages of *in vivo* CAR-M

- Off-the-shelf product with ability to re-dose
- Maintains functionality of *ex vivo* CAR-M

Pre-clinical POC Achieved

Redirecting endogenous myeloid cells with mRNA for cancer immunotherapy

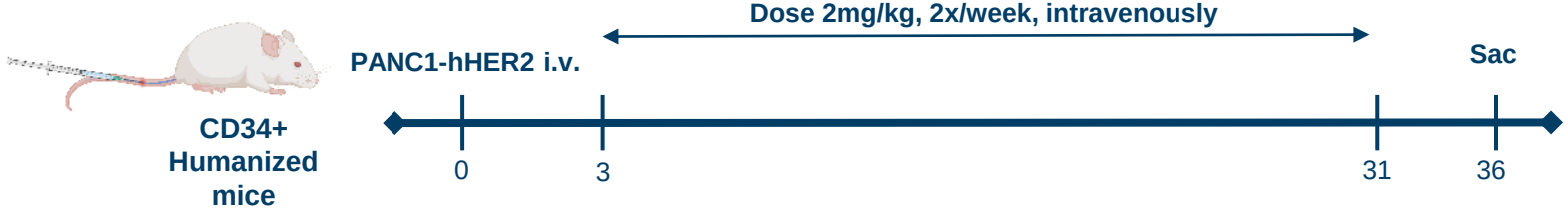


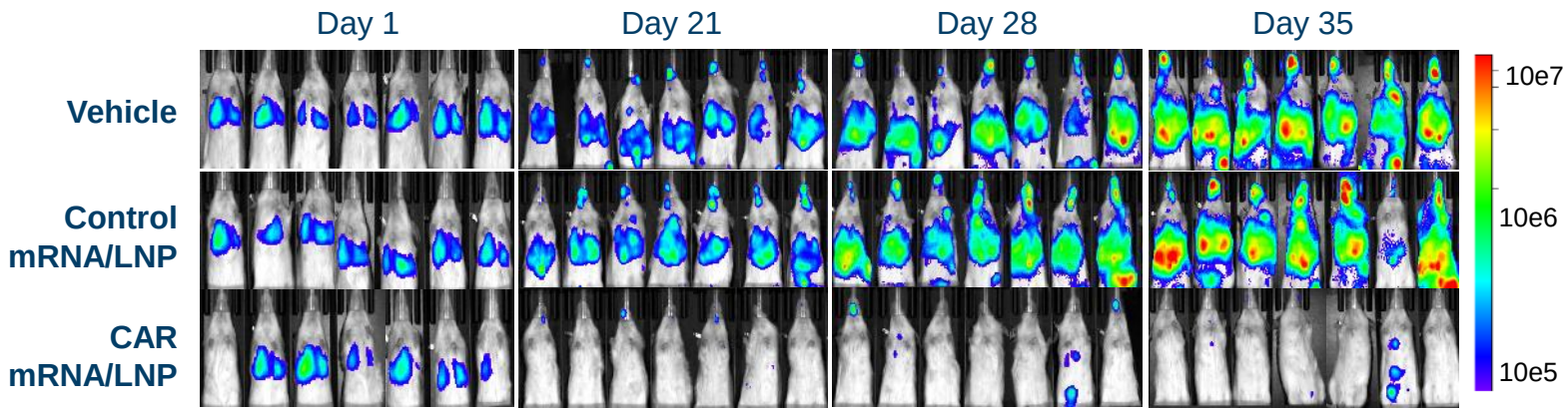
carisma THERAPEUTICS	Collaboration Terms	moderna
Number of Targets	Up to 12 (5 Identified)	
Upfront Payment	$80M	
Total Potential Milestones and Royalties	$3B+	
R&D Funding	Fully funded by Moderna	

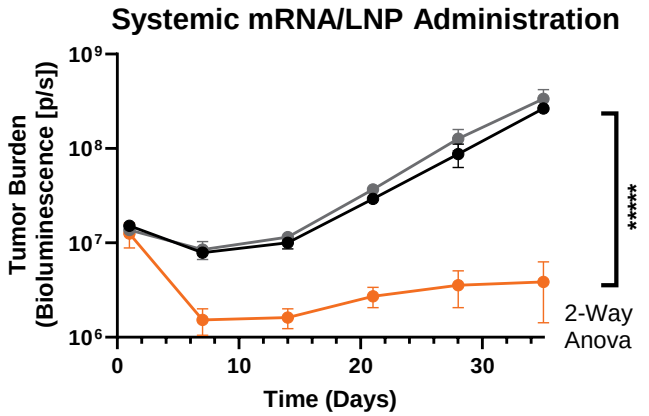
mRNA: Messenger RNA; LNP: Lipid Nanoparticle

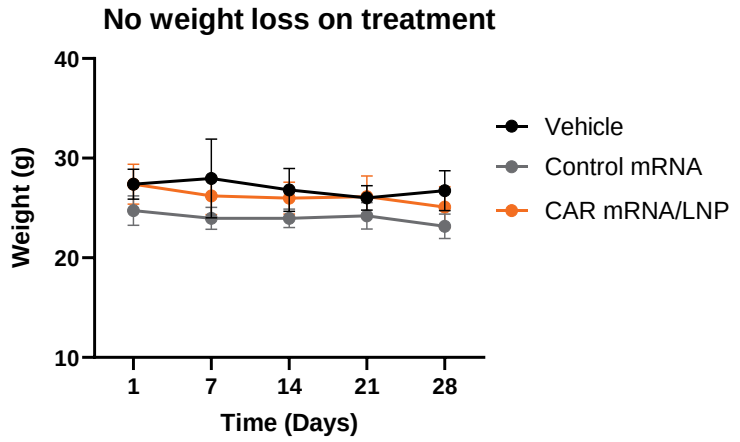
In Vivo CAR-M Controls Metastatic Pancreatic Cancer

Systemic LNP administration in humanized mouse model of pancreatic cancer



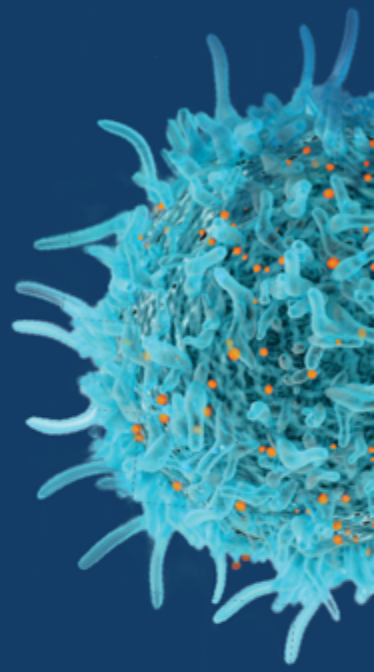






mRNA: Messenger RNA; LNP: Lipid Nanoparticle

Developing macrophage cell therapies outside of oncology: Liver Fibrosis



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Engineered Macrophage Cell Therapy for Liver Fibrosis

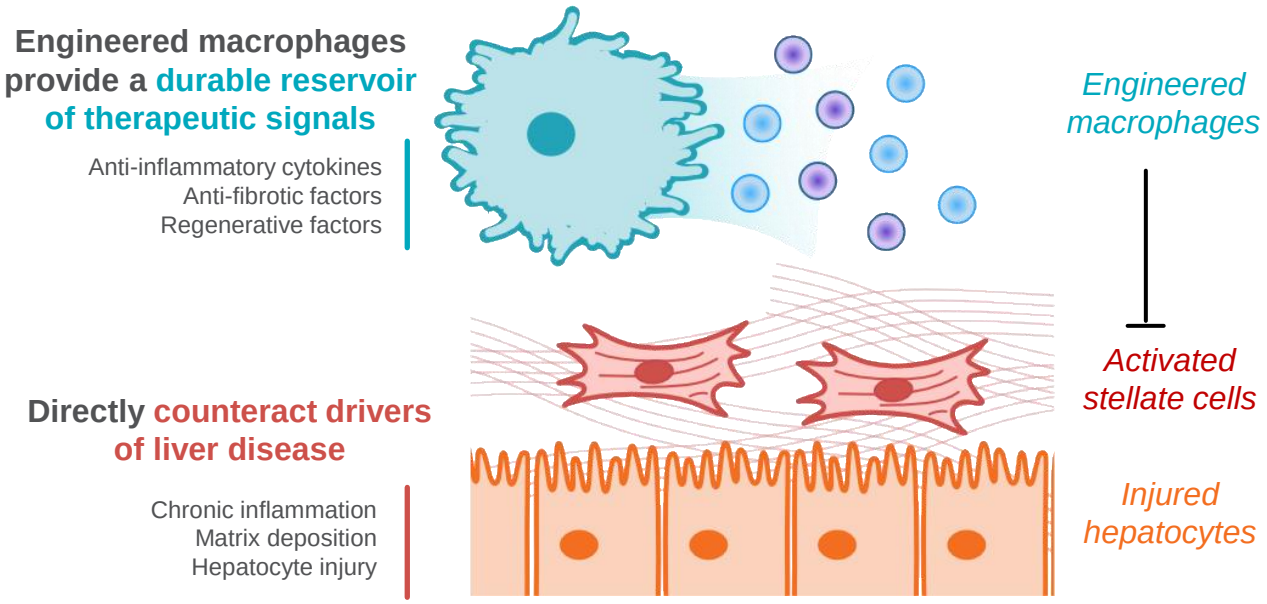
Highlights

Key Takeaways

- Allogeneic macrophage compatible MOA
- Genetically engineered macrophages overcome limitations by directly impacting sites of action
- Safety[1] and activity[2] demonstrated with non-engineered macrophages

Development Plan & Timeline

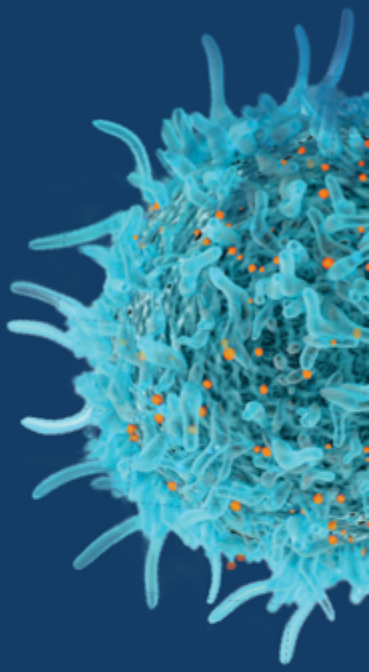
- Preclinical POC data expected in 1H 2024



MOA: Mechanism of Action

1. Moroni F, et al. Nature Medicine. 2019.
2. Brennan PN, et al. Hepatology. AASLD Abstract #160. 2023.

Corporate & Financial



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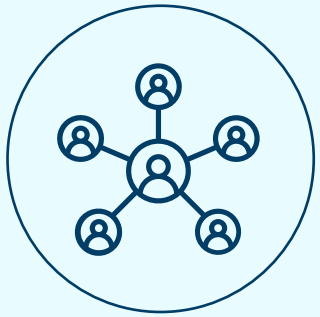
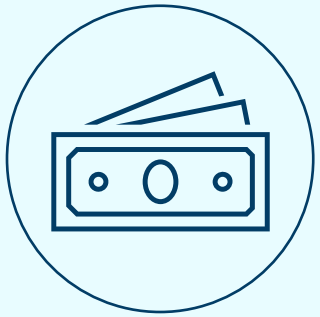
Financial Snapshot

As of September 30, 2023



40.3M

Shares outstanding



$94.1M

Cash, cash equivalents and marketable securities

Into 1Q 2025

Expected cash runway

Operating Plan and Corporate Milestones

Capital efficient R&D program designed to reach significant value inflection points

THERAPEUTIC AREA	PRODUCT	PLATFORM	RECENT AND ANTICIPATED MILESTONES	
***Ex Vivo* Oncology**				
HER2+ solid tumors	CT-0508	CAR-Macrophage *(1st Gen CAR)*	**2H23** Report initial Phase 1 Group 2 data	✓
	CT-0508 + pembrolizumab	CAR-Macrophage *(1st Gen CAR)*	**1H23** Commence Phase 1 combination substudy	✓
			1H24 Present data from Phase 1 combination substudy	□
	CT-0525	CAR-Monocyte *(1st Gen CAR)*	**2H23** IND cleared	✓
			1H24 Treat first patient	□
Mesothelin+ solid tumors	CT-1119	CAR-Monocyte *(Next-Gen CAR[1])*	**2H23** Select clinical candidate	✓
			2025 IND application	□
***In Vivo* Oncology**				
Oncology	5 Targets[2]	CAR-Macrophage + mRNA/LNP	**2H23** Nominate fifth target	✓
			2H23 Report proof of concept data for *in vivo* CAR-M (SITC 2023)	✓
			2H23 Nominate first *in vivo* CAR-M lead candidate	✓
Fibrosis and Immunology				
Liver Fibrosis	TBD	Engineered macrophage	**1H24** Report pre-clinical POC data	□

1. Includes SIRPα knockdown technology
2. Moderna collaboration has identified 5 oncology targets, with the option to identify an additional 7 oncology targets

THANK YOU

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APPENDIX

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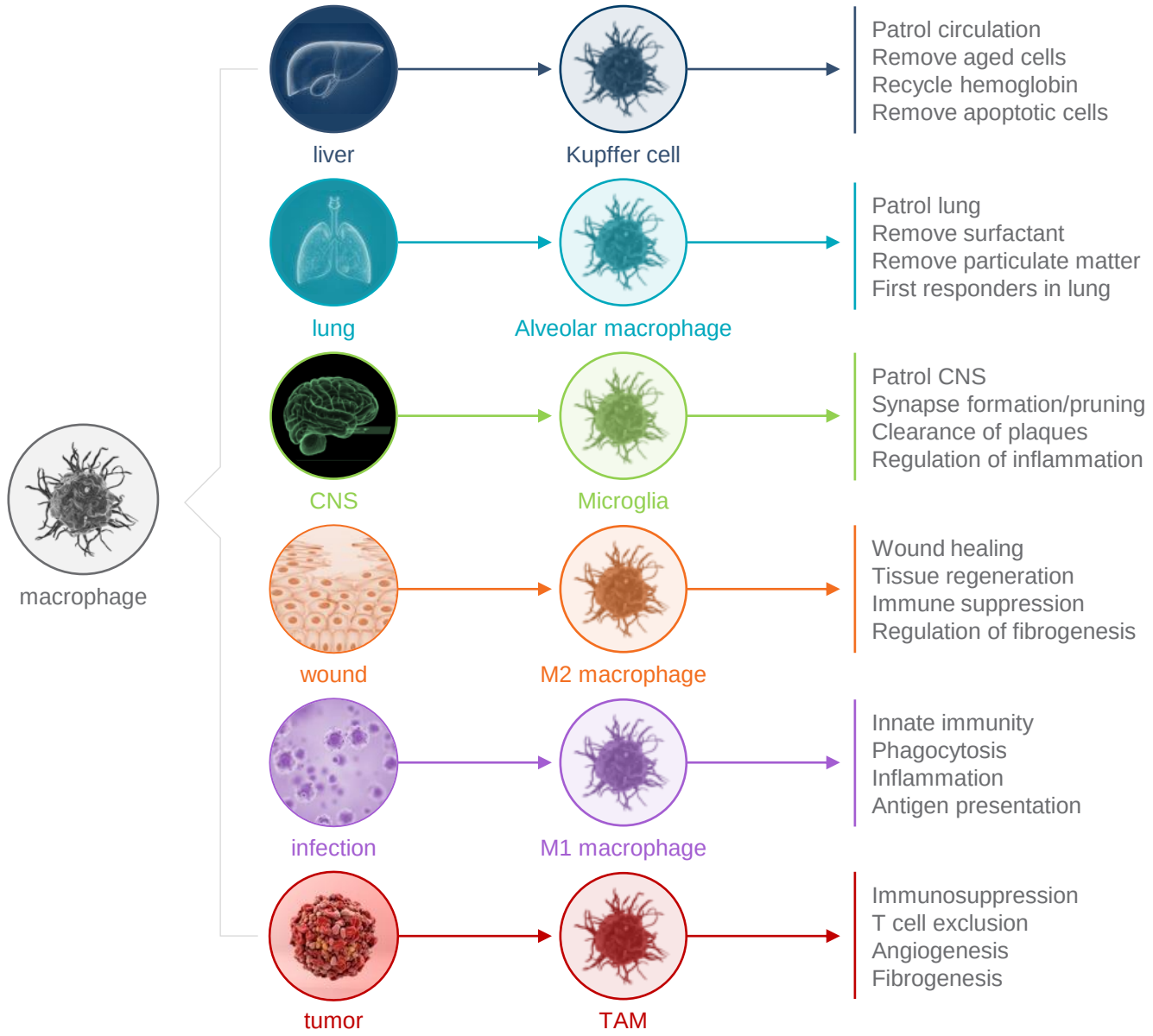
Macrophages:
The Ultimate Multitasker

Macrophages can:

- Traffic to tumors/inflammation
- Phagocytose
- Initiate immune response
- Present antigen to T-cells
- Resolve fibrosis
- Induce tissue regeneration
- Resolve immune response

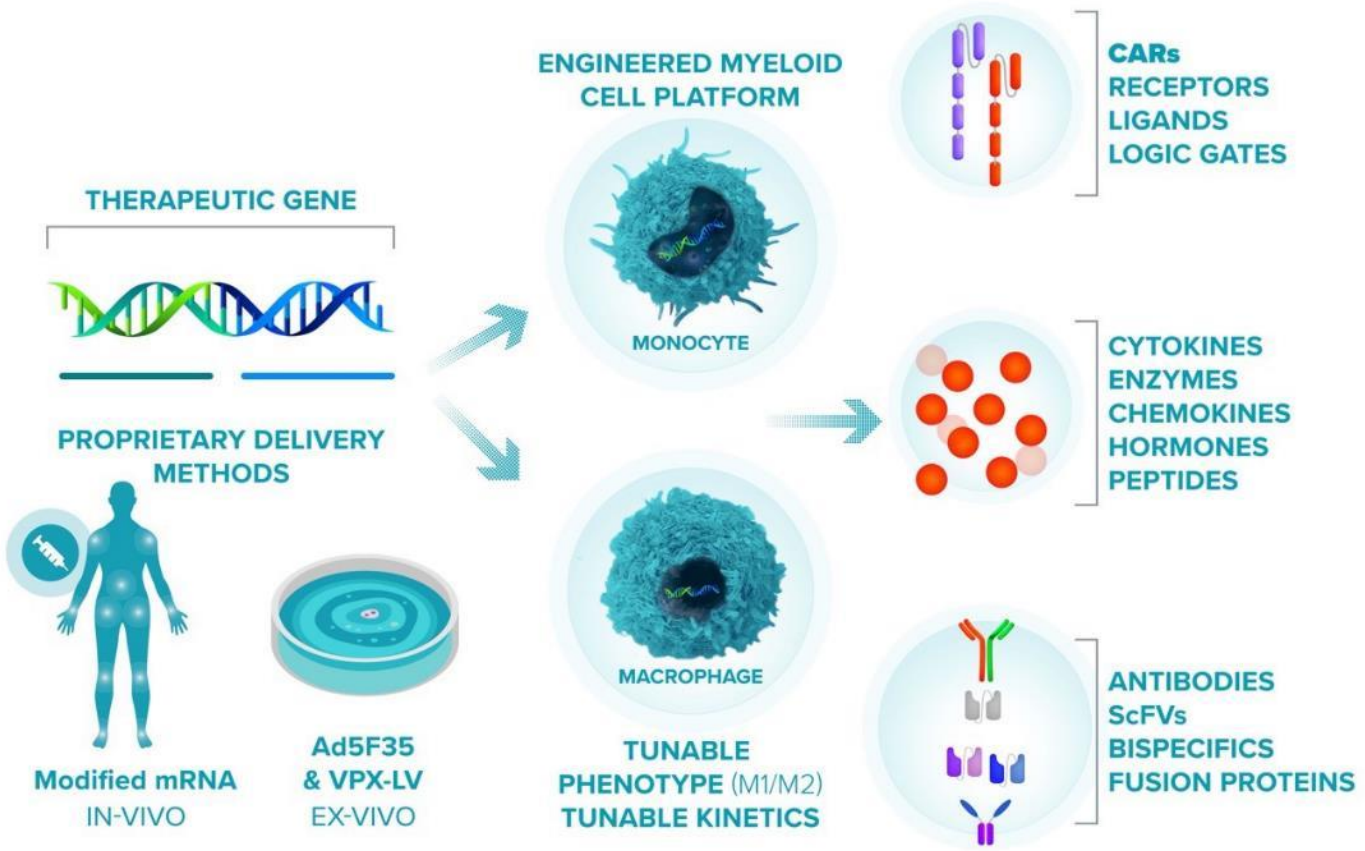


CARISMA's Broad Myeloid Cell Engineering Platform

Proprietary technology, world-leading macrophage engineering know-how, and strong IP position ensure leadership position

Monocyte & Macrophage Engineering Capabilities:

- **Proprietary platforms** for robust/durable monocyte & macrophage engineering
- **Established rapid GMP manufacturing** processes for monocytes and macrophages
- **In vivo myeloid cell reprogramming** using LNP/mRNA technology
- **Novel next-gen CAR constructs**
- **Cytokine targeting** with switch receptor platform
- Applications **beyond oncology**



Strong Patent Position

Broad Coverage for Monocyte and Macrophage Targeted Therapies

21

PATENTS GRANTED WORLDWIDE*

85+

PATENT APPLICATIONS PENDING WORLDWIDE*

- Worldwide patent coverage with issued and pending applications in major markets
- Multiple issued US patents covering CAR-M composition of matter
- Broad patent portfolio covering:
  - Viral and non-viral methods for engineering monocytes and macrophages
  - Methods for treatment of protein aggregate disorders
  - Methods for in vivo targeting of monocytes and macrophages

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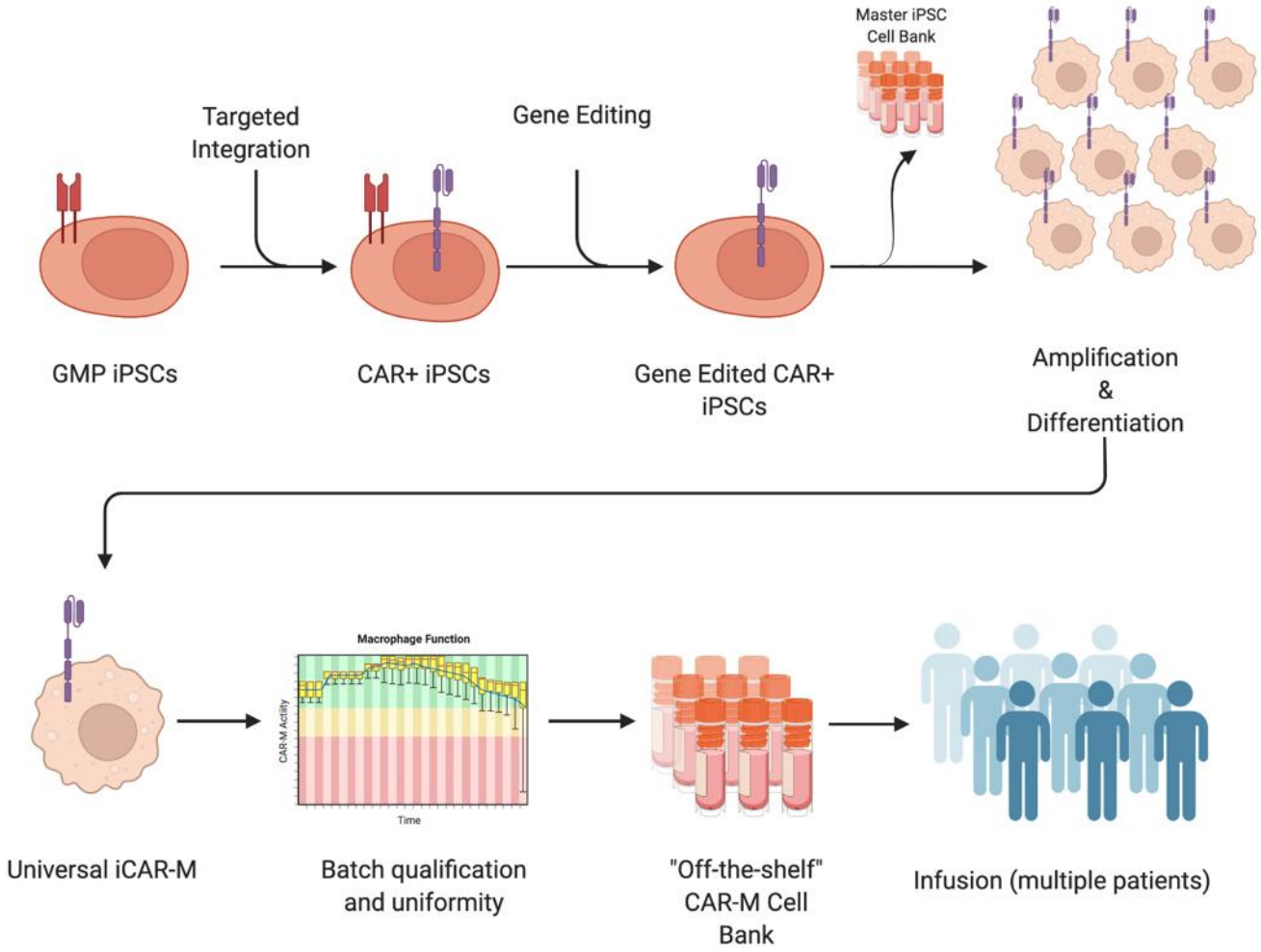
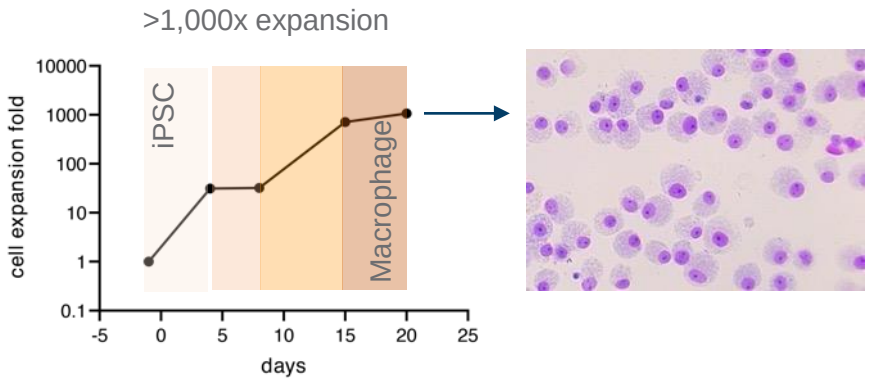
* Total includes Carisma-owned patents and patents exclusively licensed from The University of Pennsylvania and New York University

Off-the-Shelf iPSC Derived Myeloid Cells

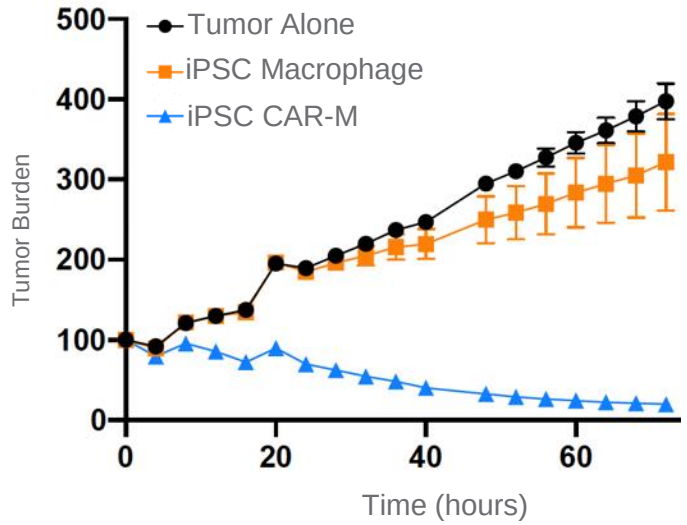
Expandable, allogeneic, and potentially broadly applicable



Production of iCAR-M



iCAR-M anti-tumor function in-vitro



GMP: Good Manufacturing Practice

CT-0508 Study 101: Phase 1 Study Patient Demographics

Heavily pre-treated patients with Stage IV HER2 2+/3+ solid tumors

Characteristics	N=14
Tumor Type, n (%)	
Breast Cancer	8 (57.1)
Esophageal Cancer	2 (14.3)
Salivary Carcinoma	2 (14.3)
Cholangiocarcinoma	1 (7.1)
Ovarian Cancer	1 (7.1)
HER2 Overexpression, n (%)	
IHC 3+	9 (64.3)
IHC 2+/FISH+	5 (35.7)
Pre-Treatment History	
Median Number of Prior Cancer Therapies, n (range)	5 (2, 12)
Median Number of Prior Anti-HER2 Therapies, n (range)	2 (0, 9)
Subjects with Prior Anti-HER2 Therapy	13 (92.9)
Tumor Mutational Burden (TMB)	
Low (<10 mut/Mb)	11 (78.6)
High (≥10 mut/Mb)	2 (14.3)†
Unknown	1 (7.1)
Microsatellite Instability (MSI)	
MSS/MSI-Low	13 (92.9)
MSI-High	0 (0)
Unknown	1 (7.1)

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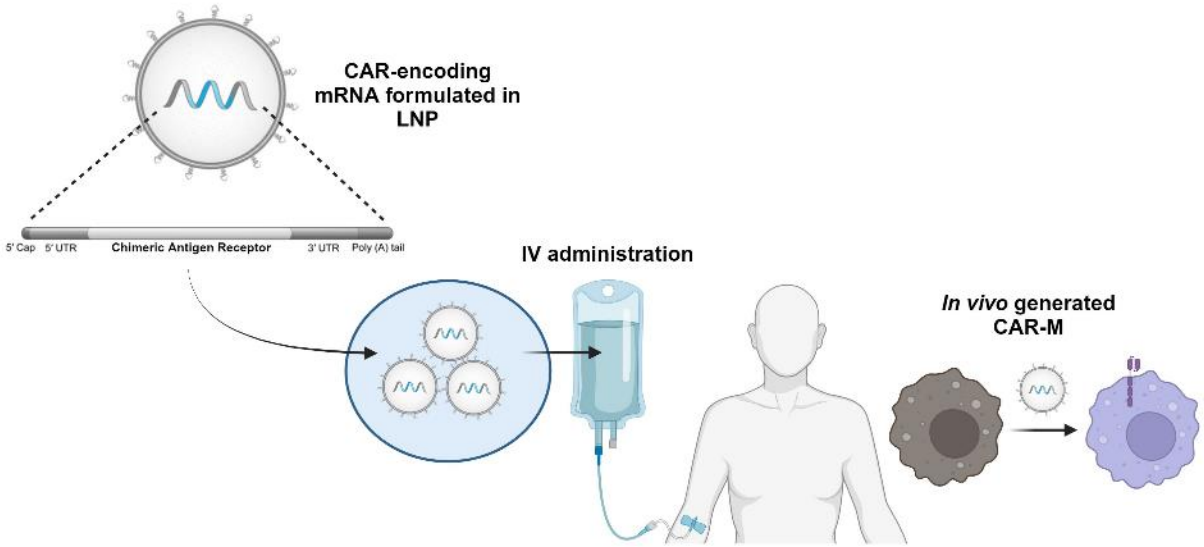
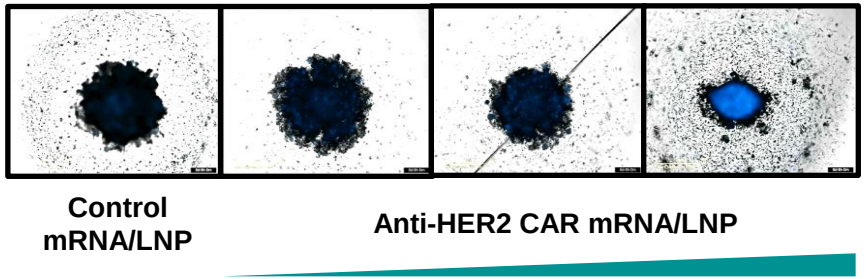
† 1 patient had received 12 lines of prior therapy, and 1 patient has demonstrated HLA-A and HLA-C loss of heterozygosity

Directly Reprogramming Myeloid Cells *In Vivo* with mRNA/LNP

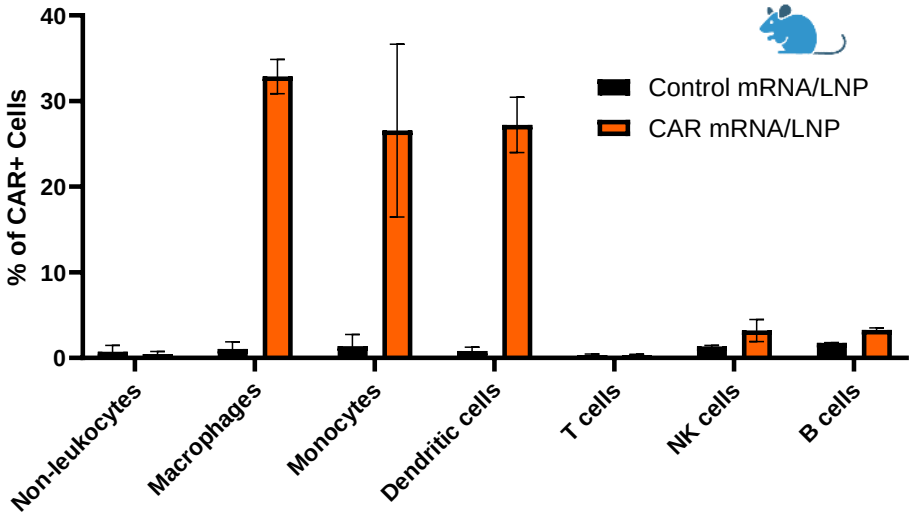
Redirecting endogenous myeloid cells with mRNA for cancer immunotherapy



Direct TAM reprogramming shrinks tumors*



CAR Distribution *in vivo* (Mouse Blood)

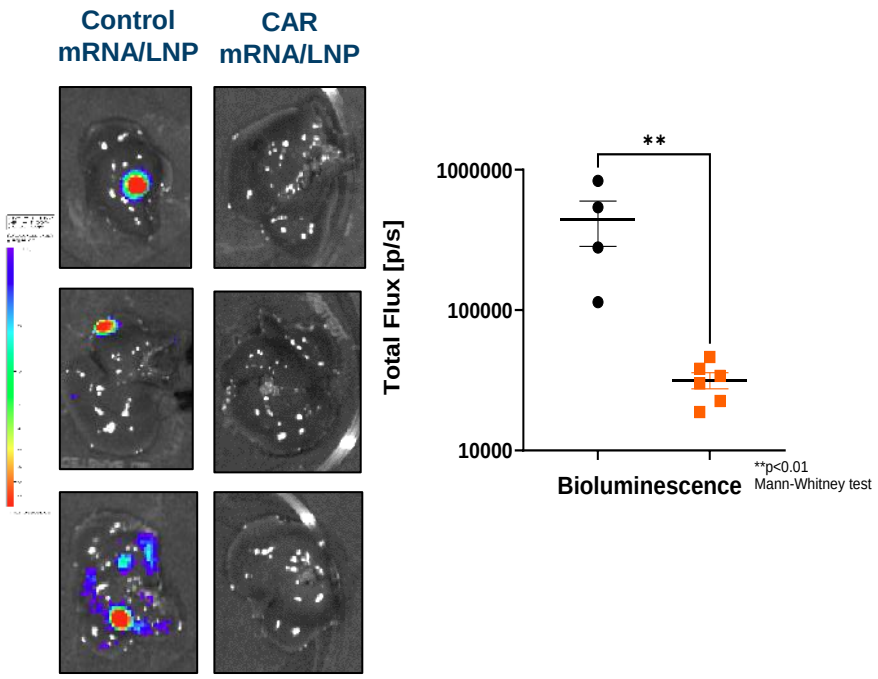


* LNP/mRNA encoding CAR added to breast cancer spheroids with tumor associated macrophages (TAMs)

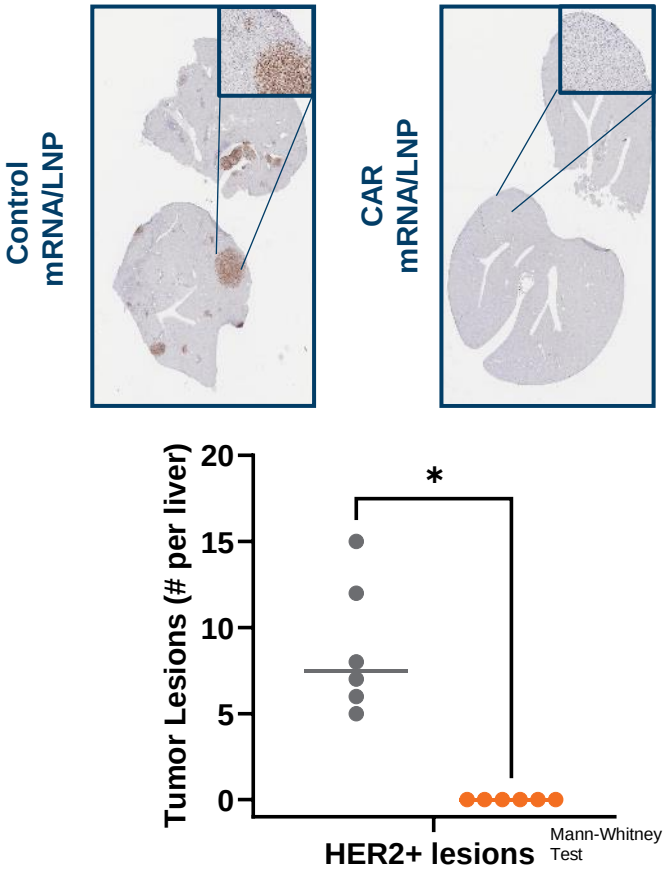
In Vivo CAR-M Suppresses Liver and Lung Metastasis

Systemic LNP administration in humanized model leads to robust disease control

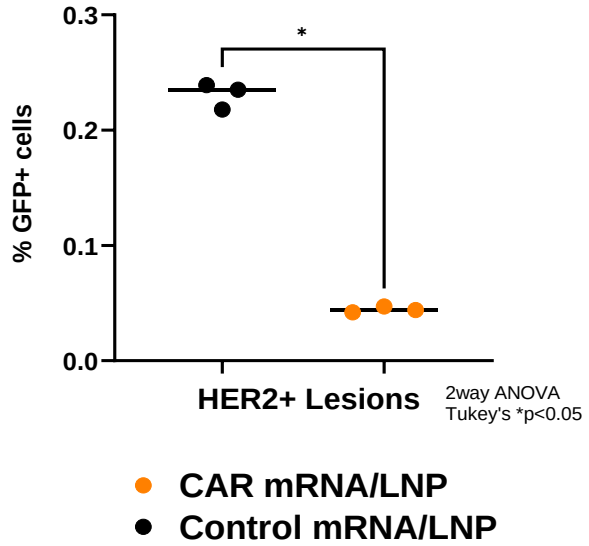
Tumor Lesions in Liver (BLI)



Tumor Lesions/Liver (IHC)



Tumor Lesions in Lung (IHC)



mRNA: Messenger RNA; LNP: Lipid Nanoparticle

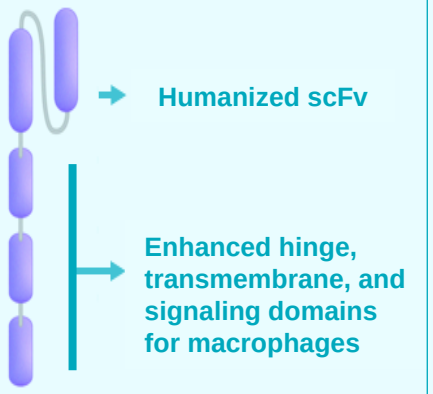
Next-Gen CAR Design Has Superior Profile

Enhanced CAR hinge, transmembrane, and signaling components incorporated into CT-1119

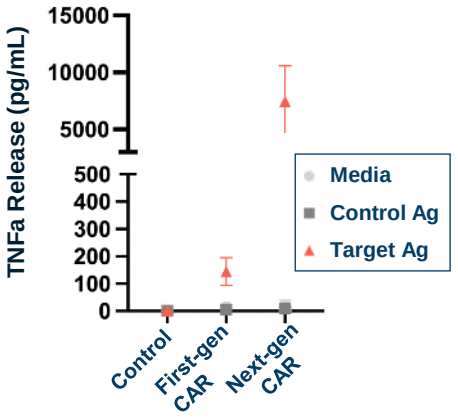
Key Takeaways*

- Increased cytokine release
- Increased killing of target tumor cells
- Increased macrophage activation
- Improved tumor control *in vivo*

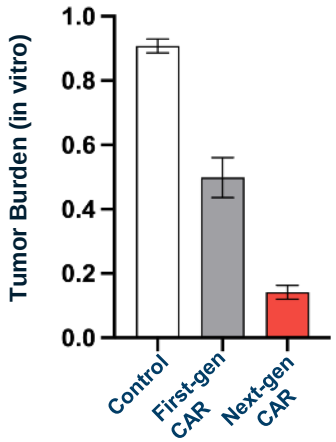
Next-Gen CAR



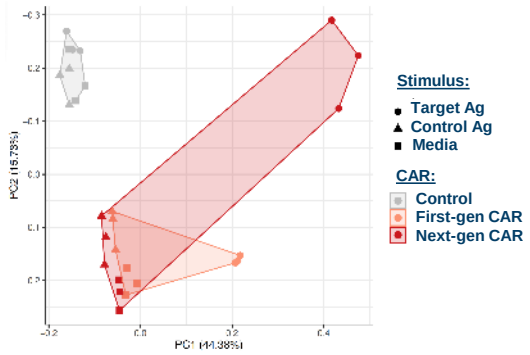
Increased Cytokine Release



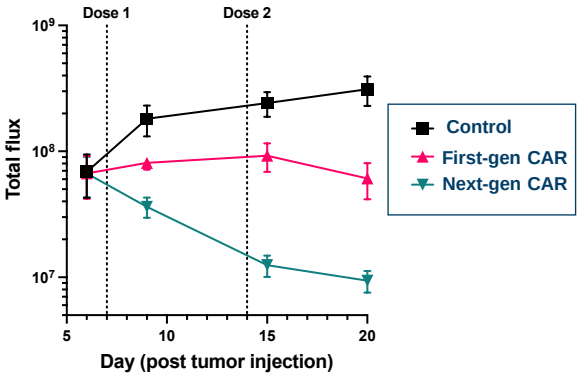
Improved Killing



Increased Macrophage Activation



Improved Tumor Control in a Xenograft Model



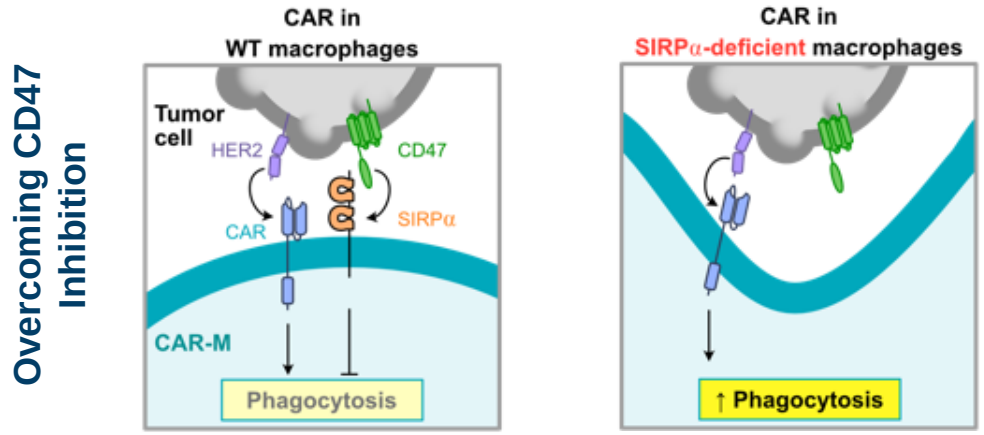
Data shown with model antigen. First generation CAR is utilized in CT-0508 and CT-0525, while next-gen CAR design is being incorporated into CT-1119.
*Key takeaways relative to first generation CAR
Ag: Antigen

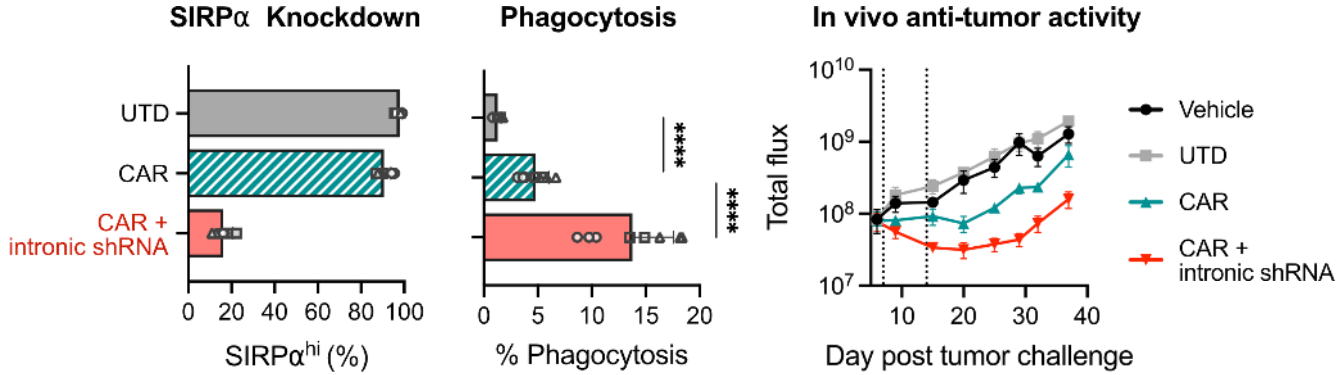
SIRPα Knockdown Enhances Anti-Tumor Activity of CAR-M

Overcoming the CD47 checkpoint enhances CAR-M potency

Key Takeaways

- Overcomes the CD47 "do-not-eat-me" signal expressed by tumor cells
- Increased killing, activation, and cytokine release
- Improved tumor control *in vivo*
- No phagocytosis of normal tissue
- Proprietary intronic shRNA platform





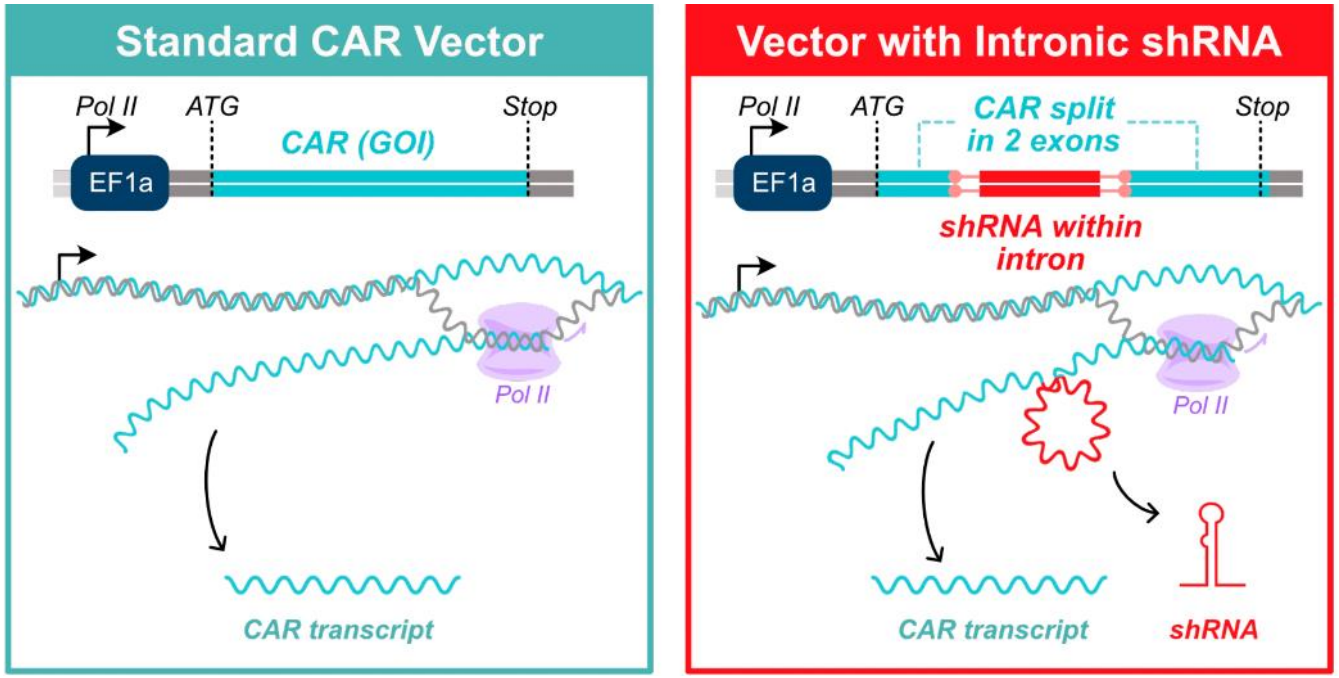
SIRPα knockdown and phagocytosis data are from in vitro studies

Intronic shRNA Enables CAR Delivery and Gene Silencing

Proprietary technology utilized for the first time in CT-1119

Key Takeaways

- Simultaneous CAR delivery and SIRPα silencing with a single vector
- Single Ad5f35 vector, 1-day CAR-Monocyte process
- More efficient than CRISPR/Cas9 editing*



*Based on pre-clinical models

Strong Leadership Team and Advisors

Deep research, clinical and operational expertise in cell and gene therapy and oncology

Management

STEVEN KELLY
President & CEO

MICHAEL KLICHINSKY, PHARMD PHD
Co-Founder & CSO

DANIEL CUSHING, PHD
Chief Technology & Development Officer

RICHARD MORRIS
Chief Financial Officer

TERRY SHIELDS
SVP, Human Resources

ERIC SIEGEL
General Counsel & Corporate Secretary

TOM WILTON
Chief Business Officer

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