

CARsgen Therapeutics (HKEX: 02171)

March 2024

Making Cancer Curable

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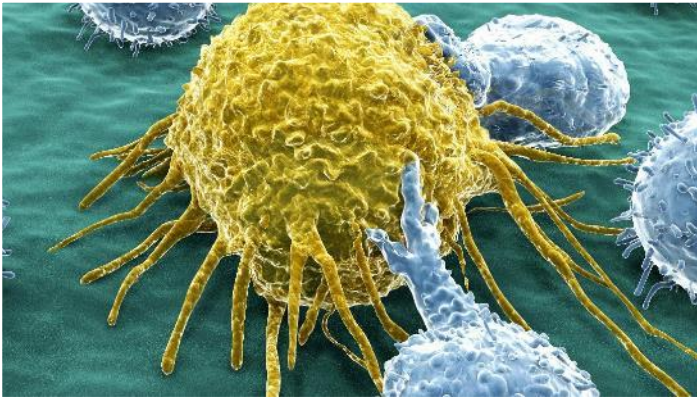
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CAR T Cells: Initial Successes in B-cell Malignancies Unlocked a Journey of Significant Opportunities and Challenges



CAR T cells: ultimate solution to “cure” cancer



T cells: **pivotal** role in immune system



Rapid **expansion**



Flexibility in **engineering**



Clinically **proven**



Initial successes in B-cell malignancies

- Revolutionary efficacy and product approval in treatment of **B-cell malignancies**.
- Lack of breakthrough beyond B-cell malignancies



Challenges with CAR T, particularly for solid tumors

- Lack of ideal **target**
- Tumor **heterogeneity**
- Hostile tumor **microenvironment**



What it takes to develop effective CAR T-cell therapies

- **Insight**
- **Infrastructure** in R&D and manufacturing
- Operational **efficiency**

Since 2014, CARsgen Has Been a Pioneer in CAR T-cell Research and Development

Research



Discovery and innovation



Cancer Types

- MM, GC, PC, HCC, etc.



Targets

- First-in-class GPC3 CAR T (CT011)
- First-in-class Claudin18.2 CAR T (CT041)



Combinations

- e.g. CAR T + TKI



Lympho-depletion

- e.g. FNC regimen (FC + Nab-Paclitaxel)

Development



Antibodies



In-house antibody development platforms

- Phage display
- Hybridoma



Humanized/fully-human antibodies developed against ~20 targets



A suite of proprietary technologies

- For both **autologous** and **allogeneic CAR T cells**
- For both **hematological malignancies** and **solid tumors**

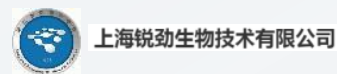
Experienced Senior Management Team in China & US



Zonghai Li, MD, PhD
Co-founder, Chairman of
the Board, CEO, CSO



Huamao Wang, PhD
Co-founder and COO



Raffaele Baffa, MD, PhD
Chief Medical Officer



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Senior Vice President,
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CARsgen's Competitive Product Pipeline with Global Rights



	Product Candidate ¹	Technology	Target	Indication	Pre-clinical	Phase I	Phase II/III ²	BLA NDA
CAR T-cell therapies	Zevor-cel (CT053) ³	Conventional	BCMA	R/R MM R/R MM R/R MM	LUMMICAR 1 (China)			launched
					LUMMICAR 2 (US, Canada)			
					IIT (China)			
	CT041	Conventional	Claudin18.2	GC/GEJ GC/PC PC (adjuvant) GC/GEJ, PC, etc.	ST-01 (China)			
					ST-02 (US, Canada)			
					ST-05 (China)			
					IIT (China)			
	CT011		GPC3	HCC (adjuvant)	(China)			
	CT071	CARcelerate™	GPRC5D	R/R MM, R/R pPCL R/R MM, R/R PCL	(US)			
					IIT (China)			
	CT0180	sFv-ε	GPC3	HCC	IIT (China)			
	CT0181		GPC3	HCC	IIT (China)			
mAb	CT0590	THANK-uCAR®	BCMA	R/R MM	IIT (China)			
	CT048	CycloCAR®	Claudin18.2	GC/GEJ and PC	IIT (China)			
	KJ-C2113	CycloCAR®	Mesothelin	Solid tumors				
	KJ-C2114	THANK-uCAR®	Undisclosed	Solid tumors				
	KJ-C2320	Undisclosed	Undisclosed	AML				
	AB011		Claudin18.2	GC/GEJ and PC	Mono & Combo (AB011+CAPOX) (China)			

¹ All product candidates are self-developed with global rights

² Phase II trials of some indications are pivotal studies

³ Core Product Candidate. Commercial rights in mainland China have been granted to Huadong Medicine (SZ: 000963). Rights in the South Korean market have been licensed out to HK Inno.N (KOSDAQ: 195940)

➡ for hematologic malignancies ➡ for solid tumors

R/R MM: relapsed / refractory multiple myeloma; GC: gastric cancer; GEJ: gastroesophageal junction cancer; PC: pancreatic cancer; HCC: hepatocellular carcinoma; R/R pPCL: relapsed/refractory primary plasma cell leukemia; AML: acute myeloid leukemia

Zevor-cel (CT053): a Potential Best-in-class BCMA CAR T



Zevor-cel Highlights



- ✓ Optimized scFv with enhanced binding affinity and stability
 - ✓ Competitive efficacies
 - ✓ Excellent safety
 - ✓ NDA approved by China NMPA (February 23, 2024)
-
- ✓ Designations: RMAT (FDA), PRIME (EMA), Orphan Drug (FDA & EMA); Breakthrough Therapy Drug (NMPA)

38 heavily pretreated R/R MM patients (IIT + China Phase 1)¹

• High Disease Burden

Extramedullary disease
31.6%

High-risk cytogenetics
50%

• Competitive Efficacy and Safety Profile

ORR
92.1%

sCR/CR
78.9%

mPFS
22.7 mos

mDOR
24.0 mos

Treatment-related death
0%

≥Grade 3 CRS
0%

≥Grade 3 Neurotoxicity*
2.6%

*epilepsy (fully resolved after methylprednisolone treatment)



1. Chengcheng Fu, et al. ASH 2021. Abstract 1751.

CT041: First-in-class CLDN18.2 CAR T with Breakthrough Efficacy Data¹



CT041 Highlights



- ✓ First-in-class CLDN18.2 CAR T
 - ✓ Optimized **scFv** with enhanced binding affinity and stability²
 - ✓ Optimized **preconditioning**
 - (FC + **low-dose Nab-Paclitaxel**)
 - ✓ Globally first solid tumor CAR T in **pivotal trial**
 - GC (3L+) Confirmatory Phase II trial in China: Ongoing
 - PC Adjuvant Therapy Phase I trial in China: Ongoing
-
- ✓ Designations: RMAT (FDA), PRIME (EMA), Orphan Drug (FDA & EMA)

1. Qi C, et. al. *Nat Med*. 2022 Jun;28(6):1189-1198
2. Jiang H, et al. *J Natl Cancer Inst*. 2019;111(4):409-418
3. Shitara K, et. al. *The Lancet Oncol*. 2018;19(11):1437-1448
4. Kang, Yoon-Koo et al. *The Lancet*. 2017;390(10111):2461-2471



ARTICLES

<https://doi.org/10.1038/s41591-022-01800-8>



OPEN

Claudin18.2-specific CAR T cells in gastrointestinal cancers: phase 1 trial interim results

18 GC/GEJ patients who had failed at least 2 prior lines of therapies at a dose 2.5×10^8 CAR T cells.

ORR

61.1%

DCR

83.3%

DOR rate at 6 months

57.1%

mPFS*

5.6 mos

mOS*

9.5 mos

*PFS and OS above were calculated from CAR T infusion date.

SOC in GC/GEJ patients who had failed at least 2 prior lines of therapies

Lonsurf (trifluridine/tipiracil) TAGS³

Opdivo (Nivolumab) **ATTRACTION-2⁴**

ORR
4.5%

mPFS
2.0 mos

mOS
5.7 mos

ORR
11.2%

mPFS
1.6 mos

mOS
5.3 mos

A Suite of Technology Platforms to Empower the Development of Next-Generation CAR T-cell Products



4 Strategic Pillars

to address major challenges of CAR T-cell therapies



Efficacy
against Solid
Tumors

CycloCAR[®] co-
expression of
IL-7 + CCL21



Safety
Profile

Minimize
safety
concerns
including CRS,
neurotoxicity



Patient
Accessibility

CARcelerate[™]
(one-day
manufacturing)
THANK-uCAR[®]
(differentiated
allogeneic platform)



Target
Availability

LADAR[®]
technology for
precise
targeting

Global Reach with Integrated R&D and Manufacturing Capabilities Complemented with Synergistic Partnership



Partnerships



(SZ: 000963)

Exclusive commercialization of zevor-cel in mainland China



moderna

(NASDAQ: MRNA)

Evaluate CT041 in combination with an mRNA Cancer Vaccine



inno.N

(KOSDAQ: 195940)

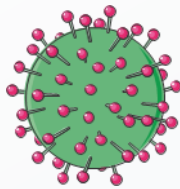
License of zevor-cel and CT032 in the Republic of Korea

Integrated Internal Capabilities to Maximize Development Speed, Robust Clinical/Commercial Supply, and Competitive Cost



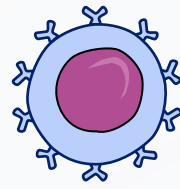
Plasmid

Clinical grade Plasmid DNA up to multiple-gram per batch



Lentiviral vectors

One batch of lentiviral vectors can support hundreds of batches of CAR T cells



CAR T cells

- Manufacturing success rate >95%
- Clinical grade CAR T cells up to 3×10^{10} cells/lot

Central lab

GLP, GCP compliant platforms covering

- Method development and validation
- Clinical sample test (PK/PD, immunogenicity, new biomarkers)

Companion Diagnostics

CDx development and registration

- CLDN18.2
- GPC3
- New Biomarkers

Bioprocess Analysis

Regulatory compliant well-characterized assays

- Kits development and manufacturing
- Cell/Molecular/Immunology assays

Nucleic acid and protein manufacturing

GMP grade nucleic acid and protein manufacturing for both clinical and commercialization

- Nuclease
- Guide RNAs
- Recombinant proteins & antibodies

Harnessing Manufacturing Capabilities in China and the U.S. for Maximized Synergies and Flexibilities



Xuhui, Shanghai

~200 CAR T batches annually



Jinshan, Shanghai

~2000 CAR T batches annually



Raleigh-Durham, North Carolina

~700 CAR T batches annually



“In China for global markets”

Lentiviral vectors

- CARsgen Shanghai Facility has been the manufacturer of lentiviral vectors for clinical trials the U.S.

CAR T cells

- Exploring using CARsgen shanghai facility to supply CAR T cells for global market

CARsgen's Strategic Development Roadmap



Establish Expand Explore



Establish

- Approval and Commercial launch
 - ✓ Zevor-cel (BCMA)
 - ✓ CT041 (CLDN18.2)

(Fast-to-market)

Expand

- Earlier lines of therapies
 - ✓ CT041 (CLDN18.2)
 - ✓ CT011 (GPC3 for HCC)
- New Targets
 - ✓ CT071 (GPRC5D)

(Maximize the value)

Explore

- New cancer types
 - ✓ KJ-C2320 (AML)
- Combination
 - ✓ CT041 + cancer vaccine
- New technology
- Allogeneic

(Explore the uncharted)

Financial Highlights – Higher Adjusted Loss and Adequate Cash into 2026

Selected Consolidated Financial Information

	Six months ended June 30,	
(RMB'000)	2023	2022
Research and Development Expenses	-323,313	-316,304
Operating Losses	-409,230	-367,692
Loss for the year	-404,472	-376,338
Adjusted net loss*	-385,726	-352,888

	As at June 30, 2023	As at December 31, 2022
Cash, Cash equivalents and Terms deposits	2,174,008	2,268,036
Bank borrowings	4,979	7,373



2023 Guidance

Continue to strengthen R&D efforts

Estimate of full year 2023 financial performances:

Expected adjusted net loss and net loss at similar level as those in 2022.

Cash, equivalents and deposits at the end of 2023 are expected to be

≥ 1.6 billion RMB

Expected adequate cash into

2026

* Adjusted net loss represent the net loss excluding the effect of certain non-cash items and one-time events, namely the fair value loss of the financial instrument issued to investors, the listing fee and share-based compensation.



Differentiated Pipeline in Multiple Myeloma

Multiple Myeloma: Significant Unmet Medical Needs

The 2nd most common hematologic malignancy

- An estimated ~560K patients worldwide will have MM by 2027

2022 Epidemiology

	
Incidence ~20K	Incidence ~30K
Prevalence ~110K	Prevalence ~110K
First-line treatable cases ~30K	First-line treatable cases ~30K
Second-line or later treatable cases ~40K	Second-line or later treatable cases ~25K

MM has a lower 5-year survival rate than other blood cancers (2000-2016 data)

5-year survival	Global ¹	US ²	China ¹	Japan ¹
Lymphoma	40-70%	68%	38%	57%
MM	30-50%	50%	25%	33%

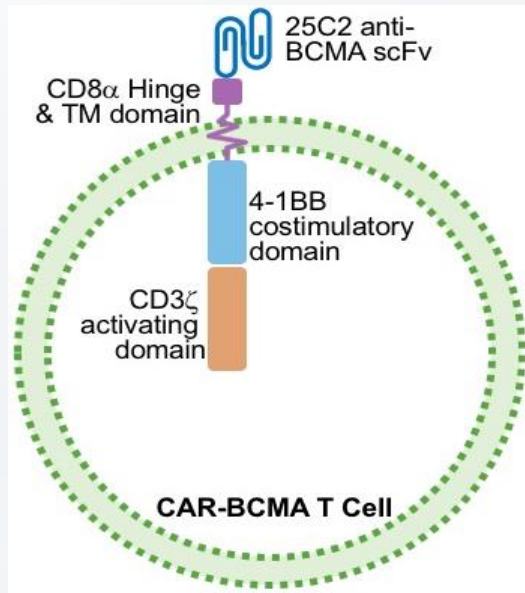
1. Allemani C, et. al. *The Lancet*. 2018 Mar 17;391(10125):1023-1075

2. Surveillance, Epidemiology, and End Results (SEER) Program; US, United States

Zevor-cel (CT053): BCMA CAR T with Optimized scFv to Enhance Efficacy and Safety

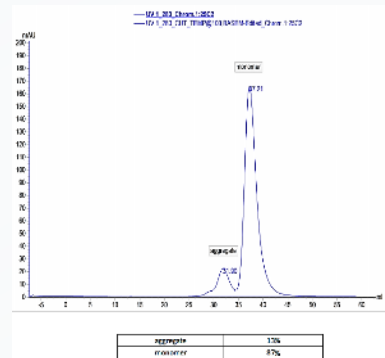
High Binding affinity (pM level)¹

	KD(M)
BCMA	4.548E-10



High stability

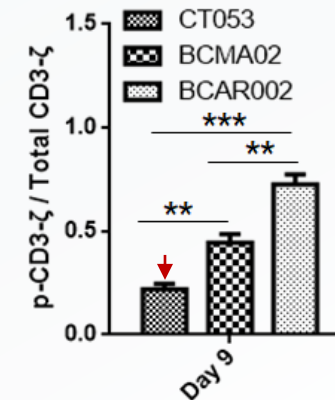
High Monomer Ratio
(~90%)



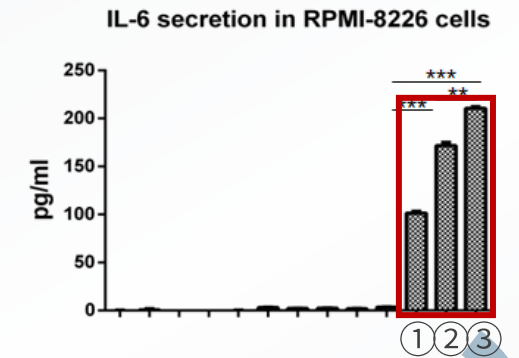
Reduced antigen-independent clustering

*BCMA02 CAR was made according to the construct ABECMA®
 **BCAR002 CAR was made according to the construct of CARVYKTI™

Less CD3 autophosphorylation than ABECMA® and CARVYKTI™



Less IL-6 expression than ABECMA® and CARVYKTI™



- ① CT053
- ② BCMA02 CAR
- ③ BCAR002 CAR

1. Yang, Min et al. *Haematologica* vol. 107,8 1960-1965. 2022 Aug 1

IIT and LUMMICAR-1 Efficacy and Safety Data



	China investigator-initiated trials ¹	China Phase I (LUMMICAR-1) ²	China Phase II (LUMMICAR-1) ³
Sample size	24	14	102 (60 with at least 6 months follow-up for efficacy analysis)
EMD+	41.70%	14.30%	10.8%
High risk Cytogenetic	50%	50%	45.1%
Prior therapies	5 (2-11) regimens	6 (3-11) regimens	6 (3-17) regimens
ORR	87.50%	100%	91.70%
CR/sCR rate	79.20%	78.60%	56.70% (34/60, not mature)
≥VGPR rate	83.3% (20/24)	92.9% (13/14)	88.3%
Median follow-up	17.4 months	37.7 months	9 months
mDOR	21.8 months	24.1 months	9m-rate 86.1%
mPFS	18.8 months	25.0 months	9m-rate 84.6%
MRD negative*	/	100%	100%
≥Grade 3 CRS	0	0	6.9%
≥Grade 3 NT	1/24 (4.2%)	0	0
Treatment related death	0	0	1

1. Yang M, et. al. *Haematologica*. 2022 Aug 1;107(8):1960-1965

2. Fu C, et. al. ASH 2023. 2023 Dec; Poster #4845

3. W Chen, et al. ASH 2022. 2022 Dec.

* In the patients achieved CR/sCR

LUMMICAR-2 Phase 2: Preliminary Data Suggest Competitive Efficacy and Safety Profile in the US



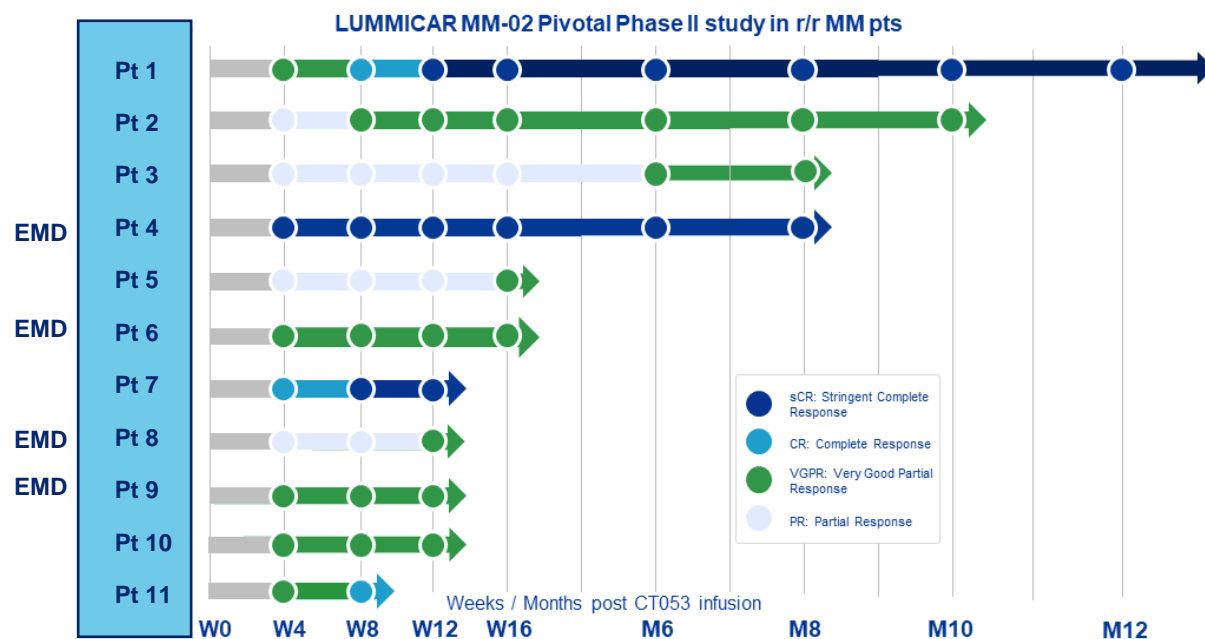
Competitive efficacy

- 100% responses at Week 4 (VGPR, CR or sCR) and ongoing
- Responses deepened with longer follow-up
- 100% MRD negative in all patients with available results at Week 4 by next-generation sequencing

Sample size	17 treated, 11 evaluated
Patient Population	5/17 (29.4%) EMD 9/17 (52.9%) high risk
No. of prior therapies, median (range)	6 (4-17)
ORR	11/11 (100%)
CRS	10/17 (59%)
Grade 1 CRS	6/17 (35%)
Grade 2 CRS	4/17 (24%)
≥Grade 3 CRS	0
ICANS	3/17 (17.6%)
Grade 1 ICANS	2/17 (11.8%)
Grade 2 ICANS	0
Grade 3 ICANS	1/17 (5.9%)
Toxicity Mgmt: tocilizumab	5/17 (29%)
Toxicity Mgmt: corticosteroid	1/17 (5.9%)
Treatment related death	0

Best-in-class safety profile

- No treatment related death, no patient was admitted to ICU for CRS/ICANS
- No grade 3 or higher CRS (41% without any grade of CRS)
- 1/17 (5.9%) Grade 3 ICANS and fully resolved; No parkinsonism
- Minimal use of medication for toxicity mgmt (29% tocilizumab rate)
- 3 patients have received outpatient treatment




Data cutoff date: August 19, 2022

CT071: Differentiated GPRC5D CAR-T with CARcelerate™ Platform



Product



- Fully-human scFV generated by CARsgen
- For relapsed R/R Multiple Myeloma or R/R Primary Plasma Cell Leukemia
- Proprietary CARcelerate™ platform
 - ✓ Manufacturing Time
 -  CARcelerate™: < 2 days
 -  Conventional: > 10 days
 - ✓ Younger, healthier, and possibly more potent CAR T
 - ✓ Greater supply capacity, lower COGs, and better patient's access

Clinical Development Status



- China investigator-initiated trial (NCT05838131) **Ongoing**
- ✓ Promising preliminary clinical data



- **IND** clearance by FDA (Dec 2023)



A photograph of an elderly couple smiling and looking towards the camera. They are positioned in front of a dense background of green foliage, which includes some branches with small yellow flowers and red berries. The man on the left has white hair, a beard, and wears glasses and a dark jacket. The woman on the right has short white hair and is also smiling. The overall scene is bright and natural.

Claudin18.2 Franchise Pipeline Products

Addressing Large Population of Claudin18.2 Positive Tumors with Significant Unmet Medical Needs

According to *Global Cancer Statistics 2020*:

>1.5 million incident case for just gastric cancer and pancreatic cancer combined worldwide

	Gastric cancer 	Pancreatic cancer 
Incidence	1,089K	496K
Mortality	769K	466K

Gastric Cancer



5-year survival rate of advanced gastric cancer is 5-20%

3L+

ORR
4.5%

mPFS
< 2 mos

mOS
< 6 mos

Pancreatic Cancer



5-year survival rate ~6%

2L+

No effective SOC

Claudin18.2 Franchise Offers a Comprehensive Multi-modal Solution for Patients



CT041

First-in-class Claudin 18.2
CAR T

CT048

IL-7 and CCL-21 co-
expression to enhance
efficacy

CARsgen proprietary
Claudin18.2 IHC test kit with
high sensitivity and specificity

Gastric Cancer



($\geq 1+$, any percentage)
77%



Pancreatic Cancer



($\geq 1+$, any percentage)
66%

CT041: Global First-in-Class CAR T for Claudin18.2-positive Solid Tumors



Product 	Designations 	Clinical Development Plan 
<ul style="list-style-type: none"> • Optimized scFv¹ <ul style="list-style-type: none"> ✓ High binding affinity ✓ High stability 	<ul style="list-style-type: none"> • RMAT (FDA) • PRIME (EMA) • Orphan Drug (EMA & FDA) 	 <ul style="list-style-type: none"> • GC (3L+) Confirmatory Phase II trial in China: Ongoing • PC Adjuvant Therapy Phase I trial in China: Ongoing • Plan to submit the NDA in 2024
<ul style="list-style-type: none"> • Innovative FNC (FC + low-dose Nab-Paclitaxel) preconditioning regimen to enhance penetration and anti-tumor effect of CAR T cells 	<div data-bbox="889 771 1592 853"> Collaboration  </div> <p>CARsgen and Moderna, Inc. (Nasdaq: MRNA) have initiated a collaboration agreement to investigate of CT041 in combination with Moderna's investigational Claudin18.2 mRNA cancer vaccine</p>	<p>Expansion of clinical development in</p> <ul style="list-style-type: none"> • earlier lines of therapy • additional claudin18.2 positive cancers

1. Jiang H, et al. *J Natl Cancer Inst.* 2019;111(4):409-418

CT041: Clinical Data from China and the United States



	China investigator-initiated trial (NCT03874897) ^{1,2}	Phase Ib/II in China (NCT04581473) ³	Phase 1b in the US (NCT04404595) ⁴
Sample size	28 GC/GEJ 5 PC 4 other GI cancers	14 GC/GEJ	7 GC/GEJ 12 PC
ORR in GC/GEJ	61.1%*	57.1%	42.9% (GC/GEJ) 16.7% (PC)
Median follow-up	7.6 months*	8.8 months	8.9 months
mPFS	5.6 months*	5.6 months	5.7 months (GC/GEJ) 2.7 months (PC)
mDOR	6.4 months*	Not reported	6.9 months (GC/GEJ) 3.4 months (PC)
mOS	9.5 months*	10.8 months	8.9 months (GC/GEJ) 8.9 months (PC)
≥Grade 3 CRS	0	1**	0 (GC/GEJ) 2 (PC)
≥Grade 3 ICANS	0	0	0
Treatment related death	0	0	0
*18 patients with GC/GEJ who had failed at least 2 prior lines of therapies at a dose 2.5×10^8 CAR T cells.			
**One patient was related to the investigational disease (lung metastasis of GC) and fully recovered after corticosteroids treatment.			

1. Qi C, et al. Annals of Oncology (2021) 32 (suppl_5): S1040-S1075. 10.1016/annonc/annonc708

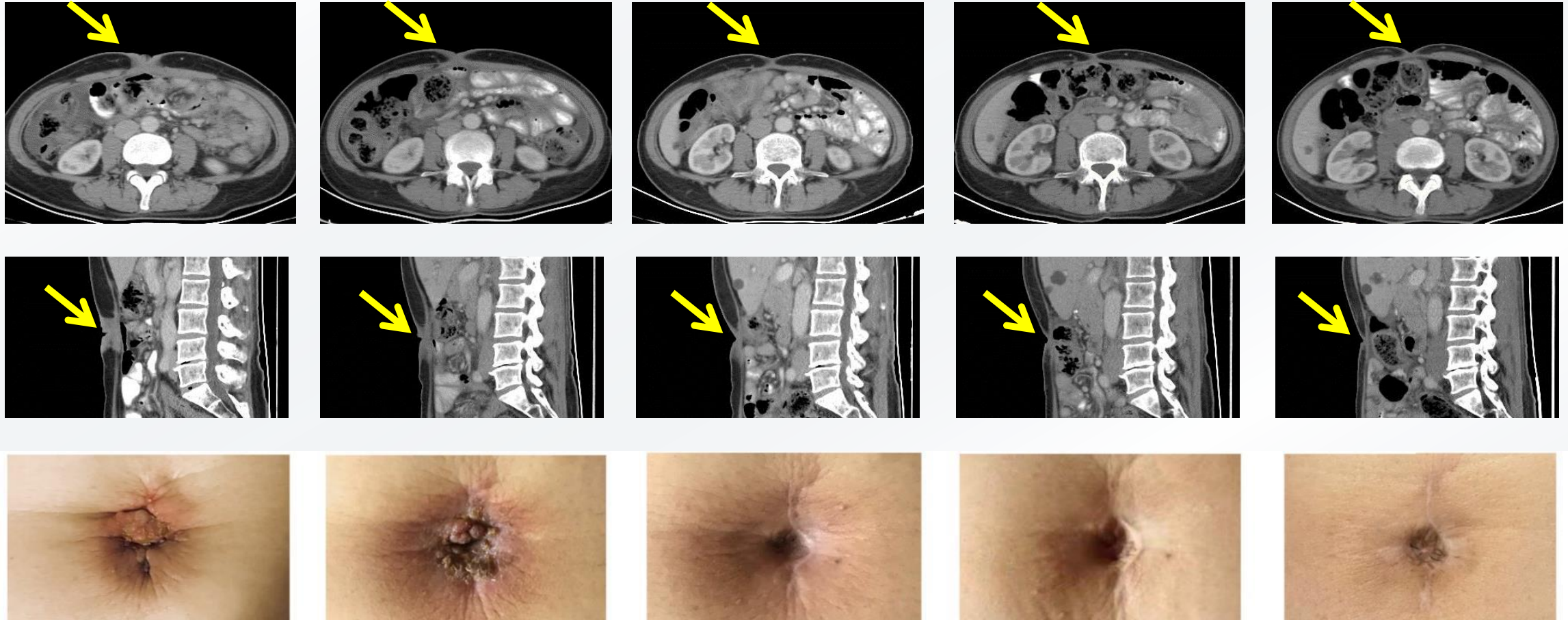
2. Qi C, et. al. *Nat Med*. 2022 Jun;28(6):1189-1198

3. Qi C, et. al. ASCO 2022. 2022 Jun; Abstract #4017

4. Botta G, et. al. ASCO GI 2024. 2024 Jan; Abstract #356

Case Sharing : Long-term Tumor Response

Pt08, 57/F, GC with peritoneal metastasis and Sister Mary Joseph nodule, had received 3 prior lines of therapy including PD-1 antibody, achieved PR and ongoing response more than 56 weeks, CLDN18.2 2+ 80%.



Pre-infusion

Post-infusion W4

W12

W24

W40

A close-up portrait of an elderly man with dark, curly hair and a white mustache, smiling warmly. The background is a soft-focus green, suggesting foliage. The image is partially obscured by a white banner at the bottom.

GPC3 Pipeline Products



Hepatocellular Carcinoma: The Third Leading Cause of Cancer Mortality Worldwide

2022 HCC Epidemiology in the US and China



HCC 5-year survival rate

	Global ¹	US ²	China ³
HCC, all stages	18%	20%	12%

1. Lin L, et al. *Liver Cancer*. 2020 Sep;9(5):563-582
2. 2022 American Cancer Society medical information
3. Zheng R, et al. *Chinese Journal of Cancer Research*, 2018 Dec;30(6):571-579

CT011: Autologous GPC3 CAR T

GPC3: high expression and specificity

- GPC3 is a cell surface protein that belongs to the acetyl heparan sulfate proteoglycan family
- High expression in HCC and no expression in other 21 tested tissues, including heart, spleen, lung and kidney. **It is an Ideal Target for CAR T Cells to Treat HCC.**
- GPC3 Expression in HCC with CARsgen IHC test*: **70.7%** (medium and high: 54.6%; low:16.1%)



GPC3 Expression

- GPC3 is also overexpressed in other cancer types >60% of lung squamous cell carcinoma (SCC)

*CARsgen internal data

CT011

CT011 is an autologous GPC3 CAR T-cell product candidate for the treatment of hepatocellular carcinoma (HCC).

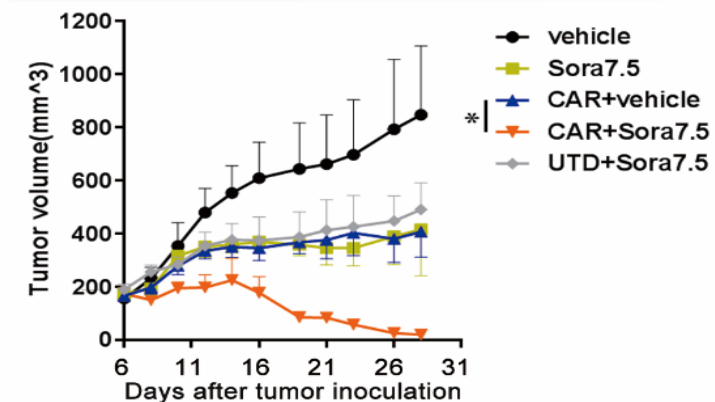
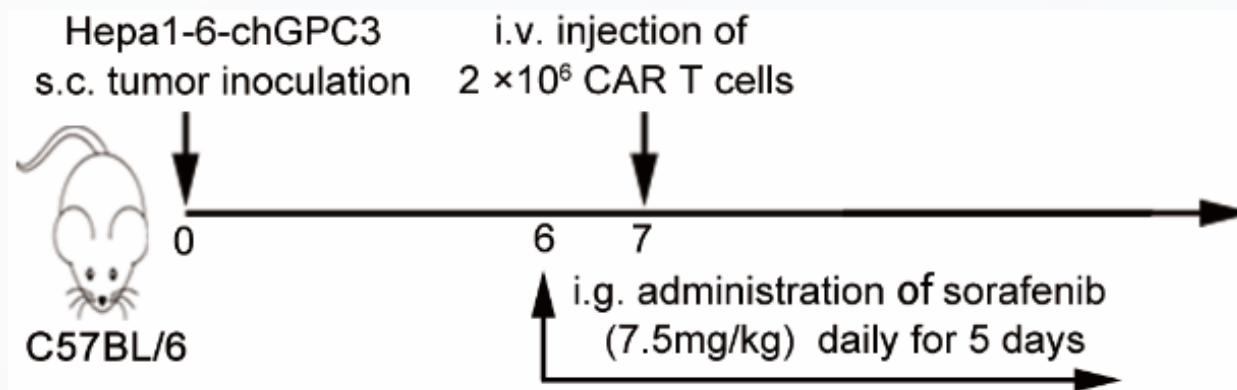
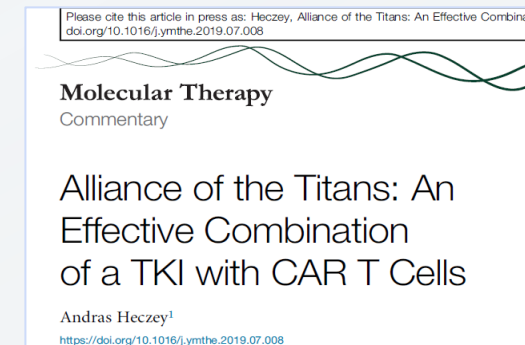
Clinical Development

- Investigator-initiated trials **Completed**
- Phase I trial for GPC3-positive solid tumor (**China's first** IND clearance for CAR T-cell therapy against solid tumors) **Completed**
- Phase I trial for GPC3-positive stage IIIa hepatocellular carcinoma at high risk of recurrence after surgical resection **Ongoing**

GPC3 CAR T in Combination with Sorafenib in HCC Mouse Models

Synergistic effect of CAR T cells and Tyrosine Kinase Inhibitors

- Sorafenib augmented the antitumor effects of mCAR T cells¹
- Promoted IL-12 secretion in tumor associated macrophages (TAMs) and cancer cell apoptosis



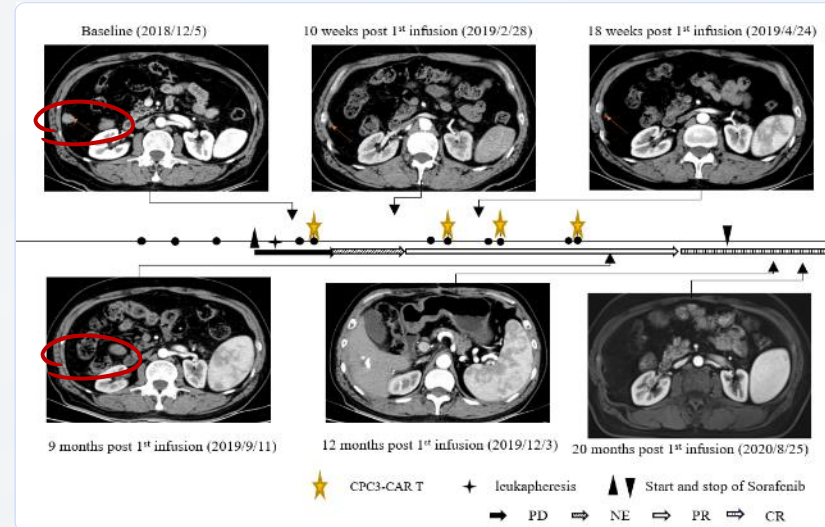
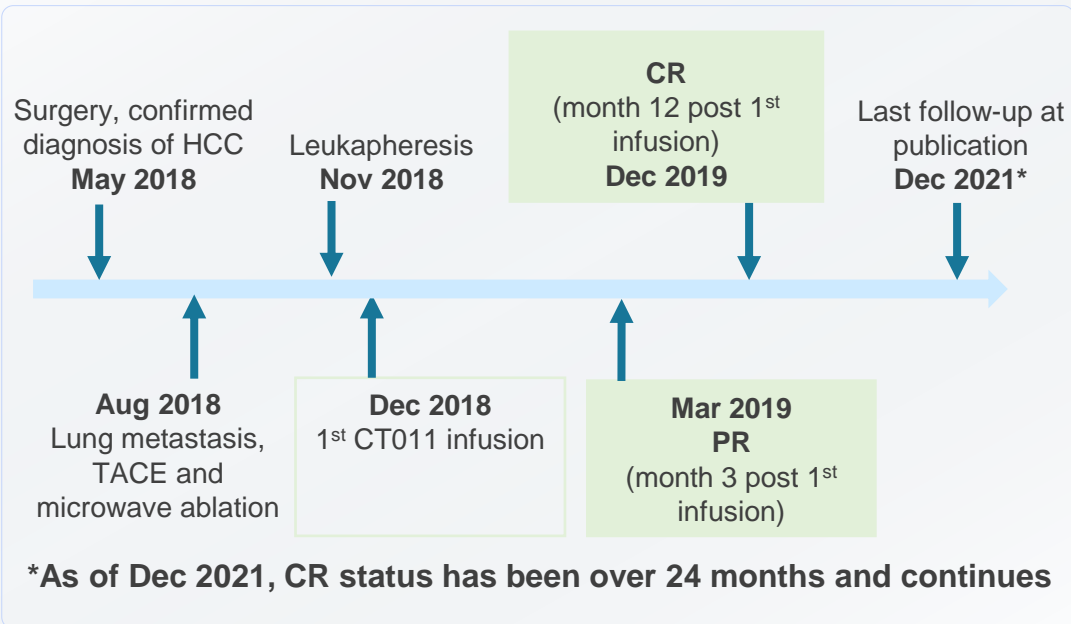
1. Wu X, *Mol Ther.* 2019 Aug 7;27(8):1483-1494

Case Report in *Frontiers in Immunology* : Complete Response and Long-term Survival (CT011 + Sorafenib for 1L HCC)

Clinical evidence supporting the curative potential of CAR T cells in early-line treatment of solid tumors¹

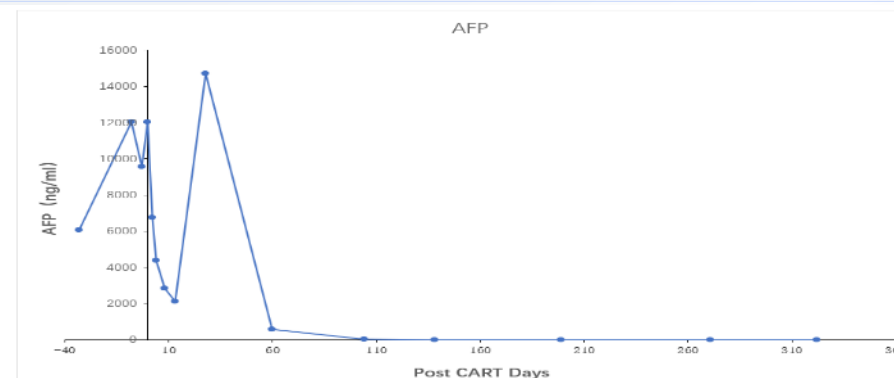
NCT03302403

- A 60-year-old Asian male with HBV related HCC
- Liver recurrence and lung metastasis
- Previously treated with liver tumor resection, trans-arterial chemoembolization therapy and interventional ablation.
- GPC3 IHC test: ++ and +++ 70%



No. 3 target lesion

- ~16.76 mm at baseline
- At 9 months, this lesion completely disappeared without relapse



The AFP level declined to a normal value 3 month post 1st infusion

1. Sun, Hongwei, et al. *Frontiers in Immunology*. 13 (2022)

Case Report in *Frontiers in Immunology* : Complete Response and Long-term Survival (CT011 + Sorafenib for 1L HCC)



The former patient is playing *Taiji* & doing exercises.

From the moment I was diagnosed with liver cancer in 2018, I received a variety of treatment methods, but none yielded the desired results. **When I got treated with CAR T-cell therapy, the situation started to change and eventually my liver cancer was cured.**

Today, I am in good health. My strength and vitality have returned to a level like before. I do regular physical activities, including walking, hiking, and swimming, a hobby of years. I even learned new swimming techniques, including freestyle, backstroke, butterfly, and diving. On average, I swim about a kilometer each day.

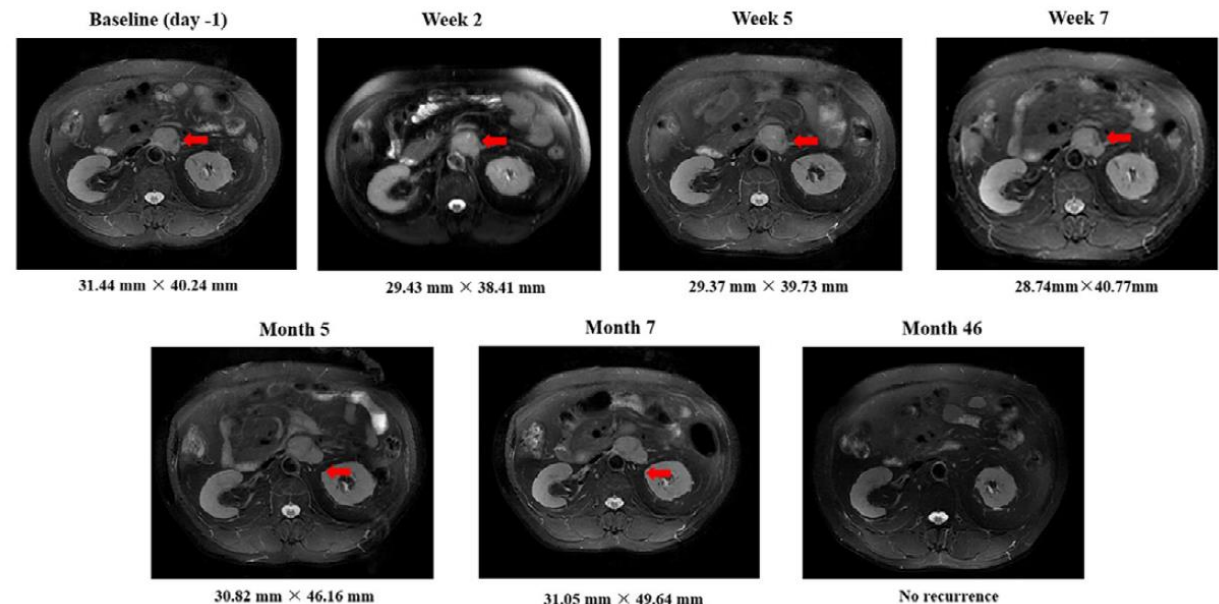
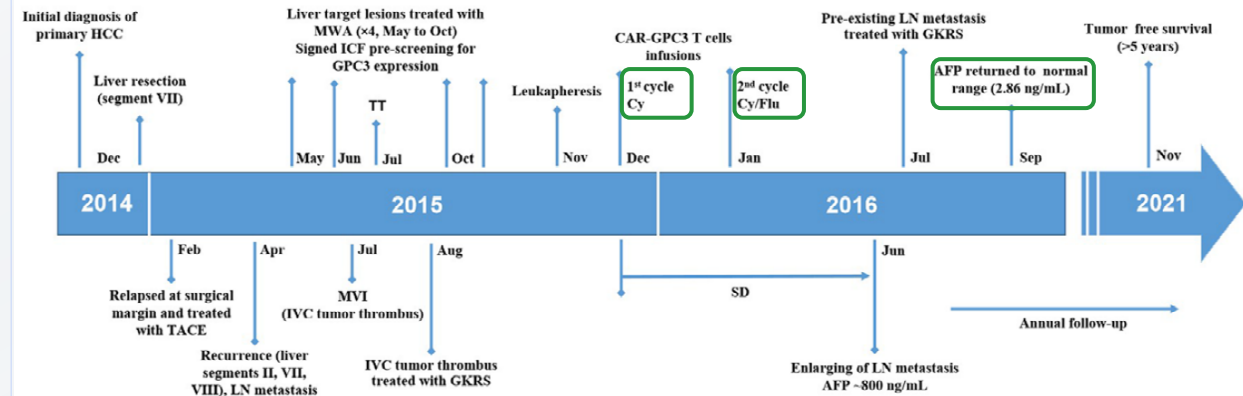
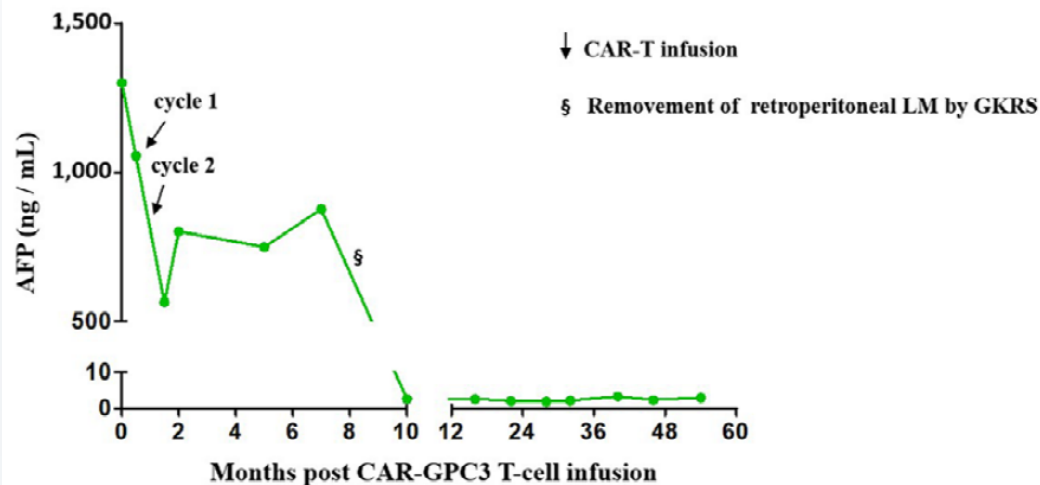
My quality of life is quite high, allowing me to fulfill my duties as a son to my parents too. My household has once again become a hub of energy and laughter, particularly with my two adorable granddaughters around. Filled with gratitude, I strive to give back to my family and those in need in the society.

- All the information above is subjective to the patients.
- CARsgen has obtained authorization for patients' personal information to be shared for non-promotional purposes.

Case Report in *Cancer Communications* : Disease-free over 7 Years

NCT02395250

- A 54-year-old male with Ib-stage HCC
- Multifocal lesions in the liver, IVCTT, and retroperitoneal lymphatic metastasis
- Previously treated with surgical resection, TACE and MWA, GKRS
- The latest follow-up date is September 4, 2023, after the publication of *Cancer Communications*



1. Shi Y, et. al. *Cancer Commun* (Lond). 2023 Jul 21

Case Report in *Cancer Communications* : Disease-free over 7 Years



the former patient

I was diagnosed with liver cancer in 2014, and my condition was very poor at that time. I could not tolerate the chemotherapy very well and the cancer kept progressing despite all the therapies received. I wanted to give up but was persuaded by my family to participate in the clinical trial as the last hope. **After receiving the treatment, my condition gradually improved and got cured finally without recurrence till today.**

Not anticipating that I would survive till today, **I cherished the time and traveled to many places in China and abroad**, such as Australia, Guizhou, Yinchuan, etc. During winter, I live in Hainan in warm southern China, while during summer, I live in my hometown in cool northeastern China, just like a migrant bird.

I can participate in various activities such as fishing, playing basketball, etc. I feel that I am leading a normal life as a healthy person.

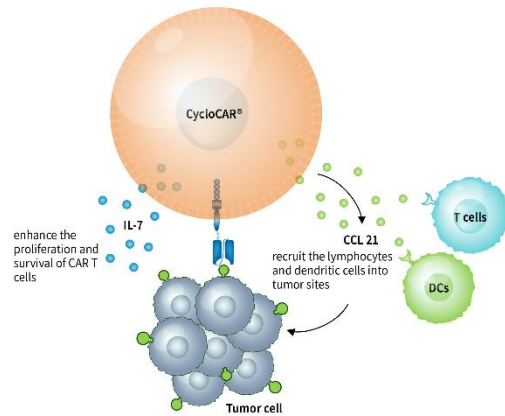
- All the information above is subjective to the patients.
- CARsgen has obtained authorization for patients' personal information to be shared for non-promotional purposes.



Technology Platforms

CycloCAR®: Enhanced Anti-tumor Effect and Potentially Lymphodepletion Free

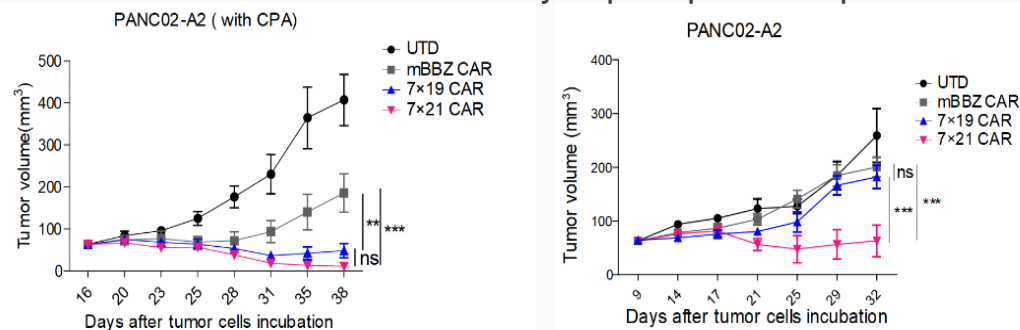
CycloCAR® (CYtokine (IL7) and Chemokine (CCL21) LOaded CAR) enables the CAR T cells to co-express IL7 and CCL21



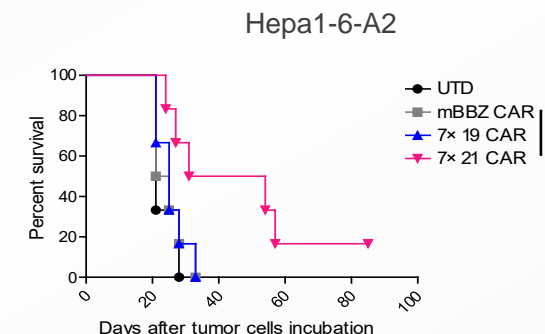
Advantages of CycloCAR® (7×21) technology:

- Increased accumulation of T cells and DC cells in tumor tissue
- Could efficiently suppress tumors with heterogeneous target expression
- Potentially lymphodepletion free

7X21 CAR T showed better antitumor activities in pancreatic cancer model with and without cyclophosphamide precondition¹



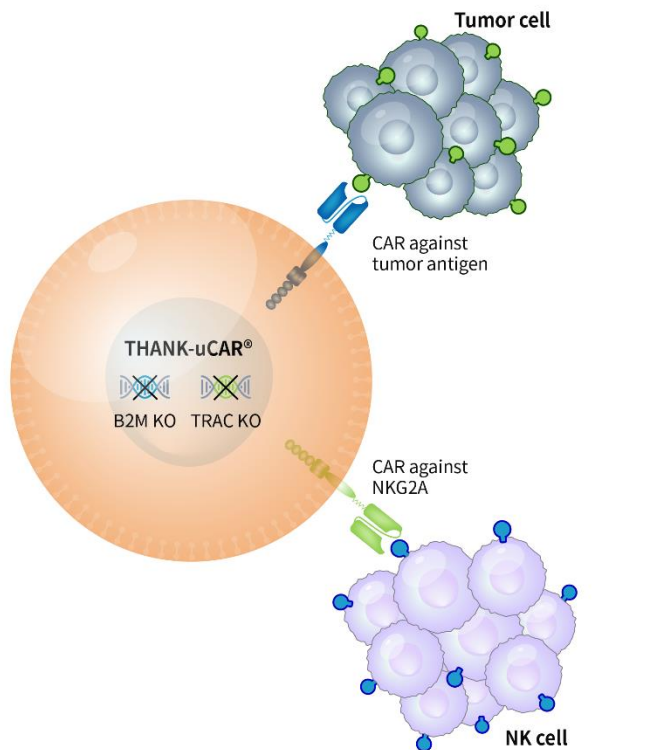
7x21 CAR T could suppress tumor xenografts with heterogenous target expression (CLDN18.2+ and CLDN18.2- tumor cells mixed at 1:1)¹



1. Luo H, et. al. *Clinical Cancer Research*. 2020 Oct 15;26(20):5494-5505

THANK-uCAR®: Market-Differentiating uCAR T Platform to Address Immune Evasion

Target and Hinder the Attack of NK cells on Universal CAR T cells (THANK-uCAR®)



Allogeneic universal CAR (uCAR) T cells must evade rejection by the host immune system, or HvGR

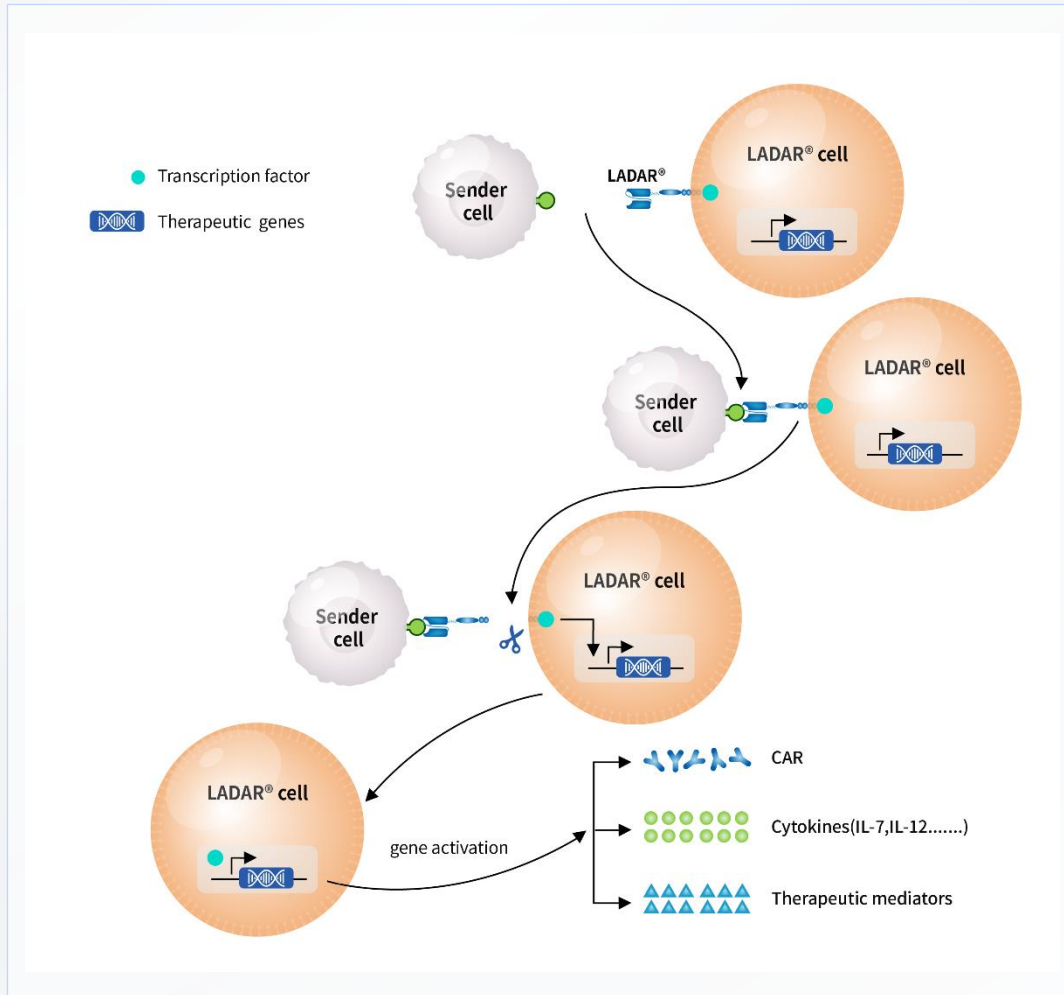
- B2M knockout to overcome HvGR from host T cells, but NK cells attack uCAR T cells without B2M

THANK-uCAR® to better address HvGR

- Anti-NKG2A CAR protects the uCAR T cells from NK cell lysis
- NK cells could act as “feeder cells” for uCAR T cells, thereby enhancing the expansion of uCAR T cells

HvGR: host versus graft reaction
GvHD: graft versus host disease

LADAR®: A Powerful Technology for Precise Targeting



LADAR®: Local Action Driven by Artificial Receptor

LADAR® is an artificial receptor that only induces the therapeutic protein expression in the presence of the LADAR ligand, leading to local antitumor activity, thereby:

- Significantly reducing the risk of side effects, such as on-target off-tumor toxicities
- Potentially making more targets available for cell therapies

Advantages over SynNotch^{1,2}:

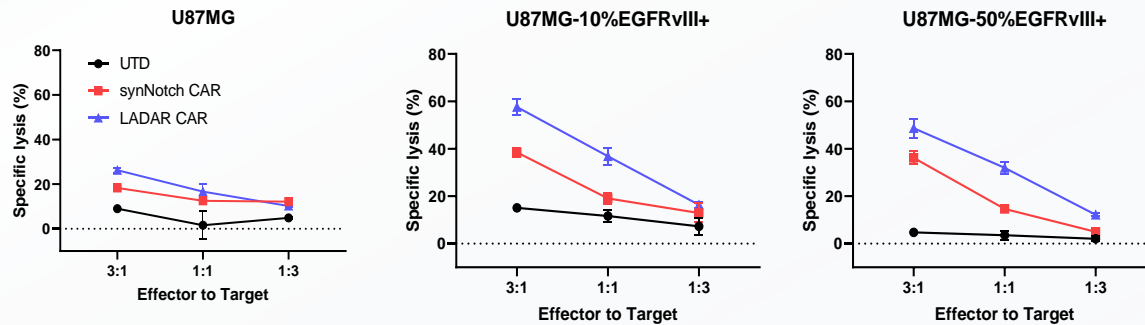
- LADAR® is smaller than SynNotch (sparing additional room for >200 amino acids)
- Significantly higher sensitivity to low-level sender antigen expression

1. Morsut L, et. al. *Cell*. 2016 Feb 11;164(4):780-91

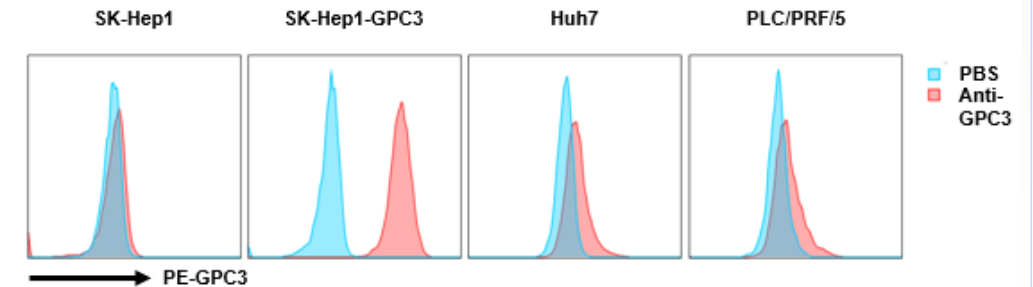
2. Roybal KT, et. al. *Cell*. 2016 Oct 6;167(2):419-432

LADAR®: A Powerful Technology to Address On-target Off-tumor Toxicity, or Systemic Toxicity of Therapeutic Proteins

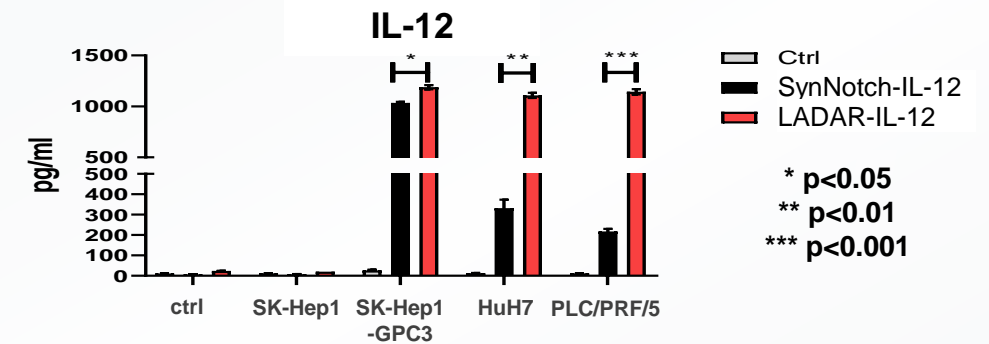
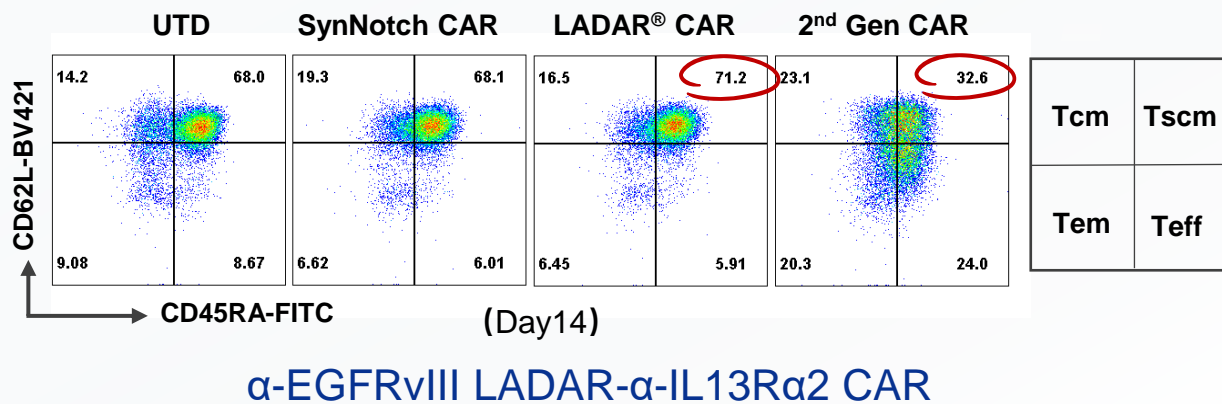
Stronger cytotoxicity than SynNotch



Higher sensitivity to low level of antigen



High fraction of LADAR® T cells remain as stem memory T cells



LADAR® T cells induced IL-12 expression 4-6-fold the level produced by SynNotch T cells in the presence of low-level GPC3 expression


External Partnerships



Commercialization Collaboration

- Partner  华东医药股份有限公司
HUADONG MEDICINE CO., LTD.
(SZ: 000963)
- Product Zevor-cel (BCMA CAR T)
- Territory Mainland China
- Rights Exclusive commercialization
- Upfront payment RMB200 million
- Regulatory and commercial milestone payments up to RMB1,025 million
- CARsgen will continue to be responsible for the development, regulatory approval, and manufacturing of CT053 in mainland China.

Co-development

- Partner  moderna
(NASDAQ: MRNA)
- Product CT041 (Claudin18.2 CAR T)
- Preclinical studies and a phase I clinical trial to evaluate CT041 in combination with Moderna's Claudin18.2 mRNA cancer vaccine.

License Agreement

- Licensee  inno.N
(KOSDAQ: 195940)
- Products
CT032 (CD19 CAR T)
CT053 (BCMA CAR T)
- Territory the Republic of Korea
- Milestone payments USD50 million
- Royalties up to double digit percentage on net sales

Continue to establish additional external partnerships with leading research institutes and pharmaceutical companies on technology and product licenses



Making Cancer Curable