Enabling Scalable Cell Engineering Using the MaxCyte® Electroporation Platform

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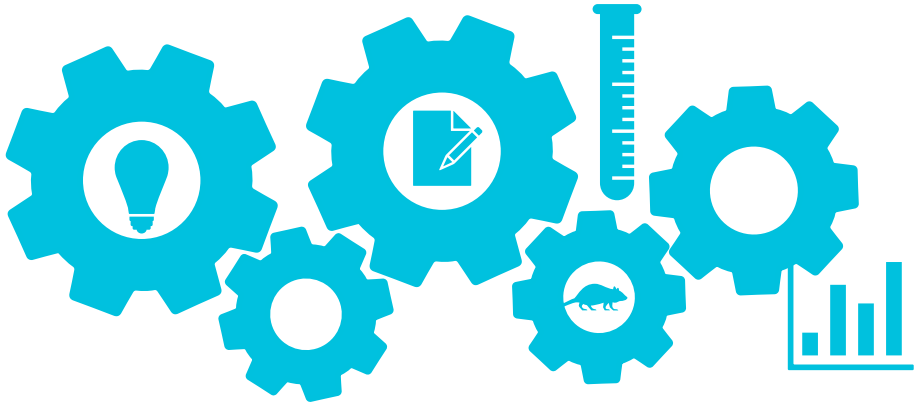
High Performance Electroporation Technology *from Concept to Clinic*

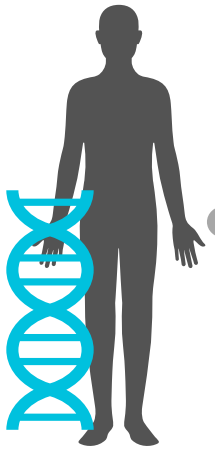
MaxCyte®



Concept | Design of Experiments | Optimization | Verification

Pre-clinical GMP

Clinical



- One Platform
- Specialized Scientific Support
- Scalability
- High Efficiency
- Efficacy and Potency
- Reproducibility
- Accelerated Development

Validation → **Mfg. / Treatment**

MaxCyte enables significant reduction in **Timelines**, **Risk** and overall **Cost**

MaxCyte Electroporation Instruments

Instrument	Touch Screen	LED Indicators	Static EP	Flow EP	Barcode Reader	21CFR	Master File	cGMP
 GTx®	●	●	●	●	●	●	●	●
 STx®	●	●	●	●				
 ATx®	●	●	●					

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The Leading Choice For Advanced Cell Engineering

MaxCyte®

High-performance engine accelerating the clinical translation of next generation cell therapies

- Twenty years of experience in primary cell transfection, protein production, and genome engineering
- Continued expansion of cell therapy partnerships with leading industry innovators and multiple programs currently in clinical trials
- Trusted by the top academic, translational and commercial groups for their R&D, PD and MFG work

Sana Biotechnology
Sangamo Therapeutics
CRISPR Therapeutics
editas Medicine
KSQ
Kite A Gilead Company
nkarta Therapeutics
CARIBOU BIOSCIENCES
APEIRON BIOLOGICS
MYELOID Therapeutics, Inc.
Allogene Therapeutics
NIH National Cancer Institute
SALK INSTITUTE FOR BIOLOGICAL STUDIES
UCSF
Cedars Sinai
Center for iPS Cell Research and Application CiRA Kyoto University
Kyoto Prefectural University of Medicine
Penn University of Pennsylvania
Seattle Children's Hospital • Research • Foundation
Washington University in St. Louis

High Transfection Efficiency with Any Cargo

MaxCyte®

Plasmid DNA

Linear dsDNA

ssODN

mRNA

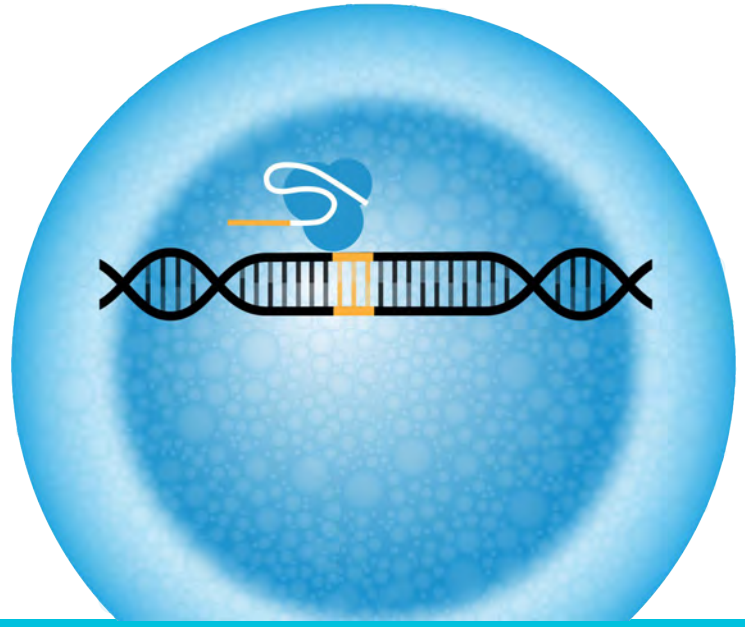
Antisense Oligonucleotides (ASOs)

Small RNAs

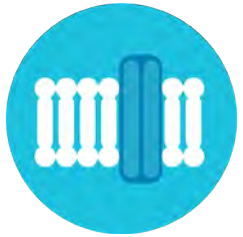
CRISPR RNPs

Recombinant Protein

Cell Lysates



Express Any Molecule with the MaxCyte Expert™ Platform



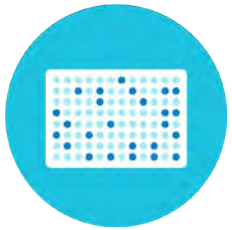
Ion channels
GPCRs
Transporters
Receptors

CRISPR-Cas9
ZFNs
TALENs
siRNAs/ASOs
Base and Prime Editors

Antibodies
Bi-specifics
Fusion Proteins
Antigens

Transcription
Factors

Epigenetic
Regulators



Enzymes
Reporters

Lentivirus
Alphavirus
Adenovirus/AAV
VLPs
Subunit vaccines

Pre-Programmed Protocols for Cell Lines and Primary Cells

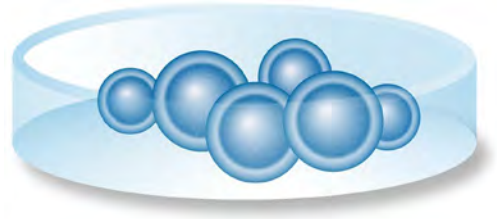
MaxCyte®

Immortalized Mammalian Cells

10T½	L6
C127	LLC-PK1
CAP/CAP-T	MDCK
Ba/F3	NIH/3T3
BHK-21	NRK
C2C12	PC12
CHO	Per.C6
COS-7	RAW264.7
HEK-293	RBL
Jurkat	Vero

Mammalian Cancer Cell Lines

A549	Neuro2a
B16	NS0
EL4	PANC-1
HCT-116	Renca
HeLa	SK-N-SH
HT-1080	SK-OV-3
K562	SNU-1
LNCaP	Sp2/0
MCF7	THP-1
MG-63	YB2/0



Hematopoietic Cells

HSCs	Dendritic cells
PBMCs	NK cells
B cells	Granulocytes
T cells	Monocytes

Stem Cells

iPSCs
Embryonic stem cells
Mesenchymal stem cells
Neural stem cells
Neural progenitor cells

Primary Cells

Myoblasts
Keratinocytes
Neurons
Fibroblasts
Cardiomyocytes

Insect Cell Lines

S2
SL3
Sf9
Sf21

+ 10 optimization protocols for new cell types and applications

Seamless Scalability Using MaxCyte Processing Assemblies

MaxCyte®

Feature	OC-25x3	R-50x3	R-50x8	OC-100x2	OC-100	OC-400	R-/G-1000	CL-1.1	CL-2
PA Type									
High Vol.	25 µL	55 µL	55 µL	100 µL	100 µL	400 µL	1 mL	3.5 mL	100 mL
Low Vol.	15 µL	45 µL	45 µL	50 µL	50 µL	200 µL	400 µL	1 mL	10 mL
# Samples	3	3	8	2	1	1	1	1	1
High Cell	$5x10^6$	$1x10^7$	$1x10^7$	$2x10^7$	$2x10^7$	$8x10^7$	$2x10^8$	$7x10^8$	$2x10^{10}$
Low Cell	$7.5x10^4$	$2.25x10^5$	$2.25x10^5$	$2.5x10^5$	$2.5x10^5$	$1x10^6$	$2x10^6$	$5x10^6$	$5x10^7$
ATx									
GTx									
STx									

eXpert®

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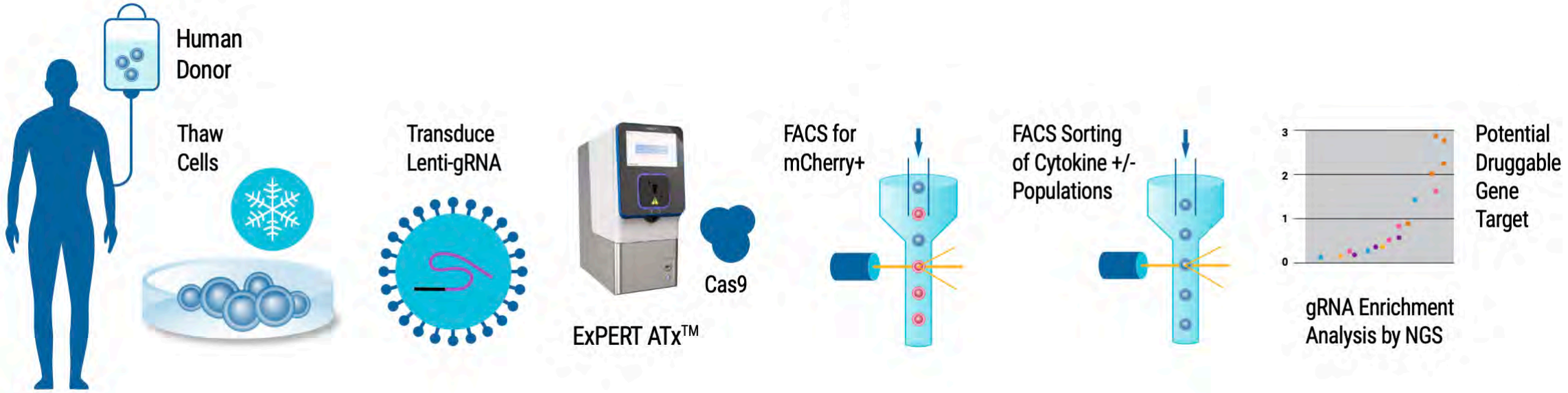
A Fully Optimized CRISPR Workflow for Drug Discovery in T Cells

SLICE-Enabled Whole Genome Screens to Investigate Immune Dysregulation



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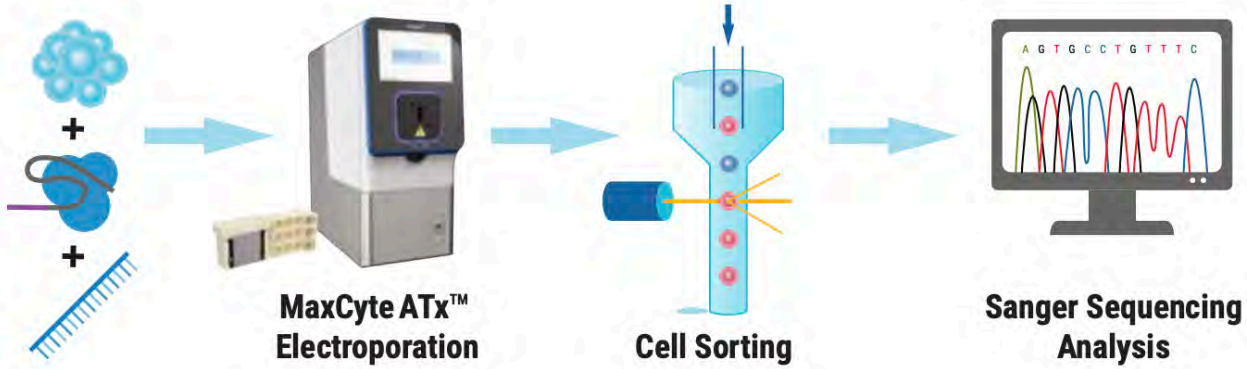
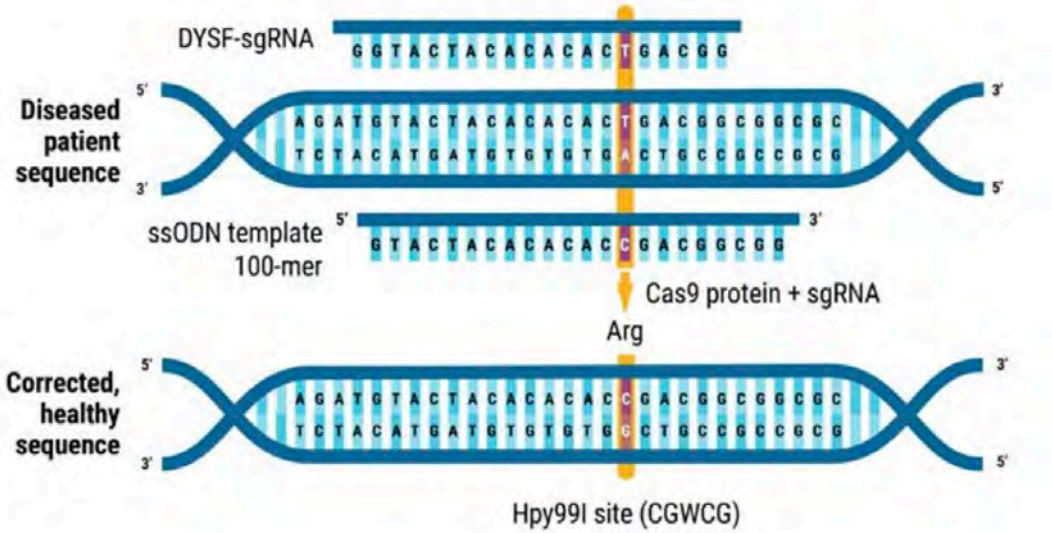
Highly Efficient Homozygous Correction of the DYSF Gene in Miyoshi Myopathy Patient iPSCs by ssODN-Mediated Knockin

>70% Homozygous corrected iPSCs enable optimized selection of isogenic clones for disease modeling and drug screening





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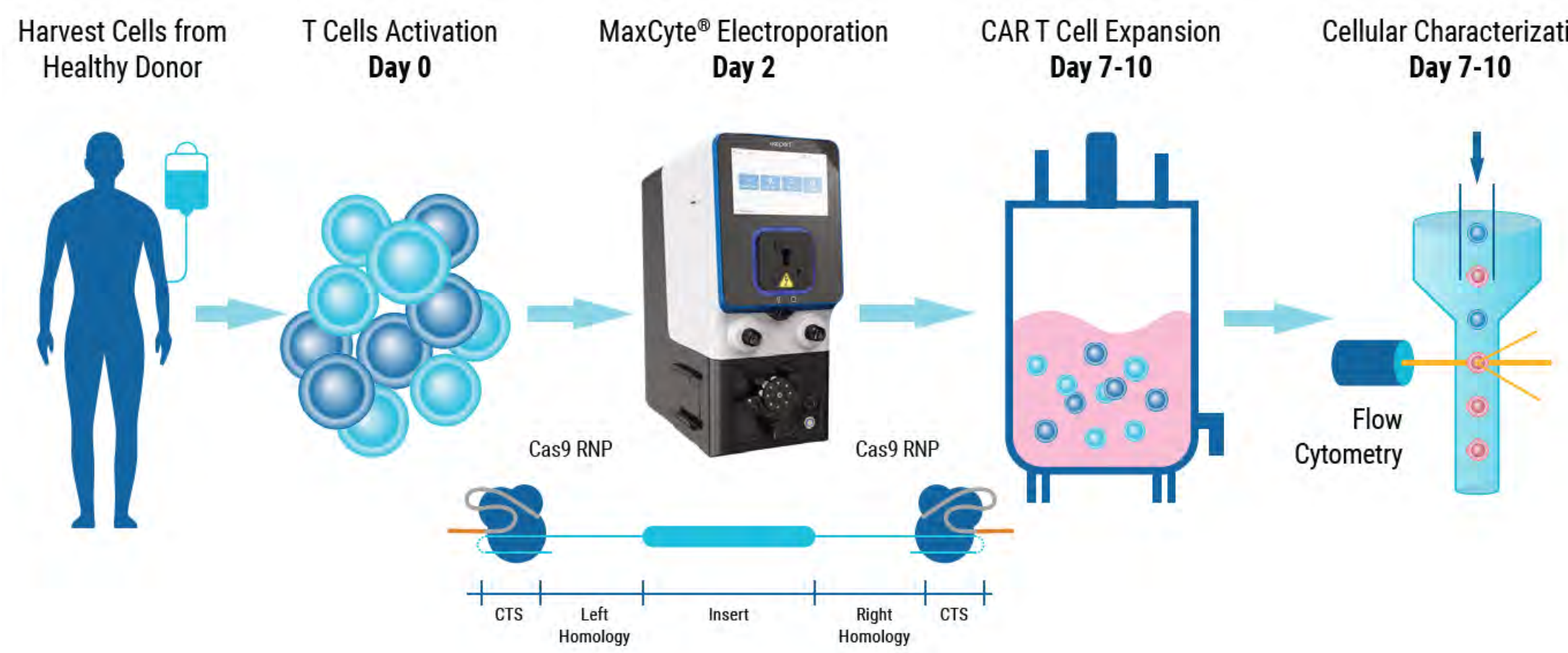
A GMP Compatible, Non-Viral CAR T Cell Manufacturing Process



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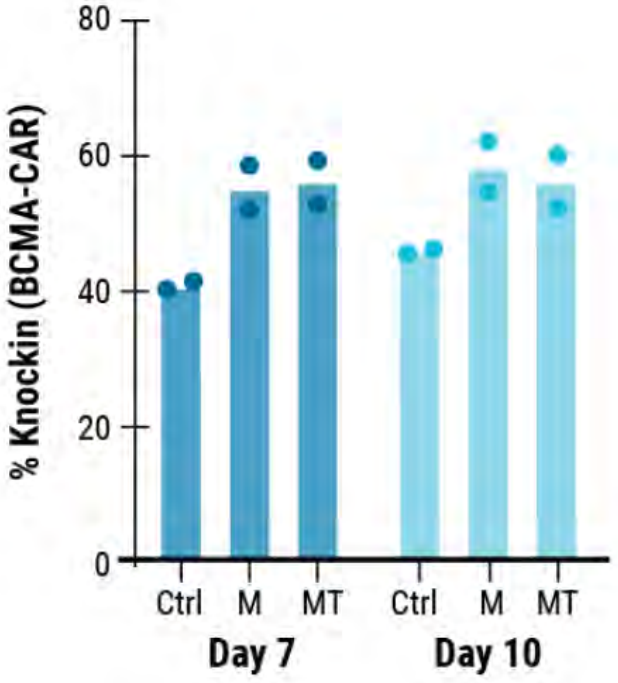
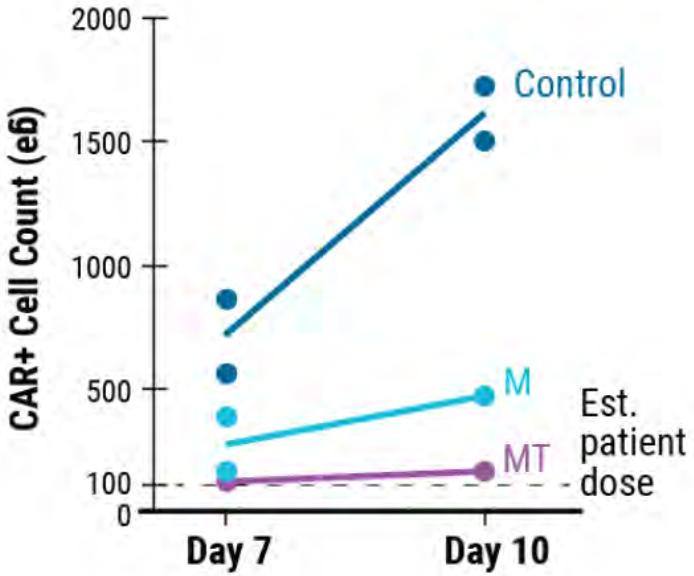
bioRxiv 2021.09.02.458799

Highly Efficient CAR Knock-In and Robust T Cell Expansion

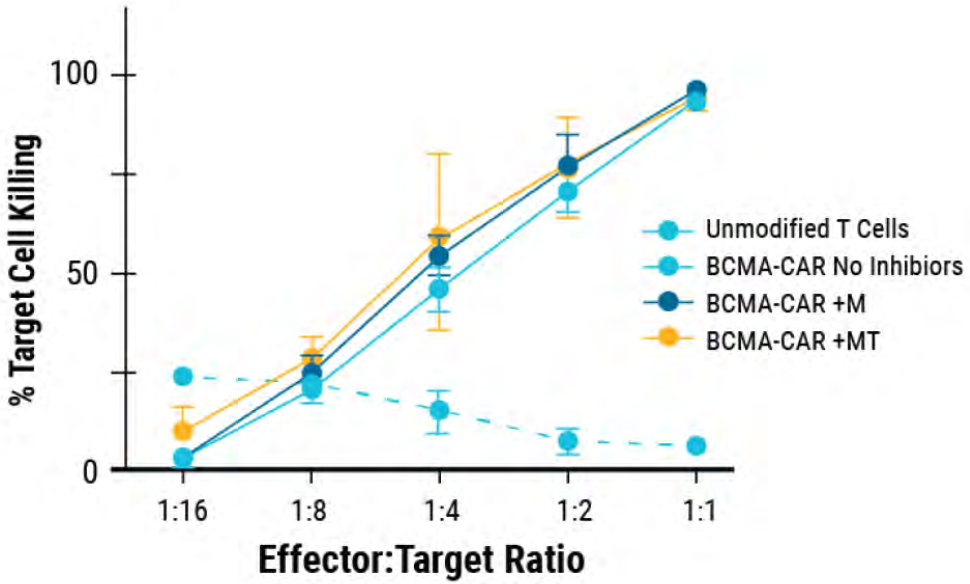
40-62% target knock-in



30-fold CAR+ T cell expansion over a 10 day manufacturing process



Robust cancer cell killing



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Have questions? Want to learn more? Visit Booth #123!

Thank you!