

# Corporate Presentation

June 2022



# Cautionary Note Regarding Forward-Looking Statements

**This presentation contains forward-looking statements about Sana Biotechnology, Inc.** (the “Company,” “we,” “us,” or “our”) within the meaning of the federal securities laws. All statements other than statements of historical facts contained in this presentation, including, among others, statements regarding the Company’s strategy, expectations, cash runway and future financial condition, future operations, and prospects, are forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as “aim,” “anticipate,” “assume,” “believe,” “contemplate,” “continue,” “could,” “design,” “due,” “estimate,” “expect,” “goal,” “intend,” “may,” “objective,” “plan,” “positioned,” “potential,” “predict,” “seek,” “should,” “target,” “will,” “would” and other similar expressions that are predictions of or indicate future events and future trends, or the negative of these terms or other comparable terminology. The Company has based these forward-looking statements largely on its current expectations, estimates, forecasts and projections about future events and financial trends that it believes may affect its financial condition, results of operations, business strategy and financial needs. In light of the significant uncertainties in these forward-looking statements, you should not rely upon forward-looking statements as predictions of future events. These statements are subject to risks and uncertainties that could cause the actual results to vary materially, including, among others, the risks inherent in drug development such as those associated with the initiation, cost, timing, progress and results of the Company’s current and future research and development programs, preclinical and clinical trials.

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# Sana Biotechnology

## Engineered Cells as Medicines

Ability to modify the genome and use engineered cells as medicines has the potential to be one of the most important advances in healthcare over the next several decades:

- Nearly every disease is caused by damage to or dysfunction of a cell
- Sana's ambition is to repair or replace any cell in the body

Platform progress, broad capabilities, and strong balance sheet enable us to execute on a broad vision:

- Goal: allo T and *in vivo* CAR T INDs this year with ~2 INDs per year going forward
- Building expertise in key areas: delivery of genetic material, gene modification, immunology, biology, and manufacturing
- \$657M cash and investments as of March 31, 2022; expect cash runway into 2025 enabling multiple data readouts across our platforms based on current timelines for lead programs
  - Slowed pace of investment for some programs with INDs expected in 2024+

# Sana goal: Repair cells in the body when possible or replace them when needed

## *in vivo* Cell Engineering

Repair and control the genes of any cell in the body

### **Deliver any payload...**

(DNA, RNA, protein, organelle, integrating vs non-integrating)

### **To any cell...**

(unlimited volume of distribution)

### **In a specific...**

(e.g., just T cell)

### **And repeatable way**

(limit immunogenicity)

## *ex vivo* Cell Engineering

Replace any cell in the body

### **Manufacture any cell at scale...**

### **That engrafts...**

(the right cell in the right environment)

### **Functions...**

(understand exact phenotype desired)

### **And persists**

(overcome immune rejection and cellular signaling, such as apoptotic signaling)

# Sana's platforms, technology, and programs

Platform	Technology	Programs (Cell Types)	Therapeutic Area	Pre-clinical Product Candidate	Potential Indications
ex vivo cell engineering	Hypoimmune donor-derived	T cells	Oncology	SC291 [CD19]	NHL/ALL/CLL
				SC276 [CD22 (+CD19)]	NHL/ALL/CLL
				SC255 [BCMA]	Multiple myeloma
	Hypoimmune stem cell-derived	Beta cells	Diabetes	SC451	Type 1 diabetes
	Stem cell-derived (to migrate to hypoimmune)	Glial progenitor cells	Central nervous system (CNS)	SC379	Huntington's disease
					Pelizaeus-Merzbacher disease
	Cardiomyocytes	Cardiovascular	SC187	Secondary progressive multiple sclerosis	
in vivo cell engineering	Fusogen	T cells	Oncology	SG295 [CD8/CD19]	NHL/ALL/CLL
				SG239 [CD8/BCMA]	Multiple myeloma
				SG242 [CD4/CD19]	NHL/ALL/CLL
				SG221 [CD4/BCMA]	Multiple myeloma
				SG233 [CD8/CD22 (+CD19)]	NHL/ALL/CLL
		Hepatocytes	Liver-related genetic disorders	SG328	OTC <sup>1</sup>
		Hematopoietic stem cells	Hemoglobinopathies	SG418	Sickle cell disease
					Beta-thalassemia

<sup>1</sup>Omithine transcarbamylase deficiency



# Hypoimmune technology: Protecting cells from immune rejection

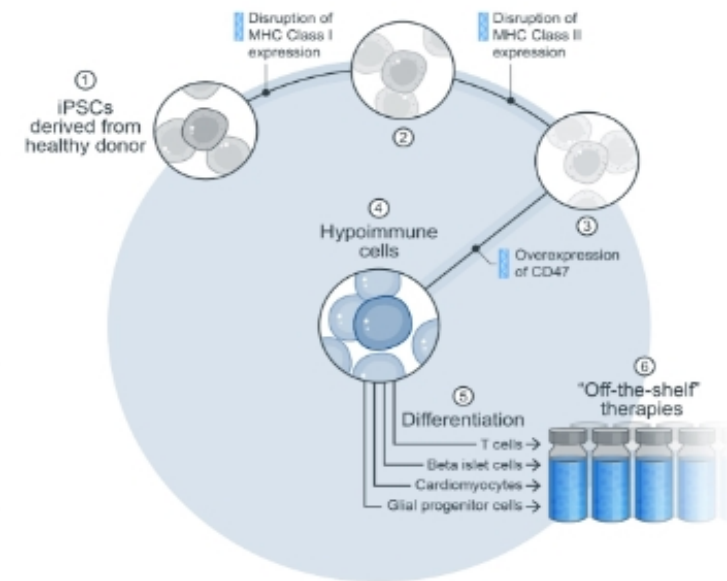
**Sana approach: Leverage insights from nature to create hypoimmune cells (HIP)**

“Allogeneic” fetus:

- Half of fetal proteins are from the father, not the mother.
- However, the fetus is not rejected by the mother.



*How can we protect our engineered cells from getting attacked from the recipient's immune system?*

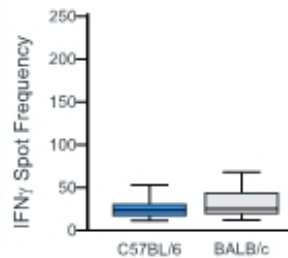


# Hypoimmune cells evade rejection from the adaptive and innate immune system in mice

## Evade the adaptive immune system

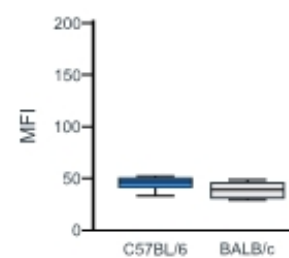
### T cell Activation (ELISPOT)

No systemic T cell activation with HIP cell transplantation

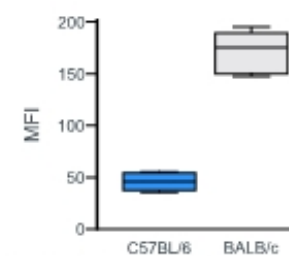
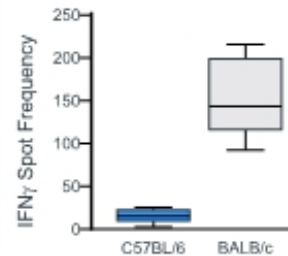


### IgM Binding (FACS)

No binding of donor-specific antibodies against HIP cells



### Unmodified iPSC



Representative of results across 5 mice for the unmodified arm and across 6 mice for the hypoimmune arm.

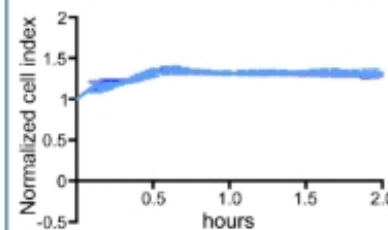
## Evade the innate immune system

### NK Cell Killing

No NK cell killing of HIP cells

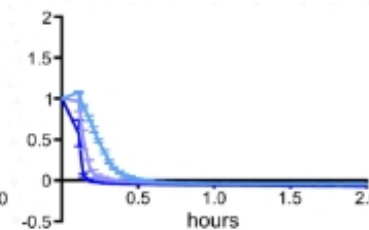
### Wildtype Unmodified Cells

No killing of unmodified cells by NK cells



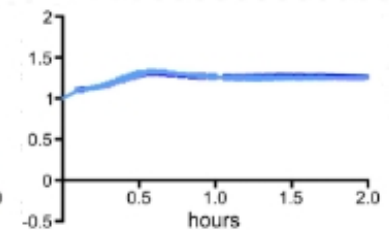
### MHC Class I/II Disruption

Killing of partially edited iPSC; HLA I/II knockout by NK cells



### MHC Class I/II Disruption & CD47 Overexpression

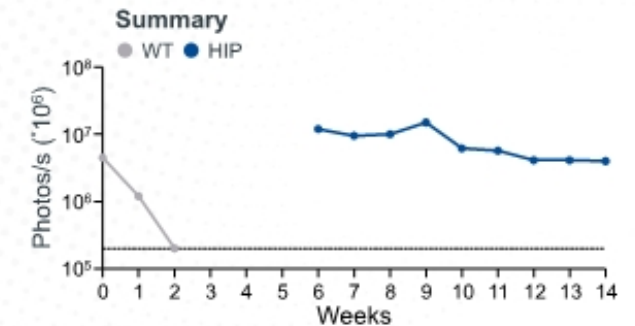
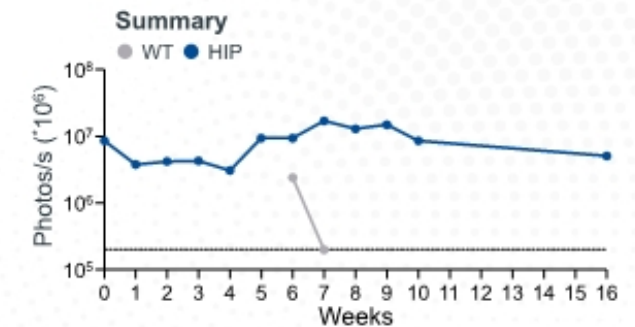
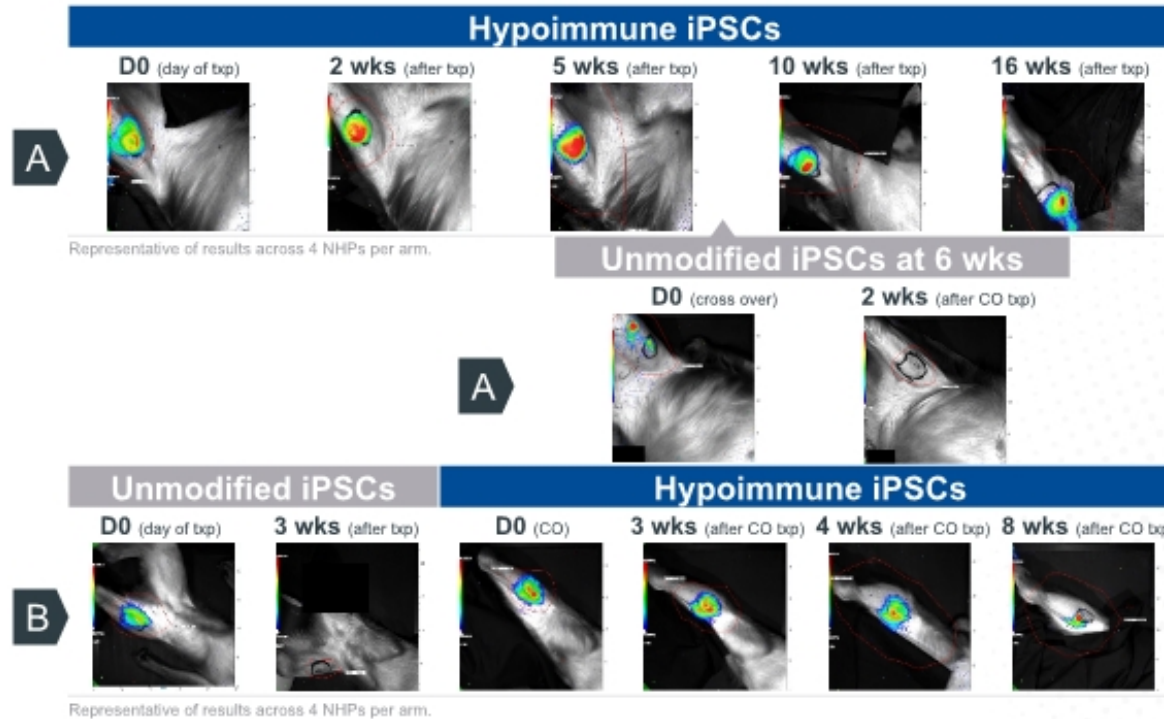
No killing of HIP cells by NK cells



— C57BL/6 mNK cells:miECs 0.5:1  
— C57BL/6 mNK cells:miECs 0.8:1  
— C57BL/6 mNK cells:miECs 1:1

Deuse T, ..., Schrepfer S. *Nat Biotechnology*. 2019; 37:252-258

# Hypoimmune cells survive *in vivo* in NHP while unmodified iPSCs get rejected



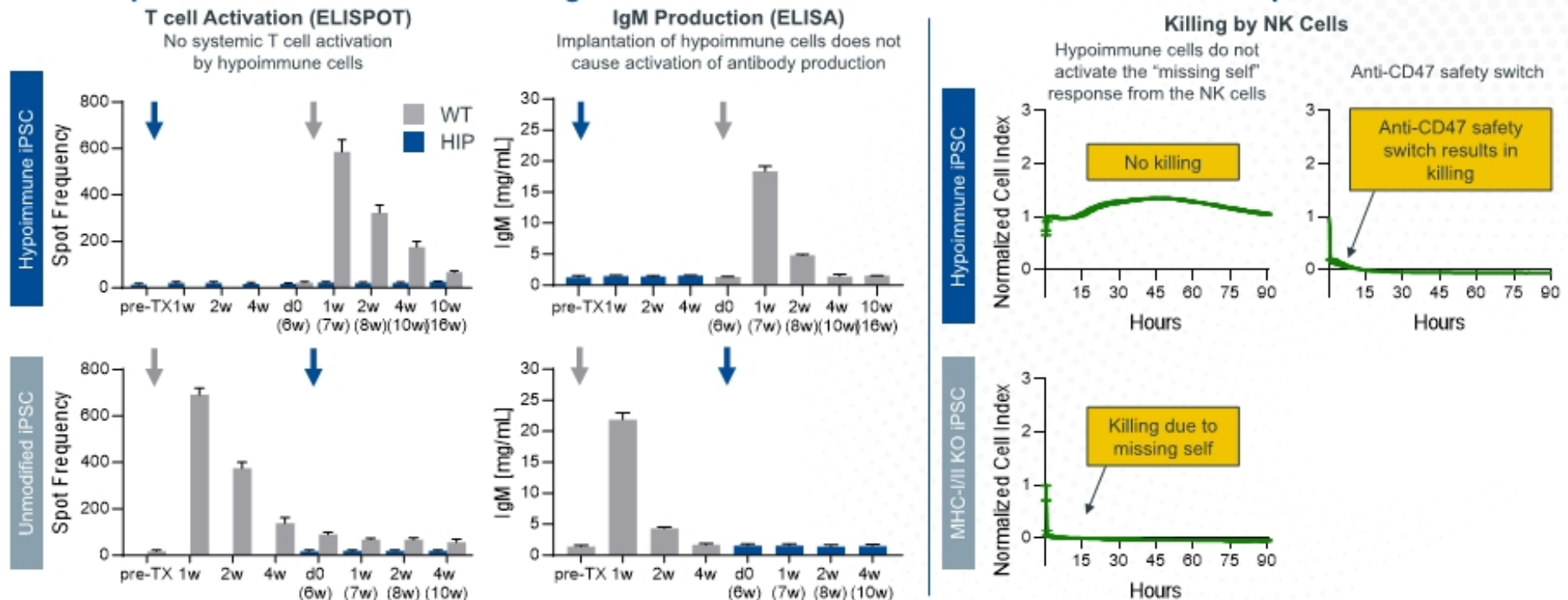
• NHP unmodified iPSCs (wt) & NHP hypoimmune iPSCs (HIP) were transplanted into 8 allogeneic recipients

CO, cross over; Txp, transplant



# Hypoimmune cells evade rejection from the adaptive and innate immune system in NHPs

Transplantation of NHP iPSCs into allogeneic NHPs: immune evasion is achieved even after prior sensitization



Representative of results across 4 NHPs per arm.

# Sana is pursuing a broad *ex vivo* cell engineering strategy

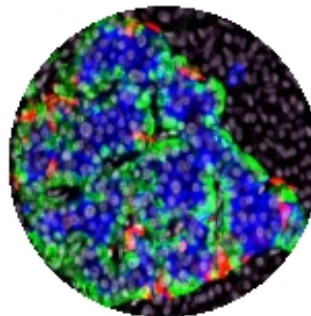
Transforming *ex vivo* cell engineering through development of hypoimmune cell platform

Differentiate pluripotent stem cells with hypoimmune edits

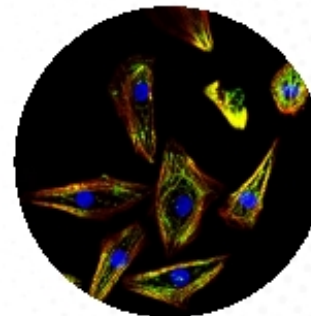
Programs that benefit from, but do not require hypoimmune edits



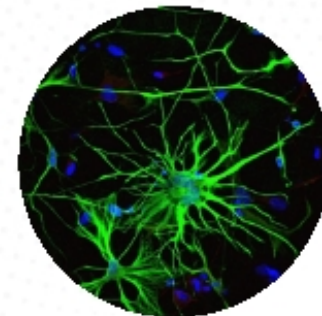
T cells



Pancreatic islets



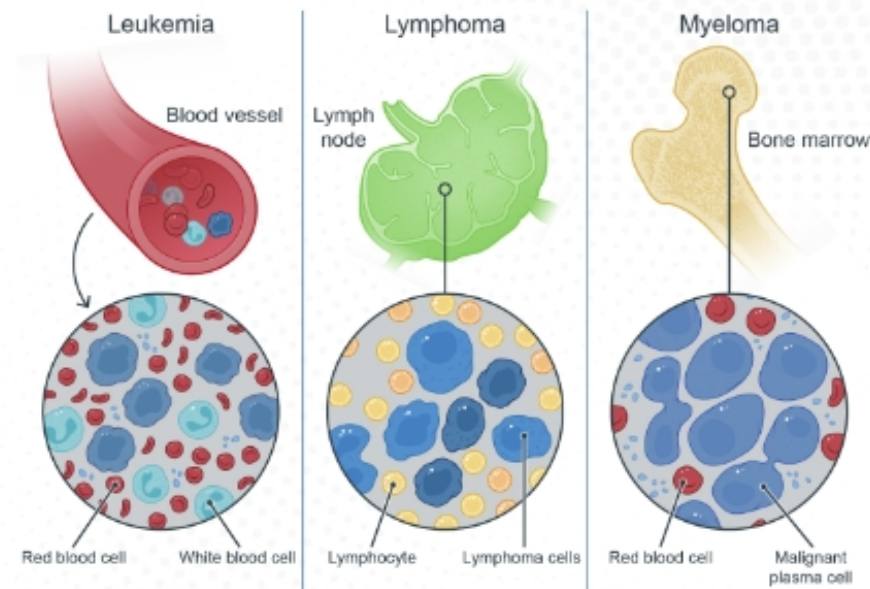
Cardiomyocytes



Glial progenitor cells

# High unmet need remains for blood cancers

- Significant unmet need in B cell malignancies and multiple myeloma in the US and EU alone:
  - ~250,000 new cases annually<sup>1</sup>
  - Est. 100,000 deaths annually<sup>1</sup>
- <10,000 patients have been treated with CAR T therapy to date<sup>2</sup>
- Of those treated, many do not respond and many relapse
- Manufacturing and access challenges remain for many patients



<sup>1</sup>World Health Organization, GLOBOCAN 2020

<sup>2</sup>Financial Reports, through Q3 2021; Evaluate Pharma, through Q3 2021

# Sana's hypoimmune allo T is potentially best-in-class

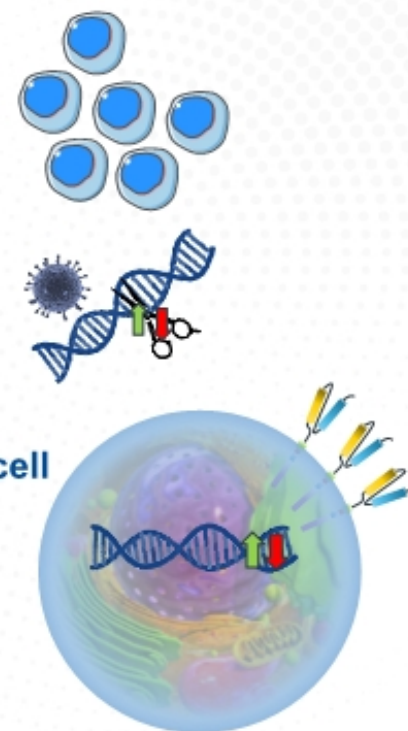
Immune Challenges	Current Allo T	Sana Hypo Allo T
GvHD	✓	✓
HvGD: Adaptive immune system	?	✓
HvGD: Innate immune system	✗	✓

GvHD, graft versus host disease; HvGD, host versus graft disease.

1 Donor or iPSC T cells

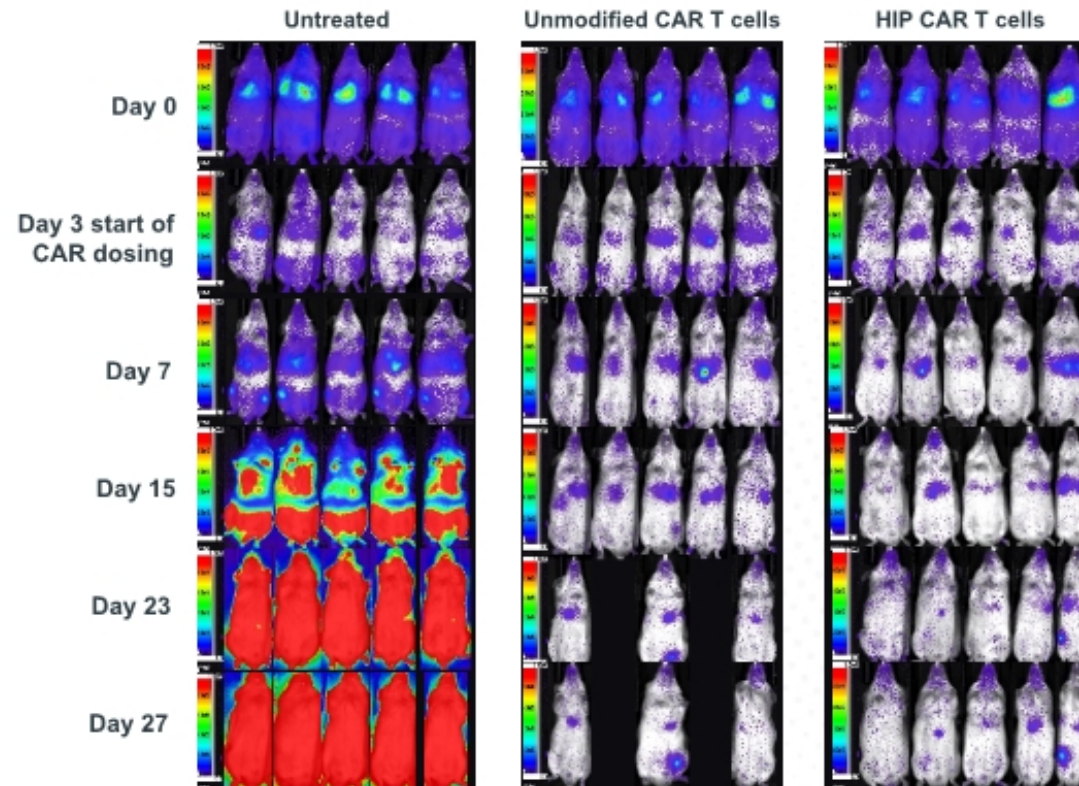
2 Cell engineering

3 CD19 targeted HIP allogeneic T cell





## CD19 HIP CAR T cells clear tumor *in vivo*

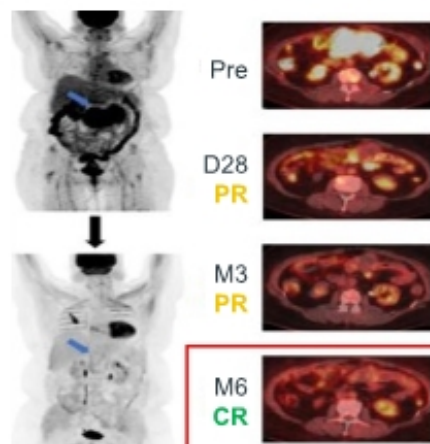




# Clinical study shows CD22 CAR T efficacy in treating relapsed lymphoma after prior CD19 CAR T therapy

Patient 1	
Prior lines of therapy	5
Prior CAR T therapy	Yes
Product previously received	Yescarta
Antigen targeted	CD19

Blood 2021 Apr 29;137(17):2321-2325. doi: 10.1182/blood.2020009432.



## LBCL

	Total (N=24)
Median follow up, months [range]	8.6 [1.6-21.3]
Overall Response Rate*, n (%)	19 (79%)
CR Rate	14 (58%)

Miklos et al, ASH 2021  
Total is a combination of DL1 and DL2

## Minimal ICANS / CRS observed across dose levels

Parameter	DLBCL DL1 (N=15)	DLBCL DL2 (N=9)	Total (N=24)
Cytokine release syndrome*, n (%)			
None	1 (7%)	0 (0%)	1 (4%)
Grade 1	6 (40%)	1 (11%)	7 (29%)
Grade 2	8 (53%)	7 (78%)	13 (54%)
Grade 3	0 (0%)	1 (11%)	1 (4%)
Neurologic events / ICANS*, n (%)			
Grade 1	1 (7%)	1 (11%)	2 (8%)
Grade 2	1 (7%)	1 (11%)	2 (8%)

Miklos et al, ASH 2021

# Best-in-class, broadly accessible allogeneic CAR T cells

- Expect to file our first allo T IND targeting CD19 as early as this year
- CD19/CD22 dual targeting offers potential of higher and more durable complete response rates
- Fully-human, clinically validated CD22 CAR with potential to address CD19 CAR T failures
- Fully-human, clinically validated BCMA CAR to potentially treat multiple myeloma
- Targets beyond CD19, CD22, and BCMA

# Type 1 diabetes represents a large unmet need with a loss of ~15 years of life<sup>1</sup>

## Large unmet need remains

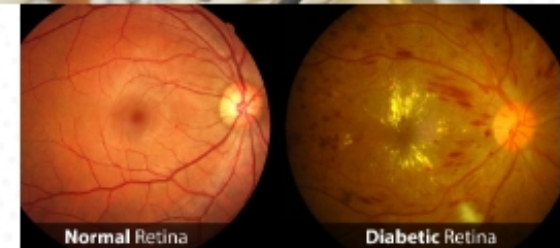
- Disease where destruction of insulin-producing beta cells in the pancreas results in inability to control blood glucose
- 1.6M patients with type 1 diabetes in the US and 2.4M in Europe<sup>2</sup>; 51k new patients/year combined<sup>3</sup>
- Long-term complications: end-organ damage, including heart attack, stroke, retinopathy, and nephropathy

→ **Our goal is to produce hypoimmune beta cells that evade the immune system and normalize glucose**

<sup>1</sup>Rawshani *et al*, Lancet 2018

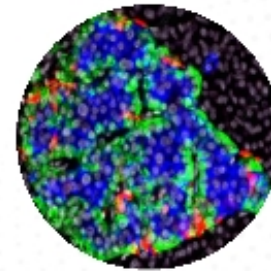
<sup>2</sup>Centers for Disease Control and Prevention, Diabetes Report, 2017-2018

<sup>3</sup>National Institutes of Health, Health Promot Perspect 2020



# Progress toward turning beta cells into medicines

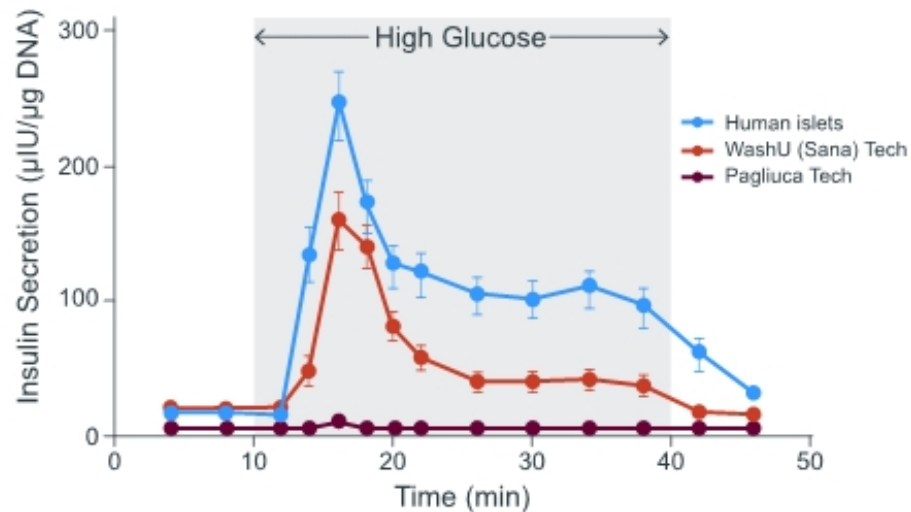
1. **Make** functional beta cells from iPSCs cells ✓
2. **Hide** beta cells from allogeneic rejection ✓
3. **Hide** beta cells from autoimmune reaction ✓
4. **Create** GMP supply chain



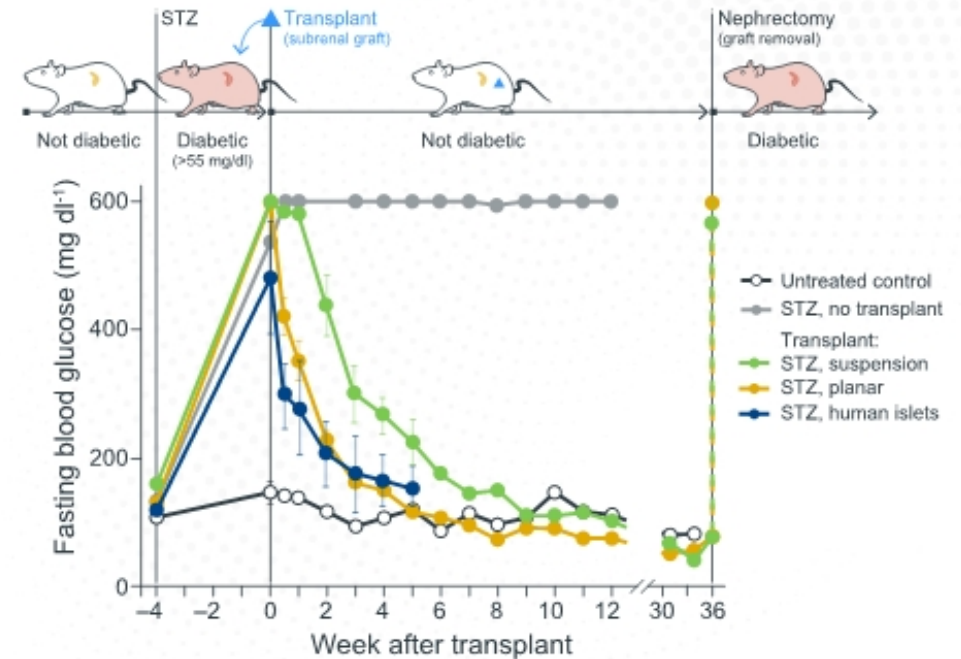


# Stem cell-derived pancreatic islet cells lead to robust function

Superior insulin secretion and faster kinetics *in vitro*



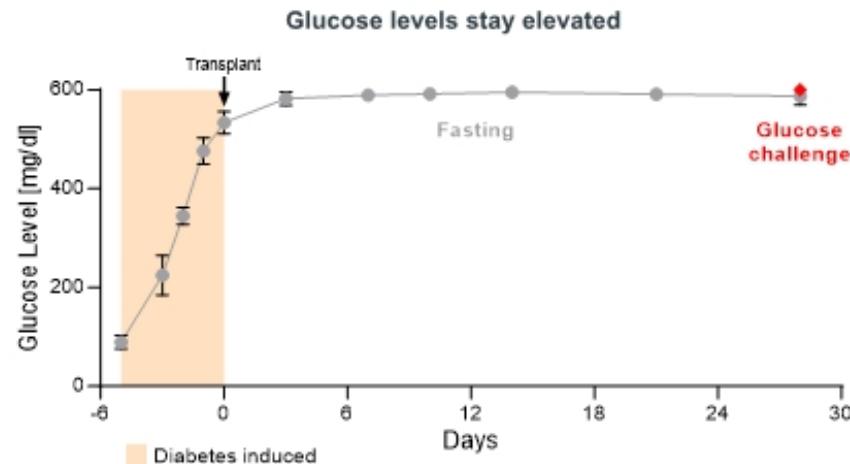
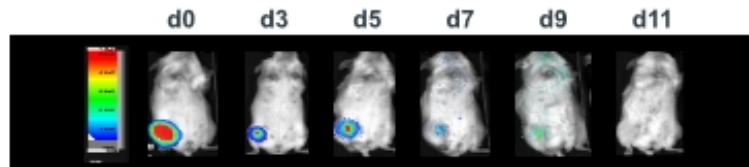
Robust rescue of type 1 diabetes mouse model



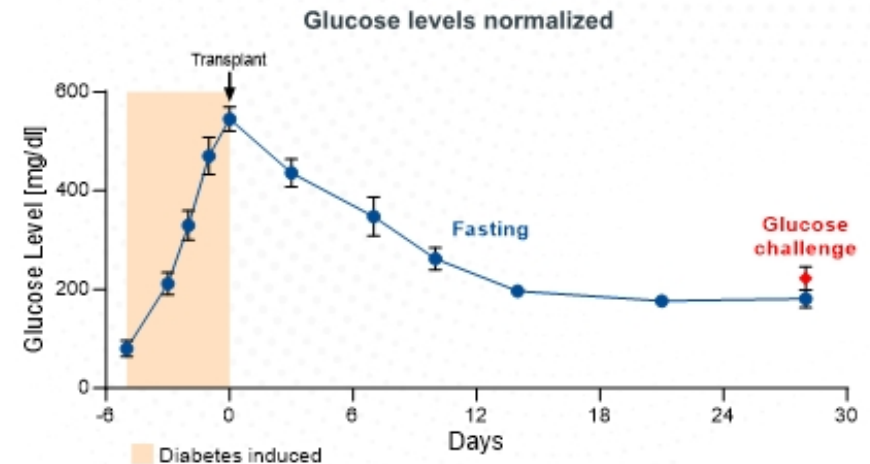
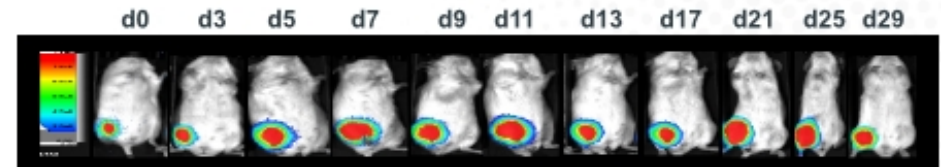


# Hypoimmune pancreatic islet cells evade immune detection and regulate glucose levels

Allogeneic human unmodified islet cells

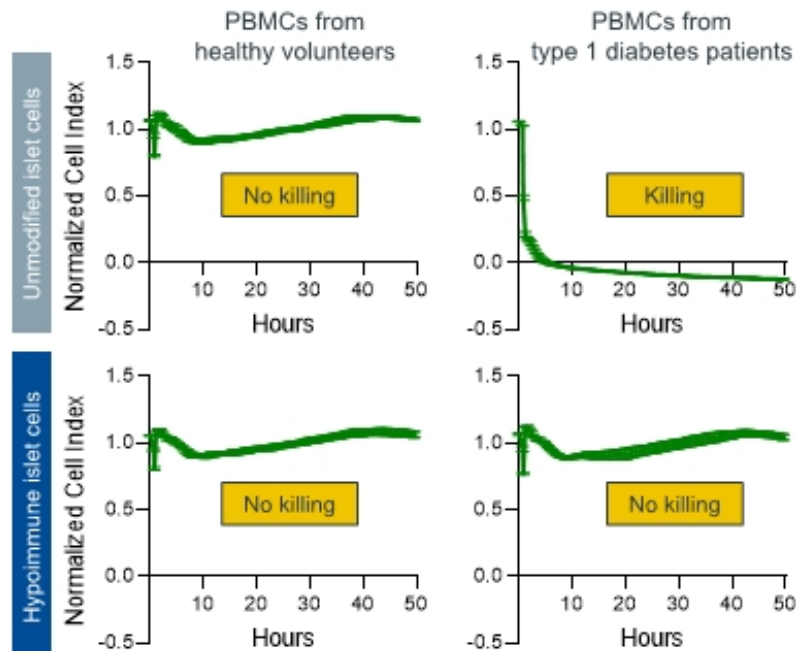


Allogeneic human hypoimmune islet cells



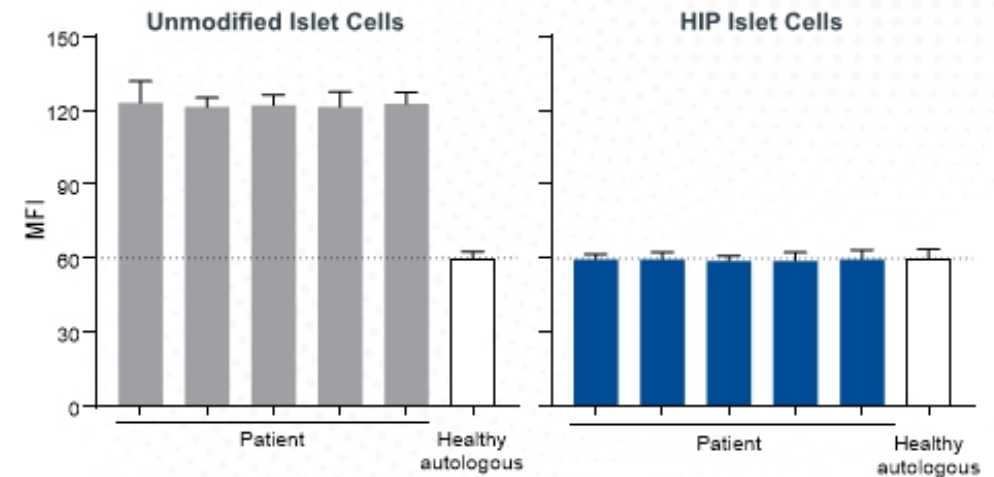
# Hypoimmune pancreatic islet cells evade autoimmune killing in testing of blood from type 1 diabetes patients

**T cells from PBMCs of type 1 diabetes patients kill unmodified islets, but not HIP islet cells**



**Antibodies from sera of type 1 diabetes patients bind to unmodified islets, but not HIP islet cells**

Serum from healthy volunteers or type 1 diabetes patients

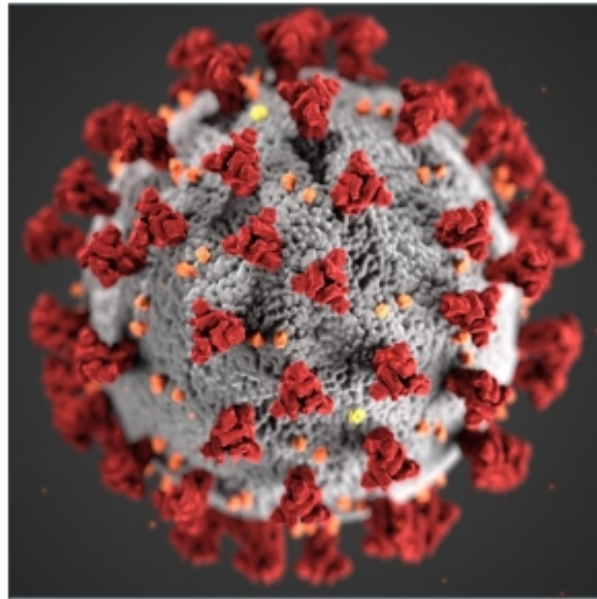


# Robust GMP supply chain required to use iPSC-based therapies as medicines

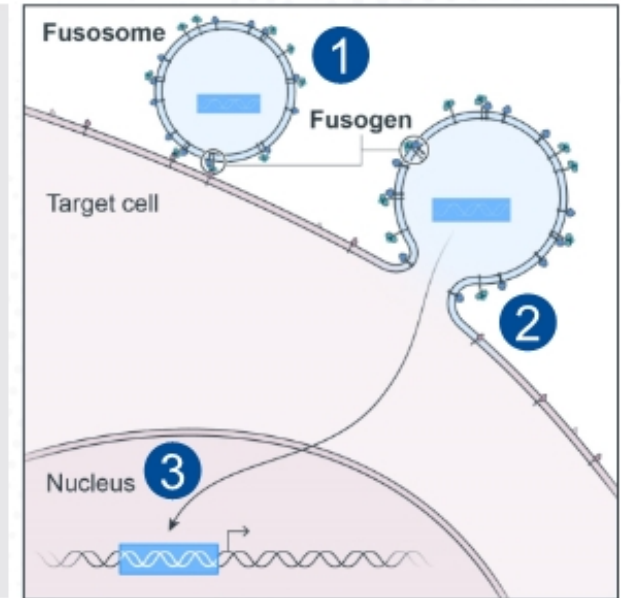
- |   |  |  |
|---|--|--|
| 1 | <b>GMP genomically stable cell lines</b> | FCDI licenses and bespoke lines                                |
| 2 | <b>GMP gene editing reagents</b>         | Beam license enables editing requirements for current programs |
| 3 | <b>GMP gene-edited master cell bank</b>  | Creating internal master cell banks for GMP HIP-edited iPSCs   |

# Fusosome technology: Development of cell-specific *in vivo* delivery platform

Sana approach: Leverage insights from nature to deliver various payloads to specific cells

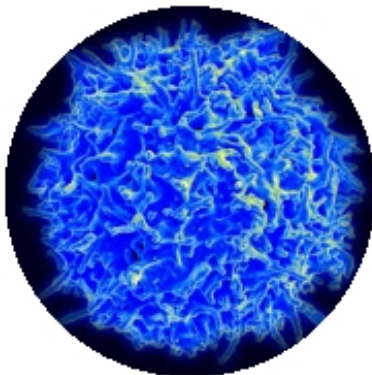


Source: CDC website

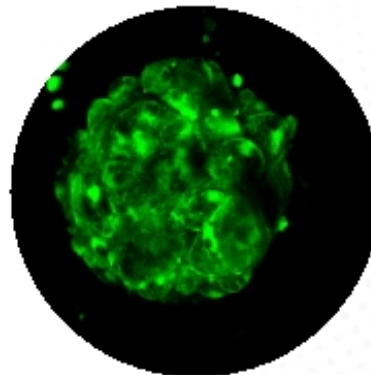


## *In vivo* cell engineering: Creating targeted medicines across a diverse set of cell types

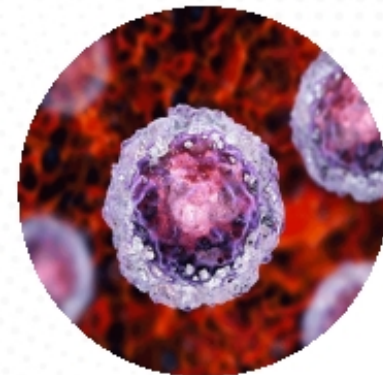
*in vivo* cell engineering strategy focused on developing therapies with transformative  
**fusogen platform delivery based on cell specificity and payload diversity**



T cells



Hepatocytes



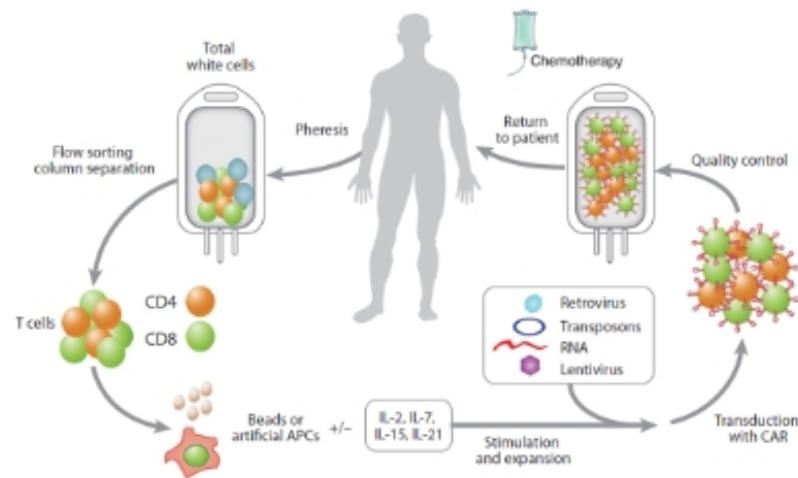
Hematopoietic  
stem cells



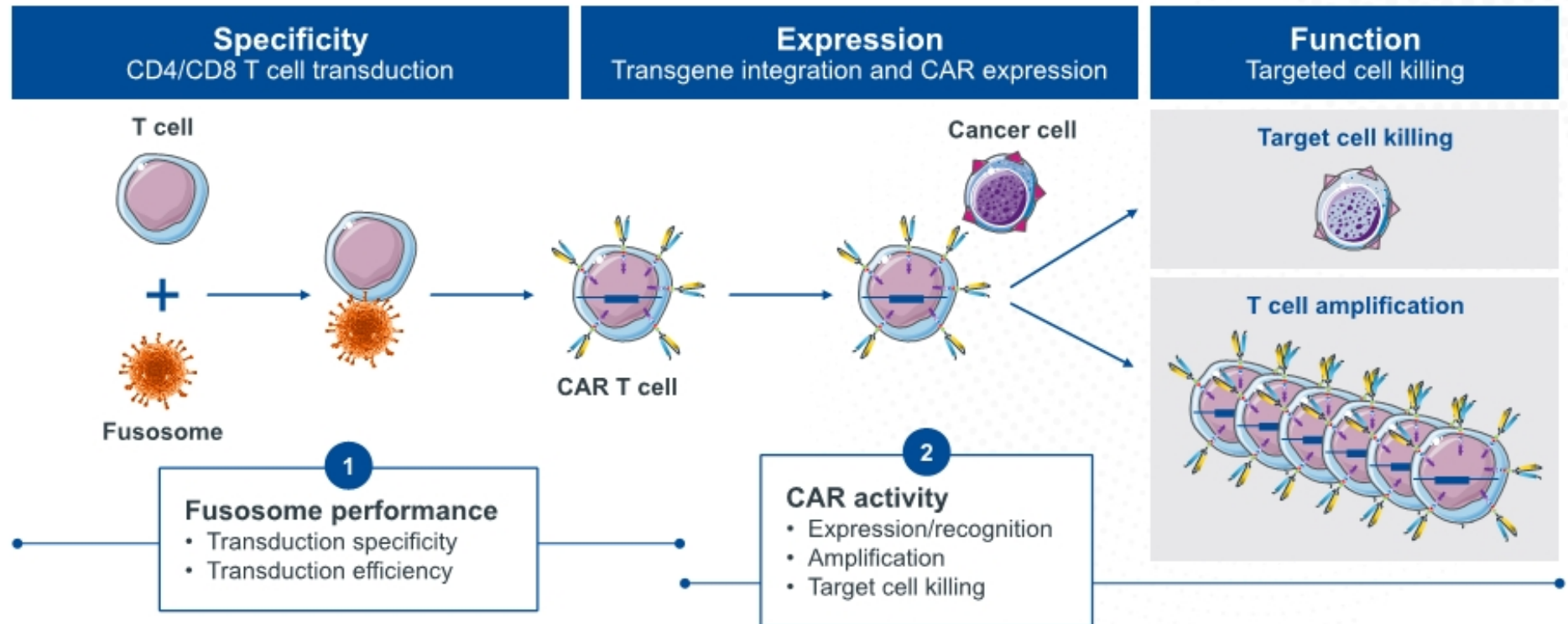
# High unmet need remains for blood cancers

Current *ex vivo* approaches have limitations

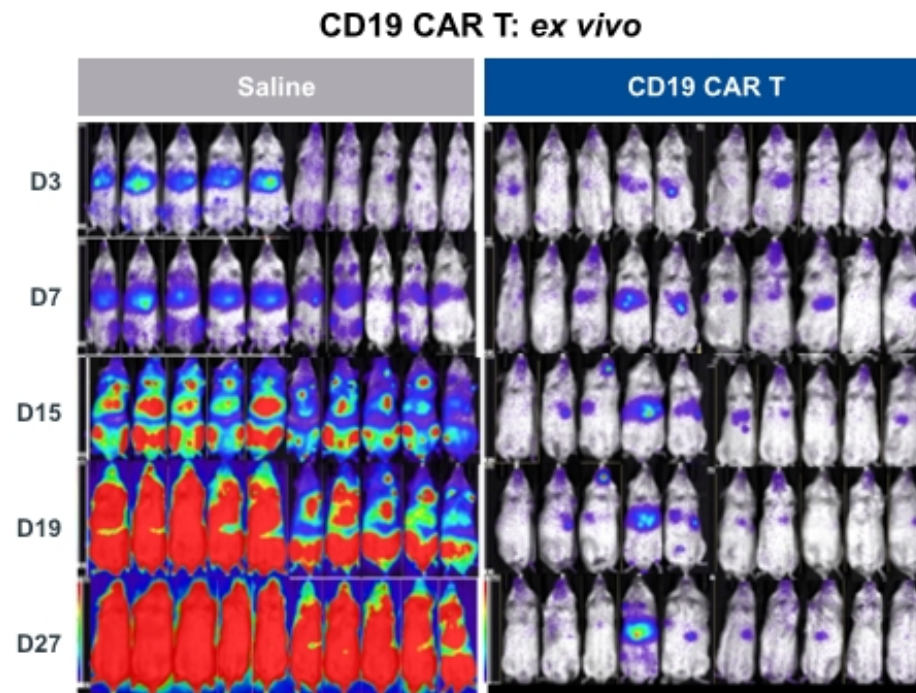
Fusogen platform offers potential to overcome these limitations



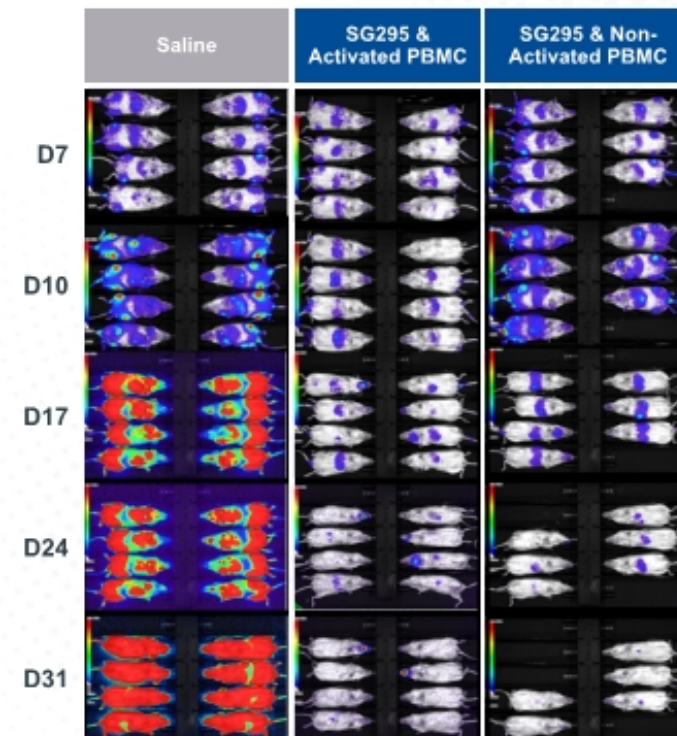
# T cell fusosome carrying CAR construct infused into patient



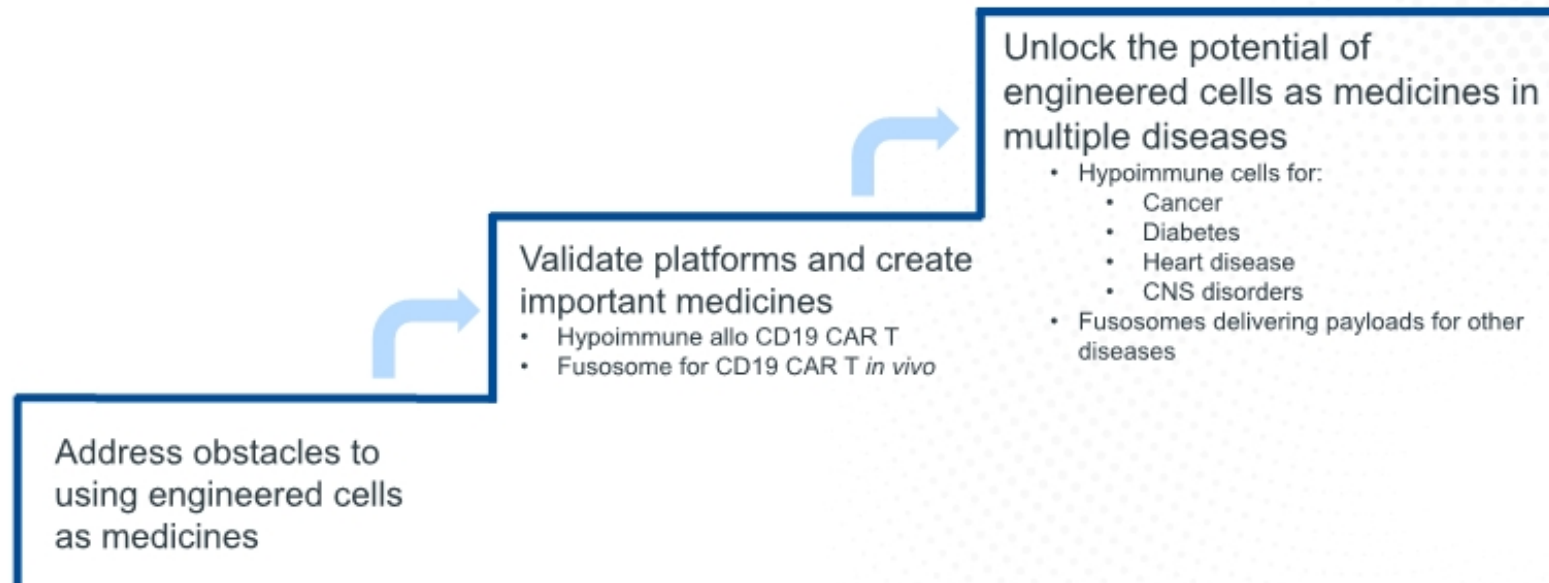
## IV administration of CD19 CAR delivered by fusosome can clear B cell tumors in humanized mice comparably to *ex vivo* CD19 CAR T



### CD19 CAR delivered by fusosome: *in vivo*



# Sana aspiration: Engineered cells as medicines



# Thank You

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Sana Biotechnology  
[www.sana.com](http://www.sana.com)

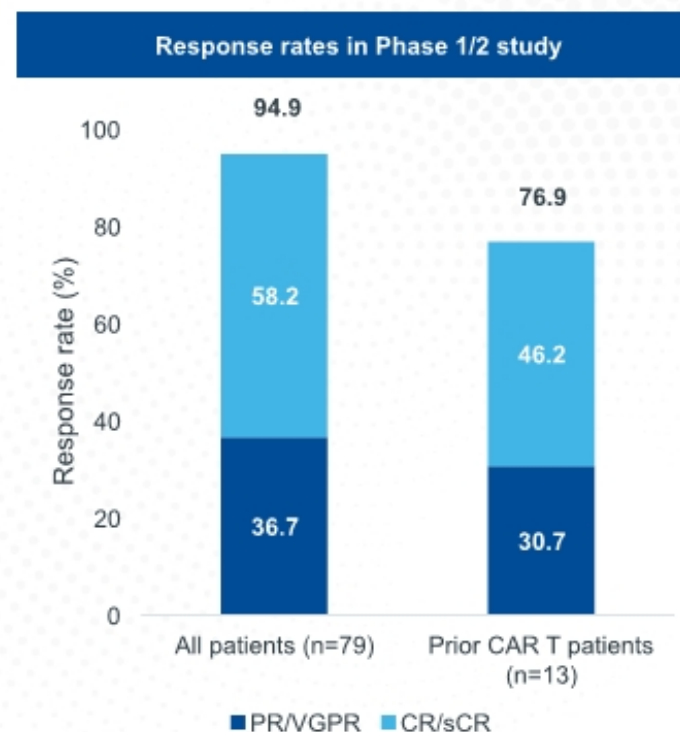




# Appendix

# BCMA CAR T (CT103A) initial clinical data promising in relapsed/refractory multiple myeloma

- **Safety profile (All patients n=79):**
  - Grade 3+ CRS: 2.5% i.e., 2 patients
  - Grade 3+ ICANS: 0%
- **Efficacy profile (All patients n=79):**
  - ORR: 94.9%
  - CR/sCR: 58.2%
  - MRD negativity at least once after infusion: 93.7%
  - In prior BCMA CAR T treated patients (n=13): ORR (76.9%); CR/sCR (46.2%)
- **Persistence of CT103A transgene:**
  - At 12 months after infusion (n=18): 55.6%
  - Maximum persistence: 34 months after infusion in first patient [patient remained in sCR]
- **Immunogenicity (anti-drug antibody positivity):**
  - Within 3 months of infusion: 1.3% i.e., 1 patient
  - Within 7 month median follow-up: 12.7% i.e., 10 patients



Note: Treated with recommended Phase 2 dose of 1e6 CAR T cells/kg