SENTI BIO

Outsmarting complex diseases with intelligent medicines

Corporate Overview

Do Not Distribute

January 2021

39th Annual J.P. Morgan Healthcare Conference - Agenda

Vision

Gene Circuit Platform

Internal R&D Pipeline: Allogeneic NK Cells

Gene Circuits: Additional Program Opportunities

GMP Allogeneic NK Cell Manufacturing Strategy

People

2021 Milestones

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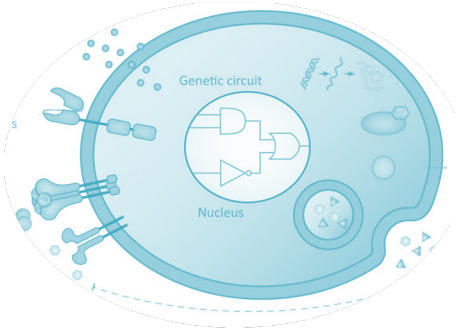
Senti exists to make smarter medicines for patients



1. Senti Bio is at the forefront of using ***synthetic biology to engineer 'gene circuits'*** that enhance cell and gene therapy products.

2. A gene circuit is a ***multi-component genetic construct that programs cells*** to interact with disease environments using logic to perform desired therapeutic functions.

3. Senti Bio uses these gene circuits to create ***"smarter" cell and gene therapies*** with improved therapeutic properties that increase efficacy, precision and control.

January 6, 2021: Leaps by Bayer leads $105 million Series B financing in Senti Bio

Press Release

Leaps by Bayer leads USD 105 million Series B financing in Senti Bio to develop next-generation cell and gene therapies using advanced gene circuit technology platform

- Senti Bio's gene circuit technology platform has the potential to optimize cell and gene therapies across delivery modalities and therapeutic areas
- Proceeds to support platform expansion and advance multiple allogeneic CAR-NK cell therapy pipeline candidates for difficult-to-treat cancers, including acute myeloid leukemia and hepatocellular carcinoma

Lead Series B Investor

BAYER

leaps

Additional Major New Investors

matrix PARTNERS CHINA 经纬中国

MIRAE ASSET Capital

RIDGEBACK CAP

intel capital

Other New and Existing Investors

8VC

ALEXANDRIA VENTURE INVESTMENTS

AMGEN Ventures

Gaingels

KB Investment

LIFESCI VENTURE PARTNERS

LIFEFORCE CAPITAL

LUX

Menlo

NEST.BIO

NEA

NOVEUS

Pear

Smilegate Investment

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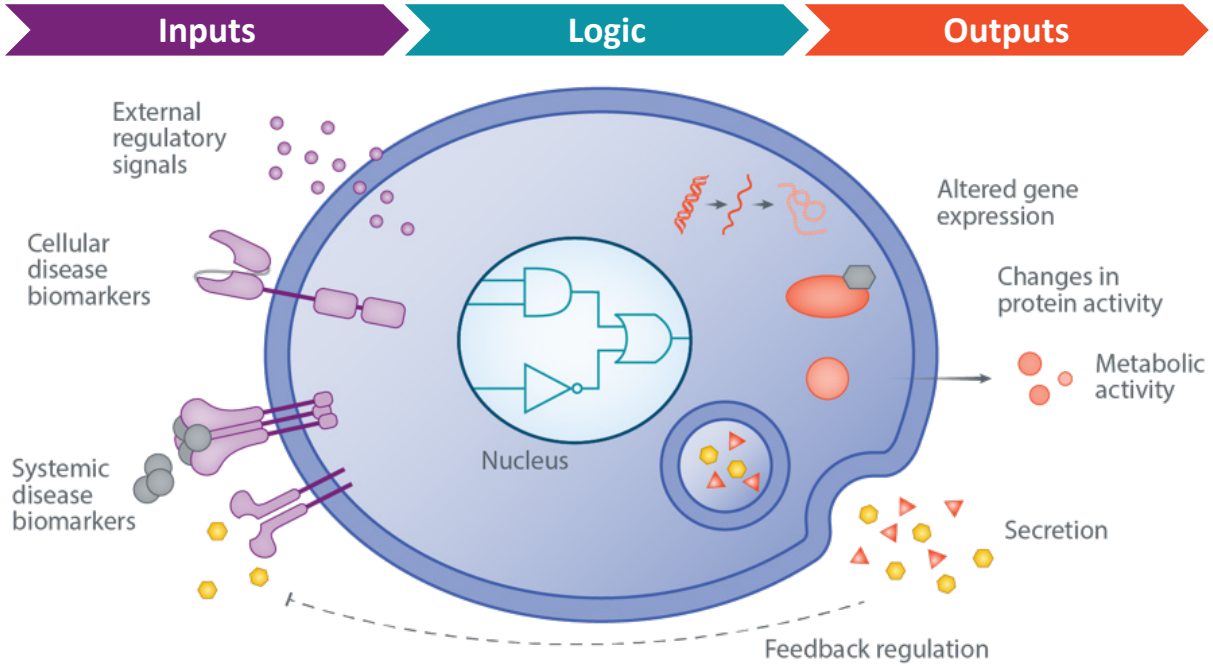
Senti's gene circuit platform embeds logic into cell & gene therapies

Embedded Biological "Apps" Overcome the Limitations of First-Generation Cell & Gene Therapies



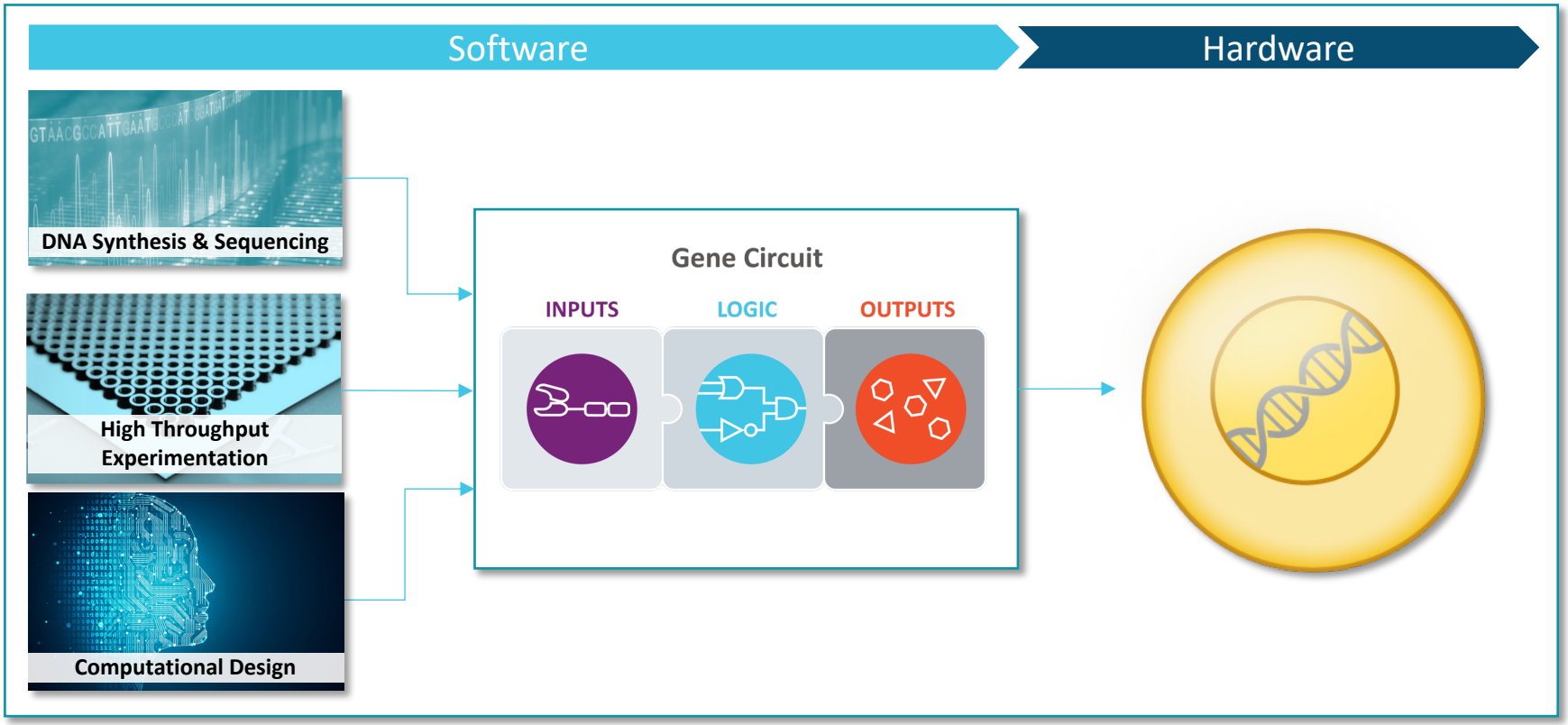
About Gene Circuits

Senti uses novel and proprietary combinations of DNA to create gene circuits that implement biological logic.

Senti's gene circuits power "smart" cell and gene therapies with enhanced therapeutic properties.

Adapted from *Science*, 359:6376 (2018)

Senti creates smart medicines by programming biology



Top left image adapted from: https://singularityhub.com/2019/02/01/how-genome-sequencing-and-senolytics-can-help-us-live-healthier-longer/
Middle left image adapted from: https://cen.acs.org/articles/93/i43/Twist-Bioscience.html
Bottom left image adapted from: https://www.ie.edu/exponential-learning/blog/data-science/machine-learning-marketing/

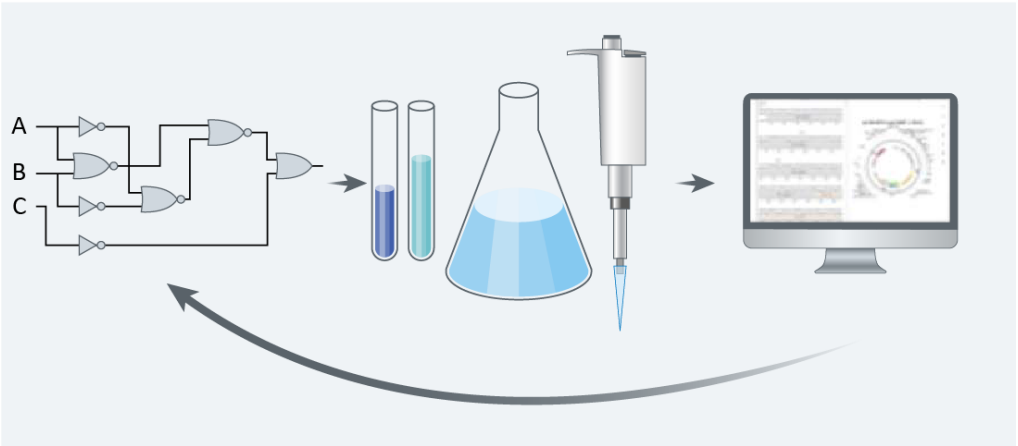
Senti's computational + experimental platform solves key bottlenecks in gene circuit design and translation

Senti's scalable Design-Build-Test-Learn gene circuit development engine

Scalable Multi-Product Engine

DESIGN | BUILD AND TEST | LEARN

Project Concepts from Senti or External Partners

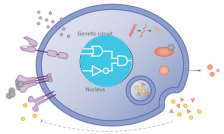


Deliver Therapeutic Gene Circuits for Preclinical and Clinical Development

Powering next-generation cell & gene therapies

Senti's gene circuit technologies and development engine are applicable across modalities and indications

Senti's Gene Circuit Design Platform
"Software"



- Logic Gating
- Small Molecule Regulator Dial
- Combination Therapies
- Synthetic Promoters

Cell & Gene Therapy Modalities
"Hardware"

Cell Therapies

NK, T, iPSC, MSC

Gene Therapies

AAV, Lentivirus, Non-Viral

Indications
"Therapeutic Use Cases"

- Oncology
- Immunology
- Regen. Medicine
- Neuroscience
- Cardio Metabolic
- Genetic Disease

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Diverse pipeline of internal and partnership-enabling programs

Modality	Name	Gene Circuit	Development Stage			2021 US Incidence	2021 Milestone
			Research	Preclinical	Clinical		
Internal Development Pipeline: Allogeneic NK Cell Therapies for Oncology							
Allo NK Cell	SENTI-202	OR + NOT Gate			*Acute Myeloid Leukemia*	~20K	Select Lead
	SENTI-301	Combo Tx			*Hepatocellular Carcinoma*	~30K	Initiate cGMP Manufacturing
	SENTI-401	NOT Gate			*Undisclosed*	~150K	Proof of Concept
Additional Program Opportunities: Gene Therapies & iPSCs for Non-Oncology Applications							
Gene Therapy	GC-500	Synthetic Promoters			*Undisclosed*		
iPSCs	GC-600	AND Gate			*Undisclosed*		
	GC-700	Small Molecule Regulator Dial			*Undisclosed*		

Senti will develop additional innovative gene circuit technologies and evaluate synergistic partnerships in select therapeutic applications.

Advantages of allogeneic (off-the-shelf) NK cells

Innate Killing

- ✓ Natural ability to kill tumor cells based on multi-receptor engagement
- ✓ Anti-tumor activity and persistence validated

Immune Activation

- ✓ Proinflammatory cytokine and chemokine secretion
- ✓ Elicit endogenous response for durable anti-tumor immunity

Favorable Safety

- ✓ Lower risk of GvHD, CRS, and neurotoxicity vs. CAR-T
- ✓ Potential for outpatient administration

Broad Access

- ✓ Low COGS
- ✓ Rapid delivery to patients

Efficacy and safety of NK cells as a modality for CAR-mediated targeting validated in the clinic

Senti's gene circuits overcome key challenges in cancer therapy

Challenge	Solution
1 *Specificity to kill cancer cells and preserve healthy cells*	*Logic Gating* — **SENTI-202**, **SENTI-401**
• Cancers are heterogeneous • Healthy cells can also express classic cancer antigens	• Achieve deep clearance of cancer cells • Spare healthy cells
2 *Tumor Immune Evasion*	*Combinatorial Arming* — SENTI-301
• Tumor has multiple mechanisms for evading immune system	• Potent payloads overcome tumor's immune defenses • Regulator dial can control payload expression

Diverse pipeline of internal and partnership-enabling programs

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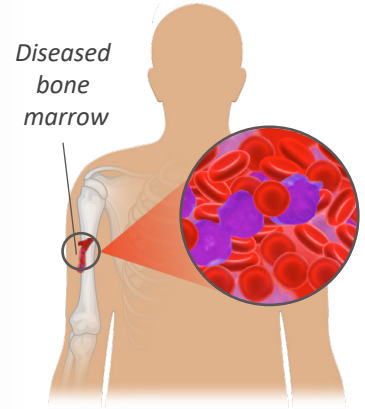
SENTI-202: Addressing unmet needs in the treatment of AML

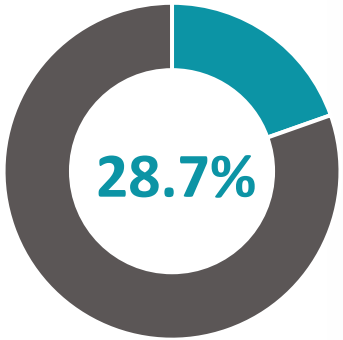
Unmet Need in Acute Myeloid Leukemia (AML)

2020 US Incidence[1]



~20K
Patients diagnosed with AML this year

5-Year Survival[1]



Challenges Associated with Treatment

Lack of "clean" targets for AML creates toxicity risks and limits efficacy of single-target drugs

→ *Limited treatment options available for the large group of patients unfit for intensive regimens*

Single-target drugs are unable to kill both blasts & leukemic stem cells (LSCs), causing relapse

→ *Bone marrow transplant is often the only curative option, but carries significant limitations with morbidity/mortality and donor availability*

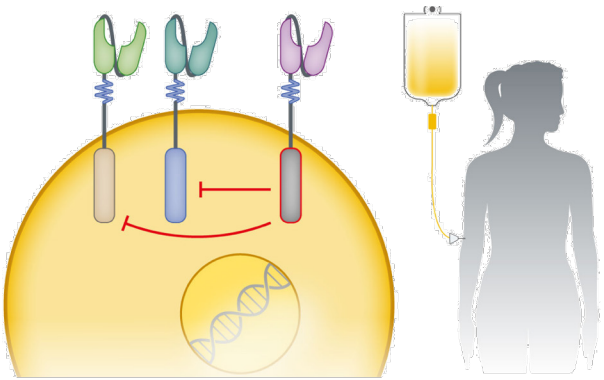
Senti's gene-circuit powered AML program overcomes these challenges to offer a ***potential cure for patients in the absence of a bone marrow transplant***

[1]SEER Cancer Stat Facts: Acute Myeloid Leukemia

SENTI-202: Precision-targeted, logic-gated CAR-NK cells designed to eliminate Leukemic Stem Cells (LSCs) and drive toward a cure

Program Rationale

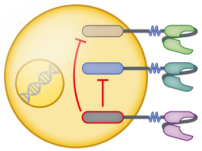
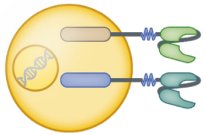
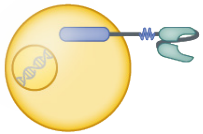
FLT3 OR CD33 NOT SA1*



- **OR + NOT Gate** technology adds clear and meaningful benefit to AML patients:
  - Eliminates AML blasts *and* **leukemic stem cells** while sparing healthy HSCs
    - ***Offers a potential cure in the absence of a bone marrow transplant***
- Approach validated by clinical success of CAR-targeted therapies in liquid tumors

*SA1: Safety Antigen 1 undisclosed

SENTI-202: Deep clearance of Leukemic Blasts & Stem Cells (LSCs) while sparing healthy HSCs

LOGIC	TARGETS	THERAPY	EFFECT ON PATIENT TARGET CELLS		
			AML BLAST	AML LSC	HEALTHY HSC
OR GATE + NOT GATE	FLT3 OR CD33, NOT SA1		KILL ✓	KILL ✓	SPARE ✓
OR GATE ONLY	FLT3 OR CD33		KILL ✓	KILL ✓	KILL ✗
No Logic	CD33		KILL ✓	SPARE ✗	KILL ✗

SENTI-202 Product Profile

FLT3 antigen

CD33 antigen

SA1 antigen (*undisclosed*)

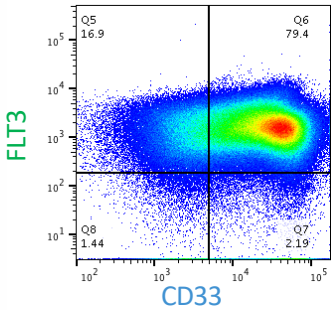
NOT Gate Aim: Protecting 10-20% of Bone Marrow Stem Cells Would Allow for Regeneration of Blood and Immune System

SENTI-202: Validation of tumor antigens (FLT3 and CD33) and Safety Antigen 1 (undisclosed)

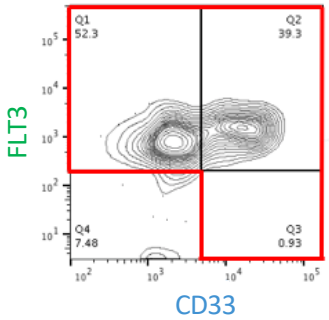
FLT3 and **CD33** are complementary targets for AML therapy

Representative Patient Sample Data:

Bulk AML Cells



Leukemic Stem Cells (LSCs)



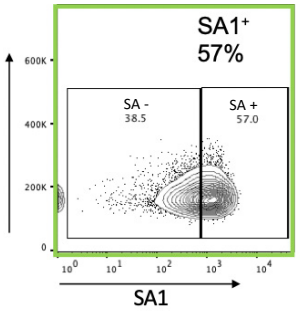
FLT3 "OR" CD33 targeting enables more effective elimination of both LSCs and AML blasts to achieve *durable responses* to treatment

SA1 is expressed on healthy HSCs, but NOT on AML LSCs

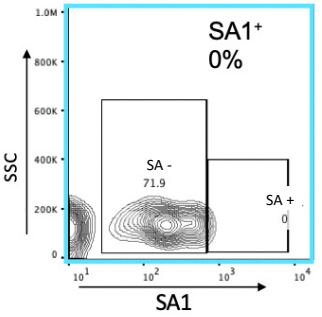
Representative Patient Sample Data:

FLT3 "OR" CD33 targeting results in on-target, off-tumor toxicity to healthy HSCs

Healthy Stem Cells



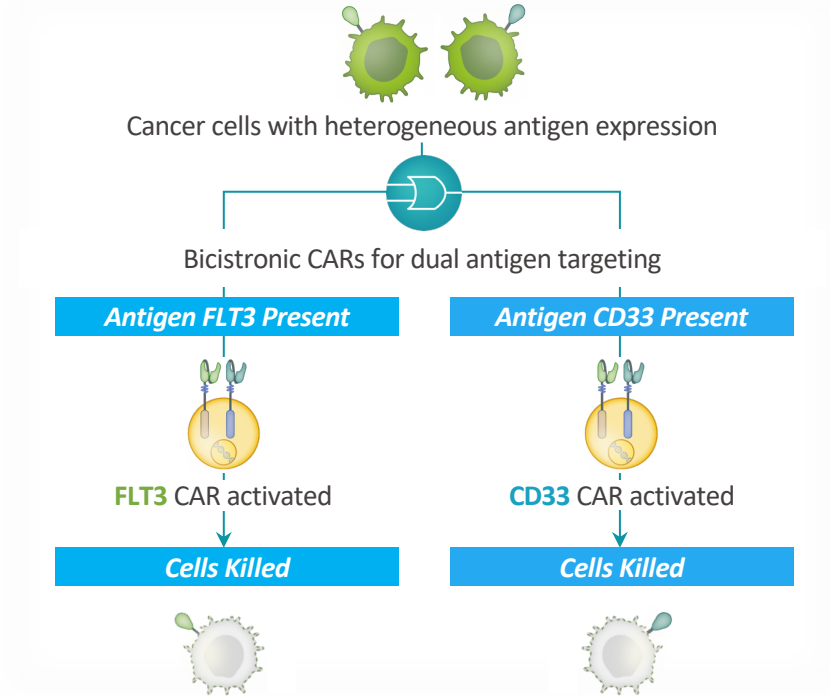
Leukemic Stem Cells (LSCs)



The use of a NOT gate to protect cells expressing SA1 enables FLT3 OR CD33 targeting *while sparing healthy HSCs*

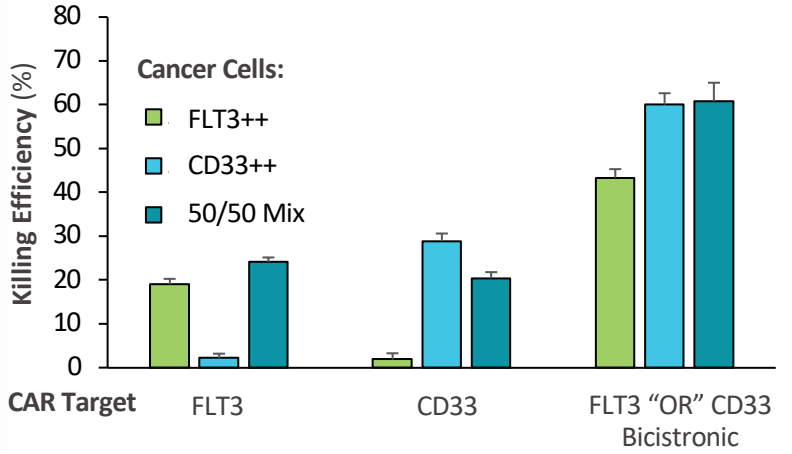
SENTI-202: OR Logic Gate (KILL TUMOR CELLS WITH FLT3 "OR" CD33)

Biological System



Gene Circuit Data

OR enables strong killing efficiency of cancer cells expressing *either* target



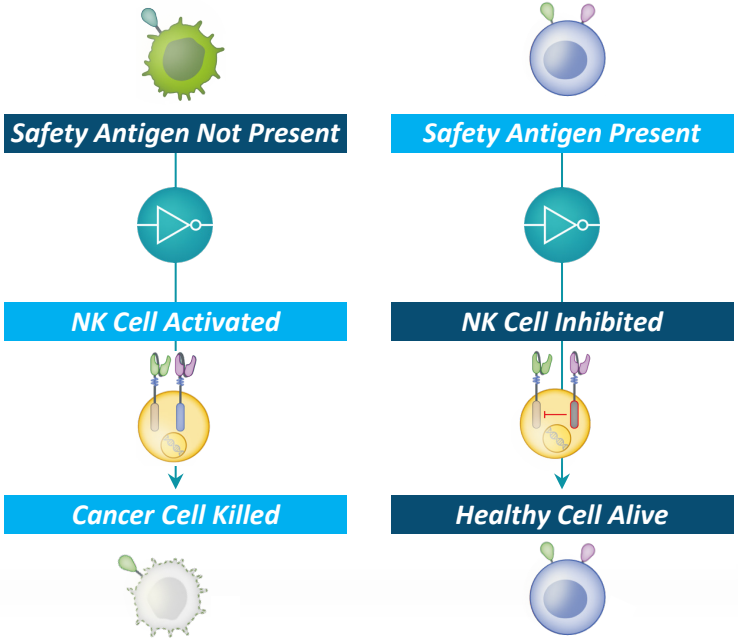
Senti can equip cell therapies with the ability to target multiple tumor-associated antigens for enhanced elimination of cancer cells

SENTI-202: NOT Logic Gate (DO NOT KILL HEALTHY CELLS EXPRESSING SA1)

Biological System

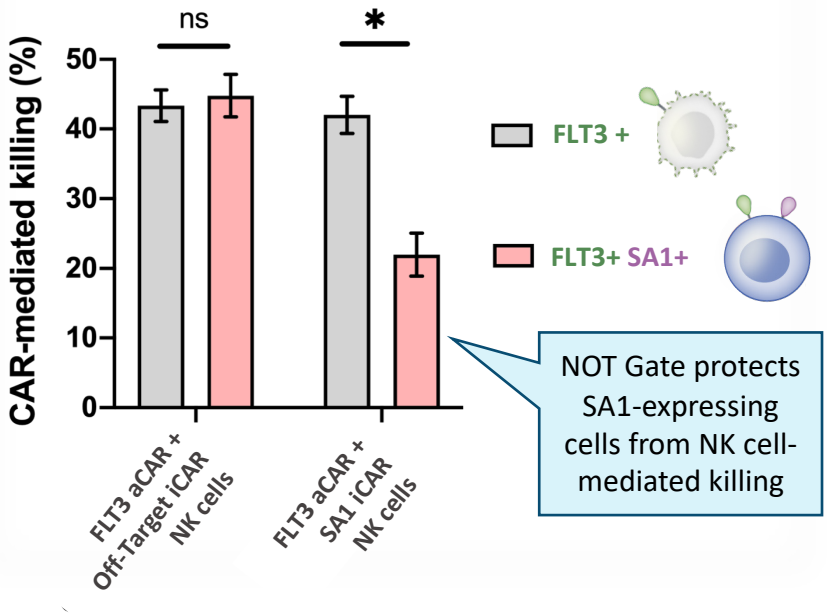
Cancer cells express only tumor antigen A1

Healthy cells express both A1 along with Safety Antigen 1 (SA1)



Gene Circuit Data

Antigen-specific inhibitory CAR (iCAR) NOT Gate Protects and Spares 50% of SA1+ Normal Healthy Cell Types



Senti's gene circuits overcome key challenges in cancer therapy

Challenge	Solution
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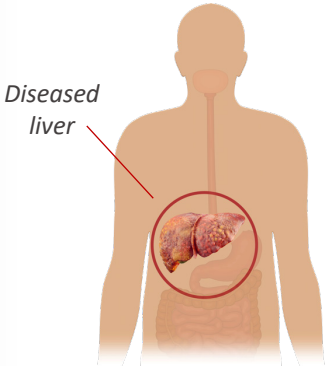
SENTI-301: Addressing unmet needs in the treatment of HCC

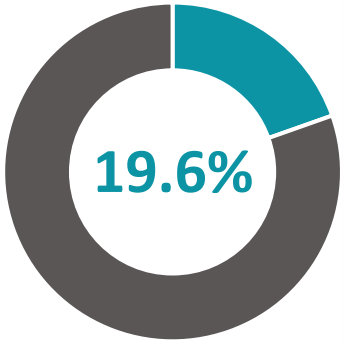
Unmet Need in Hepatocellular Carcinoma (HCC)

2020 US Incidence[1]



~30K
Patients diagnosed with HCC this year

5-Year Survival[1]



Challenges Associated with Treatment

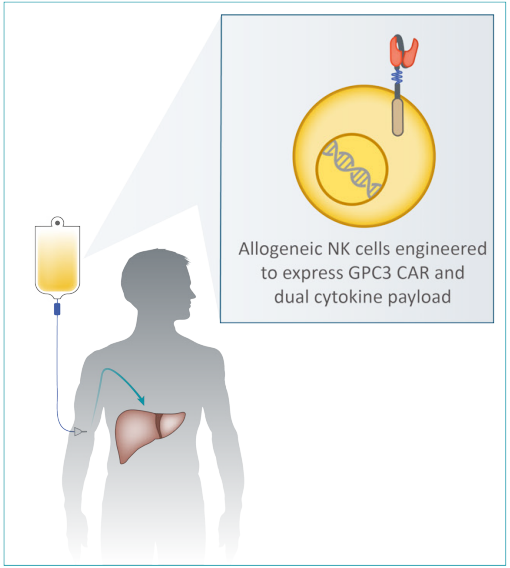
- *Immunosuppressive solid tumor microenvironment limits efficacy of existing immunotherapy approaches*
- *Treatment options are extremely limited, with a lack of targeted therapeutics*
- *Patients often have limited liver function and are ineligible for the most effective treatment options due to toxicity risks*

Senti's gene circuit-powered CAR-NK cells overcome these challenges to offer a **more effective and safer treatment treatment option** for HCC patients

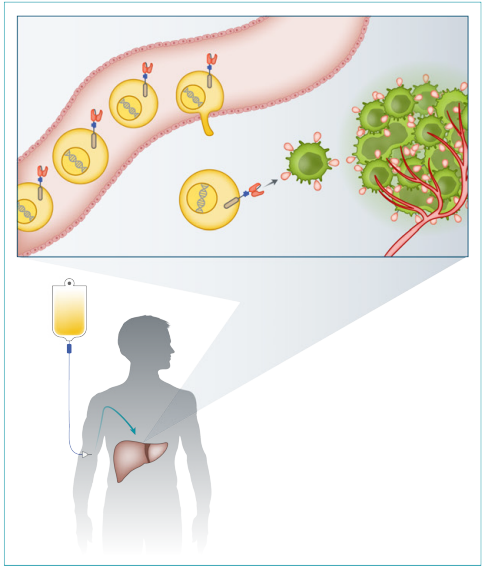
[1]SEER Cancer Stat Facts: Liver and Intrahepatic Bile Duct Cancer. Note: HCC accounts for ~70% of the total ~43K incident cases of liver and intrahepatic bile duct cancer

SENTI-301: Multi-payload armed CAR-NK cells for HCC

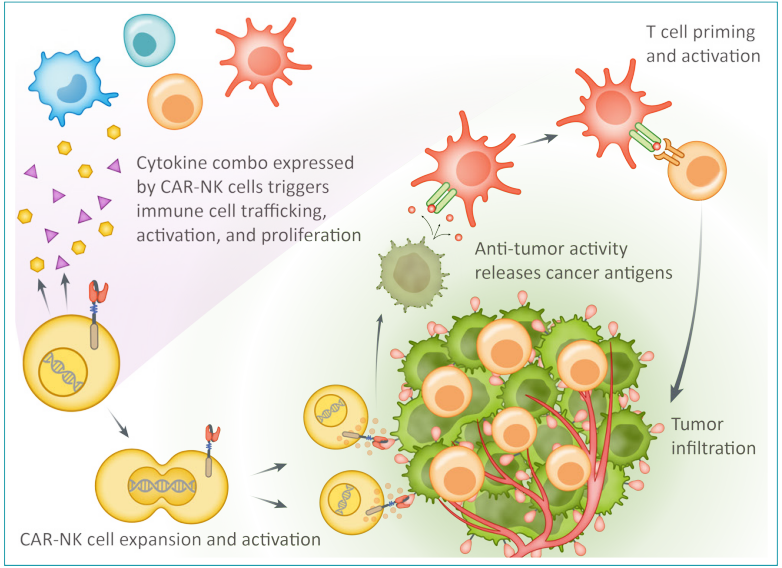
SENTI-301 Multi-Payload Arming Triggers a Potent Anti-Tumor Effect



Patient is dosed intravenously with SENTI-301 GPC3 CAR-NK cells



GPC3 CAR-NK cells traffic to tumor site and kill GPC3-expressing cancer cells

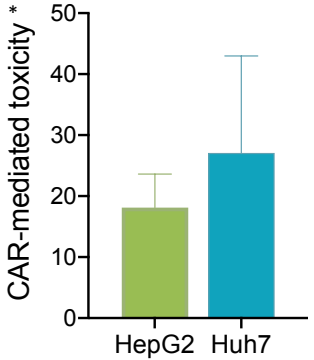


Expression of a potent cytokine combination enables CAR-NK cells to expand, persist, and more effectively stimulate an endogenous immune response

SENTI-301: Engineer multi-functionality into CAR-NK cells

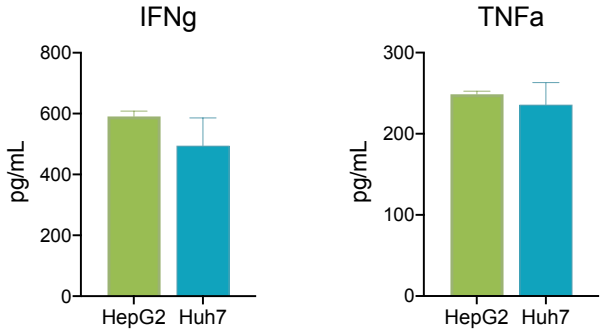
GPC3 CAR NK Robustly Kills Liver Cancer Cell Lines

Tumor Cell Killing



Robust killing of liver cancer cell lines HepG2 and HuH7

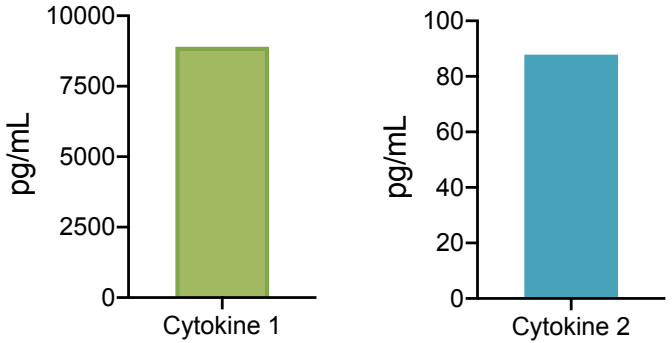
IFNγ and TNFα secretion



Significant secretion of inflammatory proteins

Co-Expression of Multiple Cytokines

Cytokine Expression Levels

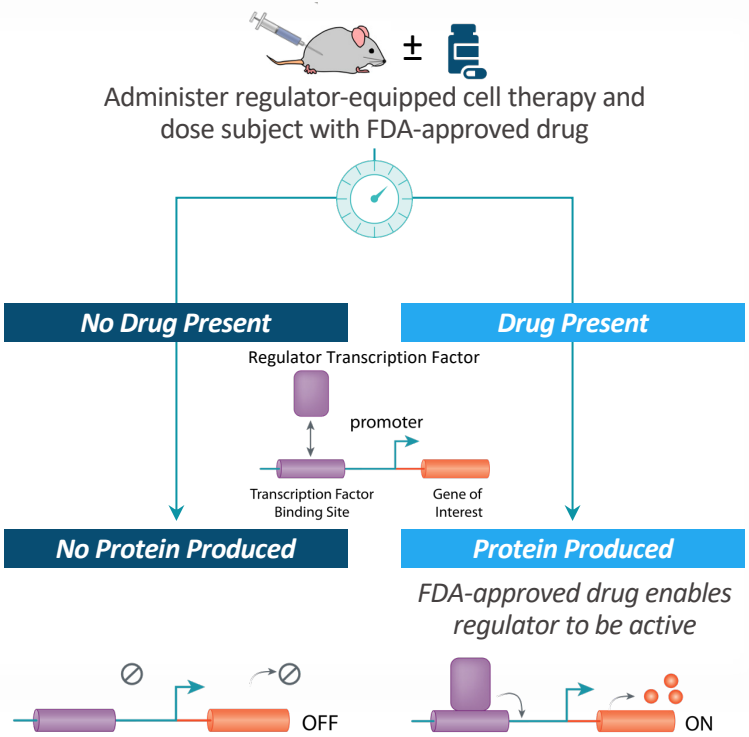


Combination of payloads expressed from NK cells

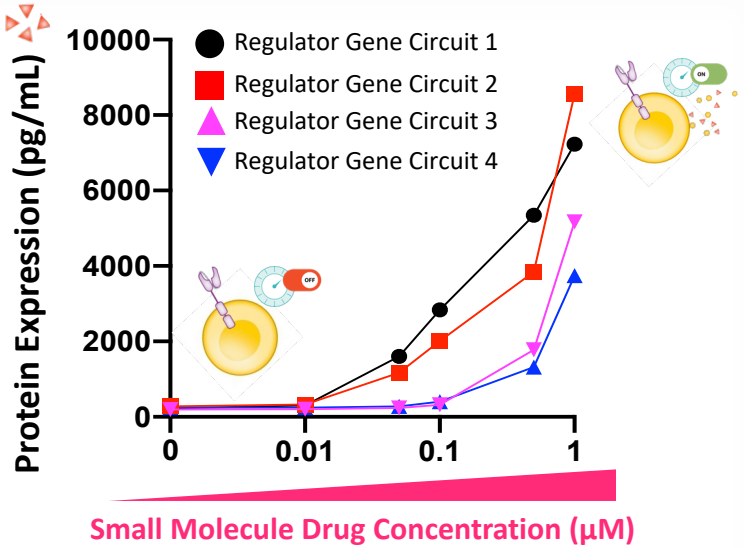
** Background (Innate NK cell killing) subtracted*

SENTI-301: Regulator (IF ORAL DRUG → THEN EXPRESS PAYLOADS)

Biological System



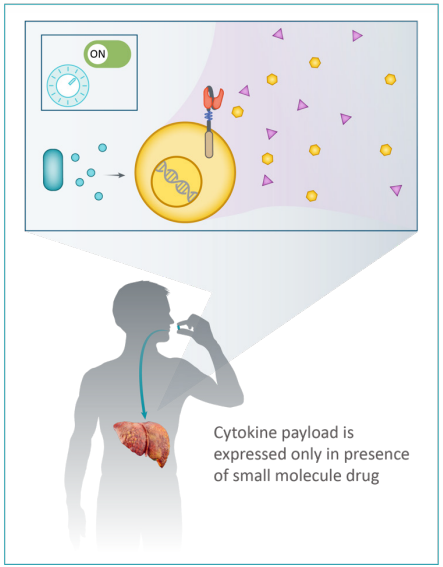
Gene Circuit Data (*in vitro*)



Senti has engineered SM regulator gene circuits with varying drug sensitivities

SENTI-301: Regulator (IF ORAL DRUG → THEN EXPRESS PAYLOADS)

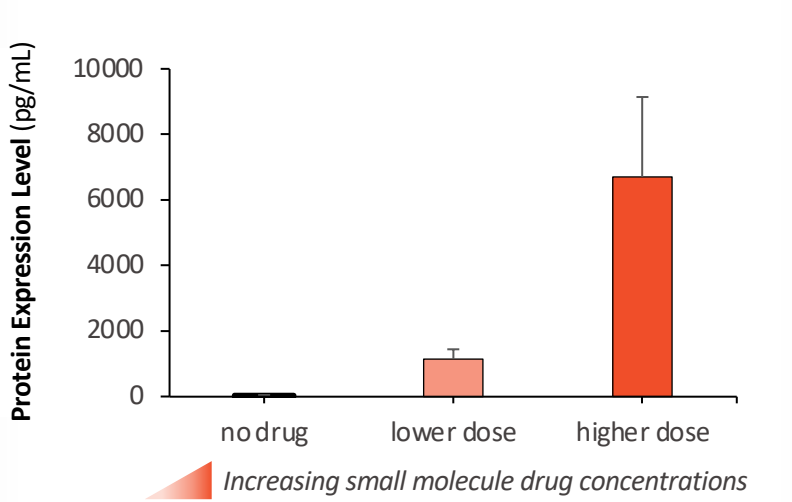
Clinical Schematic



For certain payloads, expression can be controlled via an oral small molecule (SM) drug to enhance efficacy and safety

Gene Circuit Data (*in vivo*)

Potent Immune Effector Production in Mouse Plasma



Senti's SM regulator enables physician-controlled, dose dependent protein expression

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			Research	Preclinical	Clinical		
Internal Development Pipeline: Allogeneic NK Cell Therapies for Oncology							
Allo NK Cell	SENTI-202	OR + NOT Gate	*Acute Myeloid Leukemia*			~20K	Select Lead
	SENTI-301	Combo Tx	*Hepatocellular Carcinoma*			~30K	Initiate cGMP Manufacturing
	SENTI-401	NOT Gate	*Undisclosed*			~150K	Proof of Concept
Additional Program Opportunities: Gene Therapies & iPSCs for Non-Oncology Applications							
Gene Therapy	GC-500	Synthetic Promoters	*Undisclosed*				
	GC-600	AND Gate	*Undisclosed*				
iPSCs	GC-700	Small Molecule Regulator Dial	*Undisclosed*				

Senti will develop additional innovative gene circuit technologies and evaluate synergistic partnerships in select therapeutic applications.

Senti's synthetic promoters address critical shortcomings with gene therapies

Challenge

1st gen gene therapy

Lack of selectivity of gene expression

- High doses of vector have caused toxicity in recent studies
- Poor tropism leads to unnecessary expression of payloads in off-target tissues

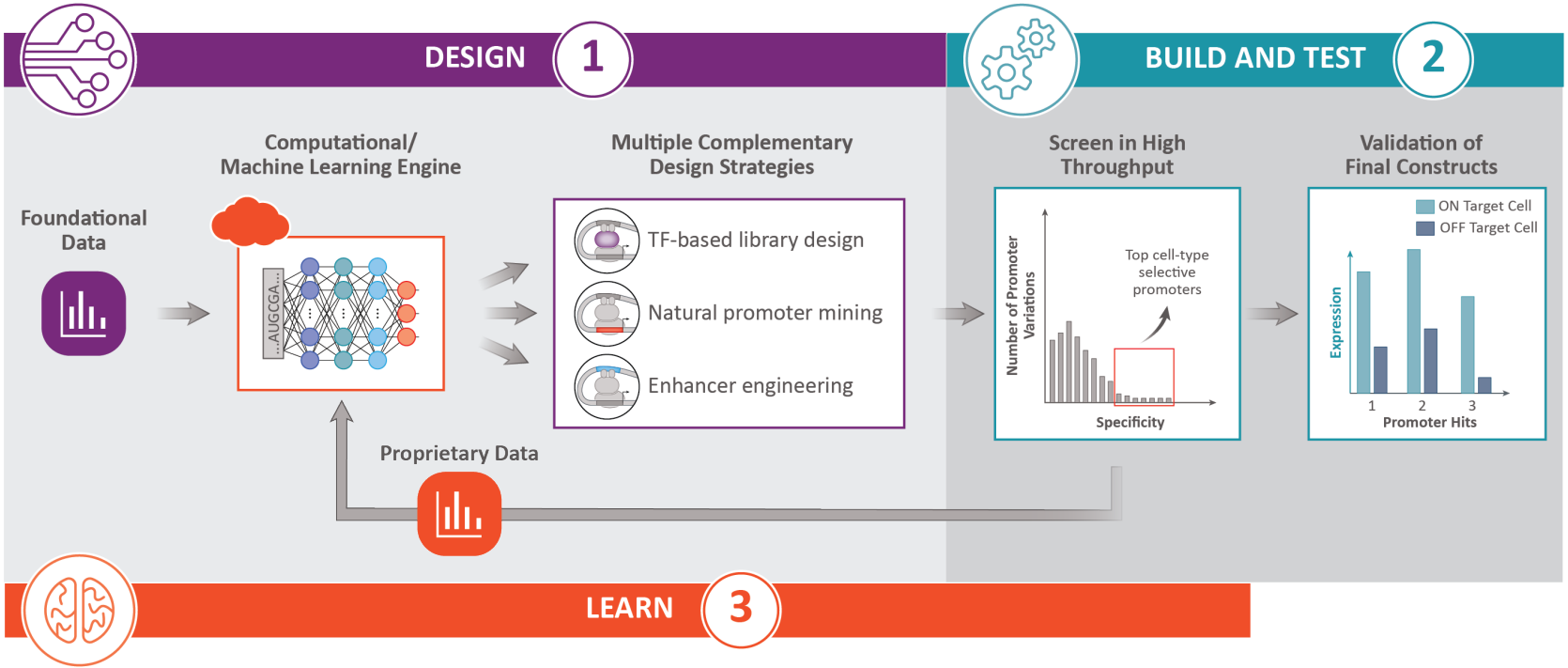
Solution

Next-gen gene therapy

Synthetic Promoters **GC-500**

- Improved expression
- Enhanced selectivity for target tissues
- Increased potency & reduced cost of goods

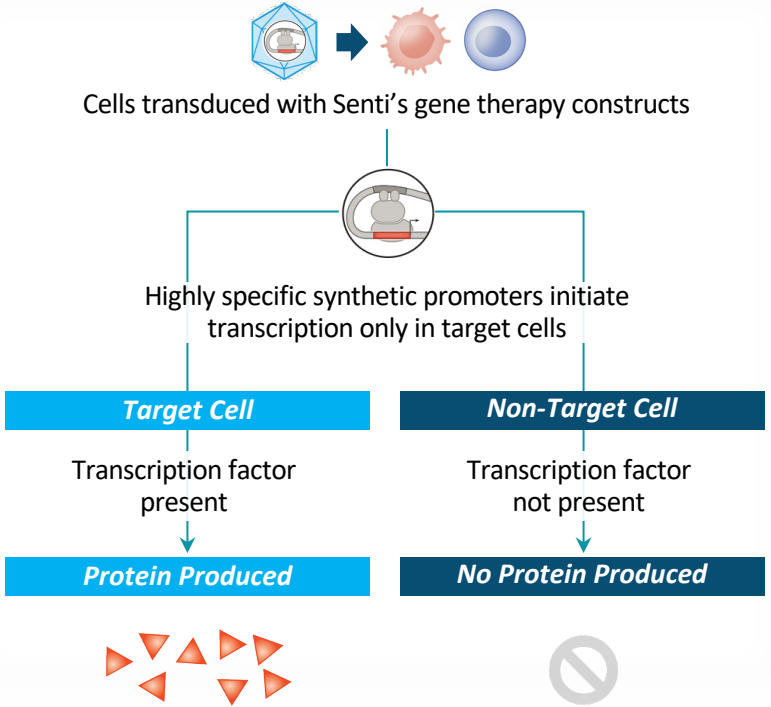
GC-500: Proprietary Synthetic Promoter Design Capabilities



Senti has established a parallel computational + experimental platform for designing synthetic promoters with desired selectivity and potency, a capability that is highly applicable for gene therapy collaborations

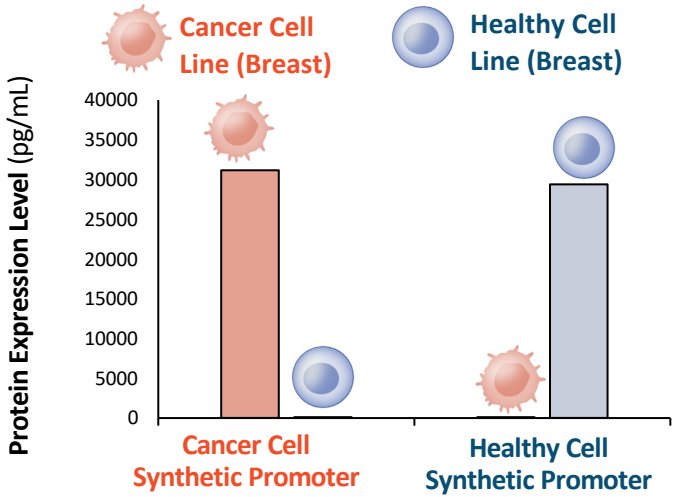
GC-500: IF CANCER CELL → THEN EXPRESS GENE THERAPY

Biological System



Gene Circuit Data

~1,000-fold cell type selectivity



Senti can engineer promoters selective to cancer cells, with minimal expression in healthy cells, and vice versa

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Vision

Gene Circuit Platform

Internal R&D Pipeline: Allogeneic NK Cells

Gene Circuits: Additional Program Opportunities

GMP Allogeneic NK Cell Manufacturing Strategy

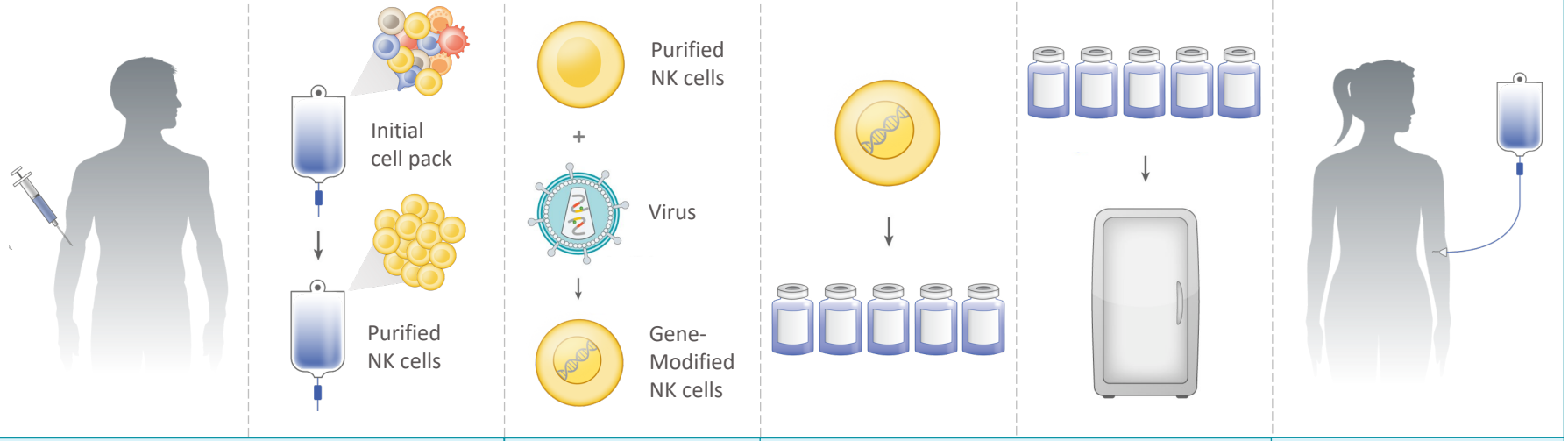
People

2021 Milestones

We have developed a scalable process for CAR-NK manufacturing

Senti's allogeneic NK cell process enables scalable manufacturing for off-the-shelf NK cell therapies

Cell Donation | **Manufacturing** | **Patient Infusion**



High purity and functional NK cells isolated from peripheral blood and cord blood sources	Vectors optimized for titer and transduction efficiency of CAR-NK	Proprietary expansion and cryopreservation process for >100 doses per batch and high post-thaw potency	"Off-the-shelf" IV dosing at clinical site

Senti has strong allogeneic cell therapy capabilities with plans to initiate construction of an in-house GMP facility in 2021

Dedicated facilities and systems for PD and AD, with processes set up for viral vectors, allogeneic NK cells, and autologous T cells

1. **Vector Process Development**
2. **Cell Process Development**
3. **Analytical Development**
4. **Manufacturing Operations**
5. **Quality**

Highly experienced staff with broad cell & gene therapy expertise

- Technical staff with experience on 20+ INDs in cell and gene therapy
- 70+ years of cell & gene therapy PD, AD, QC, and GMP experience
- Expertise in NK cells, T cells, lenti/retroviral vector, AAV, iPSCs, MSCs, and HSCs
- Established relationships with leading contract manufacturers
- Chief Medical Advisor with extensive global experience in clinical development and medical affairs in oncology to lead clinical trial planning and preparation

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2021 Milestones

Leadership and BOD

Executive Team

Tim Lu, M.D., Ph.D.
CEO & Co-Founder

Thought leader in synthetic biology and serial biotechnology entrepreneur

Philip Lee, Ph.D.
COO & Co-Founder

Leader in advanced cell technologies and cell manufacturing

Curt Herberts, M.B.S.
CFO & CBO

Executed numerous industry leading collaborations and strategic financings

Gary Lee, Ph.D.
CSO

Experienced biotech executive; filed 5 cell & gene therapy INDs

Jose Iglesias, M.D.
Chief Medical Advisor

Extensive global leadership experience in oncology clinical development and medical affairs

Board of Directors

Tim Lu, M.D., Ph.D.	Ed Mathers	Alex Kolicich	Lee Cooper, J.D., M.B.A.	Brenda Cooperstone, M.D.
CEO & Co-Founder	*NEA*	*8VC*	*LEAPS by Bayer*	*Pfizer Rare Disease*
SENTI BIO	NEA	8VC	leaps	*Independent*

Senti's scientific and clinical advisors represent leaders in their fields

Scientific Founders and Advisors

Tim Lu, M.D., Ph.D.
CEO & Co-Founder

Jim Collins, Ph.D.
Professor, MIT
Scientific Co-Founder

Wilson Wong, Ph.D.
Professor, Boston Univ.
Scientific Co-Founder

Ahmad (Mo) Khalil, Ph.D.
Professor, Boston Univ.
Technical Advisor

Martin Fussenegger, Ph.D.
Professor, ETH Zurich
Technical Advisor

Clinical Advisors

Michael Andreeff, M.D., PhD.
Professor of Medicine, and Paul and Mary Haas Chair in Genetics, MD Anderson Cancer Center

Farhad Ravandi-Kashani, M.D.
Janiece and Stephen A. Lasher Professor of Medicine, MD Anderson Cancer Center

Steven Katz, M.D.
CMO, TriSalus Life Sciences;
Associate Professor, Boston Univ. School of Medicine

Lawrence Fong, M.D.
Efim Guzik Distinguished Professor in Cancer Biology, UCSF

Robin Taylor, Ph.D., M.B.A.
Owner, Taylor Global BioPharma Consulting;
Fmr. Chief Commercial Officer at SeaGen

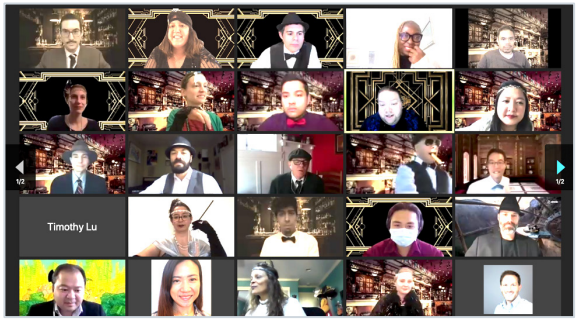
Representative publications in

nature | nature biotechnology | Science | nature chemical biology | Cell | PNAS | nature COMMUNICATIONS | Science Translational Medicine

The Senti team proved resilient and thrived in a challenging pandemic year

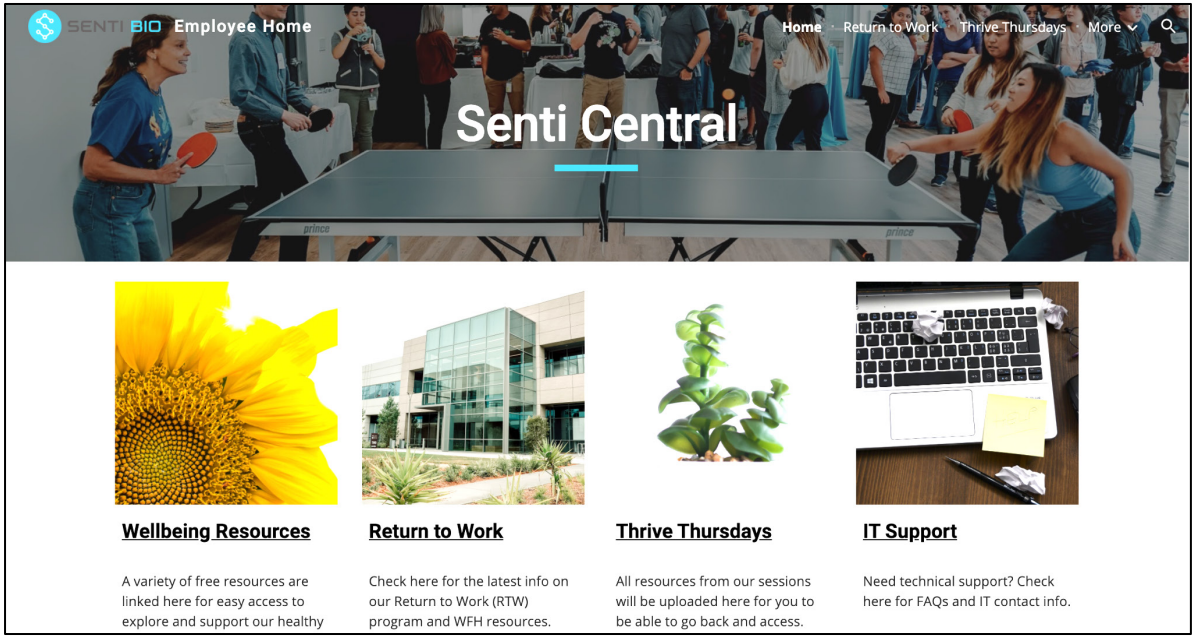
#bebold #bettertogether #builttolast

'20s Themed Holiday Party



Socially Distanced, Outdoors Happy Hour

Employee Intranet



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Vision

Gene Circuit Platform

Internal R&D Pipeline: Allogeneic NK Cells

Gene Circuits: Additional Program Opportunities

GMP Allogeneic NK Cell Manufacturing Strategy

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2021 Milestones

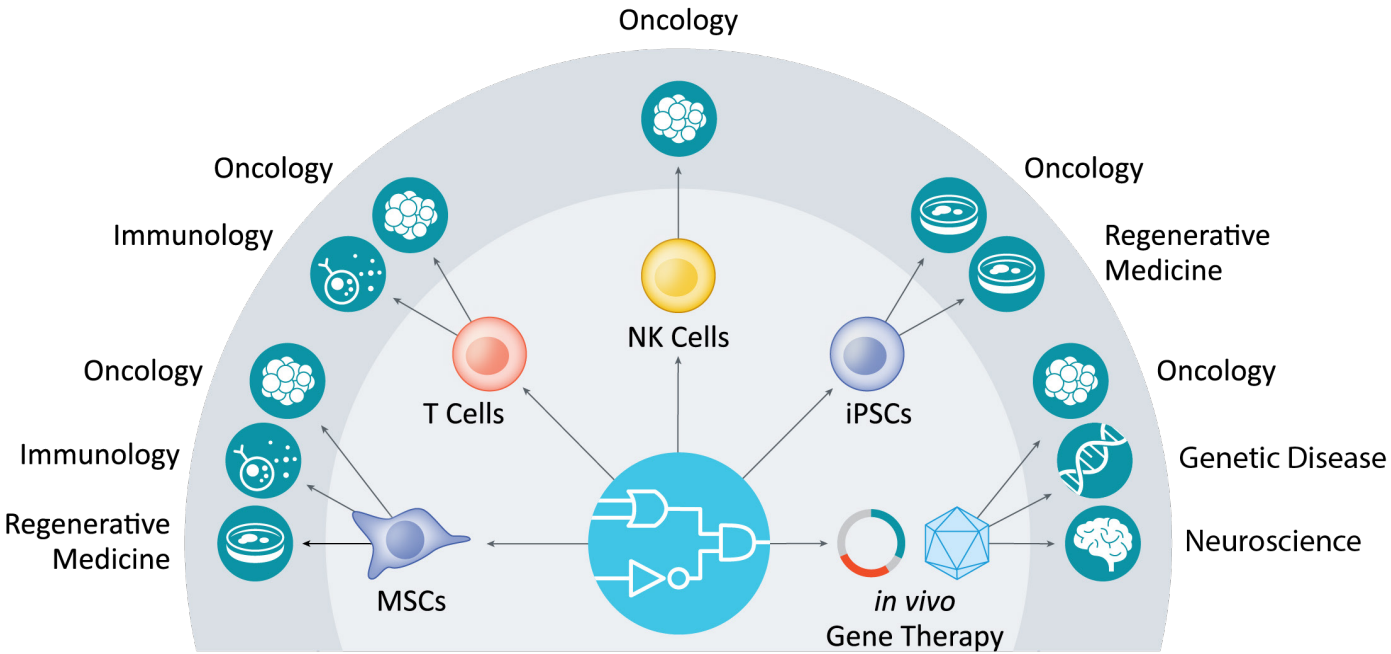
In 2021, Senti Bio plans to execute along 5 core value drivers for the business

2021 Goals

1. Select Lead for SENTI-202: precision-targeted OR+NOT-gated CAR NK cells for AML
2. Initiate GMP Manufacturing for SENTI-301: combinatorial armed CAR NK cells for HCC
3. Sign lease for in-house GMP manufacturing site and establish allogeneic NK cell GMP process
4. Further advance gene circuit platform technologies for applications outside of oncology
5. Evaluate additional fundraising and non-dilutive capital opportunities to support the company's long-term vision of 'smarter' gene circuit therapies for patients in need

With recent Series B proceeds, Senti Bio is poised to advance its gene circuit platform and to drive its robust cell therapy pipeline into the clinic

Senti's gene circuit platform optimizes cell and gene therapies across modalities and indications



SENTI BIO

Together, we can outsmart complex diseases with intelligent medicines.

tim.lu@sentibio.com