Making a Living Drug Readily Accessible to Patients in Need

Transforming the Treatment of Cancer and Autoimmune Diseases with Off-the-shelf, Multiplexed-engineered, iPSC-derived Cellular Immunotherapy

February 2025

Forward-Looking Statements

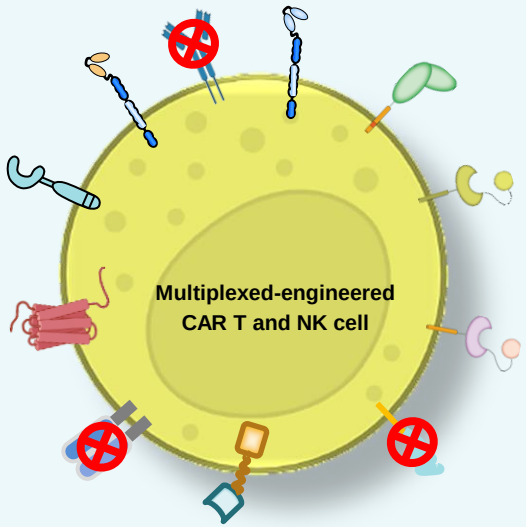
This presentation contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, including statements regarding the safety and therapeutic potential of the Company's product candidates, the advancement of and plans and timelines related to the Company's ongoing and planned clinical studies and the clinical investigation of its product candidates, the timing for the Company's receipt and announcement of data from its clinical trials and preclinical studies, the Company's clinical development and regulatory strategy, and the Company's expectations regarding progress and timelines, and potential payments under its collaboration, and the objectives, plans and goals of its collaboration with Ono Pharmaceutical, Ltd. These and any other forward-looking statements in this presentation are based on management's current expectations of future events and are subject to a number of risks and uncertainties that could cause actual results to differ materially and adversely from those set forth in or implied by such forward- looking statements. These risks and uncertainties include, but are not limited to, the risk that results observed in studies of its product candidates, including interim results and results from earlier studies, may not be predictive of final results or results observed in ongoing or future studies involving these product candidates, the risk of a delay in the initiation of, or in the enrollment or evaluation of subjects in, any clinical studies, and the risk that the Company may cease or delay manufacture, or preclinical or clinical development, of any of its product candidates for a variety of reasons (including regulatory requirements, difficulties in manufacturing or supplying the Company's product candidates, prioritization of other of its product candidates for advancement, and any adverse events or other negative results that may be observed during preclinical or clinical development). These statements are also subject to other risks and uncertainties as further detailed in the Company's most recently filed periodic report, and subsequent periodic reports filed by the Company, under the Securities Exchange Act of 1934, as amended, any of which could cause actual results to differ materially from those contained in or implied by the forward-looking statements in this presentation. The Company is providing the information in this presentation as of the date hereof and does not undertake any obligation to update any forward-looking statements contained in this presentation unless required by applicable law.

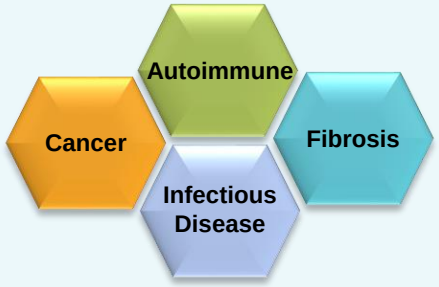
Fate THERAPEUTICS

Fate Therapeutics

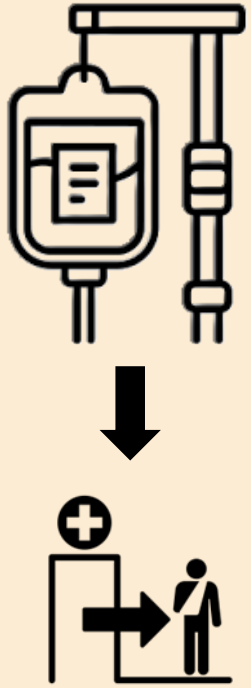
Pioneering the Vision of Drug Development for Cell Therapies

A "living drug" uniquely capable of targeting a broad array of diseases





A novel paradigm where cell therapies are administered routinely in an outpatient setting without the need of conditioning chemotherapy with the option to redose as needed



A renewable manufacturing process that can deliver cell therapies on-demand to patients in need

Multiplexed Engineering
Incorporate multiple mechanisms of action

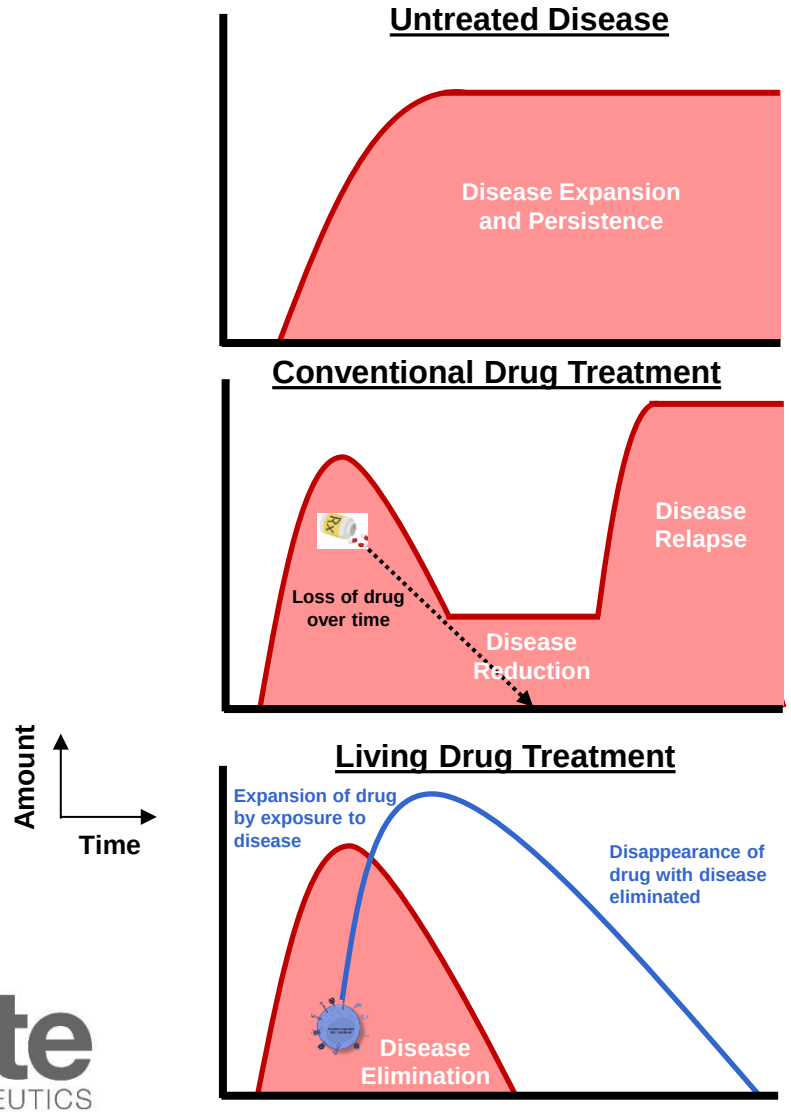
Mass Production from MCB
Reliable manufacturing process from master cell bank (MCB) with high yield at low cost per dose

Uniform Products
Consistent identity, purity and potency of cell products

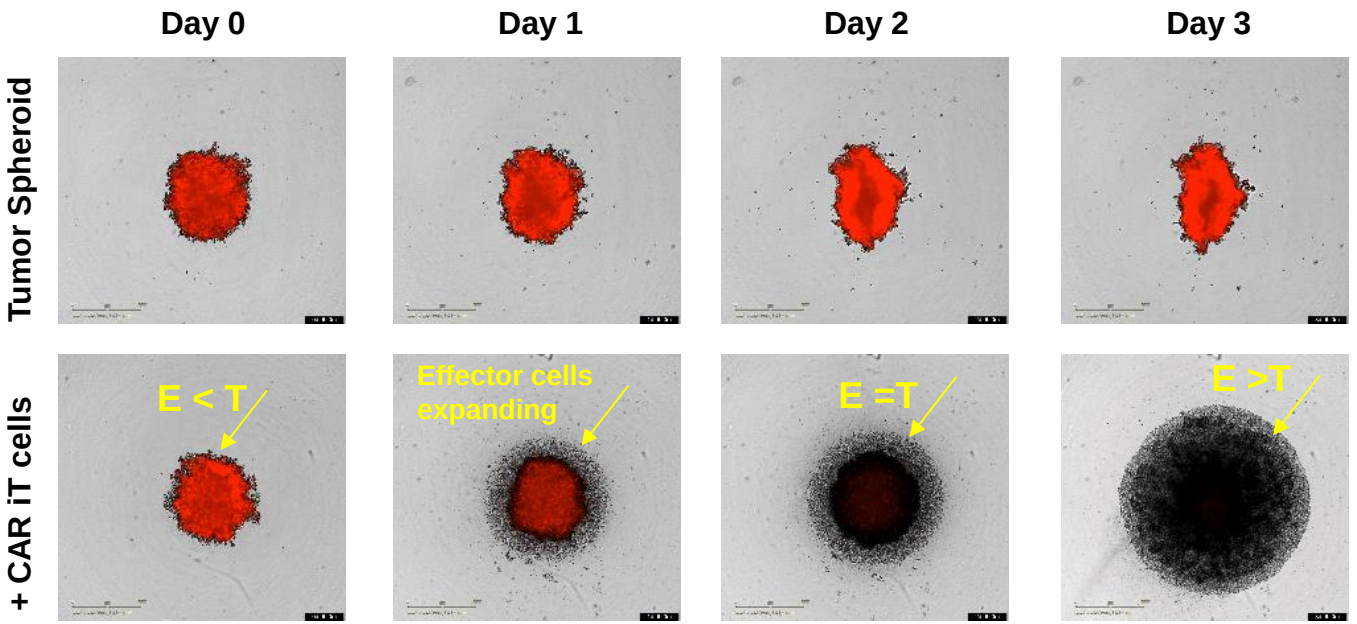
Off-the-Shelf
Stable, cryopreserved for on-demand treatment and expanded patient reach

A “Living Drug” Designed for Complete Disease Elimination

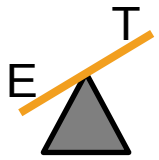
In vivo expansion tilts the balance toward drug product efficacy in difficult to treat diseases



CAR iT cells demonstrate the unique ability to proliferate upon exposure to targeted disease and tilt the balance towards high effector to target ratio to effectively eliminate the disease



More tumor cells means less of a chance for tumor elimination

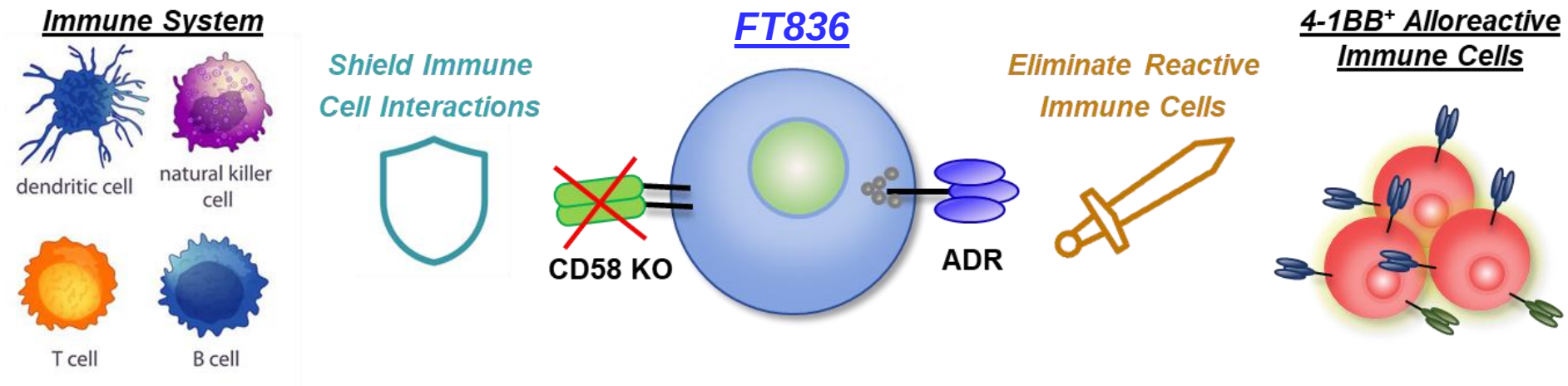


More effector cells means the tumor is eliminated

E = Effector cells
T = Target cells

Novel Sword and Shield Strategy to Avoid the Need for Conditioning Chemotherapy

Alloimmune defense receptor (ADR) & CD58 disruption



Cell Stem Cell

CellPress
OPEN ACCESS

Short article

Genetic ablation of adhesion ligands mitigates rejection of allogeneic cellular immunotherapies

Quirin Hammer,[1,9,*] Karlo Perica,[2,3,4,9] Rina M. Mbofung,[5] Hanna van Ooijen,[6] Karen E. Martin,[7,8] Pouria Momayyezi,[1] Erika Varady,[5] Yijia Pan,[5] Mark Jelcic,[5] Brian Groff,[5] Ramzey Abujarour,[5] Silje Z. Krokeide,[7,8] Tom Lee,[5] Alan Williams,[5] Jode P. Goodridge,[5] Bahram Valamehr,[5] Björn Önfelt,[1,6] Michel Sadelain,[3] and Karl-Johan Malmberg[1,7,8,10,*]

+

nature biotechnology

ARTICLES

https://doi.org/10.1038/s41587-020-0601-5

Check for updates

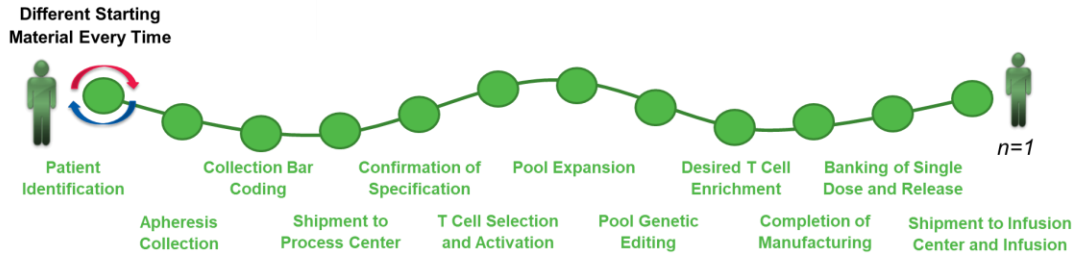
Engineered off-the-shelf therapeutic T cells resist host immune rejection

Feiyan Mo[1,2], Norihiro Watanabe[1], Mary K. McKenna[1], M. John Hicks[3], Madhuwanti Srinivasan[1], Diogo Gomes-Silva[1], Erden Atilla[1], Tyler Smith[1], Pinar Ataca Atilla[1], Royce Ma[1,4], David Quach[1], Helen E. Heslop[1,2], Malcolm K. Brenner[1,2] and Maksim Mamonkin[1,2,3,4]

Fate THERAPEUTICS

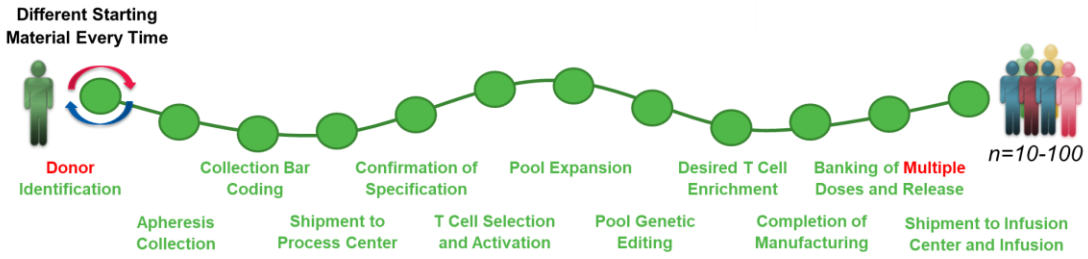
A Renewable Manufacturing Process that can Uniquely Deliver Cell Therapies On-demand to Patients in Need

Autologous CAR T-Cell Therapy



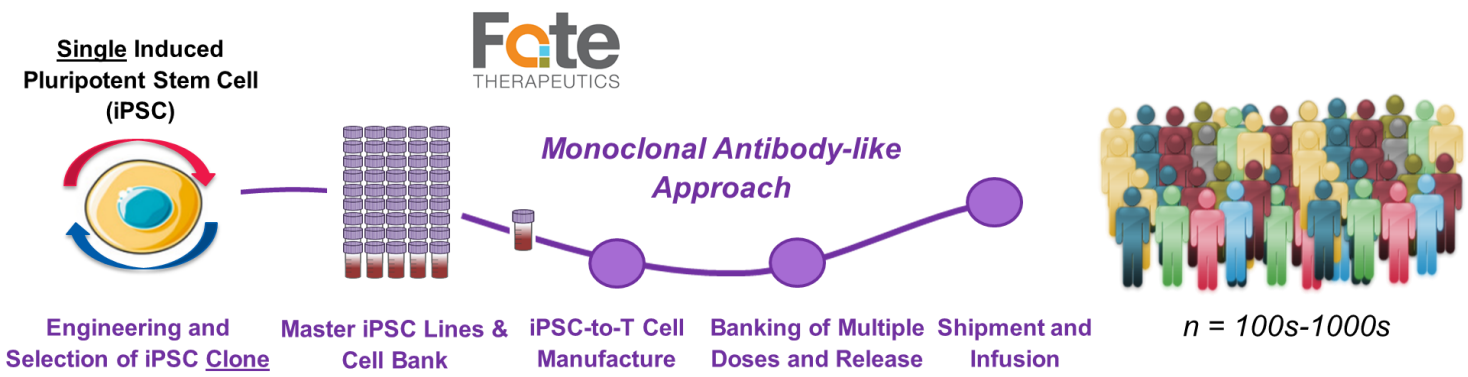
Impaired Starting Material | Random & Variable T-Cell Engineering | Complex Logistics
Single Dose Paradigm | Heterogeneous Drug Product | Expensive

Allogeneic CAR T-Cell Therapy



Healthy Starting Material | Random & Variable T-Cell Engineering | Complex Logistics
Multiple Dose Paradigm | Heterogeneous Drug Product | Expensive

Off-the-Shelf CAR T-Cell Therapy



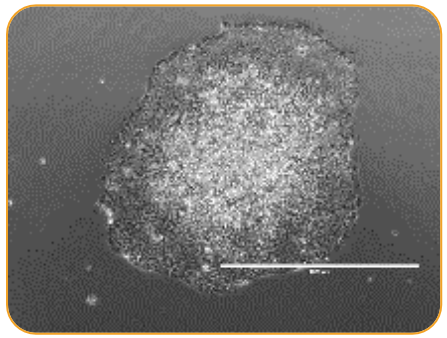
Healthy Banked Starting Material | One-time Uniform iPSC Engineering | Scalable Logistics
Multiple Dose Paradigm | Homogeneous Drug Product | Cost-Effective

Fate THERAPEUTICS

iPSC Product Platform

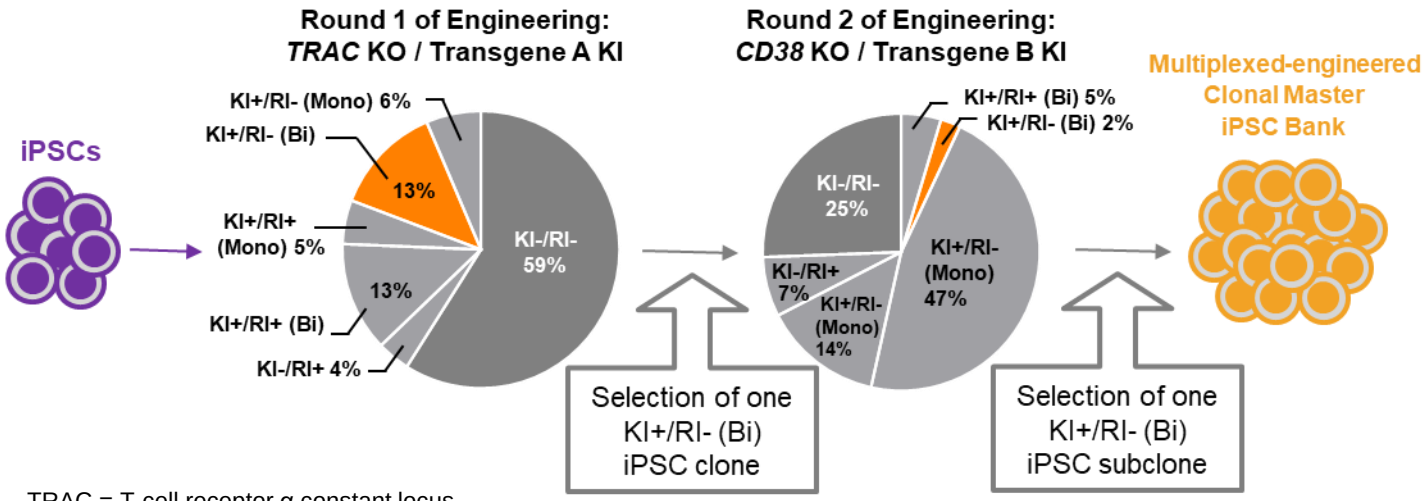
Creating Multiplexed-engineered Clonal Master iPSC Banks

Single iPSC Clone



- Multiplexed Engineering
- Extensive Characterization
- Uniform Composition
- Unlimited Clonal Expansion
- Clonal Master Cell Lines

Unprecedented Resolution in Clonal iPSC Characterization and Selection



TRAC = T-cell receptor α constant locus
CD38 = CD38 locus
KI = Knock-in Mono = mono-allelic
RI=Random integration Bi = bi-allelic
Percentages represents clones within the whole population

Fate Therapeutics' iPSC product platform is supported by an IP portfolio with 500+ issued patents and 500+ pending patent applications

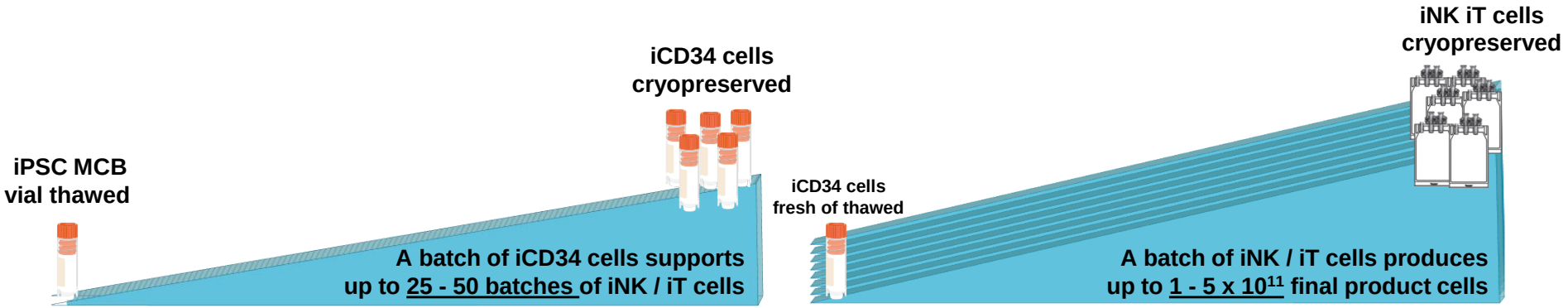
Fate THERAPEUTICS

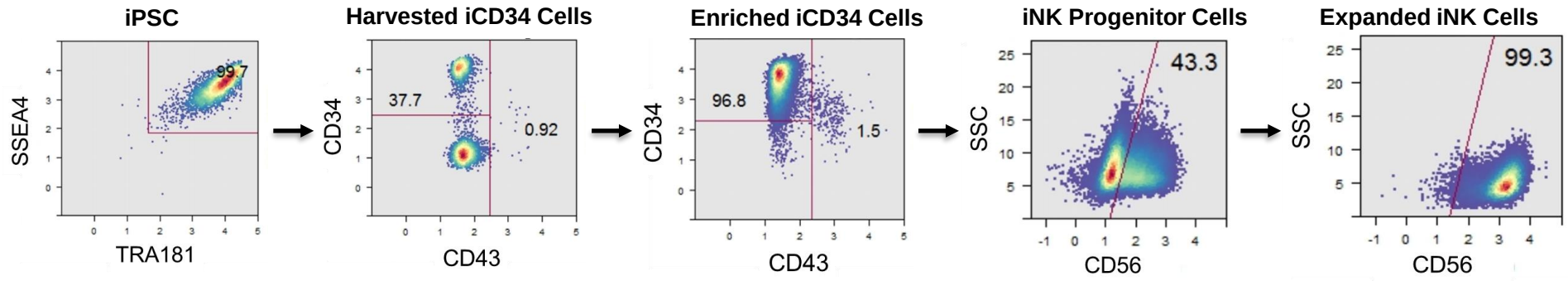
Mass Production of Drug-like Cell Products

Routine cGMP production of iPSC-derived cell products to meet clinical demand

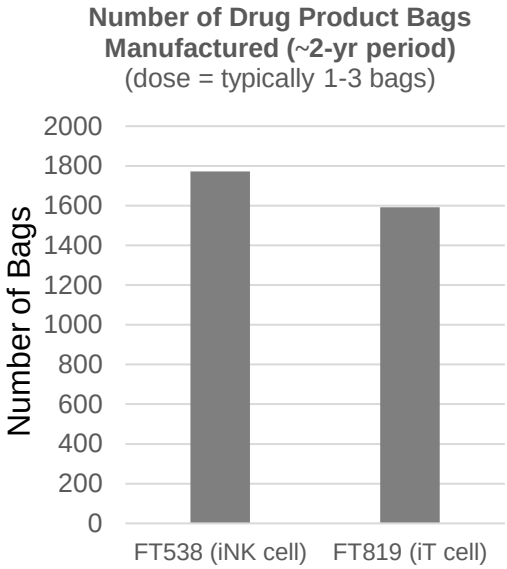
One iPSC MCB vial has the potential to yield trillions of uniformly-engineered cells

Stage 1: iCD34 Cell Production → **Stage 2: iNK/iT Cell Production**





Inventory generated through routine manufacture



Fate THERAPEUTICS

Mass Production of Drug-like Cell Products

Advanced Manufacturing Capabilities to Provide Clinical and Early Commercial Supply

State of the Art GMP facility (San Diego, CA)

- 40,000 ft^2 Fate cGMP manufacturing facility co-located with corporate headquarters
- Launched in 2022 with end-to-end capabilities and controls
  - Licensed by the State of California, Department of Health Services, Food and Drug Branch
  - Commissioned and qualified with first drug product manufacturing runs completed
  - On-site integration with quality, assay development, and process development
- Designed to support US and international clinical development as well as initial commercial launch

Fate THERAPEUTICS

Fate Therapeutics

Pioneering Off-the-Shelf iPSC-derived Cell Therapies

Induced Pluripotent Stem Cell Platform	Highly differentiated approach to cell therapy with unmatched engineering capability, manufacturing scale, and product quality and consistency
Eliminate Conditioning Chemotherapy	Proprietary ADR technology to redefine the cell therapy treatment paradigm: outpatient administration, add-on to standard-of-care therapies, reduced toxicities
Cell Therapies for Autoimmune Diseases	Designed to enable on-demand availability, patient convenience, broad therapeutic reach, and cost-effective utilization
Advanced T-cells for Solid Tumors	Constellation of novel synthetic controls to promote safety, deliver multi-pronged attack, and overcome tumor resistance for clinically meaningful outcomes
Next Generation T-cell Therapies	Highly sophisticated T-cell therapies with direct effector cell function, secretion of immune modulators, and synergy with host immune system

Fate THERAPEUTICS

Product Pipeline

First-in-class Product Pipeline

Multiplexed-engineered, iPSC-derived CAR NK Cell and CAR T-cell Product Candidates

Program	Indication	CAR Targets	Research	Preclinical	Phase 1	Partner
CAR T-cell Product Candidates						
FT819	Systemic Lupus Erythematosus	CD19				CIRM
FT825	Solid Tumors	HER2/EGFR				ONO
Undisclosed	Solid Tumors	Undisclosed				
FT836	Broad Spectrum in Solid Tumor w/o CC	MICA/B				
FT829	Broad Spectrum in Autoimmune w/o CC	CD19/CD38				
FT8XX	Multiple Therapeutic Areas	Undisclosed				
CAR NK cell Product Candidates						
FT522	B-cell Lymphoma w/o CC	CD19, 4-1BB				
FT522	Autoimmunity w/o CC					
NG iNKs	Multiple Therapeutic Areas	Undisclosed				

CIRM CALIFORNIA INSTITUTE FOR REGENERATIVE MEDICINE

ONO PHARMACEUTICAL CO.,LTD.

Fate THERAPEUTICS

Autoimmunity **Oncology** **Senescence**

CC = Conditioning chemotherapy
NG= Next-generation
US rights to all products

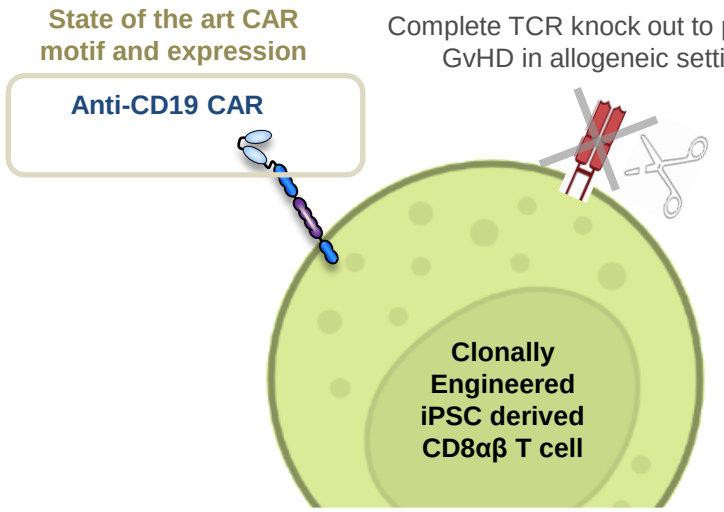
FT819 Program

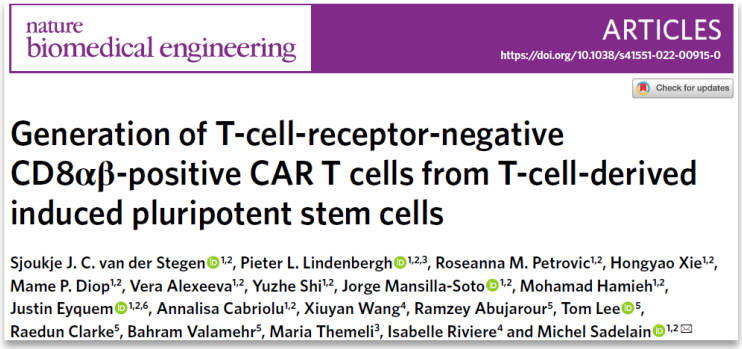
Off-the-shelf, CD19-targeted CAR T-cell Product Candidate

Fate THERAPEUTICS

Off-the-Shelf CAR T cells for Safe and Effective Targeting of CD19+ B cells with Broad Patient Accessibility

FT819:
First-of-kind off-the-shelf CAR T cell




nature biomedical engineering

ARTICLES

https://doi.org/10.1038/s41551-022-00915-0

Check for updates

Generation of T-cell-receptor-negative CD8αβ-positive CAR T cells from T-cell-derived induced pluripotent stem cells

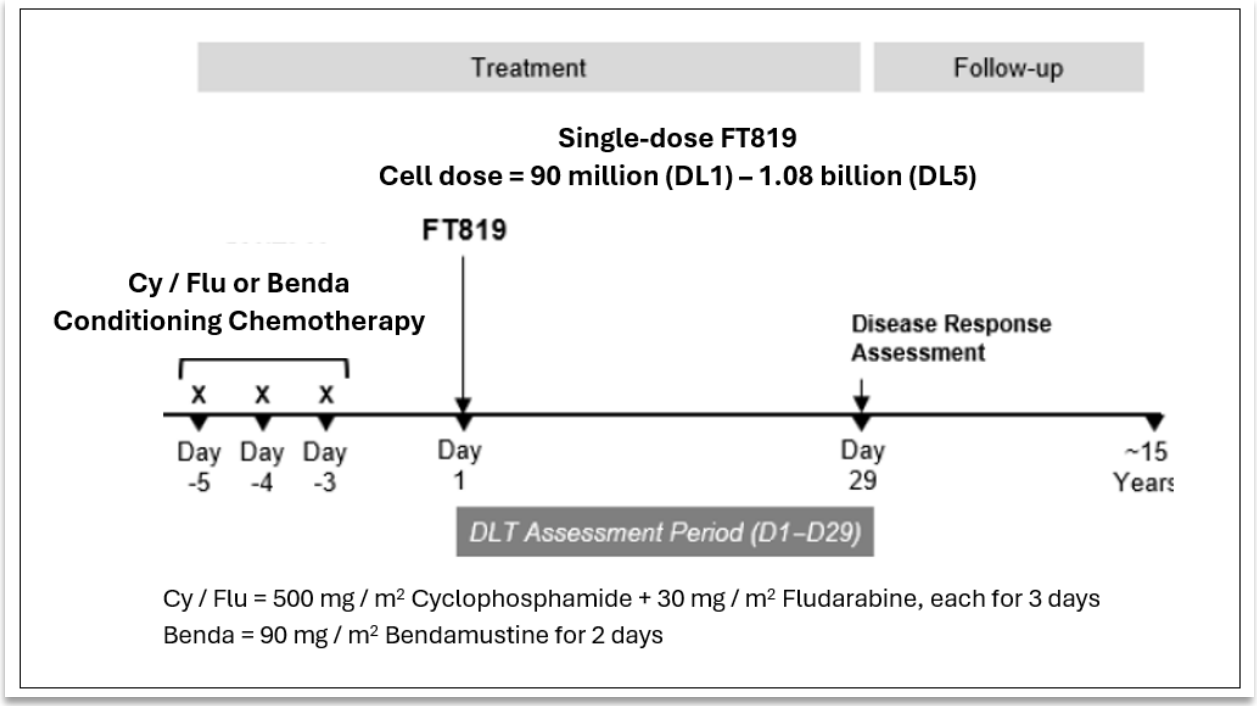
Sjoukje J. C. van der Stegen[1,2], Pieter L. Lindenbergh[1,2,3], Roseanna M. Petrovic[1,2], Hongyao Xie[1,2], Mame P. Diop[1,2], Vera Alexeeva[1,2], Yuzhe Shi[1,2], Jorge Mansilla-Soto[1,2], Mohamad Hamieh[1,2], Justin Eyquem[1,2,6], Annalisa Cabriolu[1,2], Xiuyan Wang[4], Ramzey Abujarour[5], Tom Lee[5], Raedun Clarke[5], Bahram Valamehr[5], Maria Themeli[3], Isabelle Riviere[4] and Michel Sadelain[1,2]

- Derived from a **clonal master engineered iPSC line** incorporating unique functional elements:
  - **1XX CAR19**: Novel chimeric antigen receptor consisting of CD28 costimulatory domain and modified CD3z signaling domain for optimal effector cell safety and activity
  - **TRAC targeted CAR**: Chimeric antigen receptor integrated into the T Cell Receptor Alpha Constant region to be regulated by endogenous control of TCR expression for optimal CAR function
  - **TCR null**: Bi-allelic disruption of TRAC at the clonal level for complete removal of TCR expression and the elimination of the possibility of GvHD in allogeneic setting
  - **Delivered on-demand:** Manufactured at large scale form a renewable master cell bank that is engineered one-time producing uniform drug product and maintained as an off-the-shelf inventory

Fate THERAPEUTICS

FT819-101 Phase 1 Study: First iPSC-derived CAR T-cell Clinical Trial

Initial Clinical Experience in Relapsed / Refractory B-cell Lymphoma



Heavily Pre-treated Patient Population

- Median of 4 prior lines of therapy (range 2-12)
- >71% of patients with aggressive large B-cell lymphoma (LBCL) had previously received auto CD19-targated CAR T cell therapy

Safety Profile (n=25)

- No dose-limiting toxicities (DLTs); no events of immune effector-cell associated neurotoxicity syndrome (ICANS) or graft-versus-host disease (GvHD)
- 2 patients (8%) had G2 cytokine release syndrome (CRS); no events of G3+ CRS
- No FT819-related study discontinuations or deaths; no patients experienced secondary malignancies, including MDS or T-cell leukemia

Activity Profile in Relapsed / Refractory Aggressive BCL (n=17)

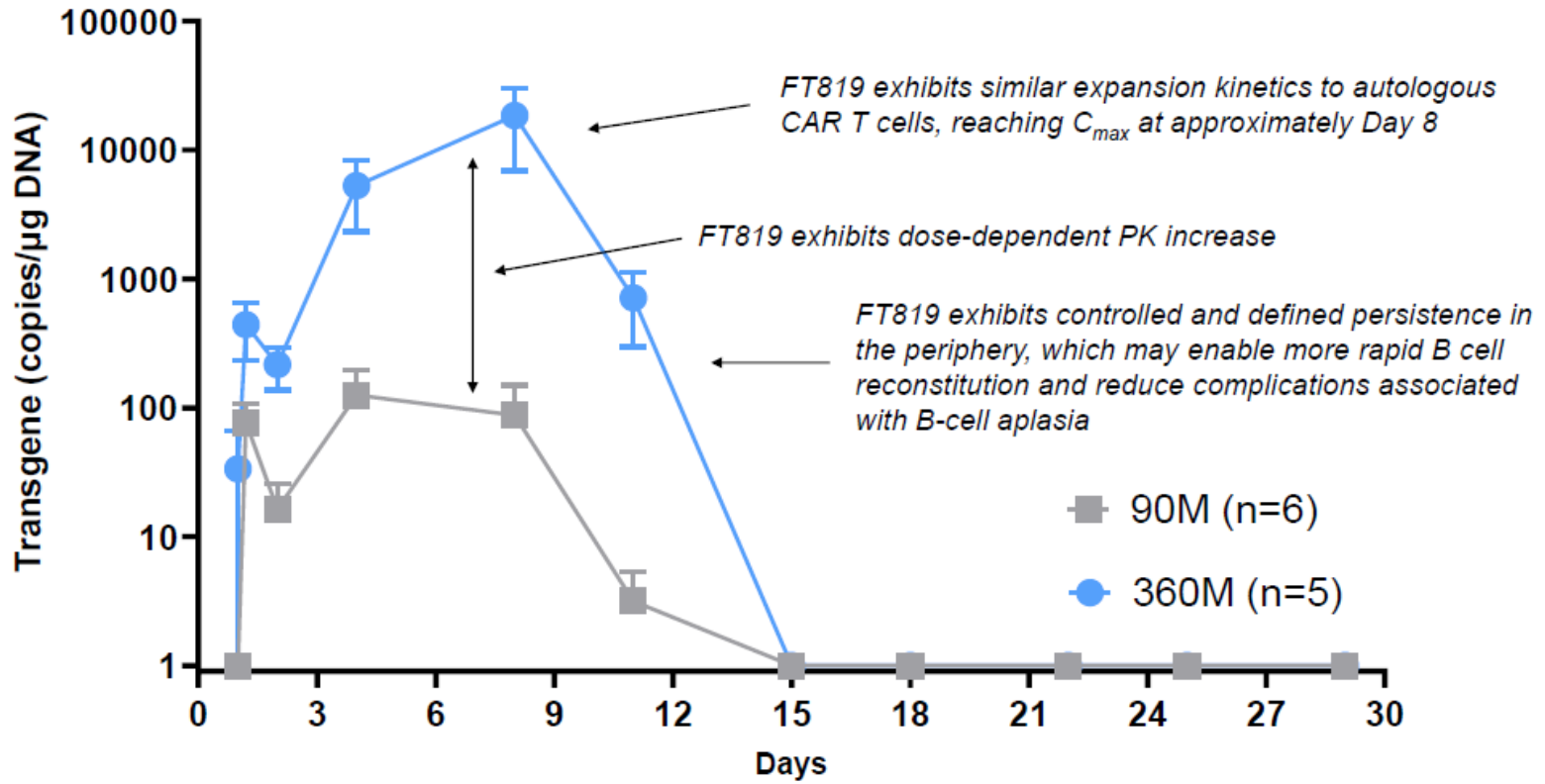
- 47% ORR / 24% CR, with 60% ORR / 40% CR rate in patients naïve to treatment with auto CD19-targeted CAR T
- Patients with CR maintained response at 3 months from first infusion, with longest DOR >1 year

Fate THERAPEUTICS

FT819 Pharmacokinetics

Phase 1 translational data illustrates measurable PK

*FT819 demonstrates dose-dependent CAR T-cell expansion and exposure**

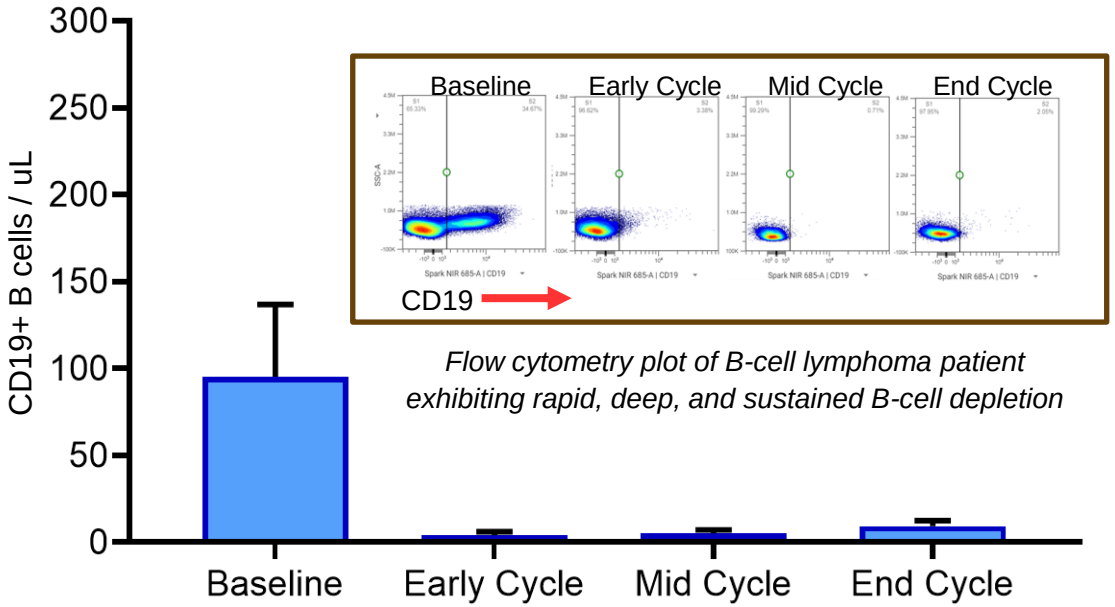


* FT819 PK (mean ± SEM) at 90 and 360 million cells in patients with r/r B-cell lymphoma (BCL) (n=11). *In vivo* CAR T-cell expansion and persistence were measured by a ddPCR assay according to the number of CAR transgene copies per microgram of genomic DNA in blood samples.

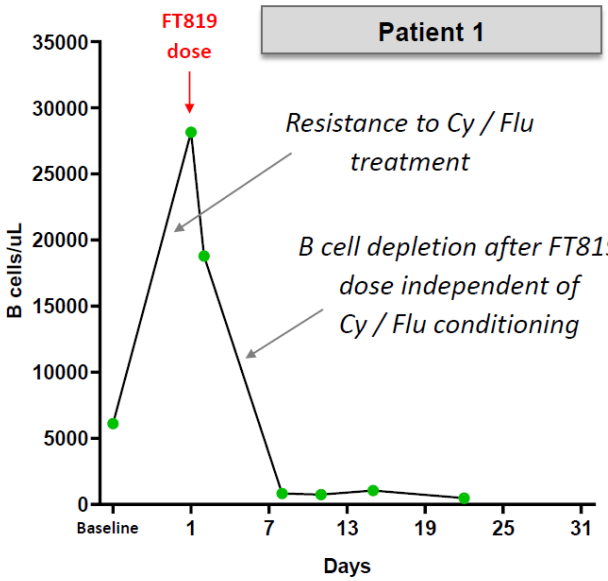
FT819 Exhibits Durable and Specific Elimination of B cells in Lymphoma Patients

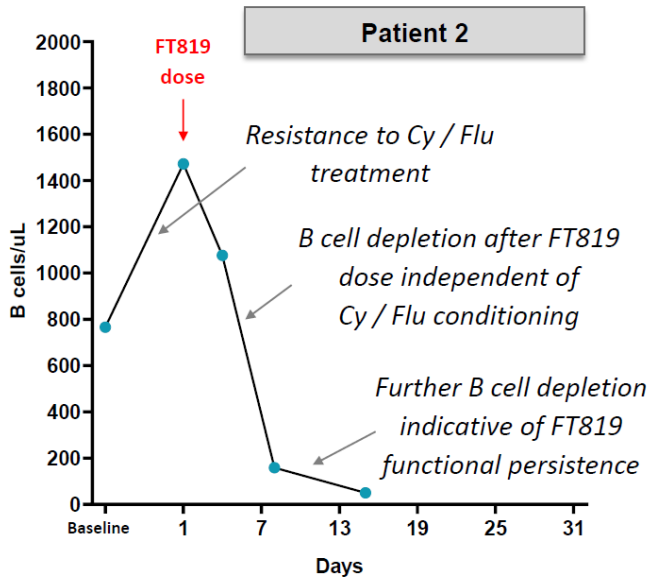
As a monotherapy in a lymphoma clinical trial, FT819 demonstrated the ability to support rapid, deep and sustained B-cell Depletion

Where Cy / Flu conditioning did not result in B-cell depletion in the periphery, a single dose of FT819 achieved rapid and deep depletion of supraphysiological B-cell burden



Flow cytometry plot of B-cell lymphoma patient exhibiting rapid, deep, and sustained B-cell depletion

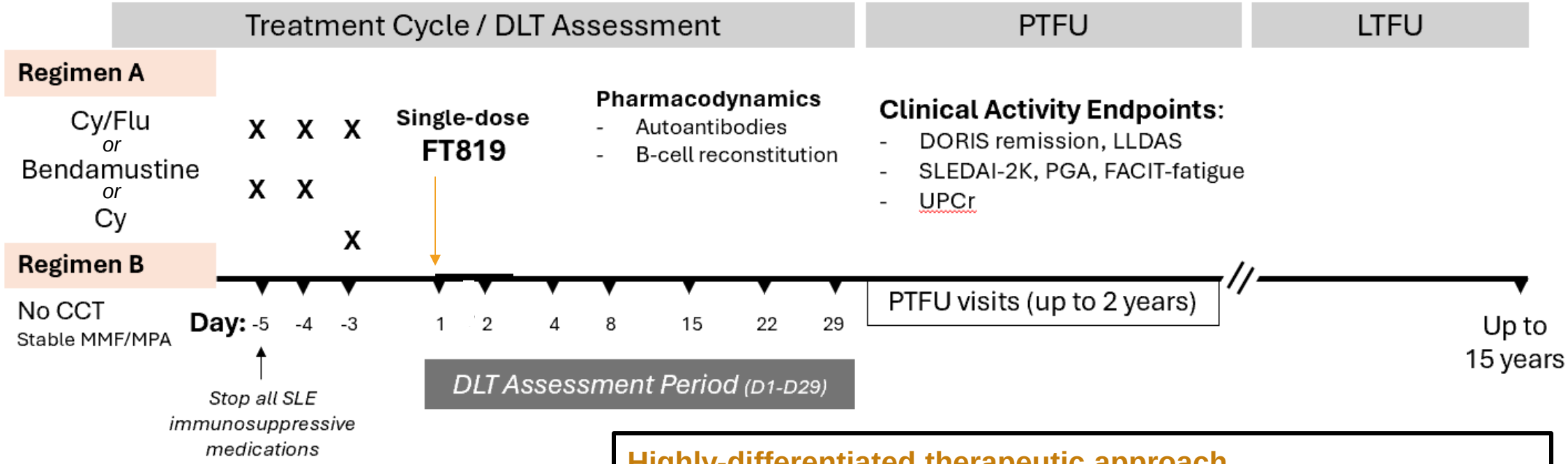




Fate THERAPEUTICS

FT819 in SLE (FT819-102)

First-of-kind Treatment of SLE with Off-the-Shelf anti-CD19 CAR T cell Therapy (NCT06308978)



Regimen	Description
A	Single FT819 dose following CCT with one of the following auxiliary medicinal products (AMPs): 1) Cyclophosphamide (CY) /Fludarabine (FLU) 2) Bendamustine 3) Cyclophosphamide (CY) alone
B	Single FT819 dose without AMP, in patients on a stable dose of MMF/mycophenolic acid (MPA)

Highly-differentiated therapeutic approach

- ✓ Does not require patient apheresis
- ✓ Does not require discontinuation of maintenance therapy
- ✓ Does not require intense conditioning chemotherapy
- ✓ Does not require extended hospitalization
- ✓ Available on-demand
- ✓ Low cost per dose
- ✓ Favorable safety profile

Fate THERAPEUTICS

First 3 Patients Treated in FT819-102

Lupus Nephritis patients with multiple prior therapies, all given fludarabine-free conditioning

FT819 in SLE: Baseline Characteristics			
Patient #	1	2	3
Age / Gender	28 F	21 F	29 F
Disease Type	Active Lupus Nephritis	Active Lupus Nephritis	Active Lupus Nephritis
Disease Duration	~11 years	~4.5 years	~17 years
Ongoing Therapies (Baseline)	GC, HCQ	HCQ	GC, HCQ
Prior Therapies	AZA, BEL, MMF, RTX, HCQ, GC	CY, ANI, BEL, HCQ, MMF, MTX, RTX	CY, BEL, MMF, MTX, RTX, HCQ, GC
Conditioning Regimen	Bendamustine (90 mg/m^2; Days -5 and -4)	CY (1000 mg/m^2; Day -3)	CY (1000 mg/m^2; Day -3)

ANI = anifrolumab; AZA = azathioprine; BEL = belimumab; CY = cyclophosphamide; GC = glucocorticoids; HCQ = hydroxychloroquine; MMF = mycophenolate mofetil; MTX = methotrexate; RTX = rituximab; TAC = tacrolimus

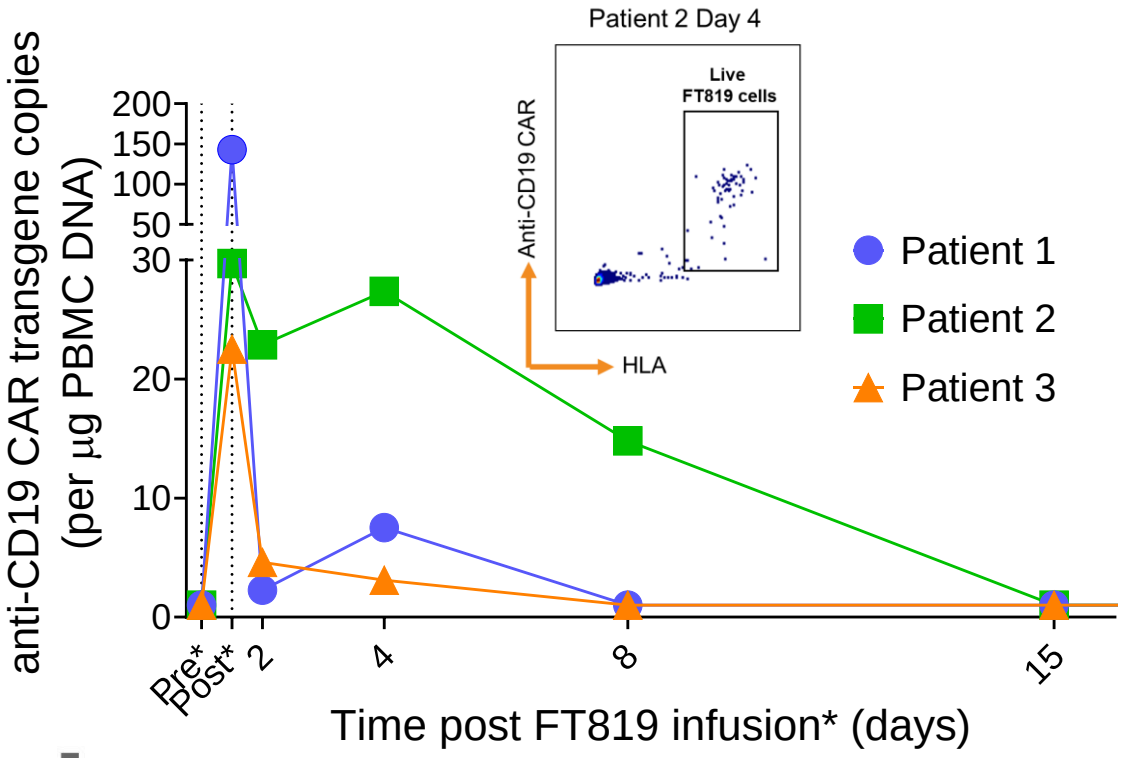
FT819 in SLE: Safety and Tolerability – Regimen A

1. Three patients were dosed at DL1 (single dose, 360M cells)
2. No dose limiting toxicities (DLTs) were observed
3. No events of any grade of CRS, ICANS, GvHD
4. Company intends to expand DL1 to up to 10 patients and to dose escalate to DL2 at 720M cells

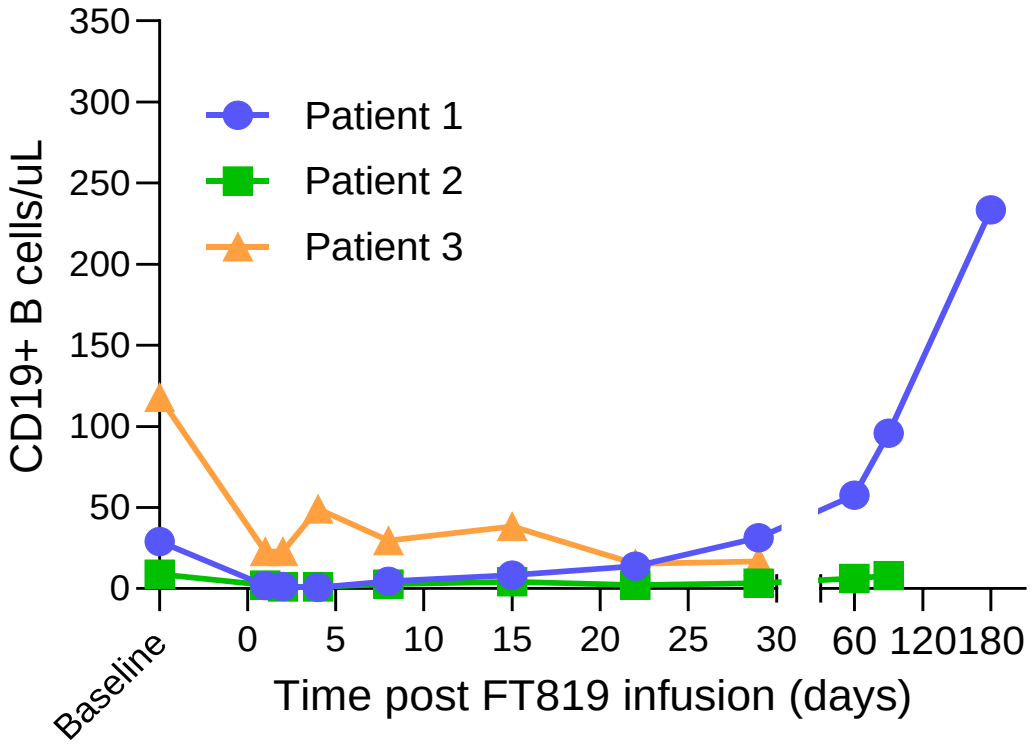
Fate THERAPEUTICS

FT819 Exhibits Persistence and B cell Depletion in the Presence of Fludarabine-free Conditioning

FT819 is detected in the peripheral blood for approximately two weeks in SLE patients after treatment with either bendamustine (two doses) or cyclophosphamide (one dose)



In the presence of light conditioning and in dose level 1, FT819 demonstrates durable B cell depletion for at least one month post treatment



FT819-102 Patient 1 Case Study

6-month Evaluation Reveals Complete Clinical Response and Suggests Durable Immunological Reset

FT819 Patient 1 Case Study: DORIS Clinical Remission and LLDAS at 6-month Follow-up

Safety & Tolerability

- No apheresis, and no tapering of therapy, prior to treatment
- Patient was hospitalized for 3 days for treatment with fludarabine-free conditioning and a single dose of FT819 and discharged
- No Grade ≥3 adverse events
- No adverse events related to FT819
- No events of any grade of CRS, ICANS, or GvHD
- No serious adverse events

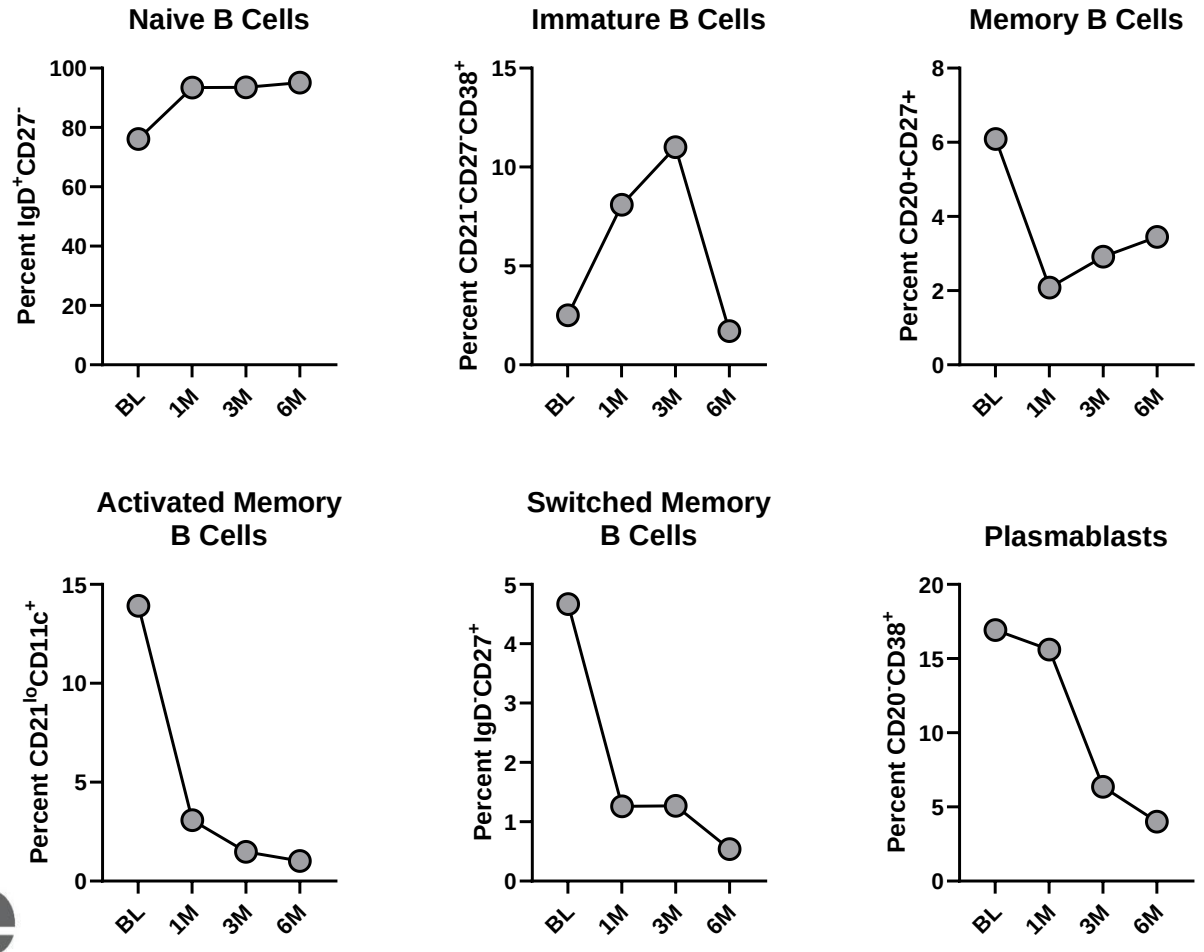
6-month Clinical Assessment

- Achieved DORIS clinical remission and LLDAS
  - **PGA disease severity = 0 (from 2.5)**
  - **UPCR ≤ 0.5 (from ≥ 1.0)**
  - **FACIT = 51 (from 33), with 52 being highest possible score indicative of no fatigue**
- Patient was tapered off steroids at 3 months
- Patient continues on-study, off steroids, and in remission

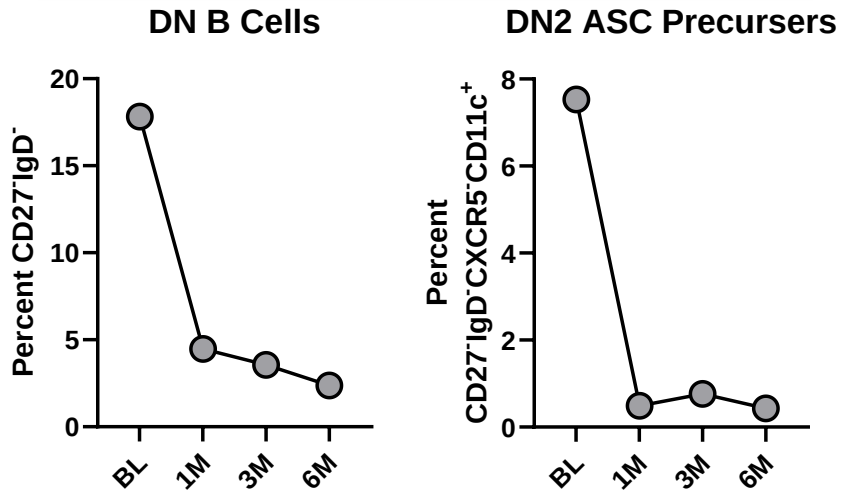
Fate THERAPEUTICS

FT819-102 Patient 1: 6-month Evaluation Suggests Immune Reset Has Been Achieved

Patient 1: Reconstituting B cells are predominantly naïve with limited activated and switched memory phenotypes



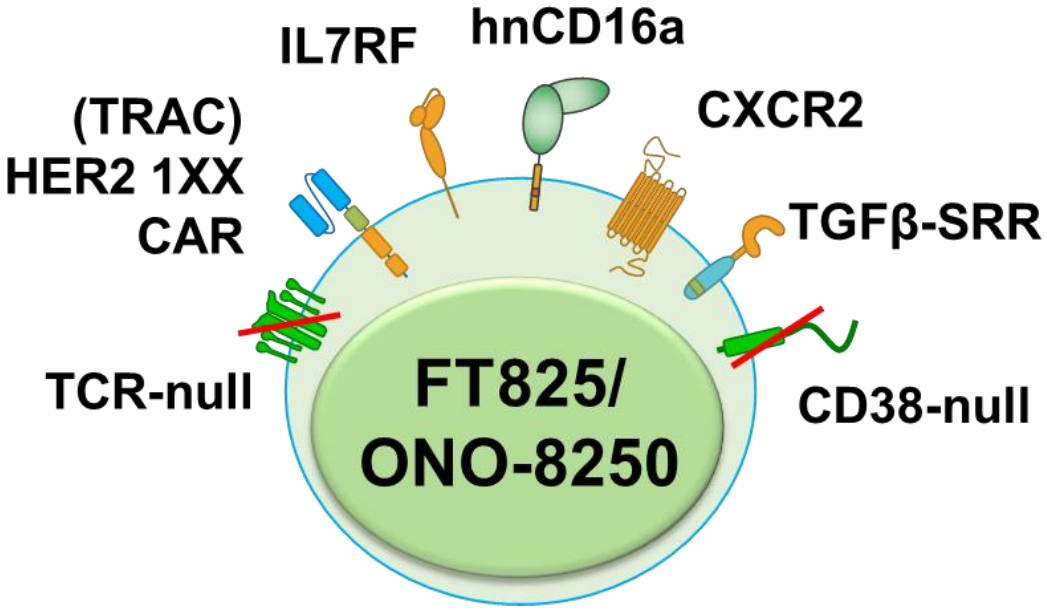
Patient 1: Pathogenic double-negative (DN) B cell subset is low in the reconstituting B cell pool, suggesting an immune reset



FT825 Program

Off-the-shelf, HER2-targeted CAR T-cell Product Candidate

FT825/ONO-8250: First-in-Class, Off-the-Shelf, Seven-Point Edited HER2-directed CAR T-Cell Therapy, Engineered **for Enhanced Solid Tumor Efficacy**



HER2-targeted CAR T-cell designed to overcome tumor heterogeneity, improve cell trafficking, and resist suppression in the tumor microenvironment

Overcoming the Challenges in Solid Tumors

TRAC KO: Complete elimination of TCR *prevents GvHD* in allo-setting

Novel HER2-Directed CAR: *Potent and preferential targeting* of tumor cells expressing HER2 with **H_2CasMab-2** CAR expression and optimized for enhanced activity

hnCD16: Enables ADCC when combined with therapeutic monoclonal antibodies to complement CAR to overcome tumor heterogeneity through *multi-antigen targeting*

TGFβ-SRR: *Resistance to TGF*β-mediated suppression commonly found in TME of solid tumors

CXCR2: Enhancement of *migration into solid tumors*

IL7RE: Enhances CAR iT *persistence* and self-renewal

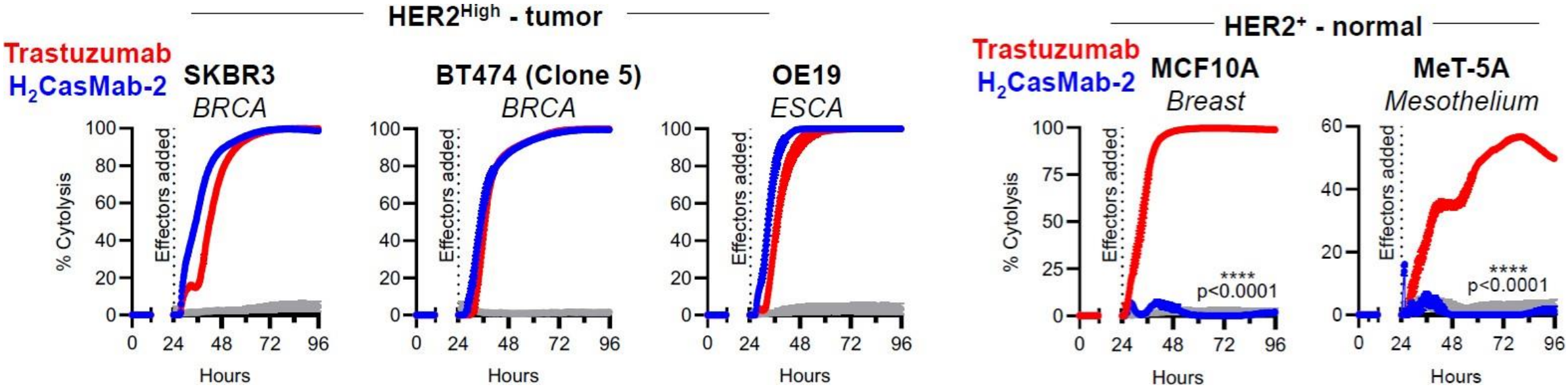
CD38 KO: Potential to enhance metabolic *cell fitness*

Fate THERAPEUTICS

FT825 iPSC-derived, HER2-targeted CAR T-Cell Product Candidate

Novel Cancer-specific Antigen Binder Preferentially Targets HER2 on Tumor Cells

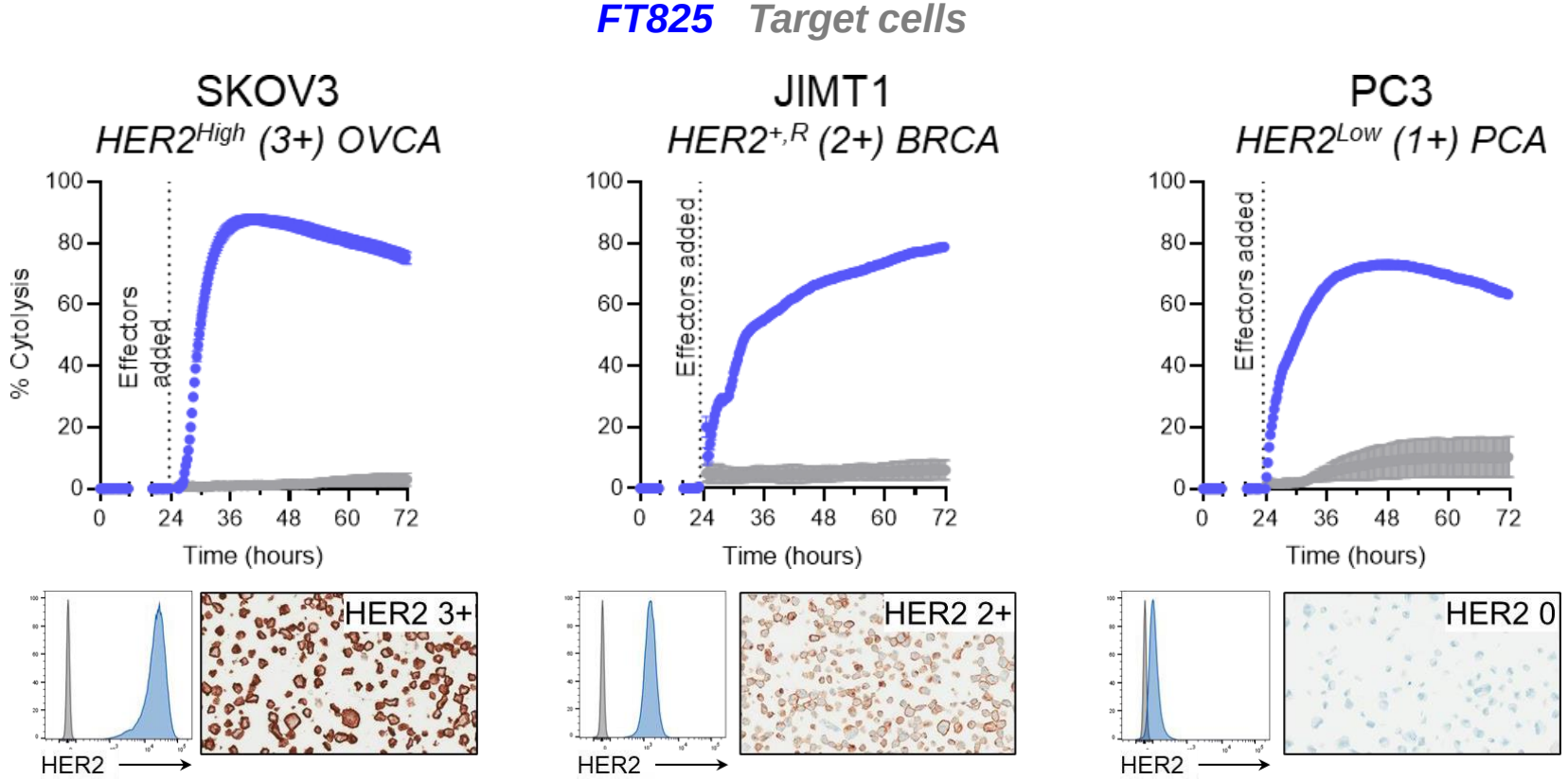
Novel cancer-specific antigen binder preferentially targets HER2 on tumor cells with limited recognition of HER2 on healthy cells



FT825 iPSC-derived, HER2-targeted CAR T-Cell Product Candidate

Novel Cancer-specific Antigen Binder Exhibits Activity Across HER2 Expression Density

Robust antigen-dependent targeting across HER2 expression levels, including HER2-low tumor cell lines

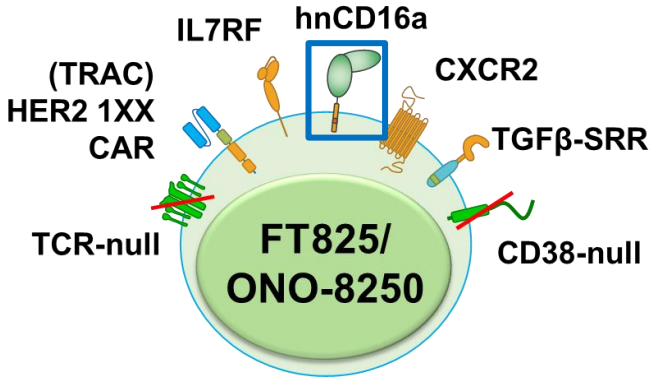


Fate THERAPEUTICS

Hosking et al. 2023 SITC Annual Conference

FT825/ONO-8250: high-affinity, non-cleavable CD16 (hnCD16)

Uniquely enabling innate ADCC function in a T cell for potent anti-tumor activity



hnCD16:

High affinity (176 V/V)

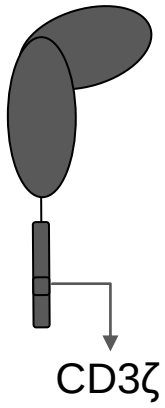
Non-cleavable (~~ADAM17~~)

RESEARCH ARTICLE

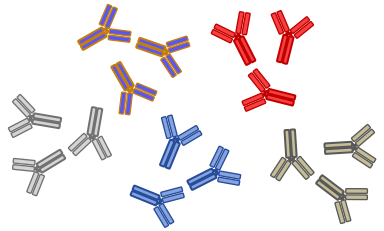
Identification of an ADAM17 Cleavage Region in Human CD16 (FcγRIII) and the Engineering of a Non-Cleavable Version of the Receptor in NK Cells

Yawu Jing[1], Zhenya Ni[2], Jianming Wu[1], LeeAnn Higgins[3], Todd W. Markowski[3], Dan S. Kaufman[2], Bruce Walcheck[1]*

PMID: 31856277



\+

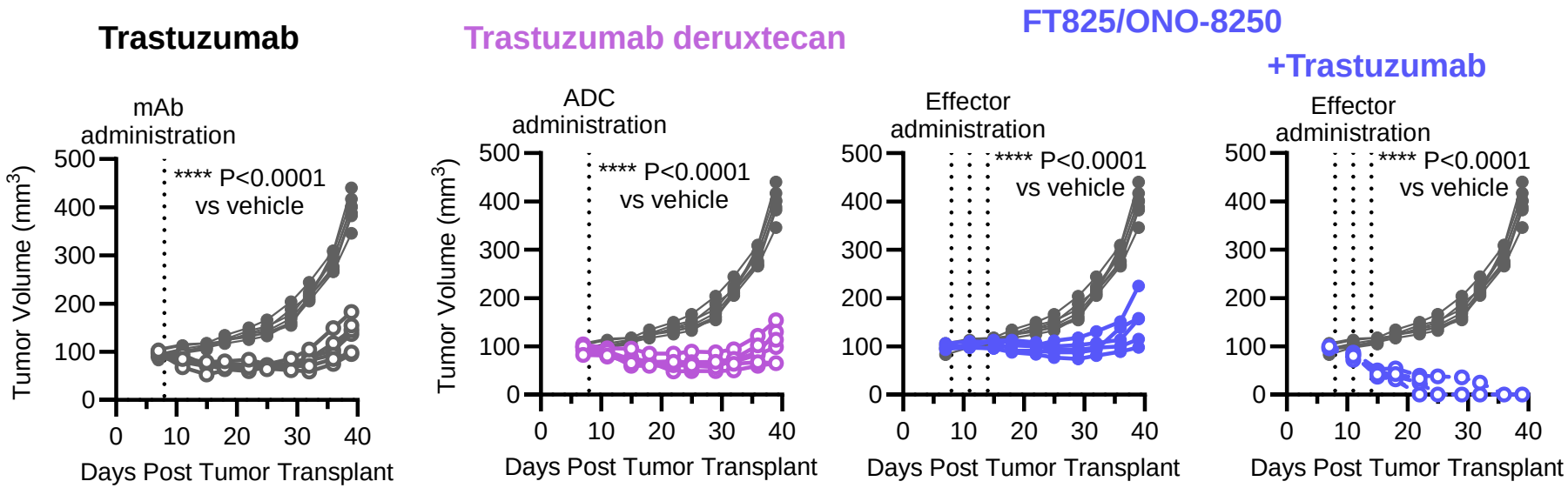


ADCC-enabled therapeutic antibodies

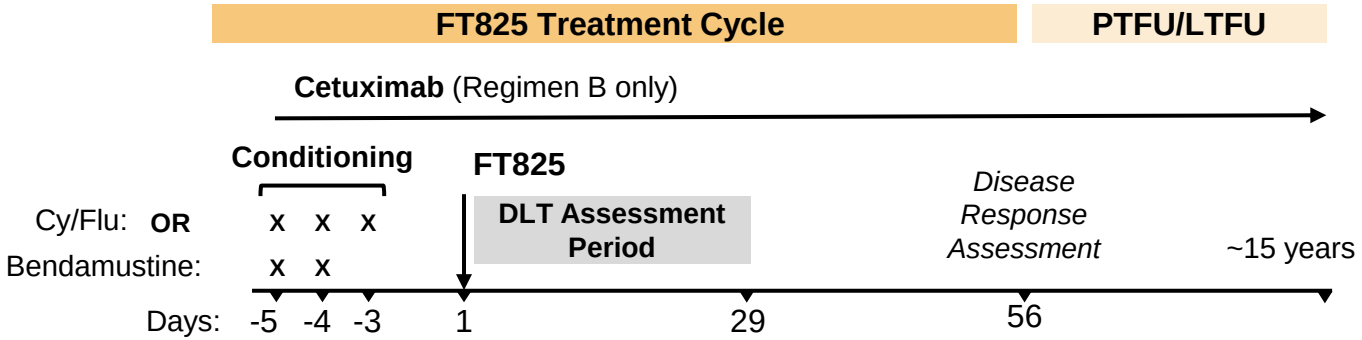
- EGFR
- HER2
- PDL1
- cMET/EGFR
- VEGFR2
- GD2

- ✓ Flexible multi-antigen targeting
- ✓ Complementary CAR – mediated killing
- ✓ Enhanced antibody-directed cellular cytotoxicity (ADCC)

Potent CAR-mediated activity of FT825 that can be further enhanced in combination with mAb



FT825/ONO-8250, an Off-the-Shelf, HER2 CAR-T, with or without Monoclonal Antibodies in Advanced Solid Tumors (*NCT06241456*)



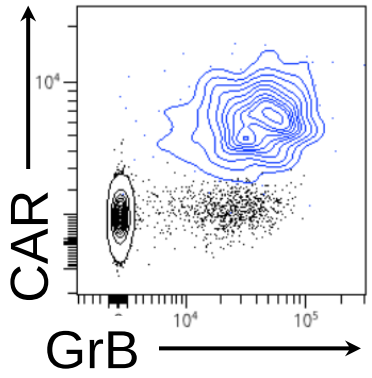
Monotherapy (Regimen A)

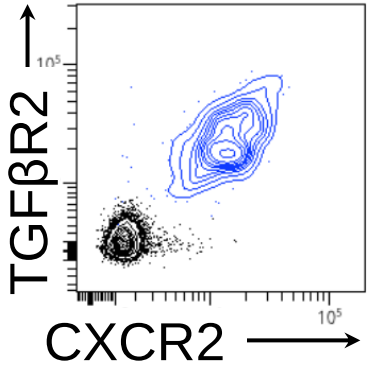
- HER2^{+} Breast, Gastric, GEJ cancer
- HER2^{Mut} NSCLC
- HER2^{+} salivary, endometrial, and other cancers

Combination with Cetuximab (Regimen B)

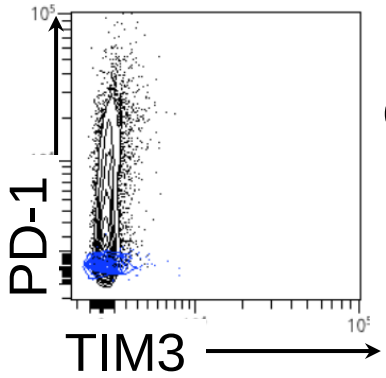
- Colorectal (KRAS WT or BRAF V600E)
- NSCLC (EGFR^{Mut})
- HNSCC

FT825 in patient blood at Day 8 appears poised for anti-tumor activity and maintains homogenous transgene expression





No evidence of immune cell exhaustion



FT825

CD3^{+} T cells

T-cell Platform Innovation

Developing a Portfolio of Engineered Features

Proprietary Functional Elements for Enhanced Cell Functionality & Synergizing with IO mAbs

Direct Multi-Antigen Targeting

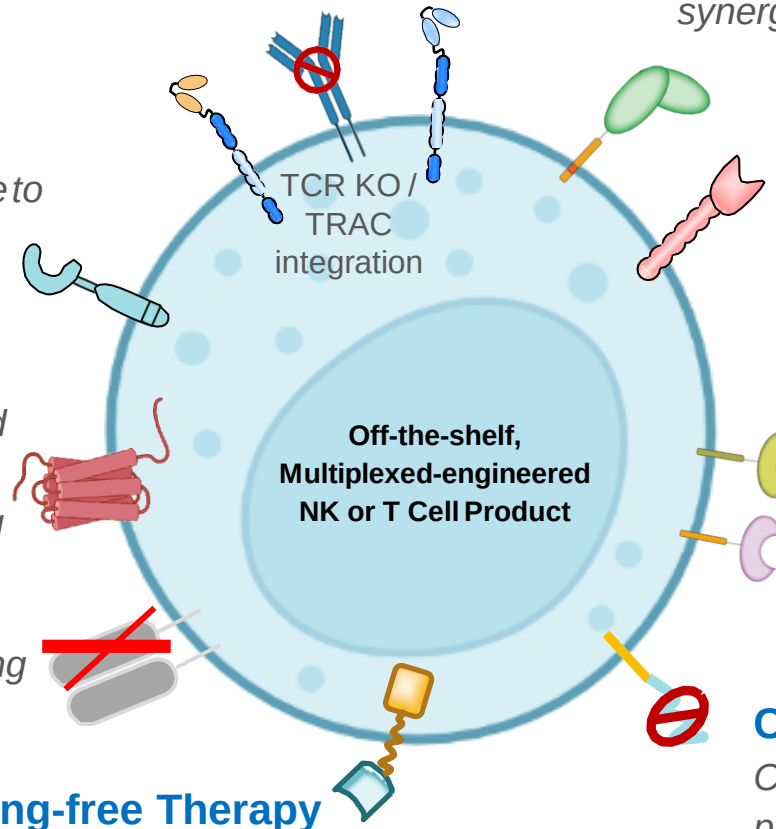
CARs directed to CD19, BCMA, MICA/B, B7H3, others

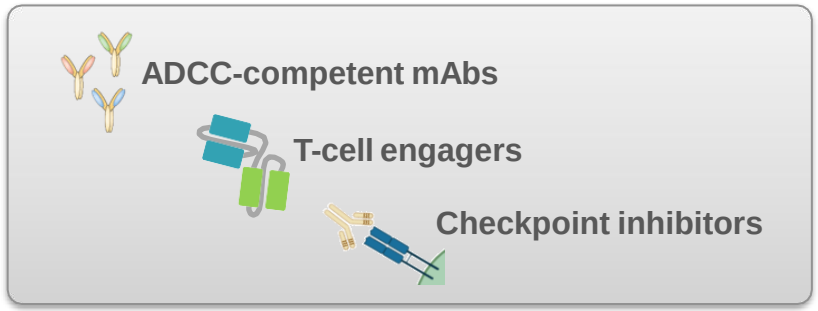
Combinations with mAbs / Engagers

hnCD16 and synthetic CD3 receptors to uniquely synergize with mAbs and NK cell / T-cell engagers

Immunosuppressive Resistance

Synthetic TGFB redirector to promote activation in response to immuno-suppressive TME





Cell Homing

Synthetic CXCR2 receptor coupled with natural CXCR3 and CXCR4 receptors to promote cell trafficking

Cytokine Support

IL15RF, IL7RF and others for cell potentiation

Stealth

Slippery receptor engineering to prevent rejection

Checkpoint KO

CD38 knock-out to promote metabolic fitness and prevent fratricide

Conditioning-free Therapy

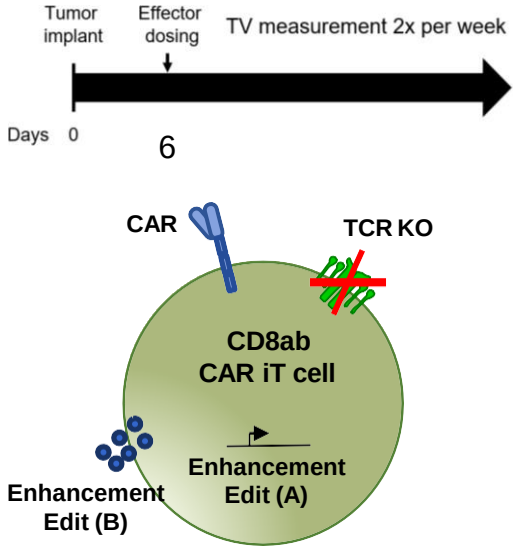
Allo-defense receptor (ADR) to redirect host immune cell alloreactivity and promote activation

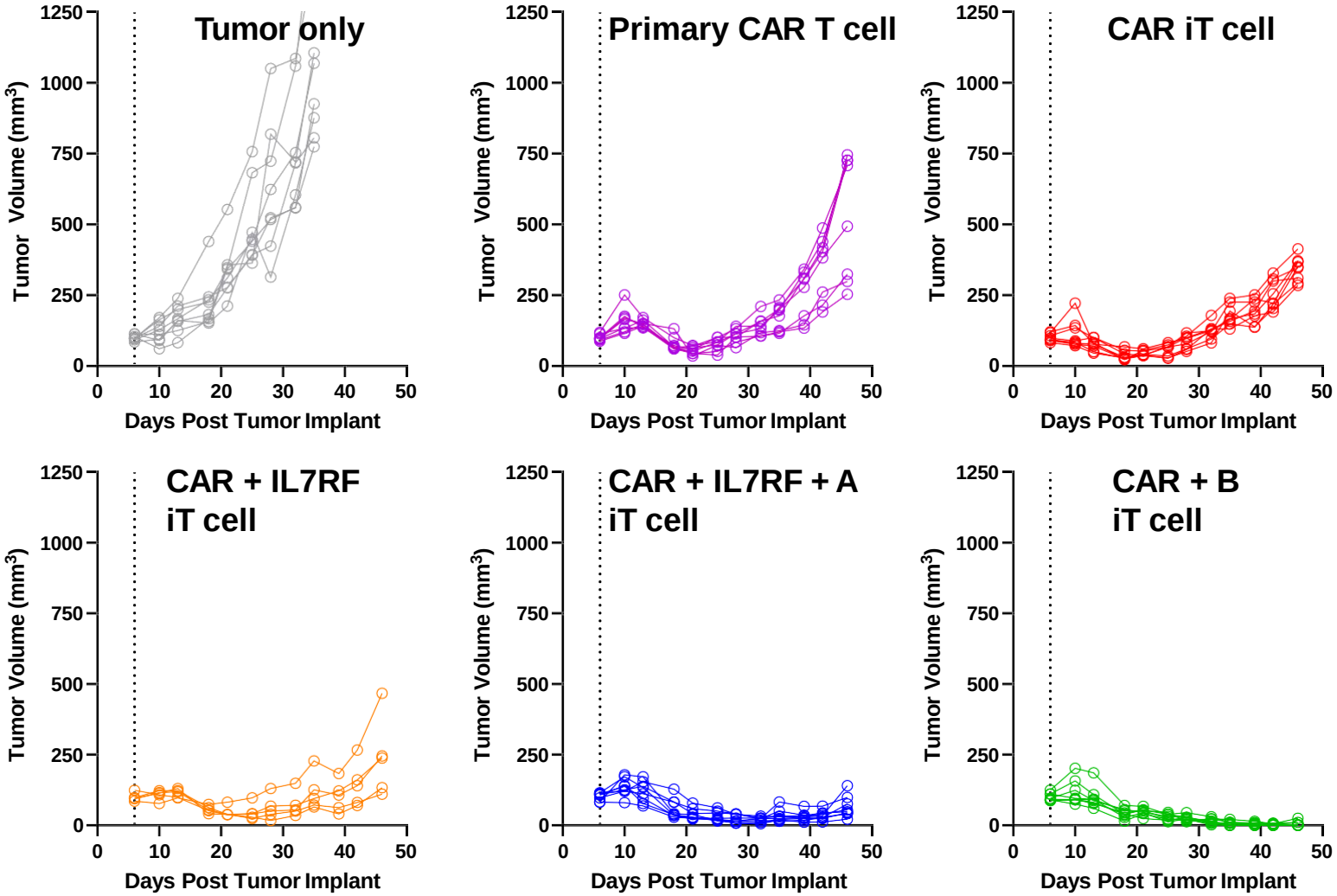
Fate THERAPEUTICS

Next-generation iPSC-derived CD8αβ CAR T cells

Creating Differentiated iPSC-derived CAR T Cells

Subcutaneous model of prostate cancer

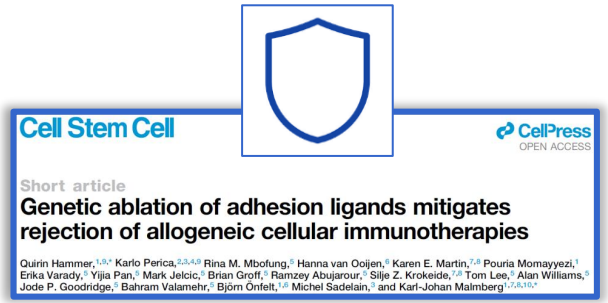


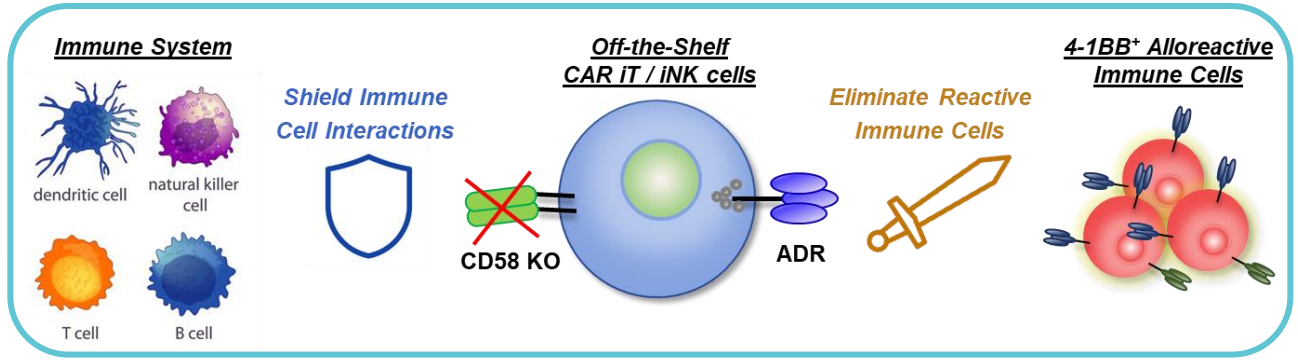


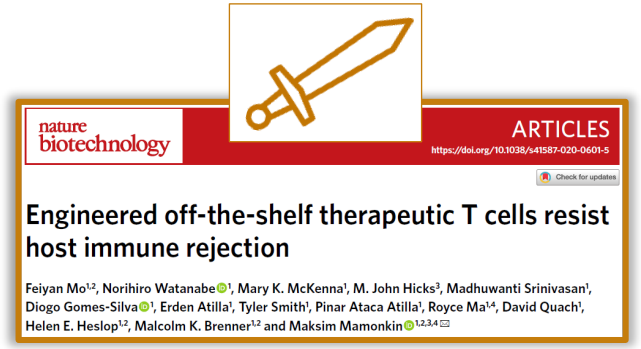
Novel "Sword & Shield" Approach to Eliminate Conditioning Chemotherapy

Superior Compared to Other Immune Evasion Methods

Fate's Comprehensive Approach to Promote Functional Persistence of Allogeneic Cell Therapies without Conditioning Chemotherapy



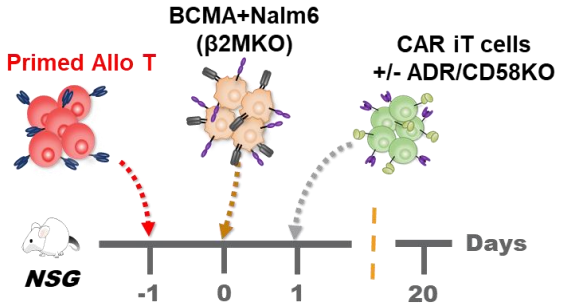


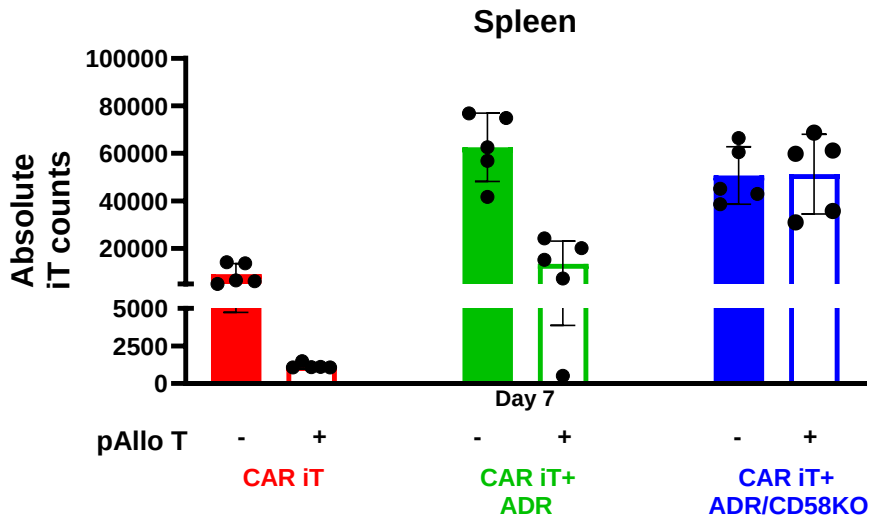


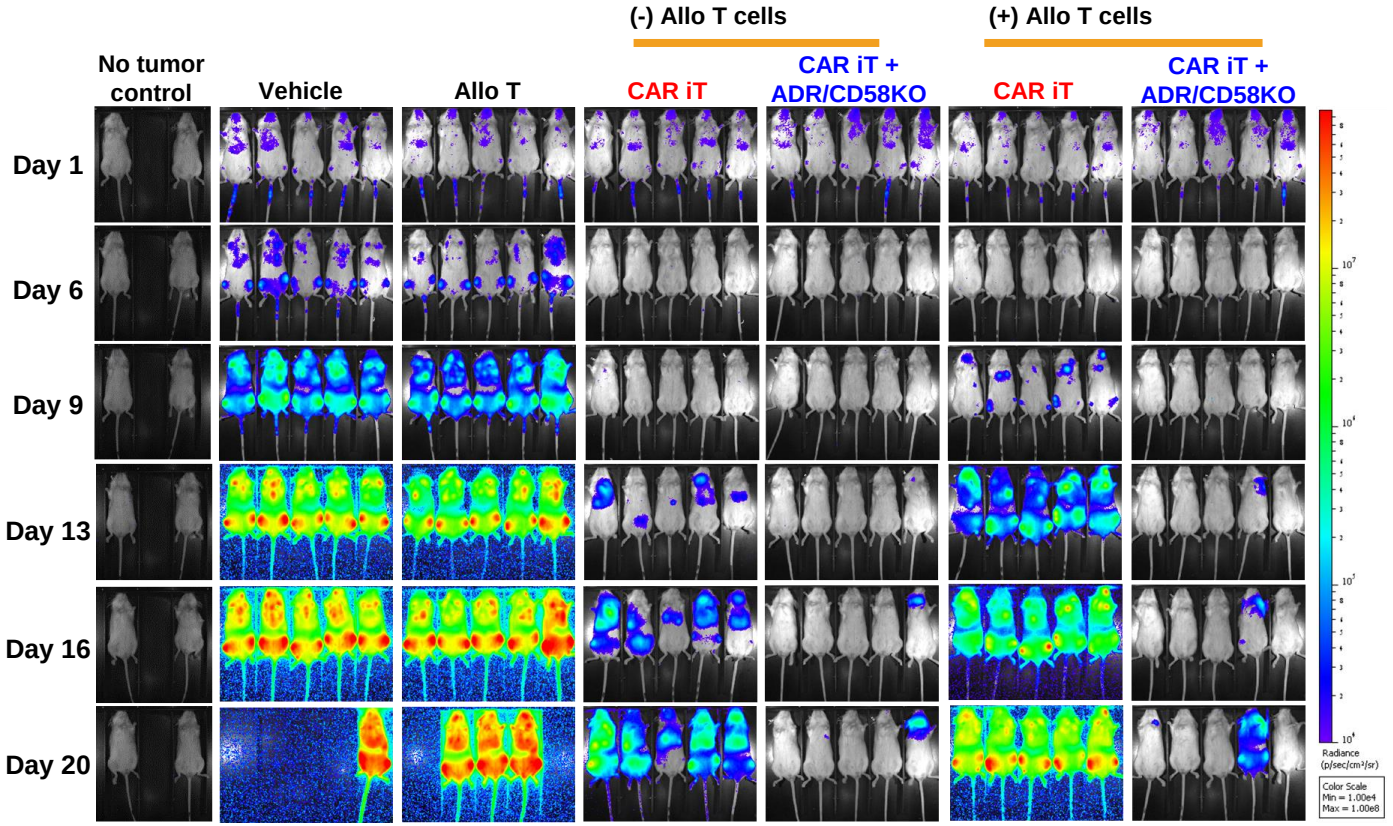
	Various Strategies to Overcome the Need for Conditioning Chemotherapy				
Key Attributes	Combination with Intense Conditioning Chemotherapy	Knockout of HLA-I & -II	Knockout of HLA-I & -II + HLA-E	Knockout of HLA-I & -II + CD47	**Fate's Approach ADR Expression CD58 Knockout**
Avoidance of rejection by host CD8 T cells	+	+	+	+	**+++**
Avoidance of rejection by host CD4 T cells	+	+	+	+	**+++**
Avoidance of rejection by host NK cells	+	-	+/-	+/-	**+++**
Avoidance of suppression by host Tregs	+	-	-	-	**+++**
Induction of proliferation signal	+	-	-	-	**+++**
Creation of endogenous space	+	-	-	-	**+++**
Avoidance of toxicity associated with immunosuppression	X	✓	✓	✓	✓

Fate THERAPEUTICS

Sword & Shield CAR T cells Eliminate the Need for pre-Treatment with Intense Conditioning Chemotherapy Through Selective Targeting and Passive Evasion of Alloreactive Immune cells



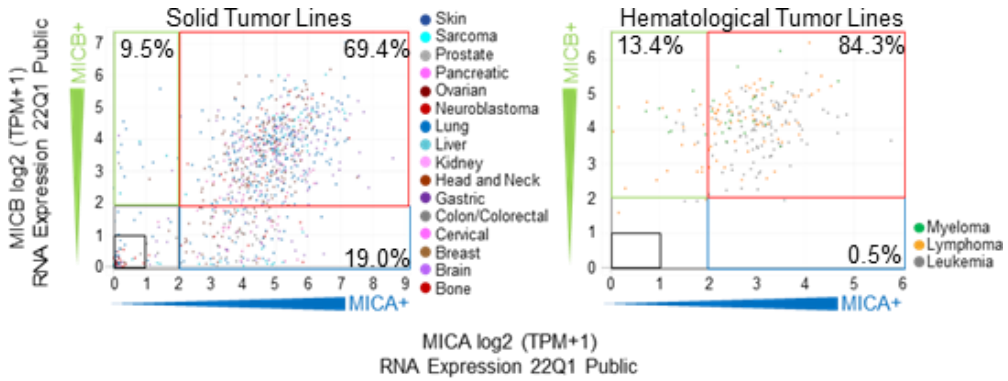




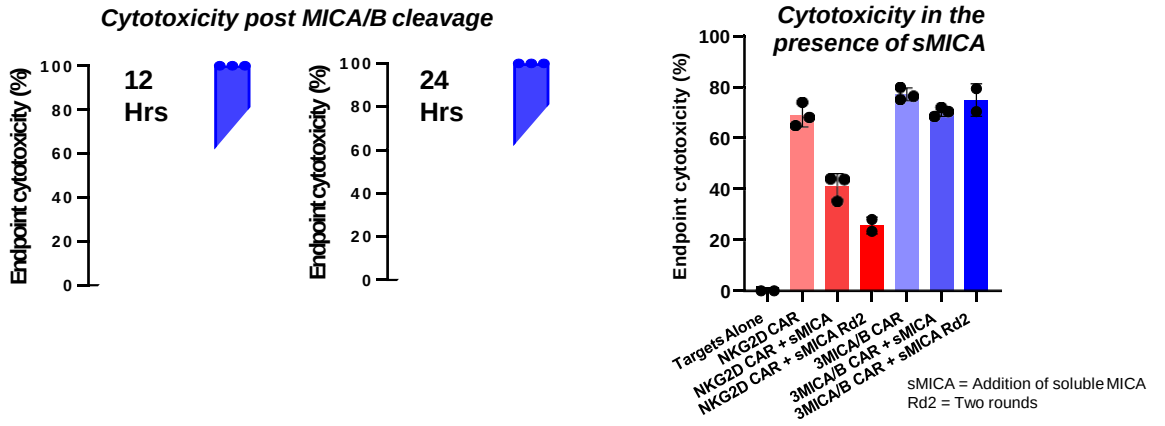
MICA/B-targeted CAR T Cells

α3 Domain Targeting Uniquely Eliminates Broad Array of Tumors in Preclinical Studies

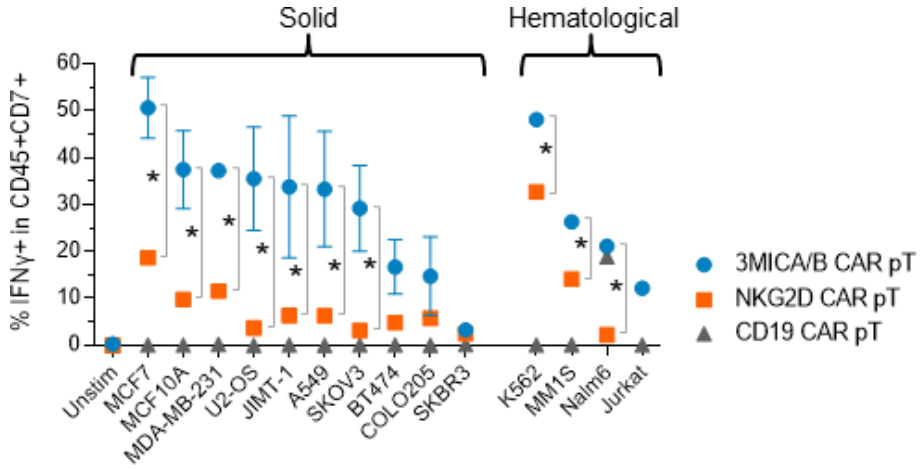
MICA and MICB are stress ligands expressed on many cancers



CAR targeting the alpha 3 domain is uniquely resistant to shedding and interference by soluble MICA/B



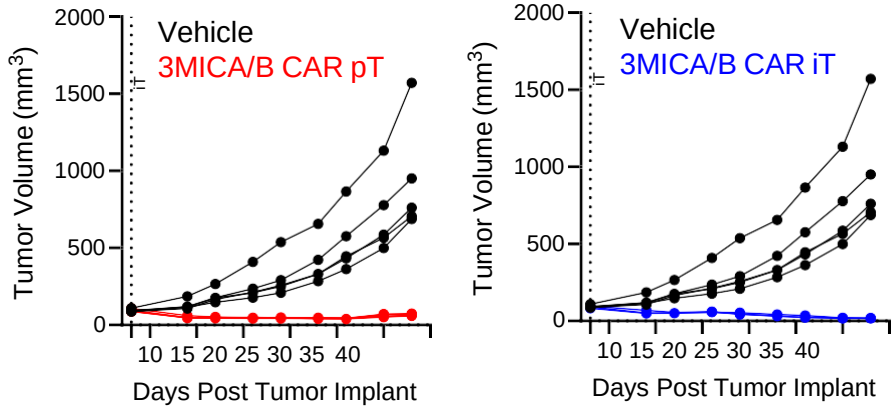
CAR targeting the alpha 3 domain demonstrates pan tumor recognition with enhanced activity over NKG2D CAR



Goulding, J. et al Cell Med. 2023 Jul 14;4(7):455-477

Development of Next Gen CAR iT cells targeting the alpha 3 domain of MICA/B

Prostate Cancer Subcutaneous Model
(PC3, single dose effector, no cytokine support)

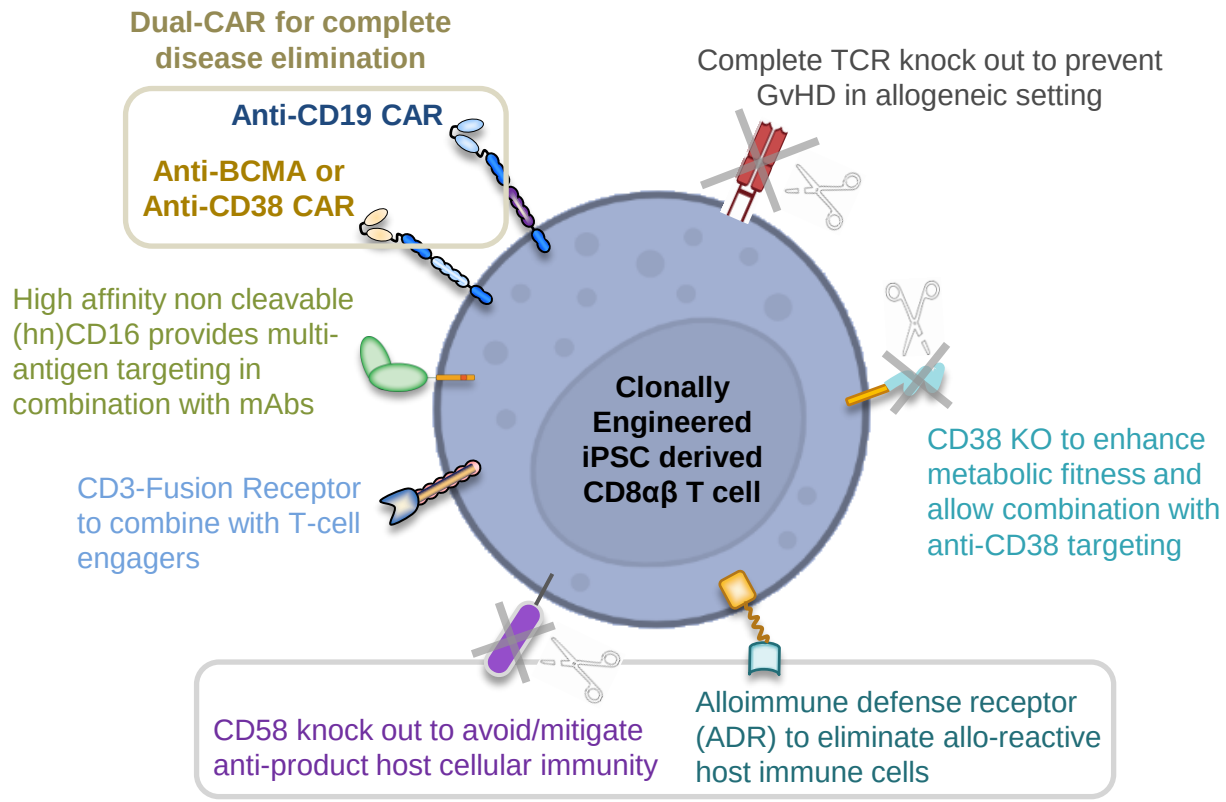


Black = Tumor only
Blue = iPSC-derived CAR T cells
Red = primary CAR T cells

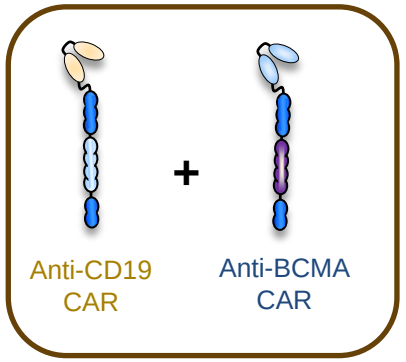
Garcia et al. 2024 ASGCT Annual Conference

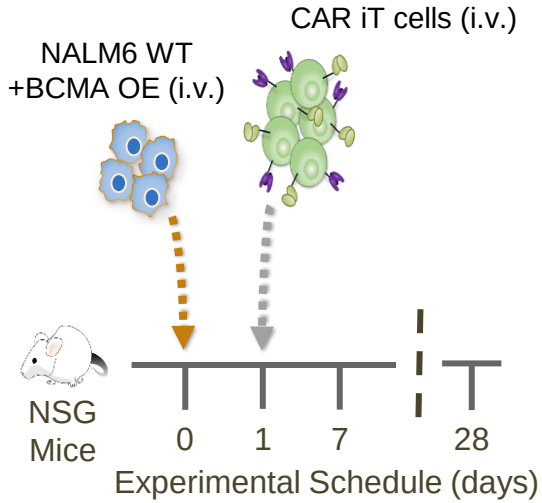
Next Generation Dual-CAR T Capable of Targeting Multiple Aberrant Cells Simultaneously

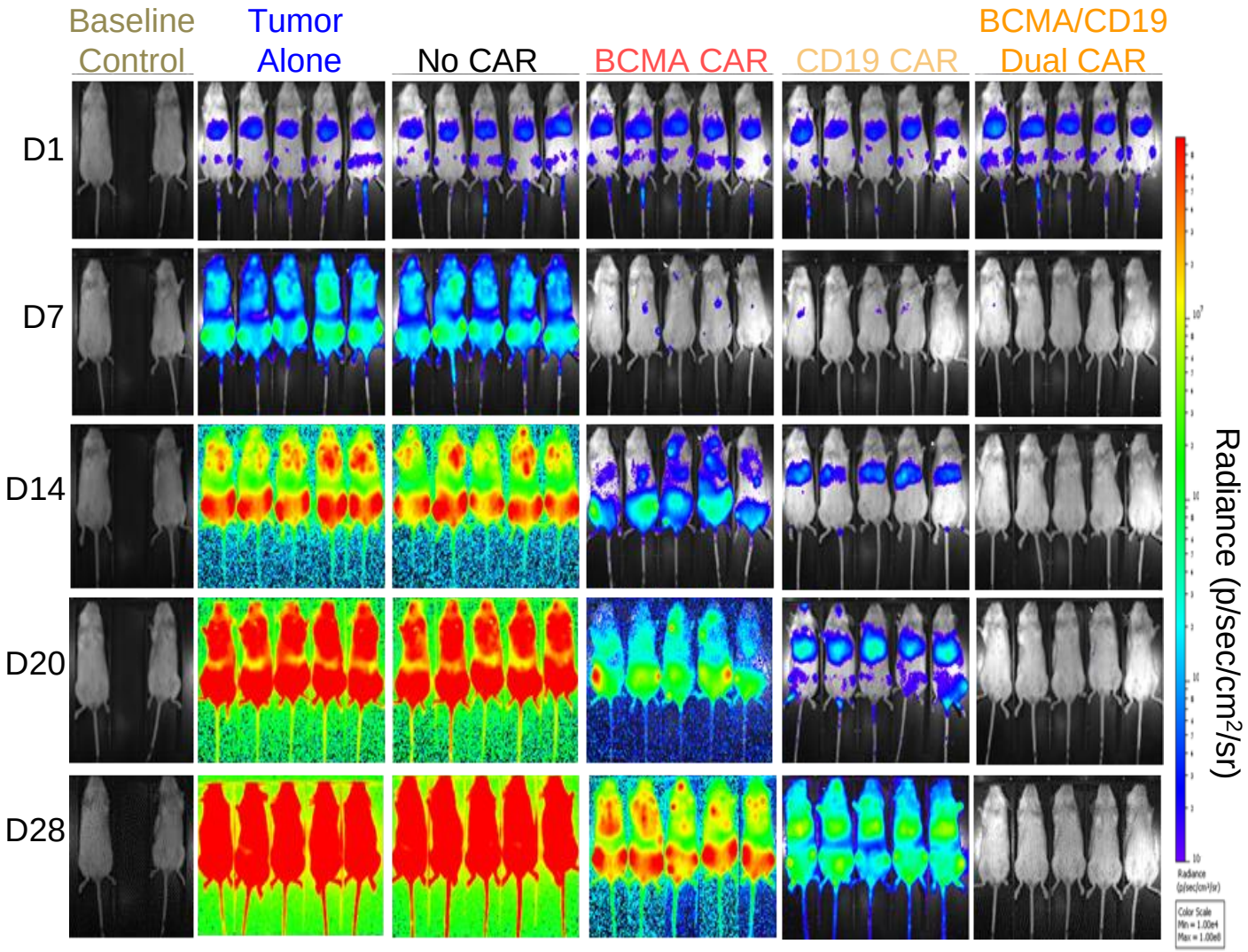
Next Generation Dual-CAR T cells designed to eliminate conditioning chemotherapy



Dual CAR T Cells Extend Breadth of B Cell Targeting and Drive Deeper and More Durable Elimination of Aberrant cells



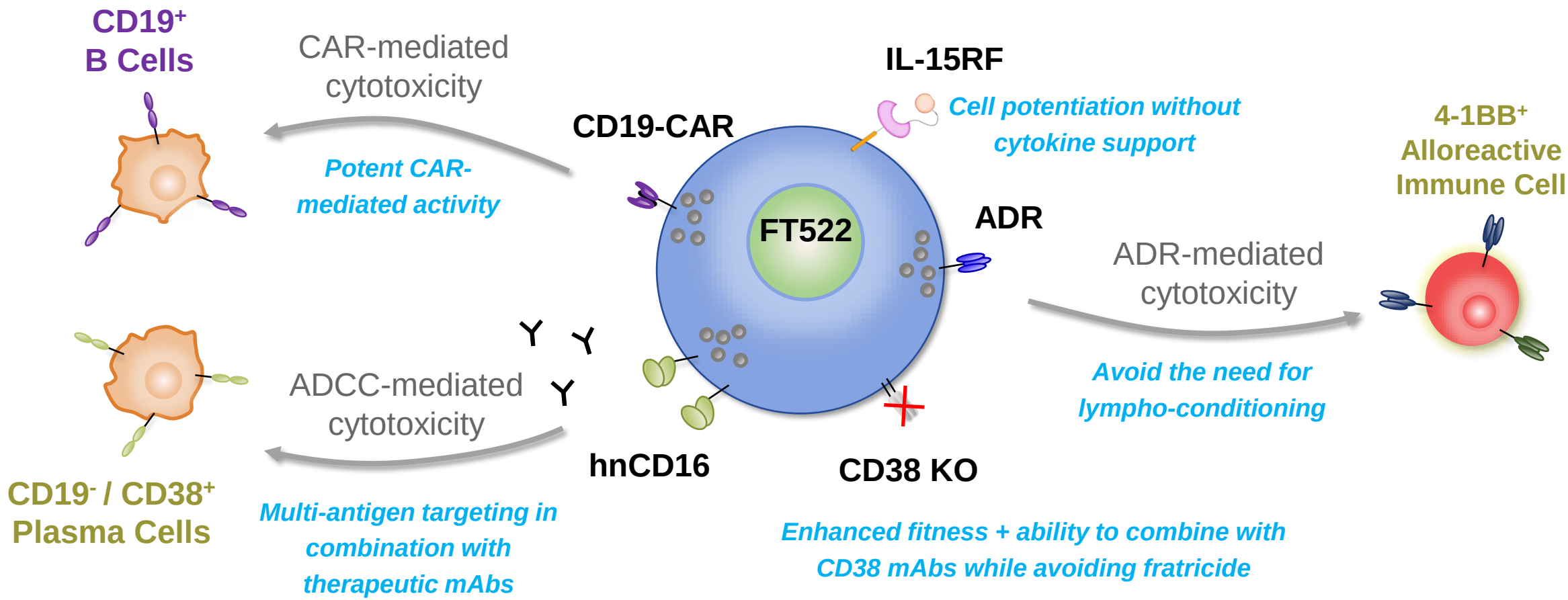




FT522 Program

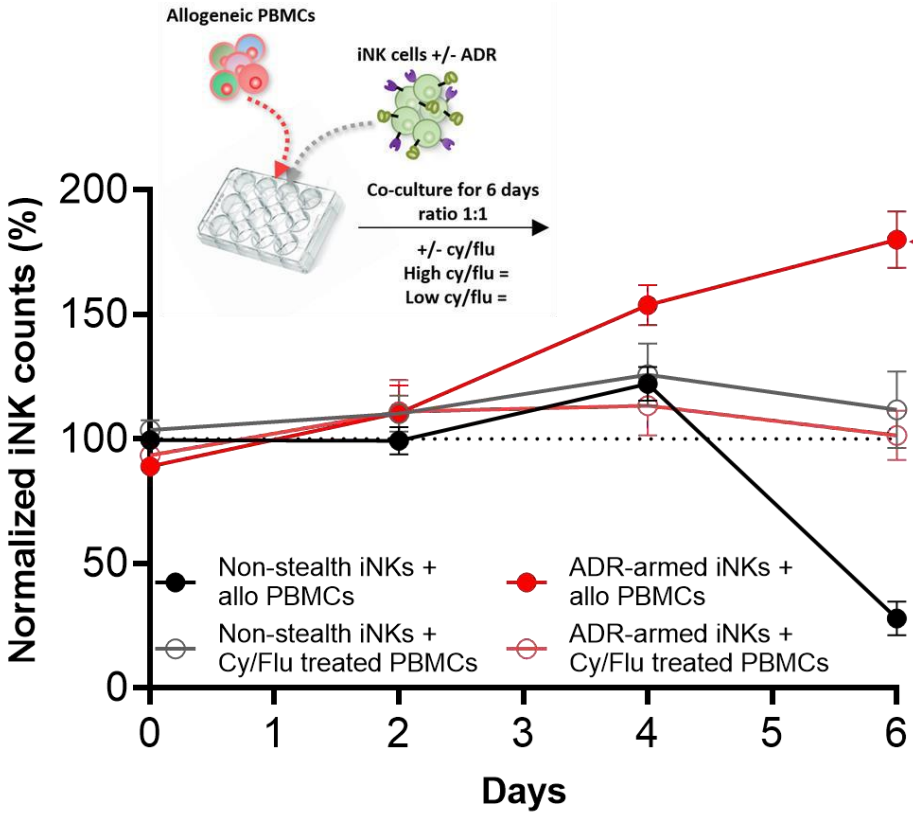
Off-the-shelf, CD19-targeted CAR NK Cell Product Candidate

FT522: Next Generation Off-the-Shelf Multi-antigen Targeting CAR NK cell armed with ADR to Avoid the Need for Conditioning Chemotherapy



ADR-armed NK Cells Uniquely Proliferate and Persist

Preclinical Data in Ex Vivo Allogeneic System

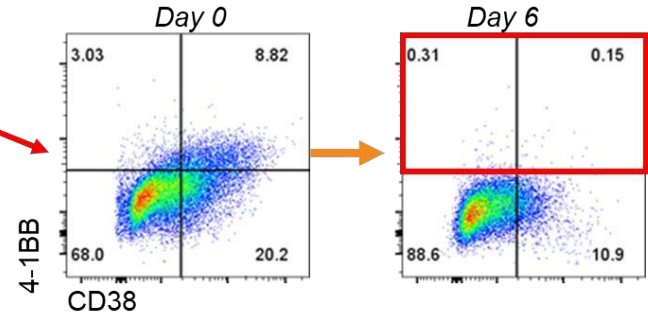


ADR-armed iNK cells proliferate, eliminate alloreactive immune cells, and persist in the presence of host PBMCs

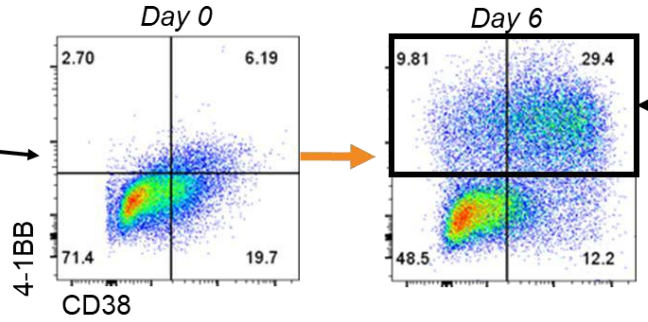
Both ADR-armed and ADR-null iNK cells maintain persistence in the presence of host PBMCs pre-treated with conditioning chemotherapy

ADR-null iNK cells are eliminated in the presence of host PBMCs

ADR-armed iNK cells (FT522) + host PBMCs



ADR-null iNK cells + host PBMCs

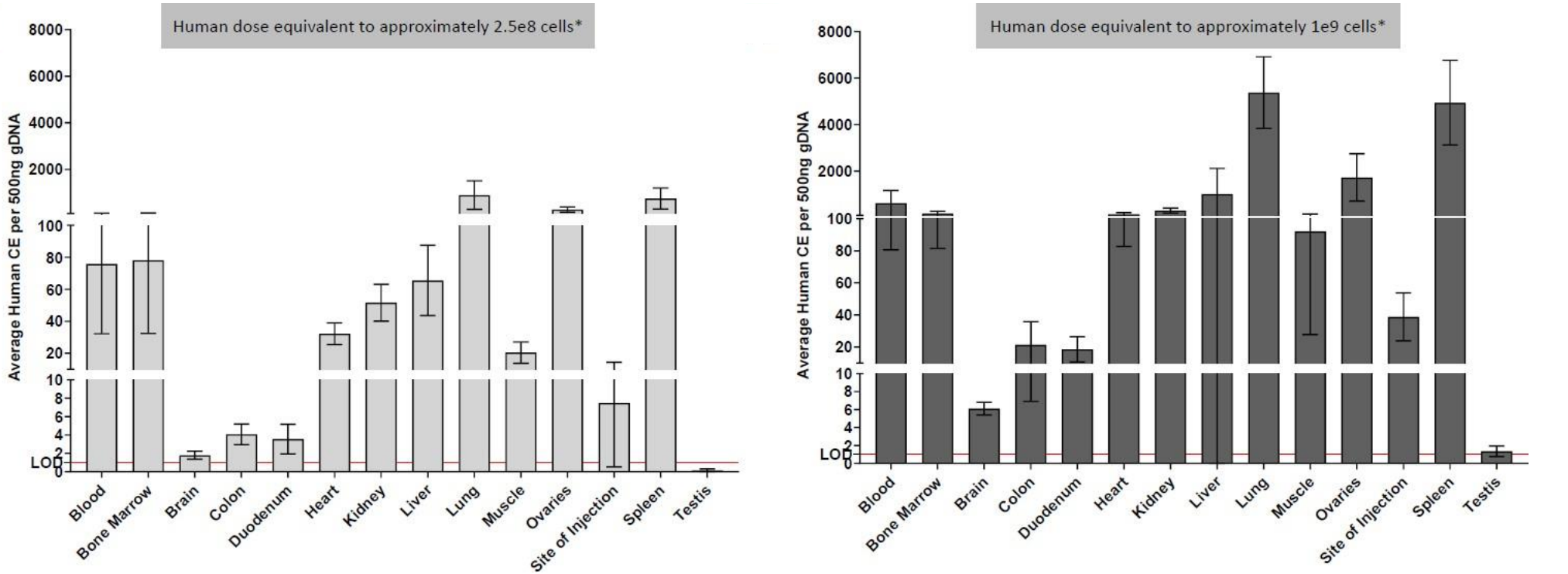


ADR-armed iNK cells eliminate alloreactive immune cells expressing either 4-1BB or CD38, enabling iNK cell potentiation and survival in an allogeneic system

FT522 In Vivo Trafficking and Tissue Residency

Preclinical Data Show Broad Distribution across Primary, Secondary, and Tertiary Tissues

*Dose-dependent trafficking, infiltration, & residency in primary, secondary & tertiary tissues without cytokine support at human dose equivalency levels of 250 million & 1 billion cells per dose**



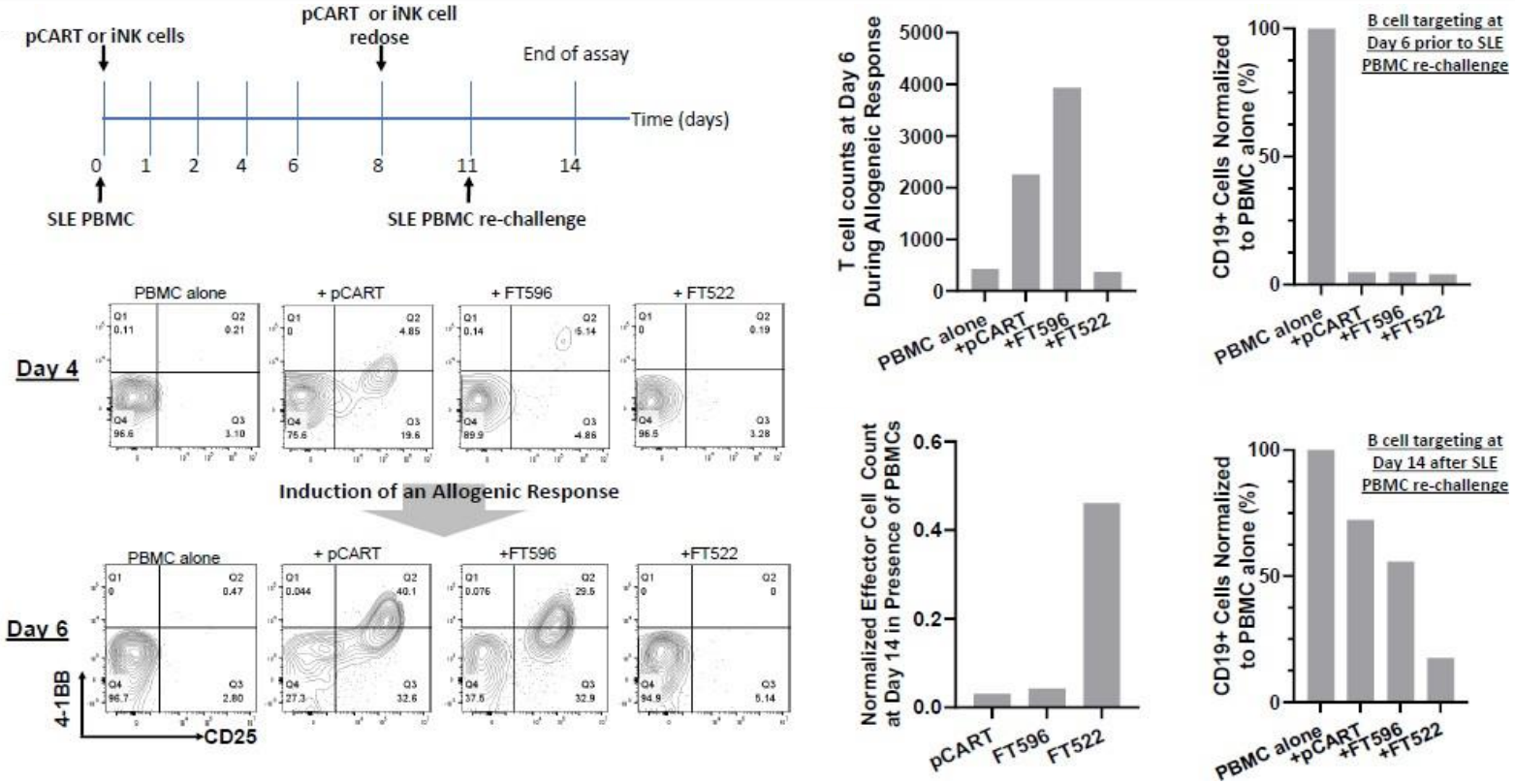
* NSG mice dosed with a human equivalency of 3 x 250 million FT522 cells and 3 x 1 billion FT522 cells over 15 days and analyzed for biodistribution the day after the last dose. No cytokine support or target cells expressing CD19 antigen were provided in this study. Human dose equivalency was calculated based on allometric conversion between a 20g mouse and 65Kg human.

Witty et al. 2024 ASGCT Annual Conference

FT522 Unique Functional Profile in Unmatched Donor SLE System

Preclinical Data Show B-cell Depletion, Alloreactive T Cell Elimination, and Functional Persistence

*In vitro activity in unmatched donor SLE PBMCs suggest unique functional profile in the presence of an unmatched host immune system**

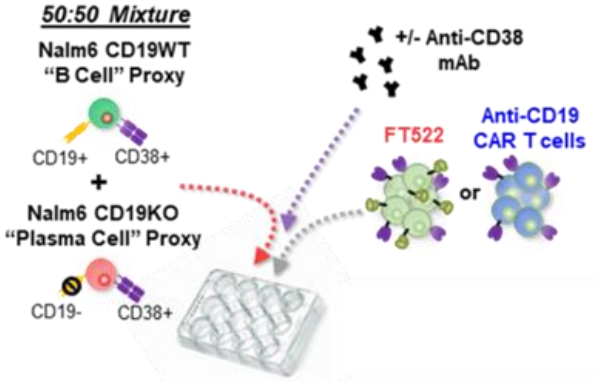


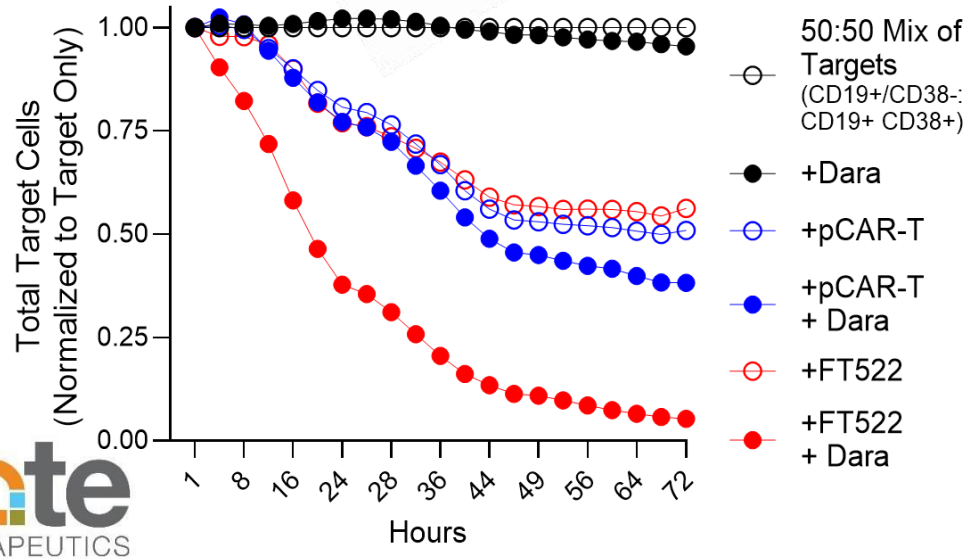
Witty et al.
2024 ASGCT Annual Conference

* *In vitro* allogenic re-challenge assay. Effector cell population is co-cultured with unmatched SLE donor PBMCs for 8 days, followed by re-dosing of effector cell population and re-challenge with unmatched SLE donor PBMCs in co-culture for a total of 14 days. Flow cytometry of unmatched SLE donor CD3+ T cells on Day 6 demonstrates T-cell activation and expansion with primary CAR-T and FT596 cells, but not to FT522 cells. Upon re-challenge, primary CAR-T and FT596 cells are depleted, whereas FT522 cells continue to persist and kill CD19+ B cells.

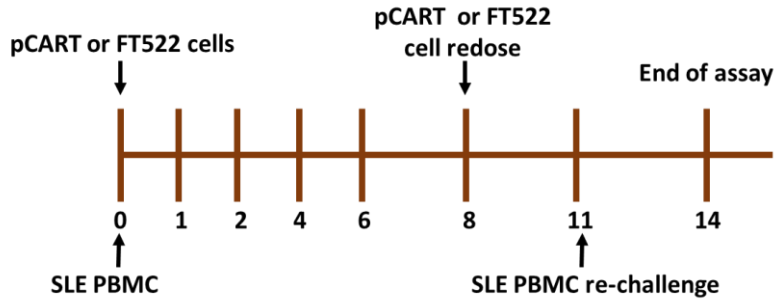
FT522 has the Unique Ability to Eliminate both B cells and Plasma Cells Without the Need for Conditioning Chemotherapy

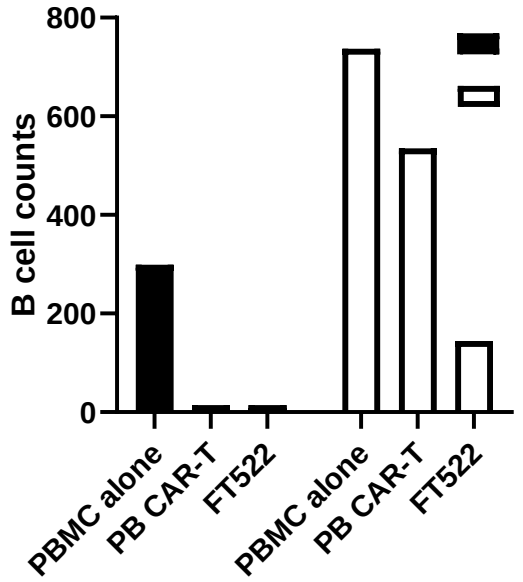
FT522 uniquely synergizes with anti-CD38 mAb to effectively eliminate both CD19+ and CD19- / CD38+ cells

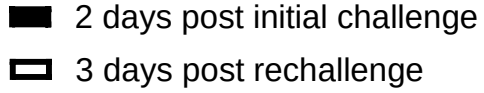




Unlike primary anti-CD19 CAR T cells, FT522 has the ability to support durable elimination of B cells from SLE PBMCs, avoiding rejection and maintaining functional persistence







While both CAR T cells and FT522 can eliminate B cells in the initial stage of the assay, only FT522 maintains the ability to continue eliminating B cells in an allogeneic environment derived from an SLE patient

FT522 Phase 1 Basket Study in Autoimmunity

IND cleared and patient enrollment to commence mid-2025

No Conditioning; Multiple Indications; Induction and Maintenance Regimens

Basket Trial Design

AAV = Antineutrophilic cytoplasmic antibody-associated vasculitides

IIM = Idiopathic inflammatory myositis

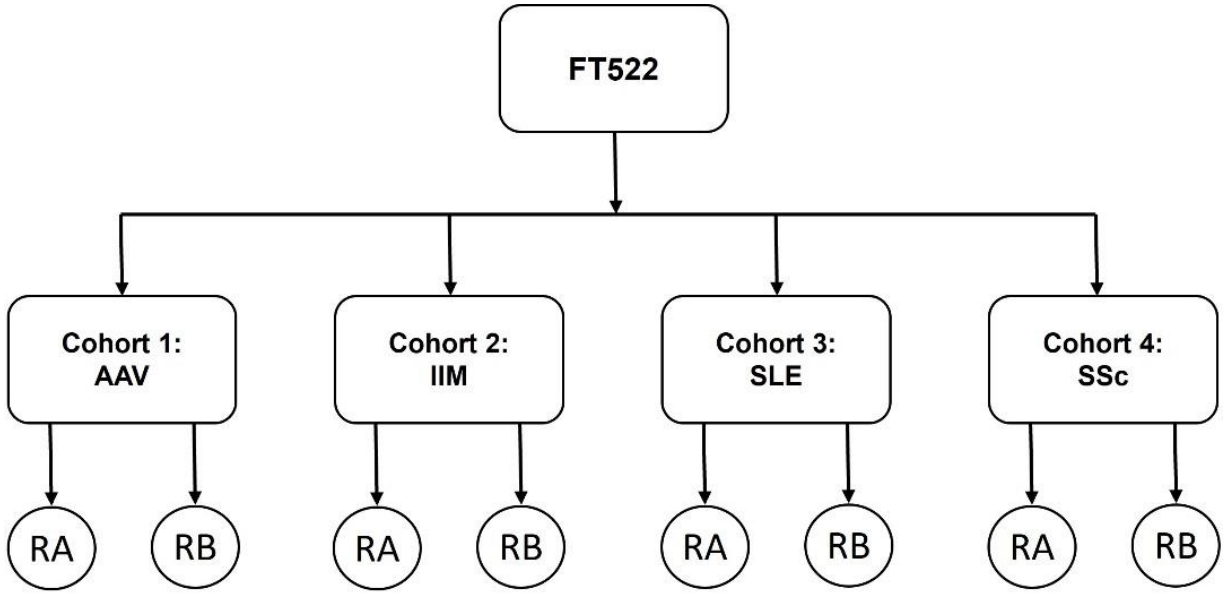
SLE = Systemic lupus erythematosus

SSc = Systemic sclerosis

Regimen A (RA): treatment of participants with FT522 as add-on to rituximab induction regimen

Regimen B (RB): treatment of participants, who are currently on background maintenance therapy and have been at a stable dose for at least 3 months, with FT522 and rituximab

- Depending on participant population, background maintenance therapies include MMF, AZA, LEF, MTX, and avacopan



All cohorts and regimens to open in parallel and escalate independently

Better Cells For Better Therapies®