UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): October 10, 2023

SANA BIOTECHNOLOGY, INC.
(Exact name of registrant as specified in its charter)

Delaware	**001-39941**	**83-1381173**
(State or other jurisdiction of incorporation)	**(Commission File Number)**	**(IRS Employer Identification Number)**

188 East Blaine Street, Suite 400
Seattle, Washington 98102
(Address of principal executive offices, including Zip Code)

Registrant's telephone number, including area code: (206) 701-7914

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	**Trading Symbol(s)**	**Name of each exchange on which registered**
Common Stock, $0.0001 par value per share	SANA	The Nasdaq Stock Market LLC

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Item 2.05 Costs Associated with Exit or Disposal Activities

On October 10, 2023, Sana Biotechnology, Inc. ("Sana") announced a portfolio update to increase its focus on its *ex vivo* cell therapy product candidates. As part of the portfolio update, Sana plans to reduce its near-term investment in its fusogen platform for *in vivo* gene delivery, including by delaying the investigational new drug (IND) filing for its SG299 program, and reduce its workforce by approximately 29%. Sana anticipates that the portfolio update and associated reduction in force will be substantially complete by the fourth quarter of 2023, which is expected to result in 2024 operating cash burn of less than $200.0 million.

In connection with the portfolio update, Sana anticipates it will incur approximately $5.1 million and $1.7 million of cash-based expenses related to employee severance, benefits and related costs in the fourth quarter of 2023 and the first quarter of 2024, respectively. Sana will file an amended Current Report on Form 8-K if amounts differ materially from these estimates.

Item 7.01 Regulation FD Disclosure.

On October 10, 2023, Sana issued a press release announcing its portfolio update, a copy of which is furnished as Exhibit 99.1 to this Current Report on Form 8-K (this "Current Report") and is incorporated by reference herein.

On October 10, 2023, Sana released an updated corporate presentation (the "Corporate Presentation"), a copy of which is furnished as Exhibit 99.2 to this Current Report and is incorporated by reference herein.

The information furnished under Item 7.01 of this Current Report, including Exhibits 99.1 and 99.2, shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended ("Exchange Act"), or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference into any other filing under the Securities Act of 1933, as amended, or the Exchange Act, except as expressly set forth by specific reference in such a filing.

Cautionary Note Regarding Forward-Looking Statements

This Current Report contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, including statements regarding (i) Sana's expected 2024 operating cash burn, including expectations regarding the effect of the portfolio update thereon; (ii) the scope and the timing of the portfolio update; and (iii) the scope and timing of expected cash-based expenses and charges for employee severance and benefits and other costs related to the portfolio update, which 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. For a discussion of these risks and uncertainties, and other important factors, any of which could cause Sana's actual results to differ from those contained in the forward-looking statements, see the discussions of potential risks, uncertainties and other important factors in Sana's Annual Report on Form 10-K for the year ended December 31, 2022, and in subsequent filings with the SEC. Forward-looking statements in this Current Report are made as of the date of this Current Report and Sana undertakes no duty to update any such statements unless required by law.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

See the Exhibit Index below, which is incorporated by reference herein.

EXHIBIT INDEX

Exhibit Number	Description
99.1	Press Release of Sana Biotechnology, Inc. dated October 10, 2023
99.2	Corporate Presentation of Sana Biotechnology, Inc. dated October 10, 2023
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Sana Biotechnology, Inc.

Date: October 10, 2023

By: /s/ Bernard Cassidy

Bernard Cassidy
Executive Vice President and General Counsel

Exhibit 99.1

Sana Biotechnology Announces Increased Focus on Hypoimmune-Related Pipeline with the Potential to Deliver Clinical Proof of Concept Data from Four Programs in 2023 and 2024 with a 2024 Operating Burn under $200M

Increasing focus on ex vivo cell therapy platform based on extensive preclinical and early translational clinical data suggesting ability of hypoimmune (HIP)-modified cells to evade immune detection

Human proof of concept data in multiple clinical settings – including oncology, autoimmune diseases, and type 1 diabetes – expected in 2023 and 2024

IND submitted to investigate SC291 in multiple B-cell-mediated autoimmune diseases with initial proof of concept data expected in 2024

Enrollment continues in SC291 Phase 1 ARDENT trial in patients with refractory B-cell malignancies with data expected in 2023 and 2024

CTA submitted for investigator sponsored trial exploring HIP-modified primary islet cells in patients with type 1 diabetes; on track for initial HIP proof of concept data in 2023 and 2024

IND submission for SC262 in patients with B-cell malignancies who have failed a CD19 therapy on track for this quarter with initial proof of concept data expected in 2024

Reducing near-term investment on fusogen in vivo delivery platform clinical and preclinical programs, including delaying SG299 IND (in vivo CD19 CAR T)

2024 operating cash burn expected below $200 million following approximately 29% headcount reduction and decreased expenses related to the fusogen platform

SEATTLE, October 10, 2023 — Sana Biotechnology, Inc. (NASDAQ: SANA), a company focused on changing the possible for patients through engineered cells, today announced a portfolio update, including both increased focus on its *ex vivo* cell therapy product candidates and an IND submission for SC291 in autoimmune diseases. Sana is positioned to generate clinical proof of concept from multiple programs in 2023 and 2024, with a goal of better understanding its allogeneic HIP CAR T programs in blood cancers, allogeneic HIP CAR T program in autoimmune diseases, and HIP pancreatic islet cells in type 1 diabetes. The company will reduce near-term spend on its fusogen platform for *in vivo* gene delivery, which postpones the planned SG299 IND and decreases its expected forward operating burn.

“We have increased confidence in the potential of our HIP platform, and near-term, we are increasing focus on three therapeutic areas that utilize this platform and have the potential to address large unmet needs with curative intent – allogeneic CAR T cells in oncology, allogeneic CAR T cells in autoimmune diseases, and pancreatic islet cell transplantation in type 1 diabetes. We plan to present clinical data in these areas at various times across 2023 and 2024,” said Steve Harr, President and CEO of Sana. “The SC291 IND submission for the treatment of

autoimmune diseases positions us to move into the rapidly emerging opportunity of utilizing CAR T cells in these large and underserved populations, leveraging the investments we have made to date in the HIP platform, T cell therapeutics, and scaled manufacturing that can produce hundreds of patient doses per run. We need to ensure that we have a financeable cost structure with these emerging opportunities factored in, and this strategic re-positioning enables us to deliver significant clinical data across multiple drug candidates with the current balance sheet. These changes unfortunately mean that many talented and valued colleagues will depart the company, and we thank them for their contributions and commitment to our mission."

Select Program Review

SC291 Oncology (HIP-modified CD19-directed allogeneic CAR T): Enrollment continues in Sana's ARDENT Phase 1 study for the treatment of B-cell lymphomas and leukemias with clinical data expected in 2023 and 2024.

SC291 Autoimmune (HIP-modified CD19-directed allogeneic CAR T): Sana submitted an IND for the treatment of multiple autoimmune diseases, with preliminary clinical data expected across multiple indications in 2024.

SC262 (HIP-modified CD22-directed allogeneic CAR T): Sana expects to submit an IND in 4Q 2023 for the treatment of B-cell lymphomas and leukemias in patients who have failed CD19-directed CAR T therapies, with preliminary clinical data expected in 2024.

HIP-modified primary islet cells for the treatment of type 1 diabetes: A CTA has been submitted for an investigator sponsored trial exploring the potential of HIP modifications to allogeneic primary islet cells to enable immune evasion and overcome transplant rejection in type 1 diabetes; proof of concept data expected in 2023 and 2024.

SG299 (*in vivo* CAR T with CD8-targeted fusogen delivery of a CD19-directed CAR): Sana will continue its focused research on this innovative platform but not submit an IND at this time as previously planned.

2024 Operating Burn Guidance

Sana expects 2024 operating cash burn to be below $200 million, allowing the current cash position to extend further into 2025. The strategic re-positioning will reduce headcount by approximately 29% while allowing the company to invest in clinical capabilities across multiple indications in oncology, autoimmune diseases, type 1 diabetes, and central nervous system disorders. Sana will leverage its existing allogeneic manufacturing expertise and continue development of its GMP manufacturing facility in Bothell, Washington.

About Sana Biotechnology

Sana Biotechnology, Inc. is focused on creating and delivering engineered cells as medicines for patients. We share a vision of controlling genes, replacing missing or damaged cells, and making our therapies broadly available to patients. We are a passionate group of people working together to create an enduring company that changes how the world treats disease. Sana has operations in Seattle, Cambridge, South San Francisco, and Rochester. For more information about Sana Biotechnology, please visit https://sana.com/.

Cautionary Note Regarding Forward-Looking Statements

This press release contains forward-looking statements about Sana Biotechnology, Inc. (the "Company," "we," "us," or "our") within the meaning of the federal securities laws, including those related to the Company's vision, progress, and business plans; expectations for its development programs, product candidates and technology platforms, including its pre-clinical, clinical and regulatory development plans and timing expectations, including with respect to the expected timing of IND submissions for the Company's product candidates; the Company's expectations regarding the timing, substance, and impact of the data from its clinical trials as well as the investigator sponsored trial exploring HIP-modified primarily islet cells in patients with type 1 diabetes; the potential ability of HIP-modified cells to evade immune detection and overcome allogeneic rejection; the Company's expected 2024 operating cash burn; the potential impact of the Company's reduction in its near-term spend on the fusogen program, including on the timing of an IND submission for the SG299 program and the Company's forward operating burn; the Company's expectations with respect to the potential therapeutic benefits and impact of its development programs and platforms, including in various indications; the potential of SC291 to treat autoimmune diseases; the potential impact of the portfolio update on the Company's clinical and manufacturing capabilities; and the Company's future plans with respect to its SG299 program. All statements other than statements of historical facts contained in this press release, 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, as well as economic, market and social disruptions. For a detailed discussion of the risk factors that could affect the Company's actual results, please refer to the risk factors identified in the Company's SEC reports, including but not limited to its Quarterly Report on Form 10-Q dated August 3, 2023. Except as required by law, the Company undertakes no obligation to update publicly any forward-looking statements for any reason.

Investor Relations & Media:

Nicole Keith
investor.relations@sana.com
media@sana.com

Exhibit 99.2

Corporate Presentation

October 2023

Sana Biotechnology®

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 studies, and clinical trials.

For a detailed discussion of the risk factors that could affect the Company's actual results, please refer to the risk factors identified in the Company's SEC reports, including its Quarterly Report on Form 10-Q dated August 3, 2023. Except as required by law, the Company undertakes no obligation to update publicly any forward-looking statements for any reason.

Sana Biotechnology
Engineered Cells as Medicines

Sana's ambition is to repair or replace any cell in the body. Technologies address fundamental barriers:

- **Hypoimmune (HIP) technology:** Overcoming immune rejection of allogeneic cells
- **Fusogen technology:** *In vivo* delivery of genomic modification reagents in a cell-specific manner

Overcoming immune rejection of allogeneic cells has potential to change cell therapy:

- Allogeneic CAR T cells that perform clinically like autologous CAR T cells can transform treatment of hematological malignancies
- Key to unlocking the potential of stem cell-derived therapies such as pancreatic islet cells for the treatment of type 1 diabetes

Two opportunities in 2023 for clear clinical proof of concept:

- SC291: Cell persistence and clinical efficacy
- HIP primary islets in patients with type 1 diabetes
- Results will provide insights in CAR T cell and stem cell-based platforms – ability to overcome allogeneic and autoimmune cell rejection

Pipeline poised to deliver multiple clinical data readouts over next several years:

- **Hypoimmune allogeneic CAR T cells:** SC291 (CD19 oncology), SC291 (CD19 autoimmune), SC262 (CD22), SC255 (BCMA), and beyond
- **Regenerative medicine:** SC451 (type 1 diabetes) and SC379 (CNS disorders)

Balance sheet allows potential for multiple data readouts

Sana's platforms, technology, and programs

Pipeline poised to deliver multiple clinical data readouts over next several years

Product Candidates	Mechanism	Potential Indications	Potential Clinical Milestones	
			2023	2024
SC291 (HIP)	CD19-targeted allo CAR T	NHL/ALL/CLL	●	●
HIP primary islet cells[1]		Type 1 Diabetes	● ●	●
SC291 (HIP)	CD19-targeted allo CAR T	Autoimmune	●	●
SC262 (HIP)	CD22-targeted allo CAR T	NHL/ALL/CLL	●	●
SC451 (HIP)	Stem-cell derived pancreatic islet cells	Type 1 Diabetes		
SC379	Glial progenitor cells	PMD, HD, SPMS		
SC255 (HIP)	BCMA-targeted allo CAR T	Multiple Myeloma		

● IND filing
● Clinical data

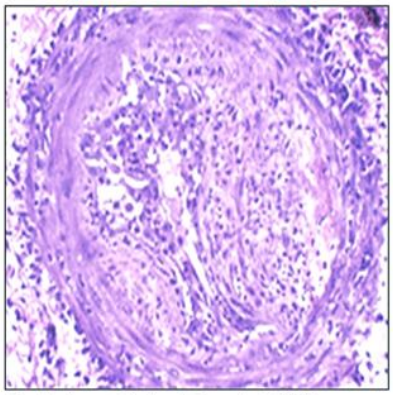
[1]IST, investigator sponsored trial.
Abbreviations: ALL, acute lymphoblastic leukemia; CLL, chronic lymphocytic leukemia; HD, Huntington's disease; IND, investigational new drug; NHL, non-Hodgkin's lymphoma; PMD, Pelizaeus-Merzbacher Disease; SPMS, Secondary Progressive Multiple Sclerosis.

Sana Biotechnology

Overcoming allogeneic immune rejection has been key limitation in transplant and cellular medicine

- ~75 years of organ and bone marrow transplants – immune rejection remains the largest problem
- Cell-based medicines face similar immune rejection challenges
- Significant immunosuppression is current standard
- Genome modification efforts to date have generally been incomplete
- Autologous therapies have limited scalability and are only available for a small number of cell types
- Sana's hypoimmune platform is designed to overcome immune rejection of foreign cells, which has the potential to unlock the field of cellular medicine

Biopsy of acute rejection of a pancreas transplant

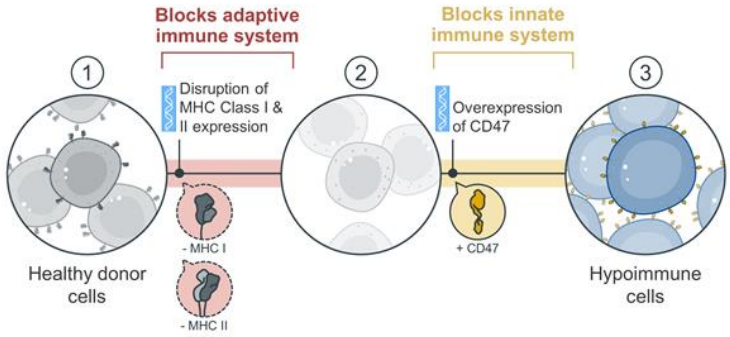


Drachenberg et al. *Am. J. Transplant.* 2008

Sana's hypoimmune solution: Leverage insights from nature

Leverage insights from nature to create hypoimmune cells

Sana's hypoimmune approach



Abbreviations: MHC, major histocompatibility complex.
Current clinical platform with multiple ongoing approaches in research phase.

Sana's team has pioneered hypoimmune technology

nature biotechnology

LETTERS

https://doi.org/10.1038/s41587-019-0016-3

Hypoimmunogenic derivatives of induced pluripotent stem cells evade immune rejection in fully immunocompetent allogeneic recipients

Tobias Deuse[1,7], Xiaomeng Hu[1,2,3,7], Alessia Gravina[1], Dong Wang[1,2], Grigol Tediashvili[1,2,3], Chandrav De[4], William O. Thayer[4], Angela Wahl[4], J. Victor Garcia[4], Hermann Reichenspurner[2,3], Mark M. Davis[5], Lewis L. Lanier[6] and Sonja Schrepfer[1,6]*

JEM

ARTICLE

The SIRPα–CD47 immune checkpoint in NK cells

Tobias Deuse[1,2], Xiaomeng Hu[1,2,3], Sean Agbor-Enoh[1,2], Moon K. Jang[1], Malik Alawi[1], Ceren Saygi[1], Alessia Gravina[1], Grigol Tediashvili[1], Vinh Q. Nguyen[1], Yuan Liu[1], Hannah Valantine[1,2], Lewis L. Lanier[3,4,5], and Sonja Schrepfer[1,2,3,6]

Here we report on the existence and functionality of the immune checkpoint signal regulatory protein α (SIRPα) in NK cells and describe how it can be modulated for cell therapy. NK cell SIRPα is up-regulated upon IL-2 stimulation, interacts with target cell CD47 in a threshold-dependent manner, and counters other stimulatory signals, including IL-2, CD16, or NKG2D. Elevated expression of CD47 protected K562 tumor cells and mouse and human MHC class I–deficient target cells against SIRPα+ primary NK cells, but not against SIRPα− NKL or NK92 cells. SIRPα deficiency or antibody blockade increased the killing capacity of NK cells. Overexpression of rhesus monkey CD47 in human MHC-deficient cells prevented cytotoxicity by rhesus NK cells in a xenogeneic setting. The SIRPα–CD47 axis was found to be highly species specific. Together, the results demonstrate that disruption of the SIRPα–CD47 immune checkpoint may augment NK cell antitumor responses and that elevated expression of CD47 may prevent NK cell–mediated killing of allogeneic and xenogeneic tissues.

PNAS

Hypoimmune induced pluripotent stem cell–derived cell therapeutics treat cardiovascular and pulmonary diseases in immunocompetent allogeneic mice

Tobias Deuse[a,1], Grigol Tediashvili[a,b,1], Xiaomeng Hu[a,b,c,d,1], Alessia Gravina[a], Annika Tamenang[a,b], Dong Wang[a], Andrew Connolly[e], Christian Mueller[f,g], Beñat Mallavia[h], Mark R. Looney[h,i], Malik Alawi[j], Lewis L. Lanier[a,2,3], and Sonja Schrepfer[a,d,2,3]

[a]Division of Cardiothoracic Surgery, Department of Surgery, Transplant and Stem Cell Immunobiology Laboratory, University of California, San Francisco, CA 94143; [b]Department of Cardiovascular Surgery, University Heart Center Hamburg, 20246 Hamburg, Germany; [c]German Center for Cardiovascular Research (DZHK) partner site Hamburg/Kiel/Luebeck, 20246 Hamburg, Germany; [d]Sana Biotechnology Inc., South San Francisco, CA 94080; [e]Department of Pathology, University of California, San Francisco, CA 94143; [f]Innate Gene Therapy Center, University of Massachusetts, Worcester, MA 01605; [g]Department of Pediatrics, University of Massachusetts, Worcester, MA 01605; [h]Department of Medicine, University of California, San Francisco, CA 94143; [i]Department of Laboratory Medicine, University of California, San Francisco, CA 94143; [j]Bioinformatics Core, University Medical Center Hamburg-Eppendorf, 20246 Hamburg, Germany; and [k]Department of Microbiology and Immunology and the Parker Institute for Cancer Immunotherapy, University of California, San Francisco, CA 94143

Contributed by Lewis L. Lanier, May 25, 2021 (sent for review October 22, 2020; reviewed by John Cooke and Yuji Shiba

Science Translational Medicine

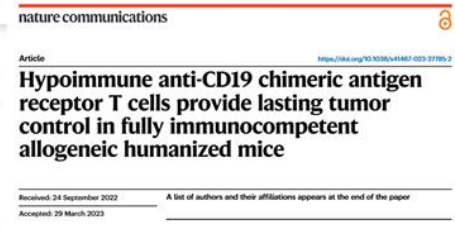
Current Issue First release papers

RESEARCH ARTICLE | TYPE 1 DIABETES

Human hypoimmune primary pancreatic islets avoid rejection and autoimmunity and alleviate diabetes in allogeneic humanized mice

XIAOMENG HU, CORIE GATTIS, ARI G. OLROYD, ANNABELLE M. FRIERA, KATHY WHITE, CHI YOUNG, RON BASCO, MEGHAN LAMBA, FRANK WELLS, E. J. AND SONJA SCHREPFER +8 authors Authors Info & Affiliations

SCIENCE TRANSLATIONAL MEDICINE · 12 Apr 2023 · Vol 15, Issue 691 · DOI: 10.1126/scitranslmed.adg5754



nature communications

Article

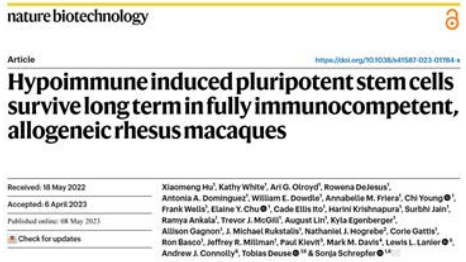
https://doi.org/10.1038/s41467-023-37785-2

Hypoimmune anti-CD19 chimeric antigen receptor T cells provide lasting tumor control in fully immunocompetent allogeneic humanized mice

Received: 24 September 2022

Accepted: 29 March 2023

A list of authors and their affiliations appears at the end of the paper



nature biotechnology

Article

https://doi.org/10.1038/s41587-023-01784-x

Hypoimmune induced pluripotent stem cells survive long term in fully immunocompetent, allogeneic rhesus macaques

Received: 18 May 2022

Accepted: 6 April 2023

Published online: 08 May 2023

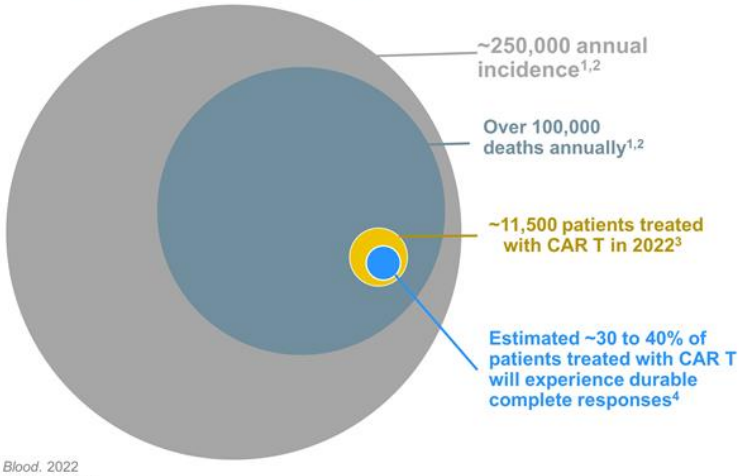
Check for updates

Xiaomeng Hu[1], Kathy White[1], Ari G. Olroyd[1], Rowena DeJesus[1], Antonia A. Dominguez[1], William E. Dowdle[1], Annabelle M. Friera[1], Chi Young[1], Frank Wells[1], Elaine Y. Chu[1], Cade Ellis Ito[1], Harini Krishnapura[1], Surbhi Jain[1], Ramya Ankala[1], Trevor J. McGill[1], August Lin[1], Kyla Egenberger[1], Allison Gagnon[1], J. Michael Rukstalis[1], Nathaniel J. Hogrebe[2], Corie Gattis[1], Ron Basco[1], Jeffrey R. Millman[2], Paul Klevit[1], Mark M. Davis[3], Lewis L. Lanier[4], Andrew J. Connolly[5], Tobias Deuse[1,6] & Sonja Schrepfer[1,6]

Sana Biotechnology

Hematologic cancers continue to have a high unmet need

High mortality in lymphoma and myeloma in the US and EU5



[1]Avezbakiyev et al. *Blood*. 2022
[2]Durie et al. *The Oncologist*. 2020
[3]Clarivate DRG NHL and MM Market Forecast Nov 2022; internal analysis of secondary EPI data.
[4]Scivida 2022 NHL Factbook
Abbreviations: EU5, France, Germany, Italy, Spain, UK

Challenges

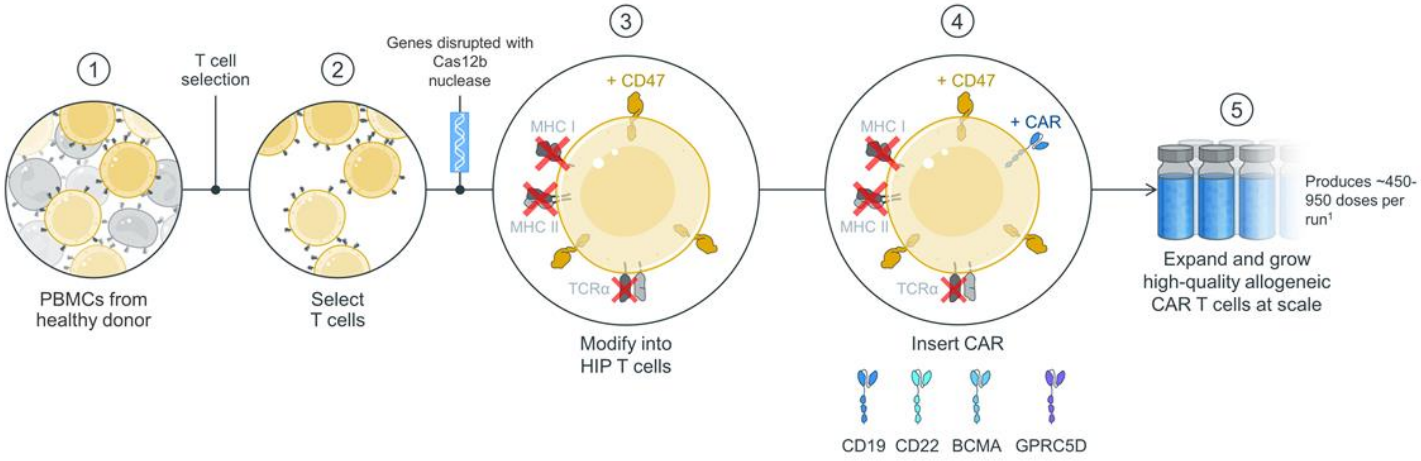
- Autologous CAR T cell scalability
- Many patients fail CAR T treatment
- Allogeneic CAR T cells immune rejection limits persistence and efficacy

Opportunity

- Known targets
- Known efficacy and safety bar

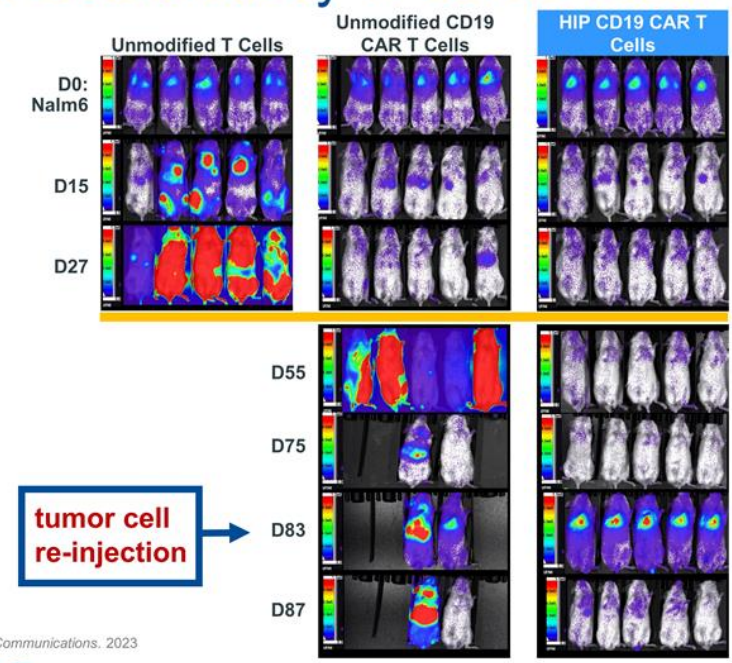
Sana's HIP CAR T platform can address challenges and exploit opportunities

Sana's HIP platform can create a regenerative pipeline for allogeneic CAR T therapies



[1]~450 doses assumes the middle dose in the ARDENT Phase 1 study and ~950 doses assumes an autoimmune dose consistent with public data on current autoimmune dose levels.
Abbreviations: Cas12b, CRISPR associated protein 12b; GPRC5D, G protein–coupled receptor, class C, group 5, member D; PBMC, peripheral blood mononuclear cell.

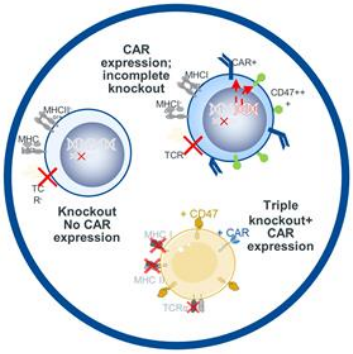
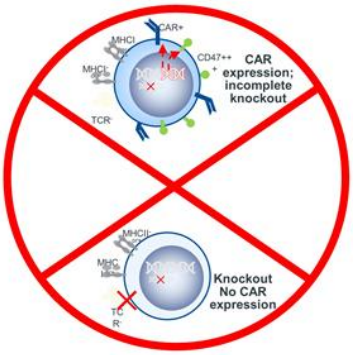
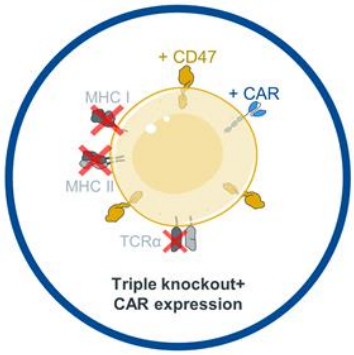
HIP CD19 CAR T cells demonstrate persistence and continued efficacy in humanized mice model



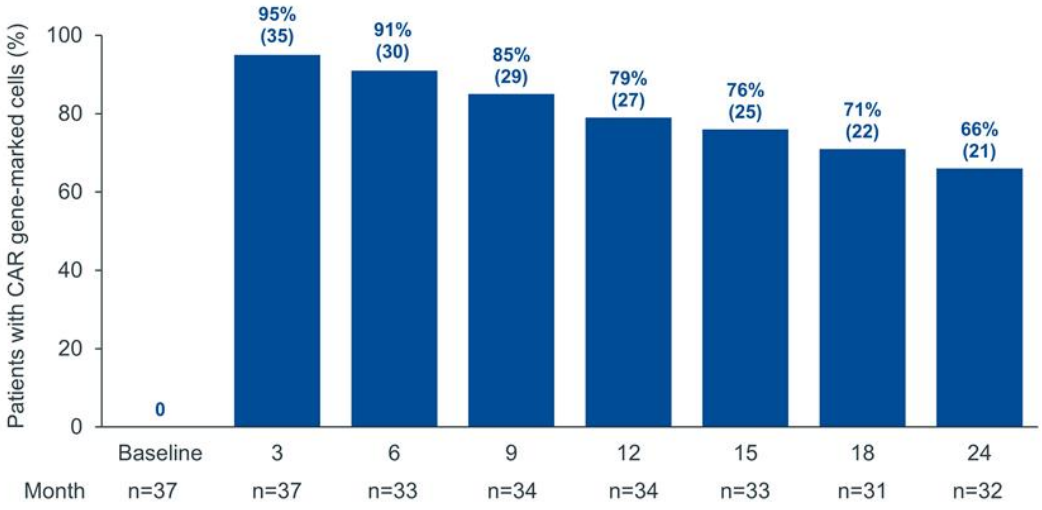
- SC291 tumor control comparable at early timepoints to standard CD19 CAR T cells
- SC291 tumor control superior at later timepoints to standard CD19 CAR T cells
- SC291 controls tumors when animals are rechallenged with tumor

Hu et al. *Nature Communications*. 2023

ARDENT trial will provide rapid insight into hypoimmune immune evasion

Day 0	2-4 weeks	1 month +
SC291 is a mixture of HIP and non-HIP CAR T cells	**T cells and NK cells recover**	**HIP CAR T cells survive after immune recovery**
		
Triple Knockout and CAR expression: 40-50% are fully modified cells 80-85% have all three gene knockouts	**Non-HIP cells eliminated by patient immune system**	**Triple Knockout and CAR expression:** With success, ~100% of surviving cells fully modified

CAR T cells remain detectable in the majority of patients with ongoing response treated in ZUMA-1 trial

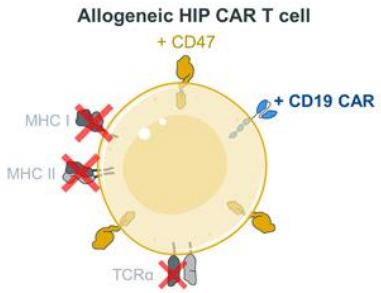


Locke et al. *Lancet Oncology*. 2019

Improved persistence can lead to best-in-class allogeneic CAR T platform

SC291: Sana's CD19 HIP allogeneic CAR T

- First clinical data in 2023



Data show CAR T cell persistence correlates with long term complete response (CRs) rates[1]

CAR T Persistence		Potential Efficacy Outcome
≤ 1 month	❯❯❯	Comparable to existing Allo CAR T
2 to 3 months	❯❯❯	Best-in-class Allo CAR T
3 to 6 months	❯❯❯	Comparable to Auto CAR T
≥ 6 months	❯❯❯	Better than Auto CAR T

[1]Porter et al. *Science Translational Medicine*. 2015

Sana Biotechnology

CAR T cells have the potential to transform autoimmune disorders like they have in blood cancers

B-cell targeting validated across multiple autoimmune diseases

Field has spent 25+ years identifying

- Systemic lupus erythematosus (SLE)
- Lupus Nephritis
- Vasculitis (Granulomatosis with polyangiitis & Microscopic polyangiitis)
- Neuromyelitis optical spectrum
- Pemphigus
- Relapsing and progressive MS
- Rheumatoid Arthritis
- Sjogren syndrome
- NMDAR encephalitis
- Thrombocytopenic purpura
- Amyloidosis
- Scleroderma
- Autoimmune Hemolytic Anemia
- Chronic immune demyelinating polyradiculoneuropathy
- Immune-mediated necrotizing myopathy
- Membranous nephropathy

Depth of B-cell depletion correlates with clinical benefit

- CD19 CAR T cell therapy results in deep B-cell depletion
- Potential to deliver durable long-term remissions

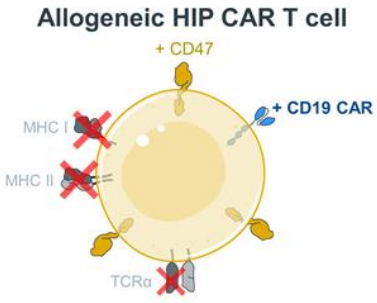
SC291 has the scale and potential profile to change patient outcomes

- Drug product from oncology studies ready for use
- PoC studies across multiple diseases in near term

Adapted from Zhang et al. *Frontiers in Immunology*. 2023; Oh et al. *Immune Network*. 2023; Lee et al. *Nature Reviews Drug Discovery*. 2021

SC291 product candidate offers potential to address large unmet need in various autoimmune disorders

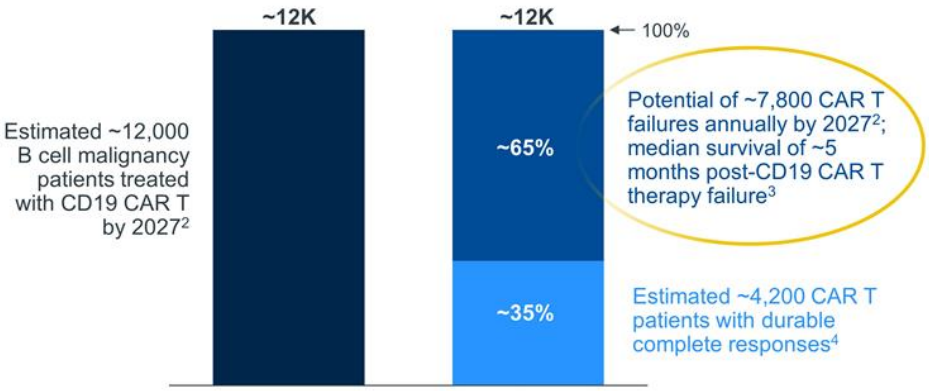
SC291: CD19 HIP allogeneic CAR T for treatment of autoimmune disorders



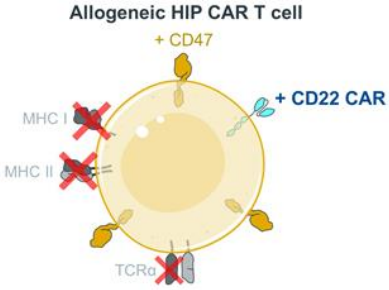
- >75 different types of autoimmune disorders with high unmet need and underlying B cell pathology
- Lupus nephritis alone impacts ~100,000 people in the US
- Utilize SC291 Phase 1 supply for potential rapid path to clinic
- Submitted IND with clinical data in 2024

SC262: Targeting growing population of patients with inadequate response to CD19 therapy

CD19 CAR T relapsed patients represent large and growing unmet need[1]



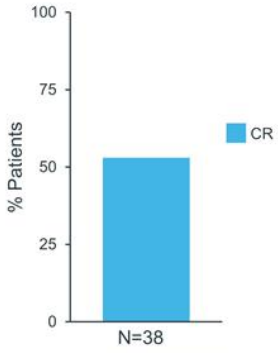
SC262 utilizes a clinically-validated CD22 CAR



[1]US, EU5, and Japan.
[2]Clarivate DRG NHL Market Forecast Nov 2021; 2027 Forecast is 2L+ LBCL patients; internal analysis of secondary EPI data.
[3]Di Blasi et al. *Blood*.2022; DESCAR-T registry.

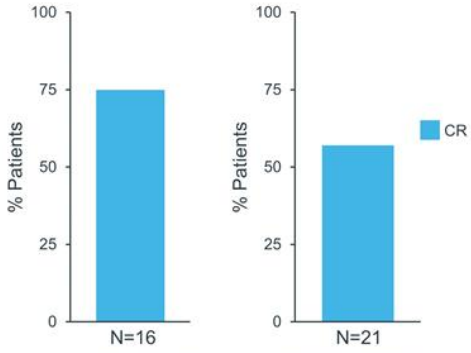
SC262: Licensed CD22 CAR produced strong clinical data in CD19 failures when part of autologous CAR T

>50% 6-month CR rate in CD19 CAR failure DLBCL patients



2023 DAVA Frank/Stanford

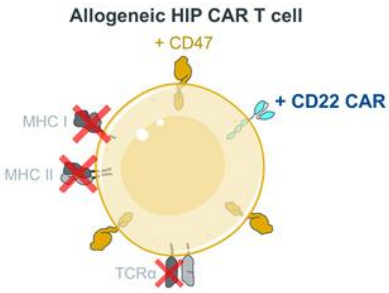
High rate of CRs in CD19 failure ALL patients
~80% patients with prior CD19 therapy



2022 ASH Miklos/Stanford

2018 *Nature Med* Fry, et al.

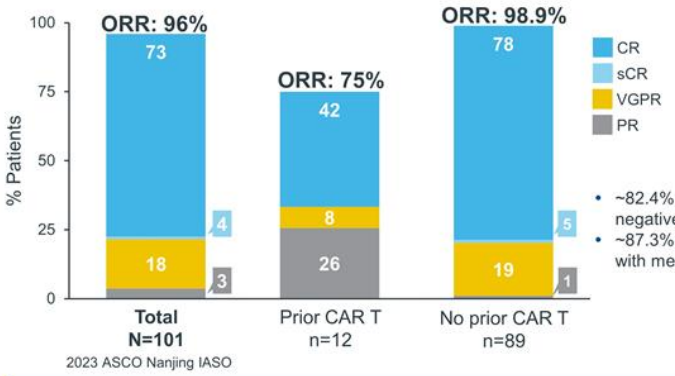
Expand our allo T platform to CD22 with Sana's SC262 candidate



SC262 Goals: File IND this year; clinical data in 2024

SC255: Licensed BCMA CAR produced strong clinical data in myeloma when part of autologous CAR T

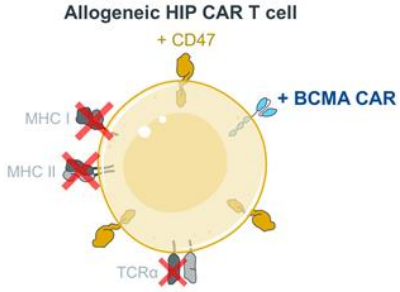
High response rate in multiple myeloma with 95% of patients MRD negative



2023 ASCO Nanjing IASO

- ~82.4% patients MRD negative at 12 months
- ~87.3% patients in CR/sCR with median follow-up ~1 year

Expand our allo T platform to BCMA with Sana's SC255 candidate



SC255 Goal: File IND as early as 2024

Abbreviations: CR, complete response; ORR, objective response rate; PR, partial response; sCR, stringent complete response; VGPR, very good partial response.

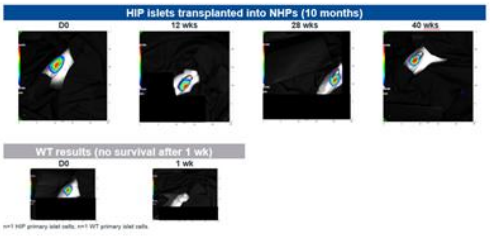
Type 1 diabetes represents a large unmet need with a loss of ~15 years of life[1]

- Disease caused by autoimmune destruction of insulin-producing beta cells in the pancreas; results in inability to control blood glucose
- Type 1 diabetes is a large unmet need with 1.9M patients in the U.S. and 2.4M in Europe[2]
- Long-term complications: end-organ damage, including heart attack, stroke, blindness, and kidney failure
- SC451 goal is euglycemia without exogenous insulin or immunosuppression

[1]Rawshani et al. *Lancet.* 2018
[2]Clarivate Type 1 Diabetes Landscape & Forecast, December 2022; internal analysis of secondary EPI data.

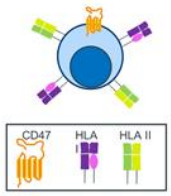
Sana's solution: SC451 is an allogeneic iPSC-derived hypoimmune pancreatic islet cell therapy

1. Hypoimmune technology overcomes allogeneic rejection and autoimmunity



2. iPSC-derived islet cells can be scaled to treat many patients

Create iPSC GMP master cell bank

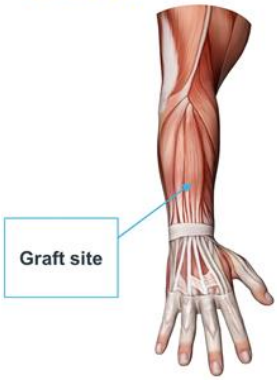


Starting iPSC cell

Differentiate iPSCs into glucose-responsive islet cells that are hypoimmune

Hypoimmune iPSC-derived islet cells

3. Intramuscular implantation site improves access and function

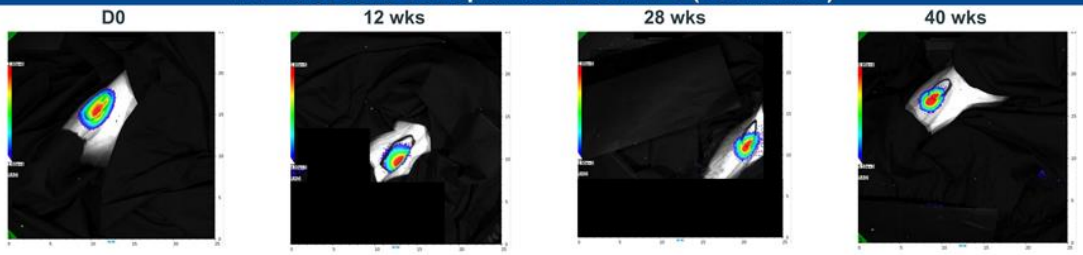


Hu et al. *Nature Biotechnology*. 2023

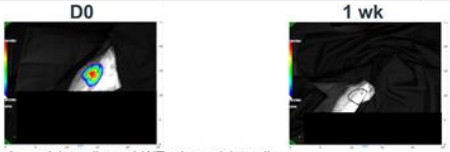
Survival of allogeneic hypoimmune pancreatic islet cells for 10+ months without immunosuppression

Study design:
- NHP primary islet cells isolated and HIP-engineered
- Cells injected intramuscularly into a healthy, allogeneic NHP without immunosuppression

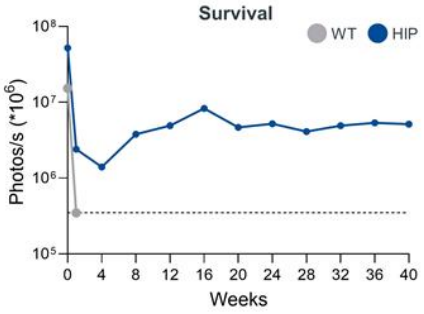
HIP islet cells transplanted into NHPs (10 months)



WT results (no survival after 1 wk)



n=1 HIP primary islet cells; n=1 WT primary islet cells.

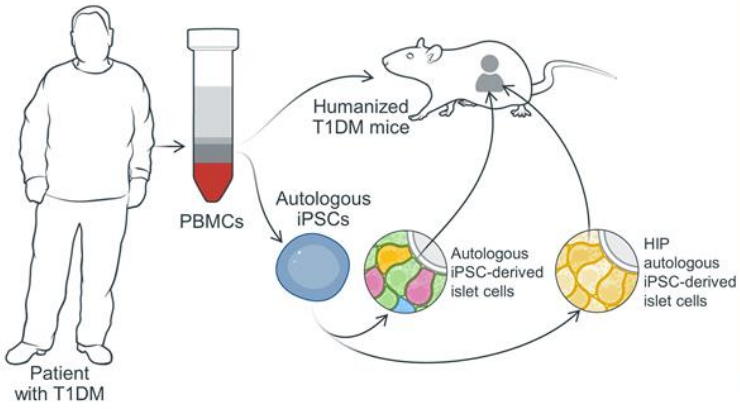


NHP unmodified islet cells (wt) and NHP hypoimmune islet cells (HIP)
Hu et al. *Nature Biotechnology*. 2023

Sana Biotechnology

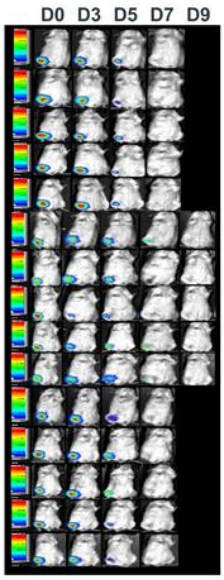
Sana's immunology, gene modification, & stem cell capabilities create proprietary type 1 diabetes model

PBMCs from patient with T1DM used to generate stem cell-derived islet cells and to humanize immune system in mice



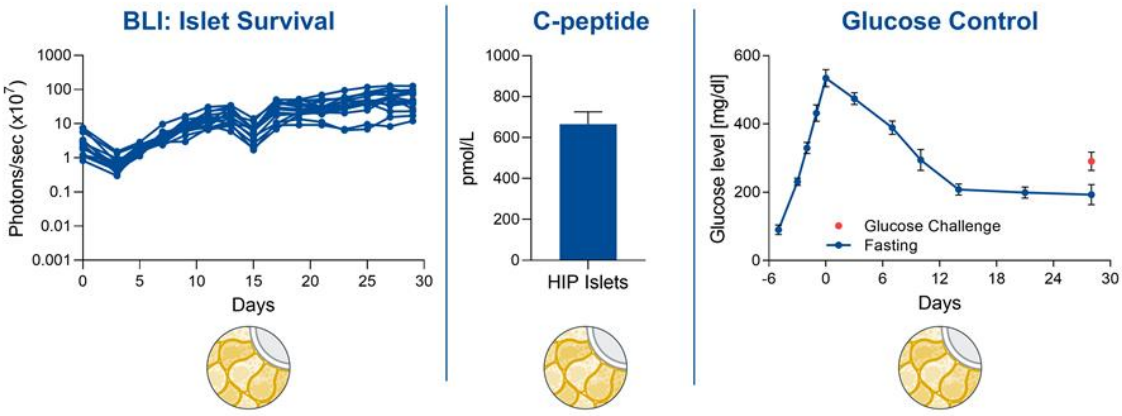
Unmodified stem cell-derived islet cells from patient with T1DM do not survive

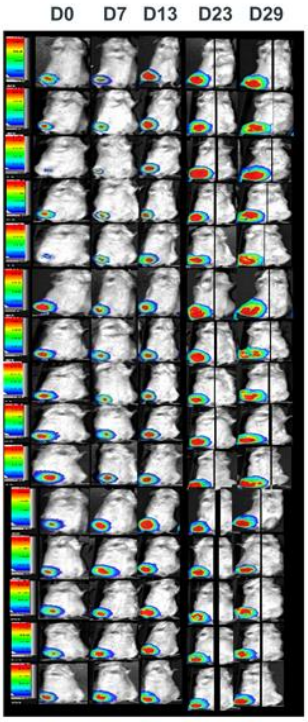
Patient T cells eliminate islet cells due to autoimmunity



Abbreviations: T1DM, type 1 diabetes mellitus
Hu et al. *Sci Transl Med*. 2023

HIP iPSC-derived pancreatic islet cells from patient with T1DM evade autoimmune killing and control glucose



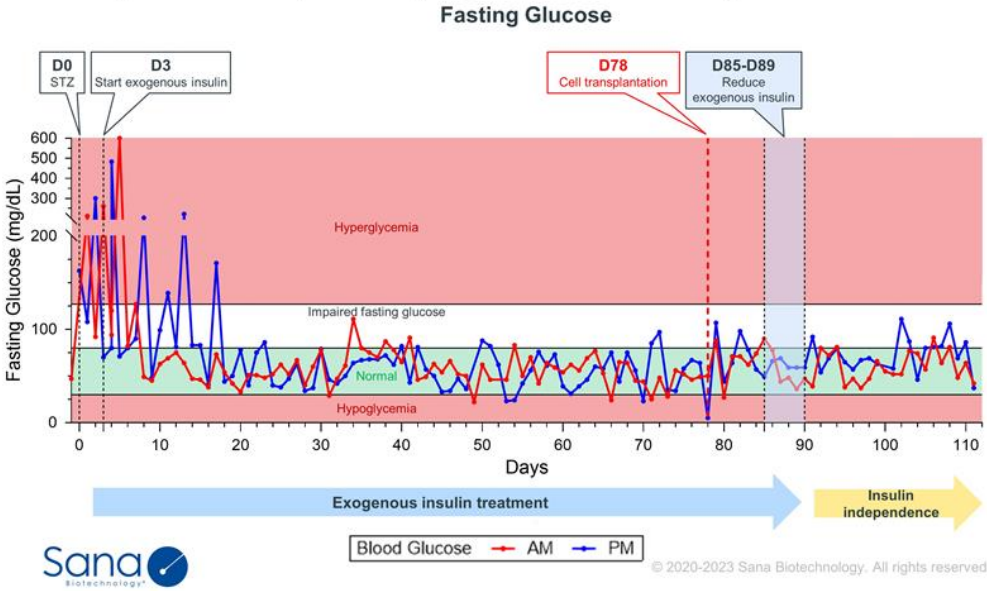


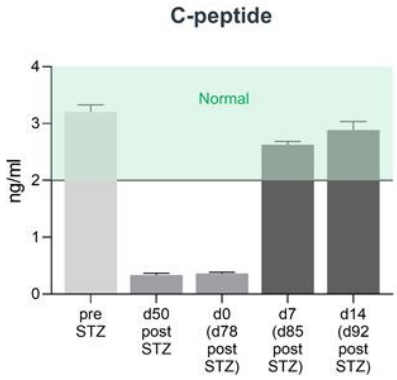
Abbreviations: BLI, bioluminescence imaging
Hu et al. *Sci Transl Med*. 2023.

HIP-modified allogeneic islet cells lead to normal blood glucose with no insulin and no immunosuppression in diabetic NHP

Study Design (N=1)

- NHP primary islet cells isolated and HIP-modified
- Cells injected intramuscularly into a healthy, allogeneic NHP without immunosuppression



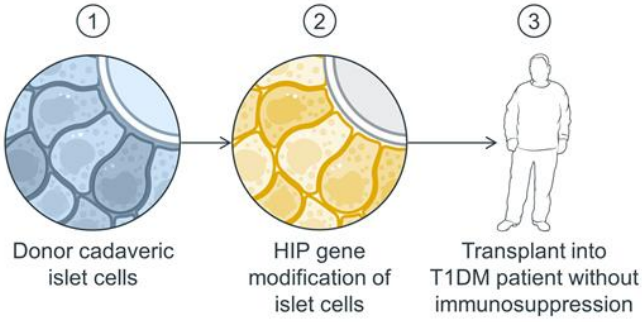


Sana Biotechnology

Path to potential clinical validation of hypoimmune islet cells in T1DM patients in 2023

- Investigator sponsored trial
- Primary human HIP islet cells transplantation in type 1 diabetes patients
- Goal: Cell survival with no immunosuppression
- Goal: Data in 2023
- Insight for SC451

Overview



Key Measured Outcomes

Cell survival & immune evasion
C-peptide
Glycemic control

Sana Biotechnology

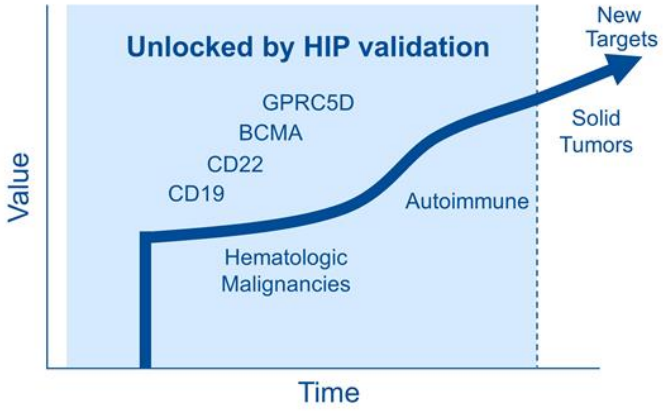
Goal is to build a best-in-class portfolio to treat patients with a range of cancers, autoimmune diseases, and beyond

Known

- [x] Validated targets
- [x] Validated CAR constructs for allogeneic platform
- [x] >100,000 potential cancer patients worldwide[1,2]
- [x] HIP platform understood in preclinical models
- [x] Potential for SLE and other autoimmune disorders

Future State

- [ ] Type 1 diabetes
- [ ] Solid tumors
- [ ] Other stem cell-derived products

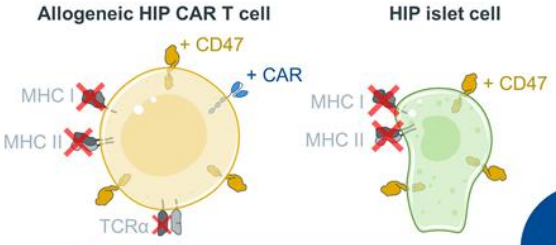


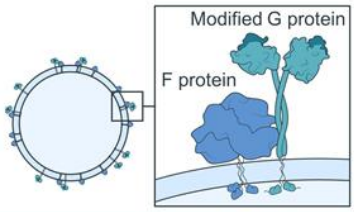
Unlocking the potential of our hypoimmune platform across multiple patient populations

[1]Avezbakiyev et al. *Blood*. 2022
[2]Durie et al. *The Oncologist*. 2020

Sana Biotechnology

Sana aspiration: Engineered cells as medicines





2023

Ex Vivo – Hypoimmune

Allogeneic CAR T Franchise
- Oncology: SC291, SC262, SC255
- Autoimmune: SC291

Stem Cell-Derived
- Type 1 Diabetes: SC451
- CNS: SC379[1]

In Vivo – Fusogen

- Cell-specific delivery of genomic modification material

Engineered cells into new therapeutic areas

[1]Does not incorporate hypoimmune genomic modifications

Sana Biotechnology

Thank You

Sana Biotechnology
www.sana.com