

*Bill, living with transthyretin
amyloidosis, and his wife, Maura*



Corporate Overview

July 2021

Intellia Therapeutics' Legal Disclaimer

This presentation contains “forward-looking statements” of Intellia Therapeutics, Inc. (“Intellia”, “we” or “our”) within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements include, but are not limited to, express or implied statements regarding Intellia’s beliefs and expectations regarding our: ability to complete clinical studies for NTLA-2001 for the treatment of transthyretin amyloidosis (“ATTR”), successfully submit additional regulatory applications in other countries, and evaluate NTLA-2001 in a broader ATTR population; expectation to submit an Investigational New Drug (“IND”) application or equivalent regulatory submission for NTLA-5001 for the treatment of acute myeloid leukemia (“AML”) in mid-2021; ability to generate data to demonstrate NTLA-5001 as a potential best-in-class engineered T cell therapy designed to treat all genetic subtypes of AML; plans to evaluate in preclinical studies the potential use of NTLA-5001 to treat Wilms’ Tumor 1 (“WT1”)-positive solid tumors; expectation to enroll a patient in a clinical study for NTLA-2002 for the treatment of hereditary angioedema (“HAE”) in 2021; expectations of evaluating safety, tolerability and measures of activities of NTLA-2002 in patients with HAE; plans to nominate at least one additional development candidate in 2021; plans to nominate an allogeneic cell therapy candidate in 1H 2022; plans to advance and complete preclinical studies for our research programs; development of our modular platform to advance our complex genome editing capabilities; further development of our proprietary genome editing tools for research and therapeutic development, including sequential editing and base editing; presentation of additional data at upcoming scientific conferences, and other preclinical data in 2021; advancement and expansion of our CRISPR/Cas9 technology to develop human therapeutic products; ability to maintain and expand our related intellectual property portfolio, and avoid or acquire rights to valid intellectual property of third parties; ability to demonstrate our platform’s modularity and replicate or apply results achieved in preclinical studies, including those in our ATTR, AML, and HAE programs, in any future studies, including human clinical trials; ability to develop other in vivo or ex vivo cell therapeutics of all types, and those targeting WT1 in AML in particular, using CRISPR/Cas9 technology; ability to optimize the impact of our collaborations on our development programs, including but not limited to our collaboration with Regeneron Pharmaceuticals, Inc. including our co-development programs for hemophilia A and hemophilia B; Regeneron’s ability to successfully co-develop products in the hemophilia A and B programs, and the potential timing and receipt of future milestones and royalties, or profits, as applicable, based on our license, collaboration and, if applicable, co-development agreements with Regeneron and Novartis Institutes for BioMedical Research, Inc.; statements regarding the timing of regulatory filings and clinical trial execution, including dosing of patients, regarding our development programs; potential commercial opportunities, including value and market, for our product candidates; our expectations regarding our use of capital and other financial results during 2021; and our ability to fund operations for at least the next 24 months.

Any forward-looking statements in this presentation are based on management’s current expectations and beliefs 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: risks related to our ability to protect and maintain our intellectual property position; risks related to valid third party intellectual property; risks related to our relationship with third parties, including our licensors and licensees; risks related to the ability of our licensors to protect and maintain their intellectual property position; uncertainties related to regulatory agencies’ evaluation of regulatory filings and other information related to our product candidates; uncertainties related to the authorization, initiation and conduct of studies and other development requirements for our product candidates; the risk that any one or more of our product candidates, including those that are co-developed, will not be successfully developed and commercialized; the risk that the results of preclinical studies or clinical studies will not be predictive of future results in connection with future studies; and the risk that our collaborations with Regeneron or our other ex vivo collaborations will not continue or will not be successful. For a discussion of these and other risks and uncertainties, and other important factors, any of which could cause Intellia’s actual results to differ from those contained in the forward-looking statements, see the section entitled “Risk Factors” in Intellia’s most recent annual report on Form 10-K as well as discussions of potential risks, uncertainties, and other important factors in Intellia’s other filings with the Securities and Exchange Commission (“SEC”). All information in this presentation is as of the date of the release, and Intellia undertakes no duty to update this information unless required by law.

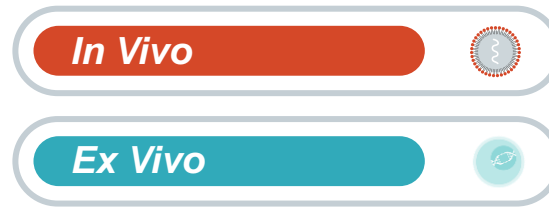
Intellia's Investment Summary

Transforming lives of people with severe diseases
by developing curative genome editing treatments



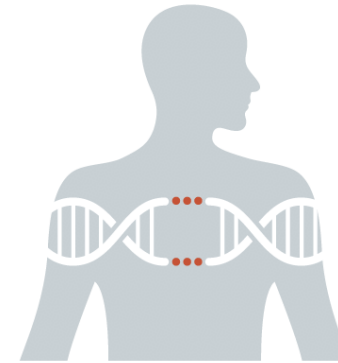
Leading Genome Editing Platform

Building differentiated modular solutions



Full-Spectrum Strategy

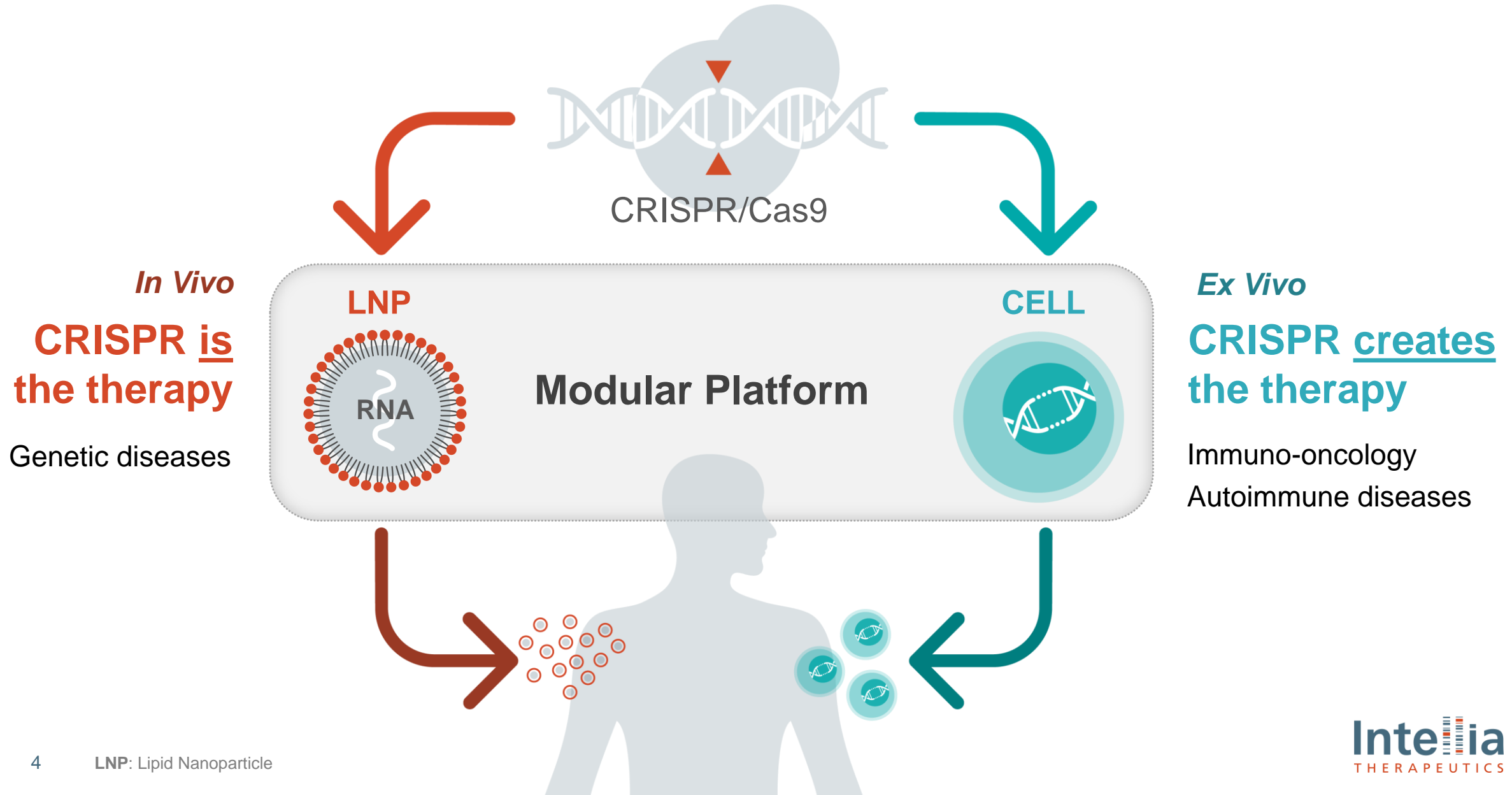
Advancing therapies for diseases with high unmet need



Broad Portfolio Opportunity

Driving pipeline expansion with robust R&D engine

Building a Full-Spectrum Genome Editing Company



Development Pipeline Fueled by Robust Research Engine



PROGRAM	APPROACH	Research	Candidate Selection	IND-Enabling	Early-stage Clinical	Late-stage Clinical	PARTNER
<i>In Vivo: CRISPR <u>is</u> the therapy</i>							
NTLA-2001: Transthyretin Amyloidosis	Knockout						LEAD Intellia* REGENERON THERAPEUTICS
NTLA-2002: Hereditary Angioedema	Knockout						Intellia THERAPEUTICS
Hemophilia A and B	Insertion						LEAD REGENERON* Intellia THERAPEUTICS
Research Programs	Knockout, Insertion, Consecutive Edits						Intellia THERAPEUTICS
Research Programs	Various						Intellia REGENERON** THERAPEUTICS
<i>Ex Vivo: CRISPR <u>creates</u> the therapy</i>							
OTQ923 / HIX763: Sickle Cell Disease	HSC						NOVARTIS Intellia*** THERAPEUTICS
NTLA-5001: Acute Myeloid Leukemia	WT1-TCR						Intellia THERAPEUTICS
Solid Tumors	WT1-TCR						Intellia THERAPEUTICS
Allo Undisclosed	Undisclosed						Intellia THERAPEUTICS
Other Novartis Programs	CAR-T, HSC, OSC	Undisclosed					NOVARTIS Intellia*** THERAPEUTICS

Executing Against Strategic Priorities and R&D Goals

Clinical Validation

NTLA-2001 for Transthyretin Amyloidosis (ATTR Amyloidosis):

- ✓ First-ever clinical data supporting safety and efficacy of *in vivo* CRISPR genome editing in humans
- Initiate Part II, a single-dose expansion cohort, in 2021
- Share additional data at medical or scientific meeting in 2021

Pipeline Advancement

NTLA-2002 for Hereditary Angioedema (HAE):

- ✓ Submitted first CTA to initiate Phase 1 study
- Enroll first patient in the Phase 1 study in 2021

NTLA-5001 for Acute Myeloid Leukemia (AML):

- Submit IND in mid-2021

Research Programs:

- Nominate at least 1 new development candidate in 2021
- Nominate first allogeneic development candidate by 1H 2022

Platform Innovation

- ✓ Demonstrated preclinical proof-of-concept for *in vivo* editing of bone marrow
- ✓ Presented first preclinical data on Intellia's proprietary base editor

In Vivo

CRISPR is the therapy

GENETIC DISEASES

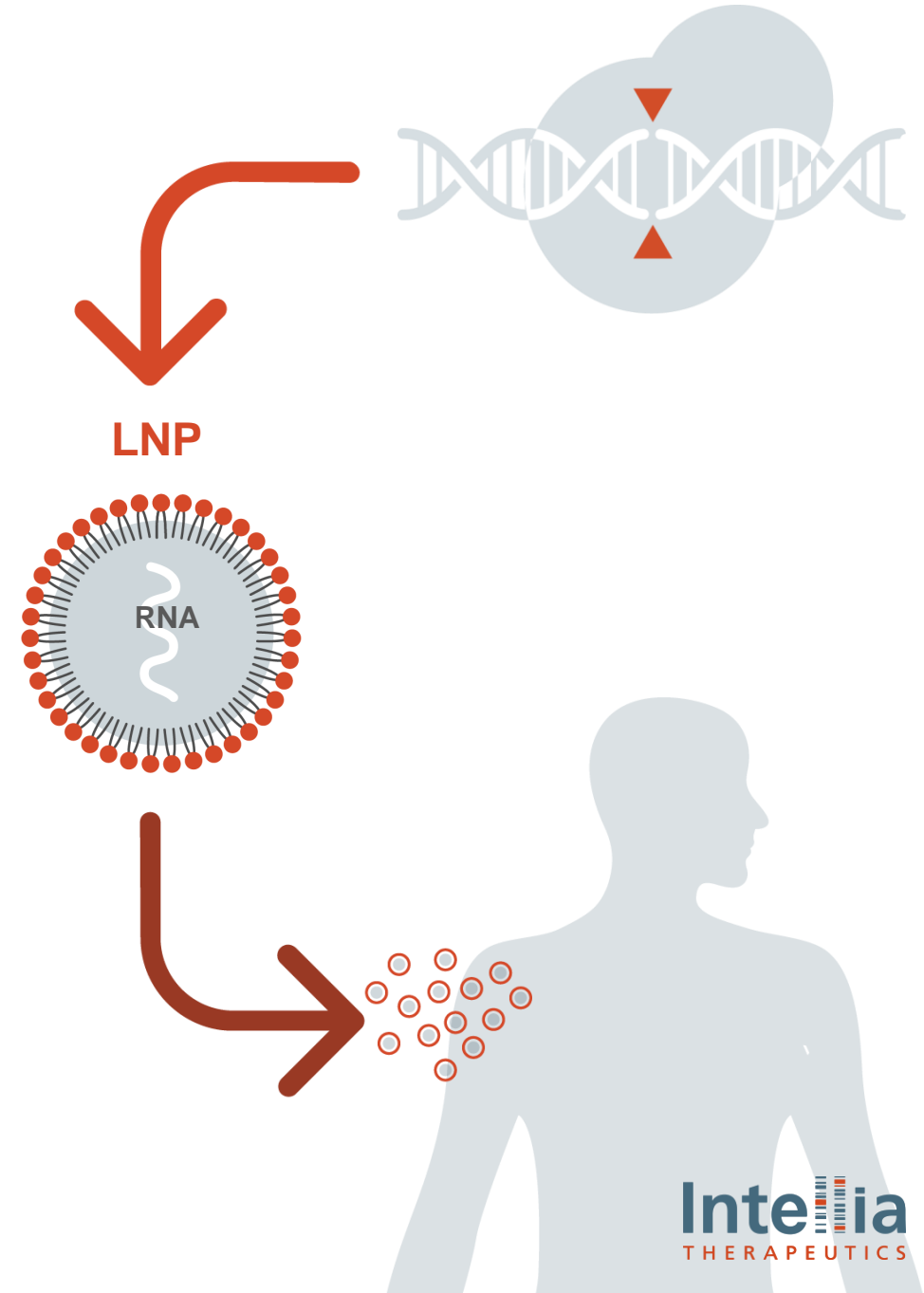
Strategic Advantages:

Systemic non-viral delivery of CRISPR/Cas9 provides transient expression

Potential curative therapy from single dose

Permanent gain of function with targeted gene insertion

Delivery to multiple tissue types enabling new therapeutic applications



Modular Approach to Unlocking Treatment of Genetic Diseases

PROPRIETARY LNP DELIVERY SYSTEM

Transient expression

Large cargo capacity

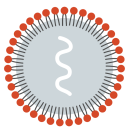
Redosing capability

ENABLES MULTIPLE EDITING STRATEGIES

Remove

KNOCKOUT

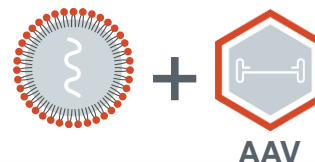
Knockout toxic or compensatory genes



Restore

INSERT

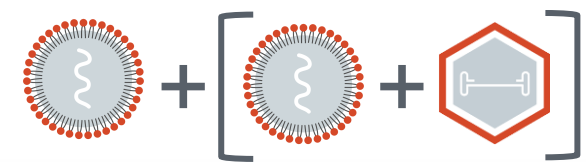
Introduce functional DNA sequence



Remove / Restore

CONSECUTIVE EDITING

Any combination of knockout and insertion strategies



NTLA-2001 for Transthyretin (ATTR) Amyloidosis



ATTR Amyloidosis

- Caused by accumulation of misfolded transthyretin (TTR) protein, which affects **nerves, heart, kidneys and eyes**
- Chronic dosing is required with current treatments
- **50,000**
ATTRv patients worldwide¹
- **~200-500K**
ATTRwt patients worldwide²

OUR APPROACH

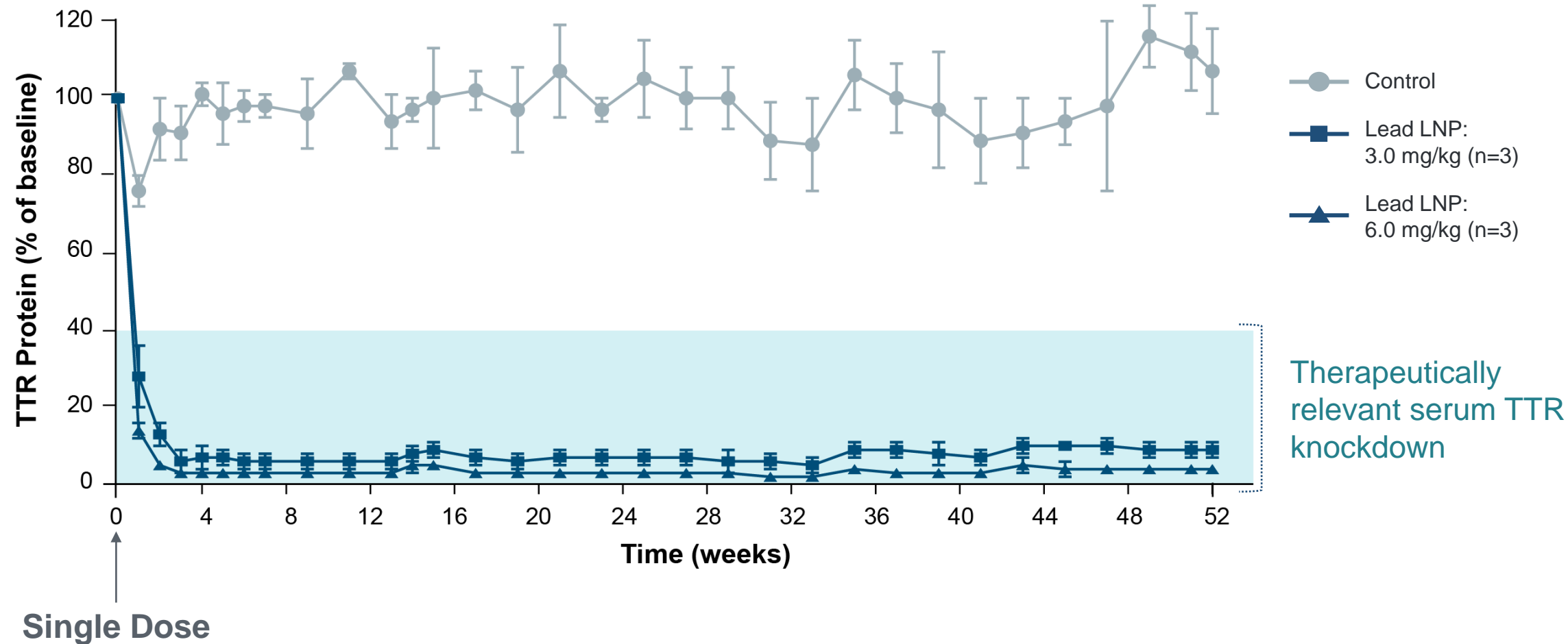
Knock out *TTR* gene with a single dose

- Reduce wild-type and mutant TTR protein
- Aims to address polyneuropathy and cardiomyopathy

KEY ADVANTAGES

- Potential to halt and reverse disease
- Potential “one-and-done” treatment
- Expect lifelong, stable TTR reduction

Sustained >95% Serum TTR Protein Reduction After a Single Dose in NHPs



NTLA-2001 Ongoing Global Phase 1 Study

Two-part, open-label, multi-center study in adults with hATTR with polyneuropathy, with plans to evaluate in a broader ATTR population of both polyneuropathy and cardiomyopathy patients

Total Enrollment:
Up to 38 patients,
age 18 to 80 years

Intervention:
Single dose
administered via an
intravenous (IV)
infusion



PART I Single-Ascending Dose

N = Up to 30 subjects*

Up to 4
dose-escalation
cohorts

PART II Single Dose Expansion Cohort

N = 8 subjects

Administer optimal dose
selected from Part I

Potential to
advance toward
a pivotal trial for
NTLA-2001 based
on Phase 1 safety
and efficacy
data

PRIMARY OBJECTIVES

Evaluate safety, tolerability, PK and PD

- Measure serum TTR levels

SECONDARY OBJECTIVES

Evaluate efficacy on clinical measures of neurologic function

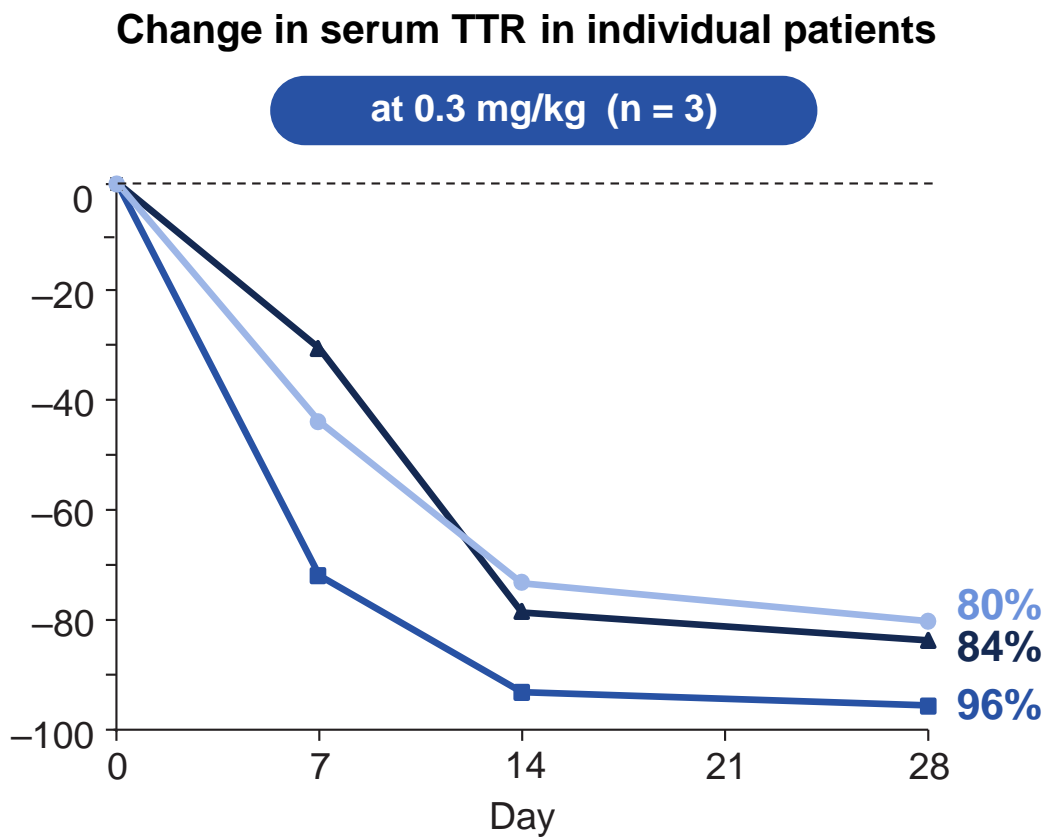
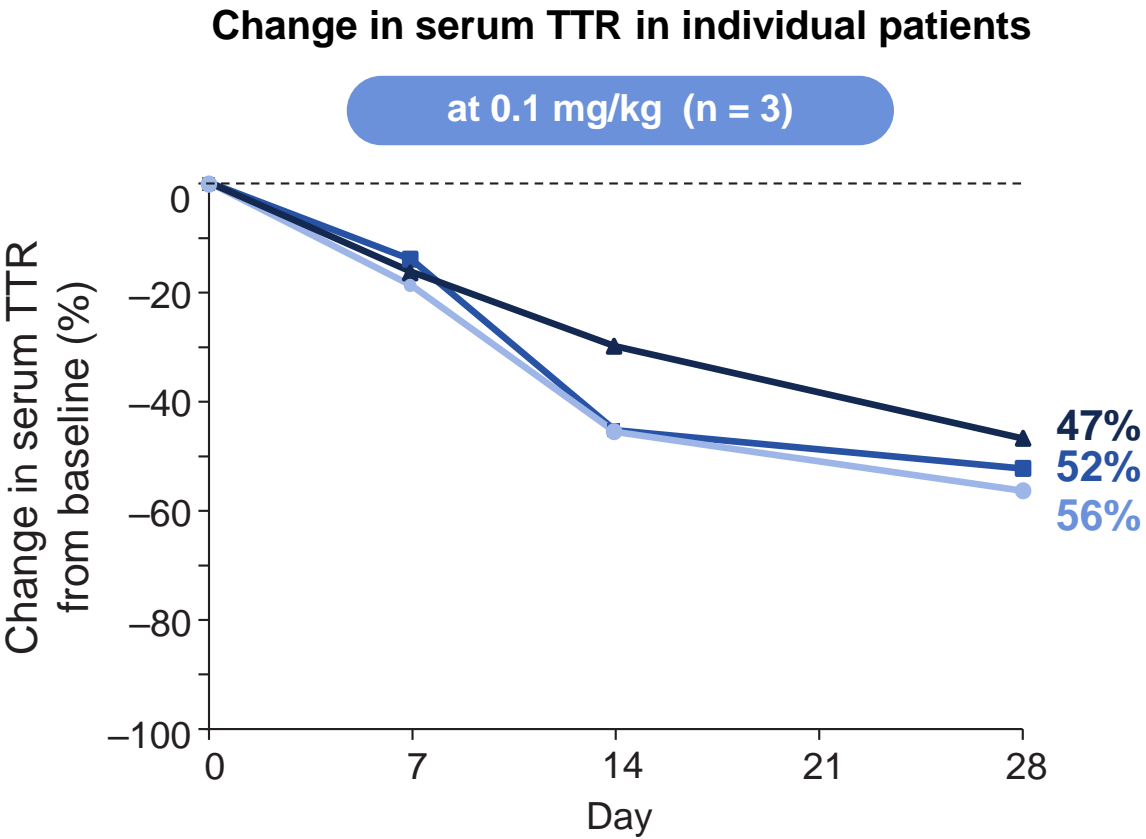
- Neuropathic impairment endpoints include NIS (Part 1 and 2) and mNIS+7 (Part 2 only)

NTLA-2001 Generally Well Tolerated in Acute Phase (N=6) by Day 28: All AEs Grade 1 with No Serious AEs

Preferred Term	0.1 mg/kg (n = 3)	0.3 mg/kg (n = 3)
Subjects with at least one TEAE	2	1
Headache	2	
Diarrhea	1	
Nausea	1	
Infusion-related reaction	1	
Skin abrasion		1
Vertigo positional	1	
Foreign body sensation in eyes	1	
Catheter site swelling	1	
Acute sinusitis	1	
Thyroxine decreased	1	
Rhinorrhea	1	
Pruritis	1	
Rash	1	

No liver findings or
coagulopathy based
on laboratory testing

Landmark Clinical Data Show Deep, Dose-Dependent Serum TTR Reduction After Single Dose of NTLA-2001



NTLA-2001 Holds Promise to Transform the Lives of People with ATTR

Achievements and Next Steps

- ✓ First-ever clinical data supporting safety and efficacy of *in vivo* CRISPR genome editing in humans
- ✓ Reported positive interim clinical data from ongoing Phase 1 study
- Initiate Part II, a single-dose expansion cohort, in 2021
- Share additional data at medical or scientific meeting in 2021

NTLA-2002 for Hereditary Angioedema (HAE)



HAE

- Genetic disease characterized by **recurring, severe and unpredictable swelling** in various parts of the body
- Chronic dosing is required with current treatments
- Attacks can occur every **7-14 days** on average for untreated patients¹
- **1 in 50,000** HAE patients worldwide¹

OUR APPROACH

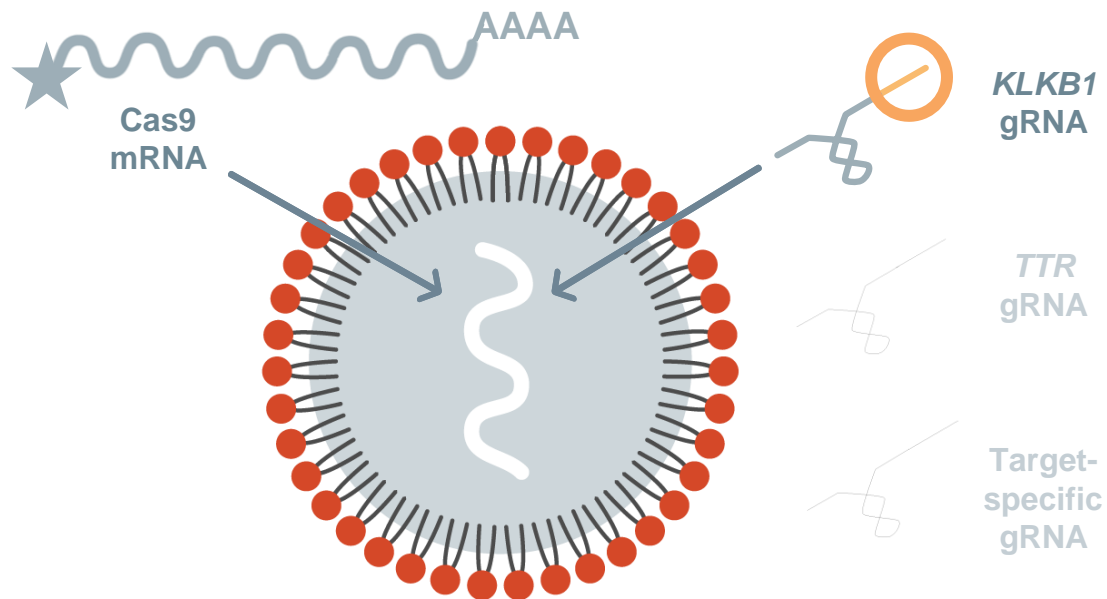
- Knock out *KLKB1* gene with a single dose
- Reduce kallikrein activity to prevent attacks

KEY ADVANTAGES

- Potential “one-and-done” treatment
- Extensive and continuous reduction in kallikrein activity
 - Minimizes the risk of breakthrough attacks
- Potential to eliminate significant treatment burden

Modular Delivery Solution Enables Rapid and Reproducible Path to Clinical Development

LNP Delivery System: gRNA Reprograms Genetic Target



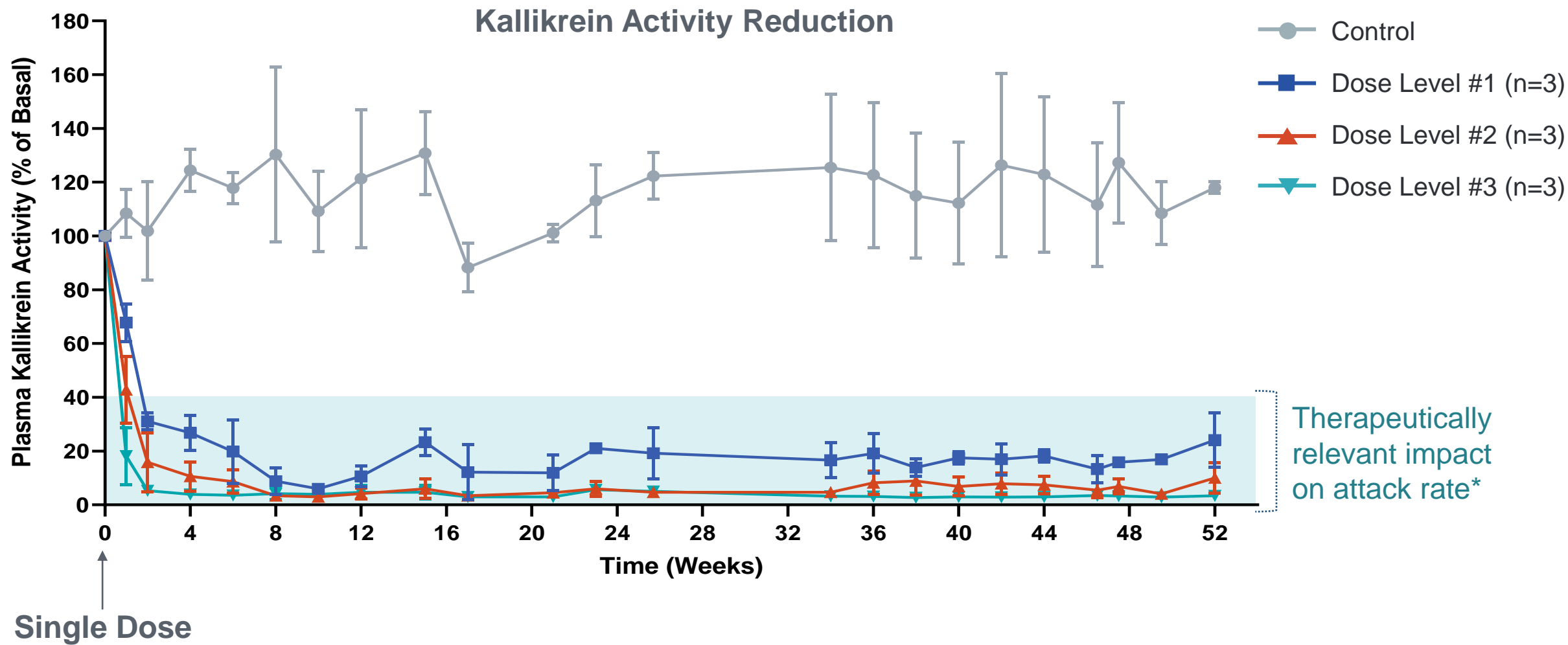
NTLA-2002 for HAE:

Builds on ATTR program's infrastructure, including modular LNP delivery system

Applies insights gained from ATTR and other research programs to liver knockout target

Platform advances expedite progression to NHP proof-of-concept and clinical development

Achieved Sustained Therapeutically Relevant Kallikrein Activity Reduction After a Single Dose in NHPs



NTLA-2002 for HAE: Advancing Toward the Clinic

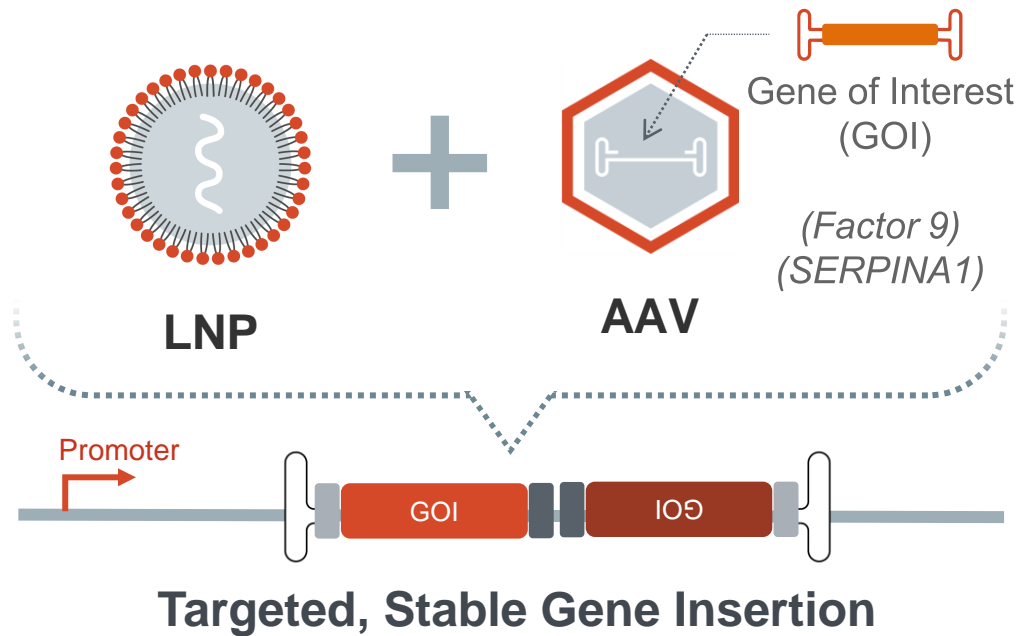
Achievements and Next Steps

- ✓ Achieved year-long therapeutically relevant kallikrein activity reduction after a single dose in NHPs
- ✓ Submitted first CTA to initiate a Phase 1 study
- Plan to enroll the first patient in 2021

Beyond Knockout: Insertion Technology Enables Production of High Levels of Therapeutic Protein

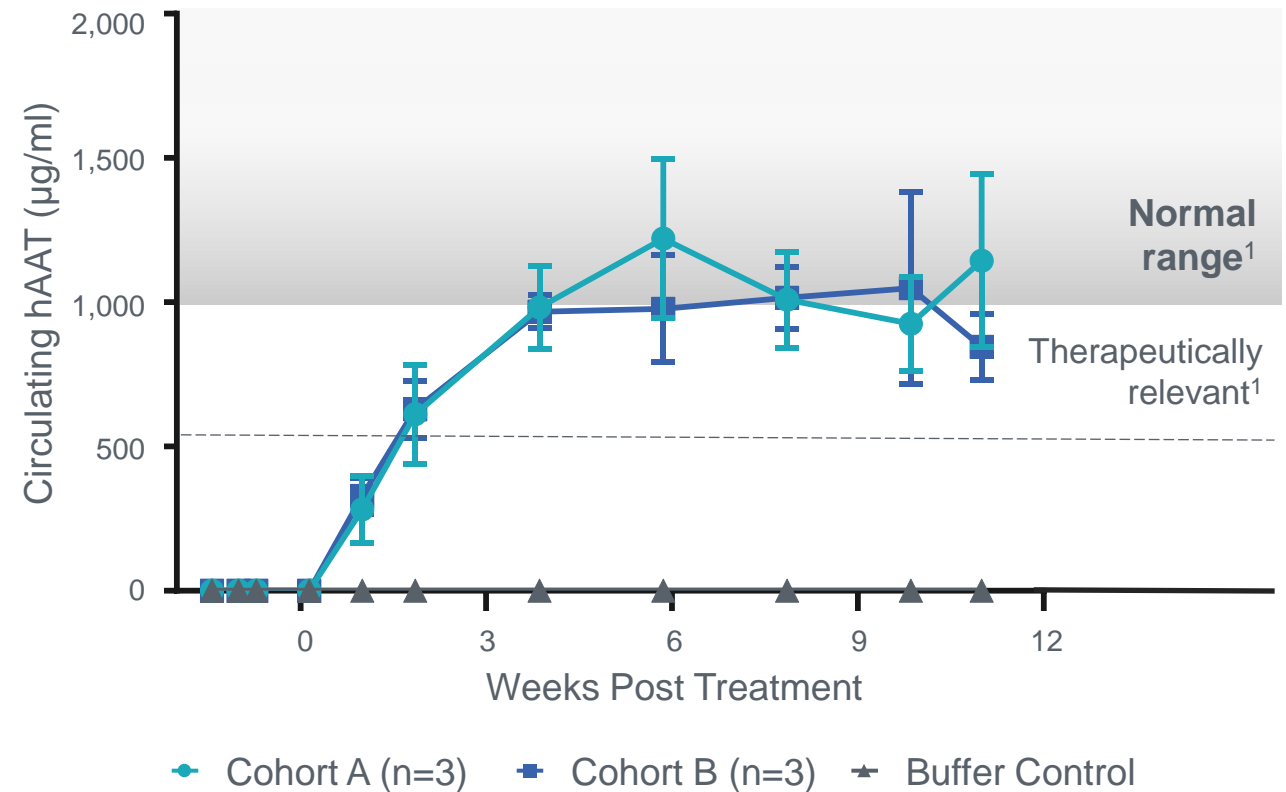
Precisely Create Insertion Site

Deliver Insertion Template

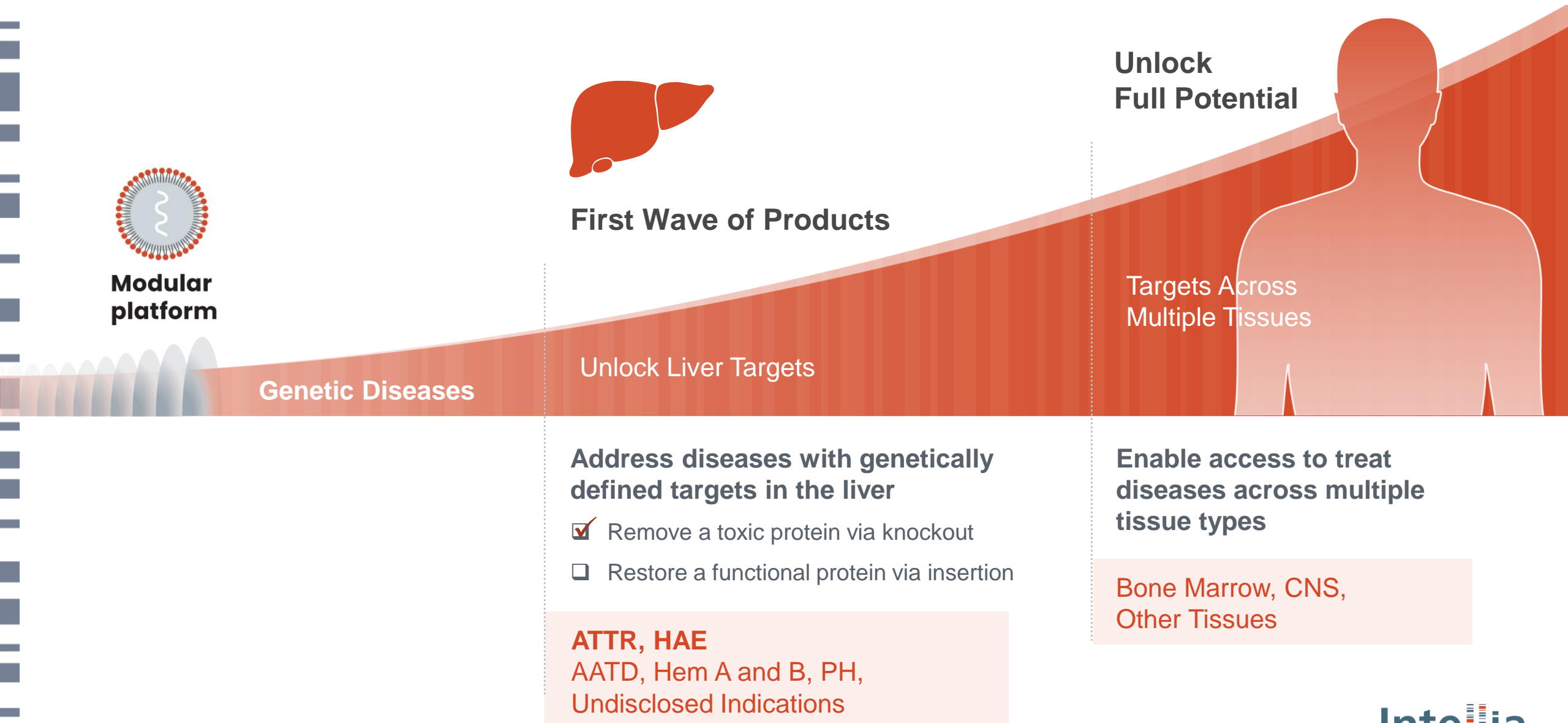


Potential best-in-class modality
for a gain of function

Alpha-1 Antitrypsin Deficiency (AATD) Achieved Normal hAAT Protein Levels in NHPs



Clinical Validation of LNP Delivery Platform Supports *In Vivo* Pipeline Acceleration



Ex Vivo

CRISPR creates the therapy

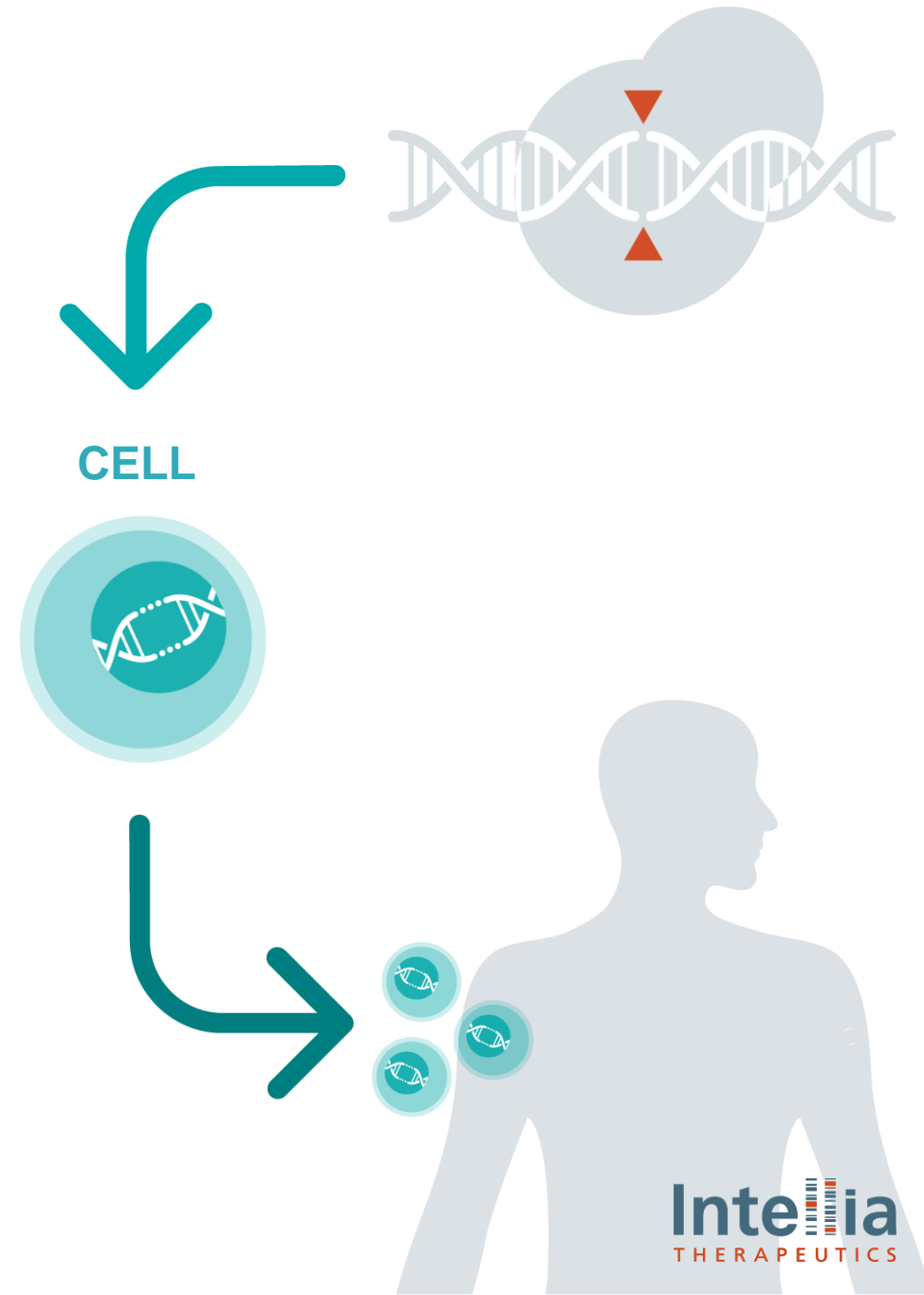
IMMUNO-ONCOLOGY / AUTOIMMUNE DISEASES

Strategic Advantages:

Utilizing proprietary CRISPR engineering platform to create differentiated cell therapies for IO and AI diseases

Targeting modalities, such as TCR, with broad potential in multiple indications

Focused on reproducing natural cell physiology for improved safety and efficacy



Proprietary Engineering Platform to Power Next-Generation Engineered Cell Therapies

CELL ENGINEERING PLATFORM

Highly efficient sequential editing

Optimal cell performance

Scalable manufacturing process

ENABLES VERSATILE SOLUTIONS BY “MIXING AND MATCHING”

Cell Type

HSCs, T cells
NK cells, Macrophages



Targeting Modality

TCRs
CAR-Ts, Universal CARs



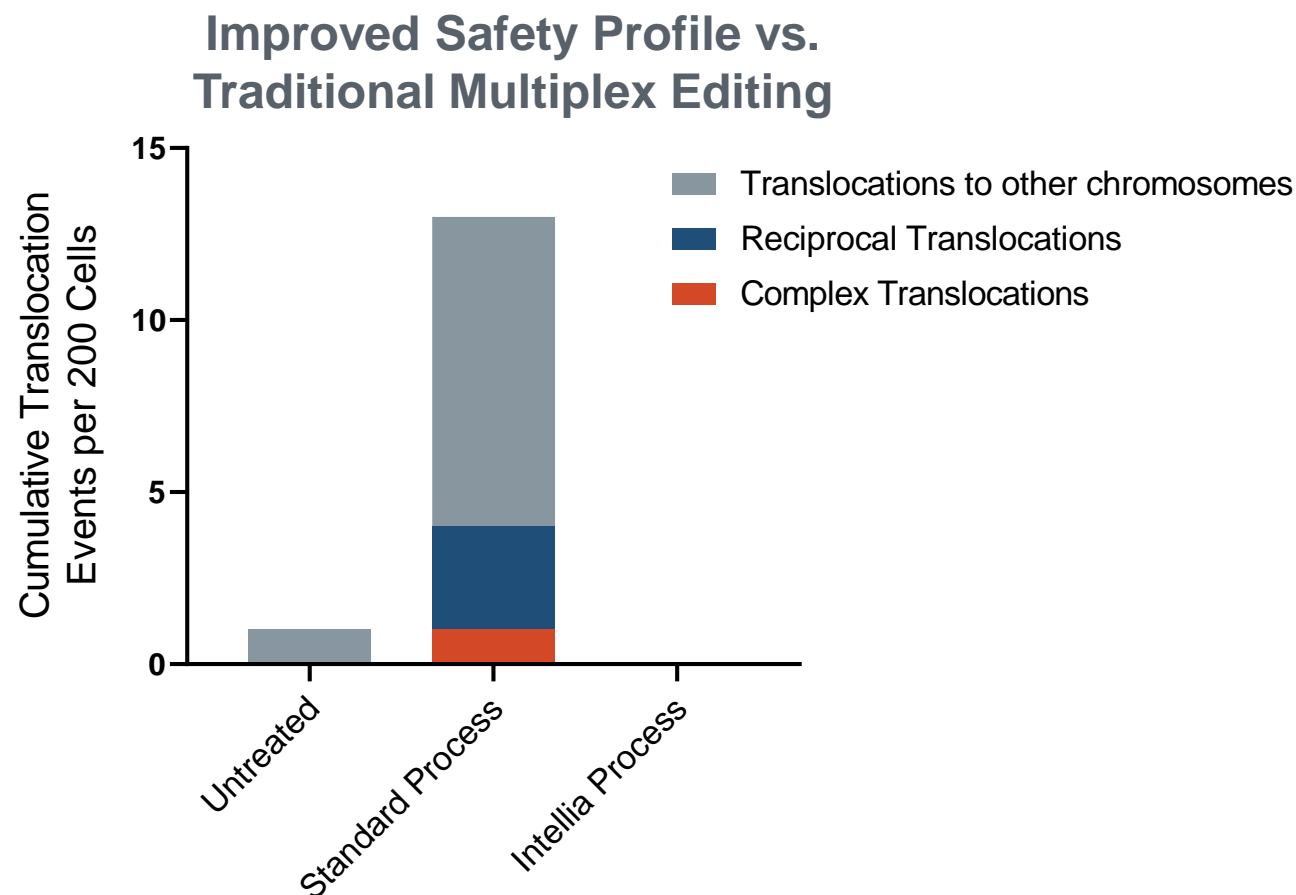
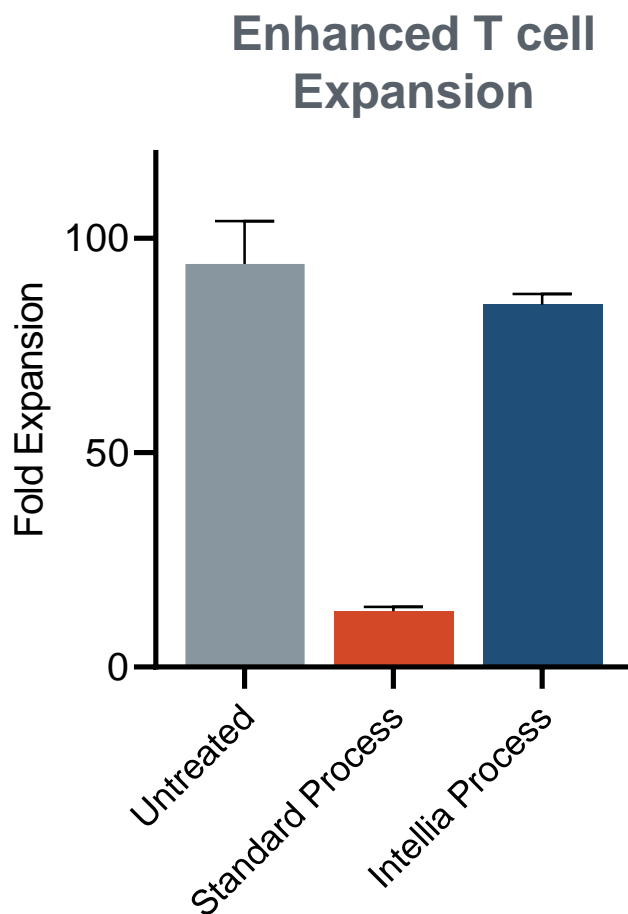
Rewiring Instructions

Immune-enhancing edits
Novel targets



Proprietary Cell Engineering Technology Optimizes Cell Health and Function

Platform capability can be applied broadly to various cell types and targeting receptors





NTLA-5001 for Acute Myeloid Leukemia (AML)

AML

- Most common acute leukemia in adults¹
- **~20K**
New cases in the U.S. in 2020¹
- **> 40K**
New cases in the 7 Major Markets in 2019²
- **< 30%**
5-year overall survival¹

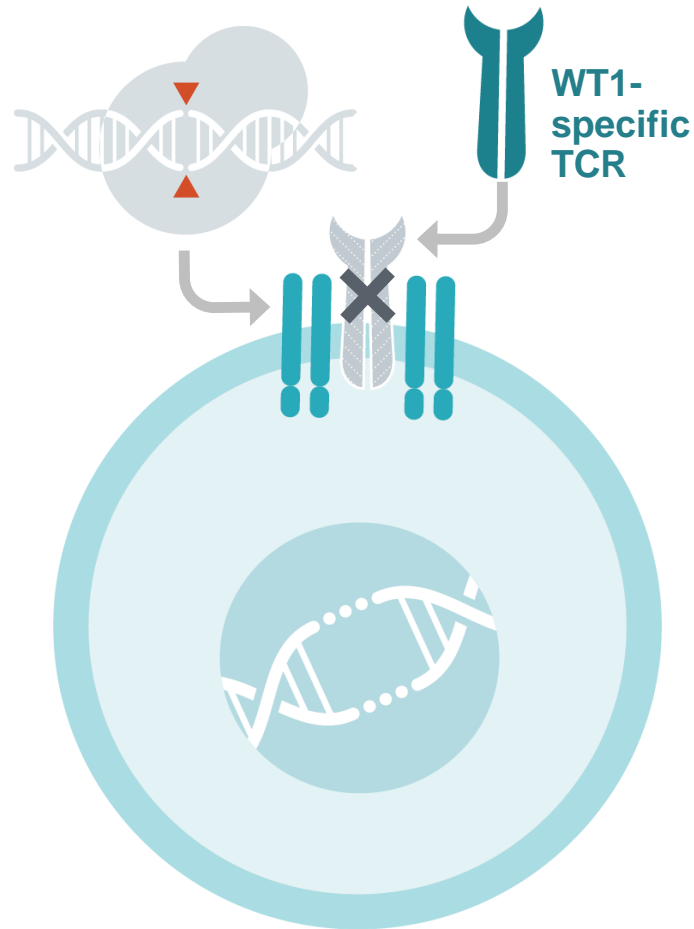
OUR APPROACH

Engineer Wilms' Tumor Type 1 (WT1)-directed TCR-T cells capable of specifically killing AML blasts

KEY ADVANTAGES

- Potential to address all mutational subtypes of AML
- Low WT1 expression in normal tissues for improved safety
- TCR sourced from healthy donor T cells minimizes immune toxicity

NTLA-5001: Potential Best-in-Class Engineered T Cell Therapy For AML



Inserts a **natural, high-avidity TCR** to replace native TCR for upgraded safety profile

- Activates both cytotoxic and helper T cells

Specifically **targets Wilms' Tumor 1 (WT1)**, an antigen overexpressed in >90% of AML blasts¹

- Recognizes an epitope (VLD²) presented broadly by AML blasts with the HLA-A*02:01 allele³

Modified by **proprietary cell engineering** technology for optimized cell health and function

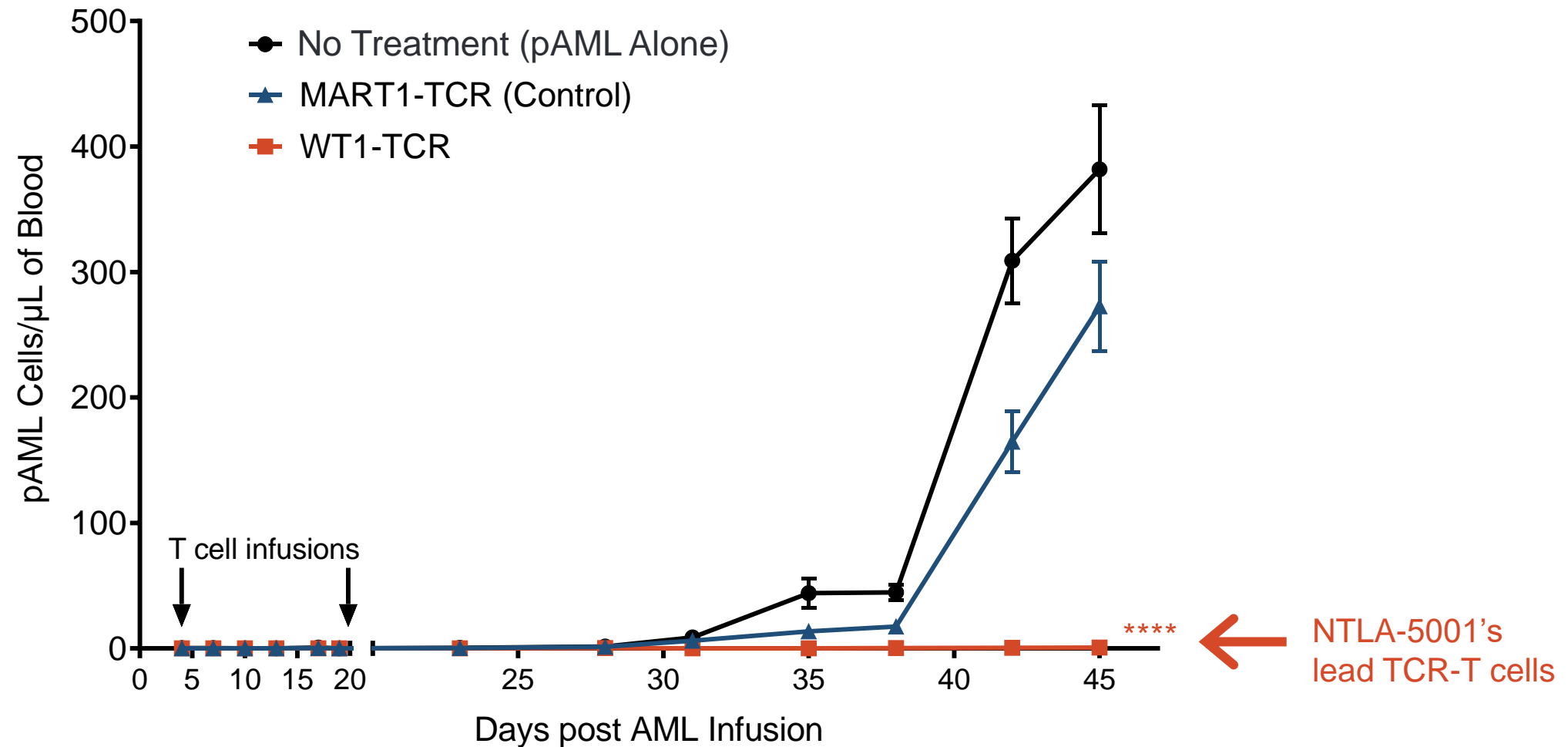
¹Cilloni et al., *J Clin Oncol*, 2009

²VLD is the WT1₍₃₇₋₄₅₎ epitope VLDFAPPGA

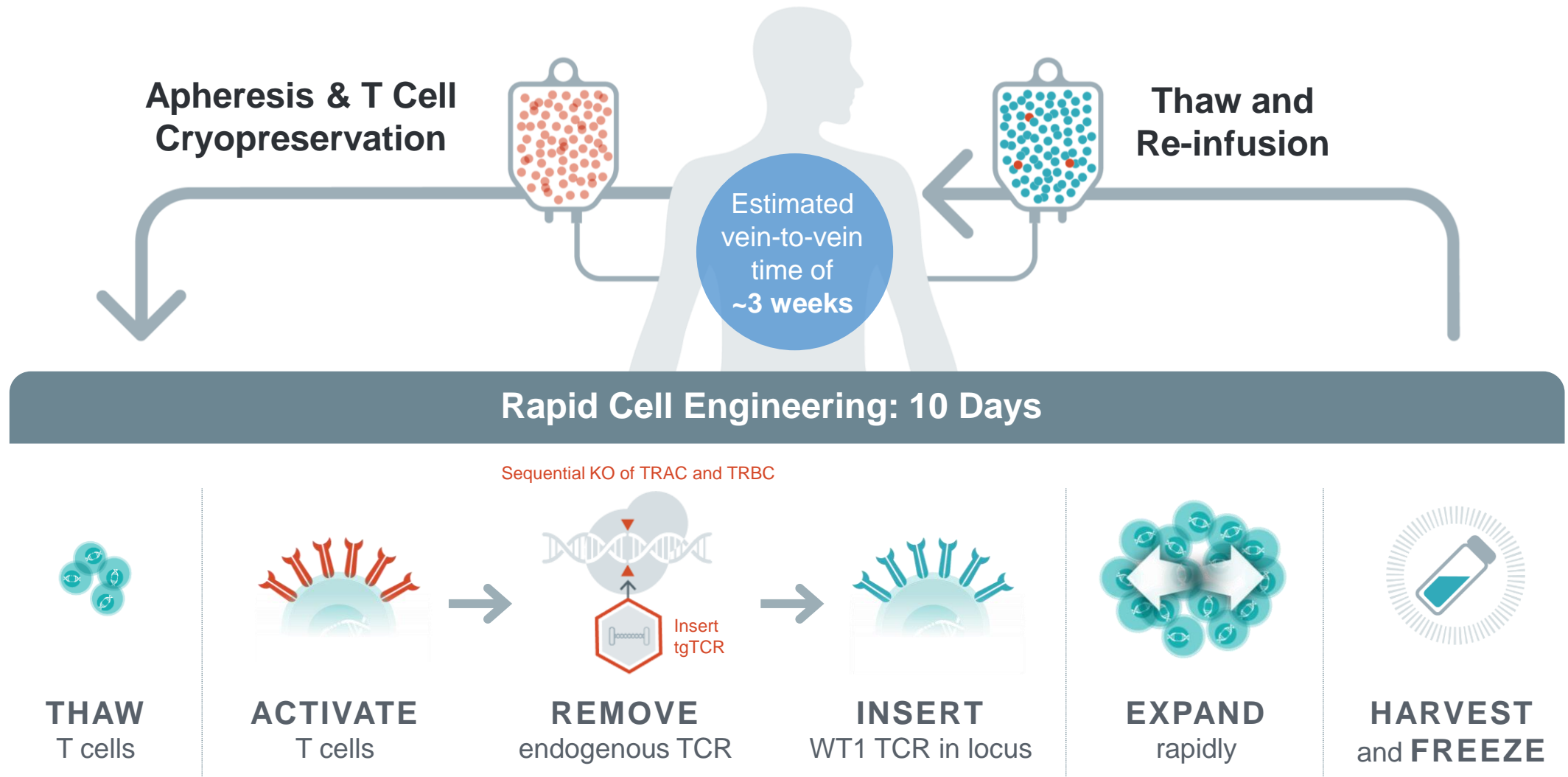
³ Refer to <http://www.allelefreqencies.net> for HLA frequency data

In collaboration with IRCCS Ospedale San Raffaele

NTLA-5001: Robust Anti-Tumor Efficacy Observed Against Patient-Derived AML Blasts in Mouse Model

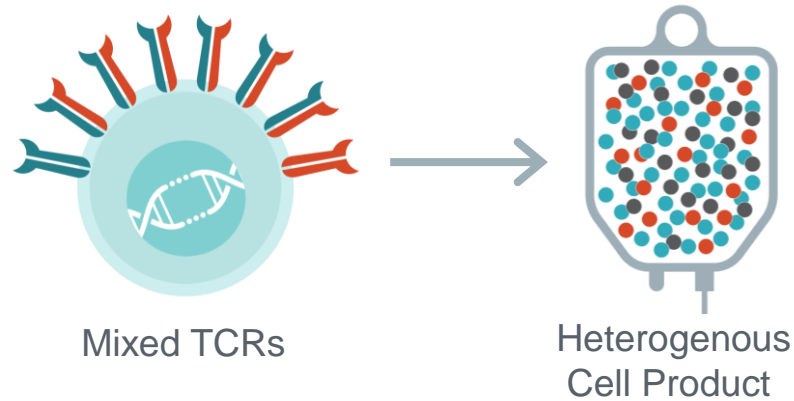


NTLA-5001: Uniform Expression of Therapeutic TCR for Potent Tumor Targeting

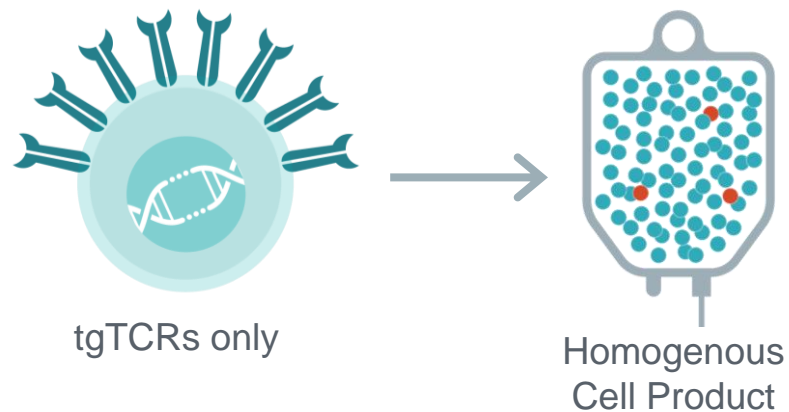


CRISPR Engineering Overcomes Key Challenges of Traditional TCR Approaches

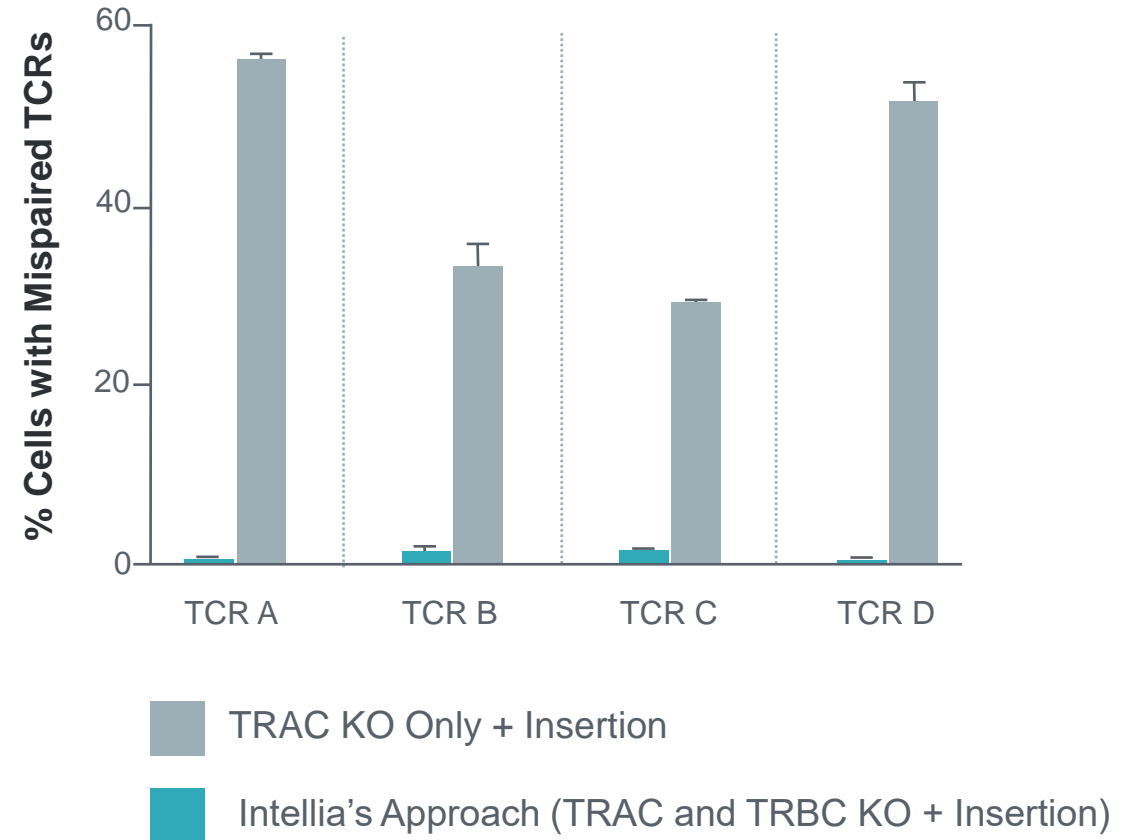
Traditional tgTCR Addition



CRISPR/Cas9 tgTCR Replacement



Removal of Endogenous TCR Prevents Mispairing

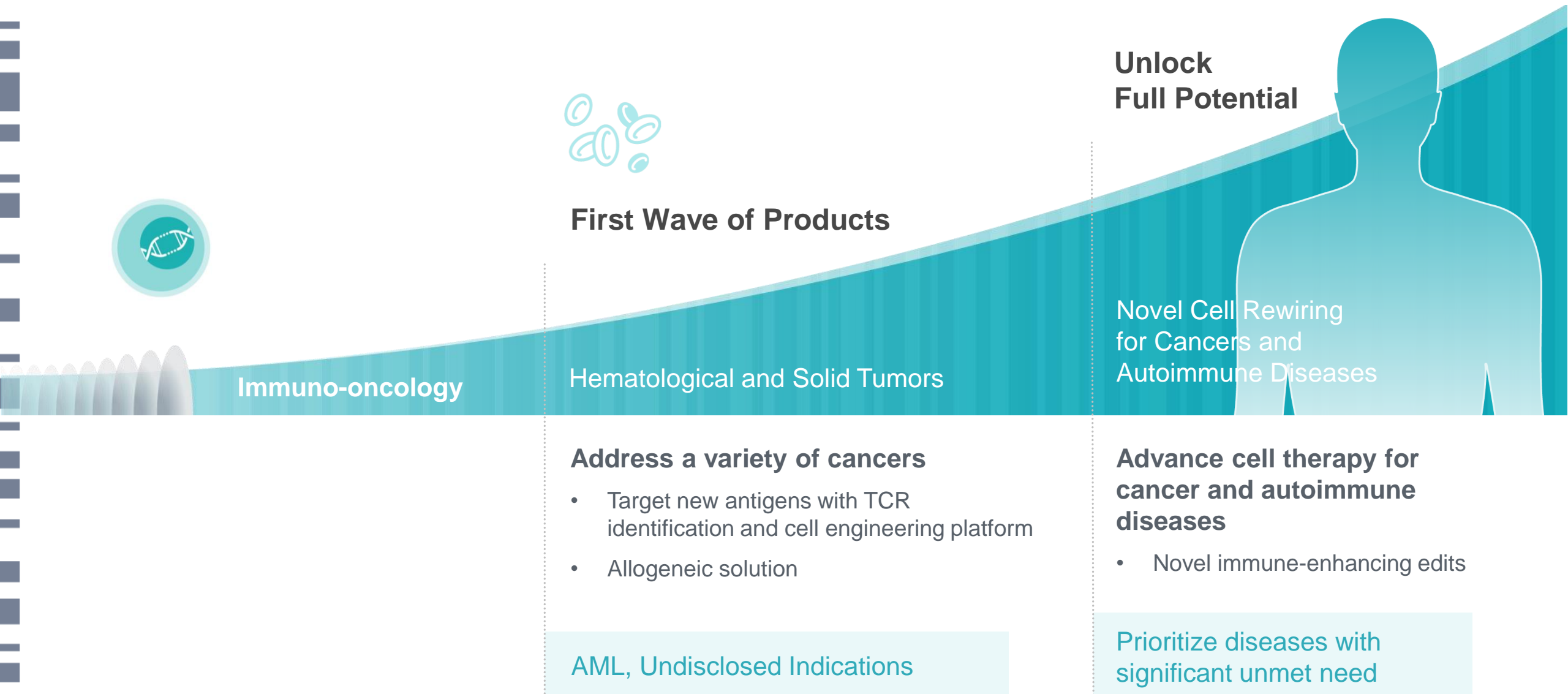


NTLA-5001 for AML: Advancing Toward the Clinic

Achievements and Next Steps

- ✓ Demonstrated high anti-tumor activity in preclinical proof-of-concept models
- ✓ Completed scale-up for clinical process in Q4 2020
- Submit IND or IND-equivalent in mid-2021

Ex Vivo Pipeline Expansion Strategy



Upcoming 2021 and Beyond Milestones



NTLA-2001
ATTR

- Initiate Part II, a single-expansion cohort, in 2021
- Share additional data at medical or scientific meeting in 2021



NTLA-5001
AML

- Submit IND or IND-equivalent in mid-2021



NTLA-2002
HAE

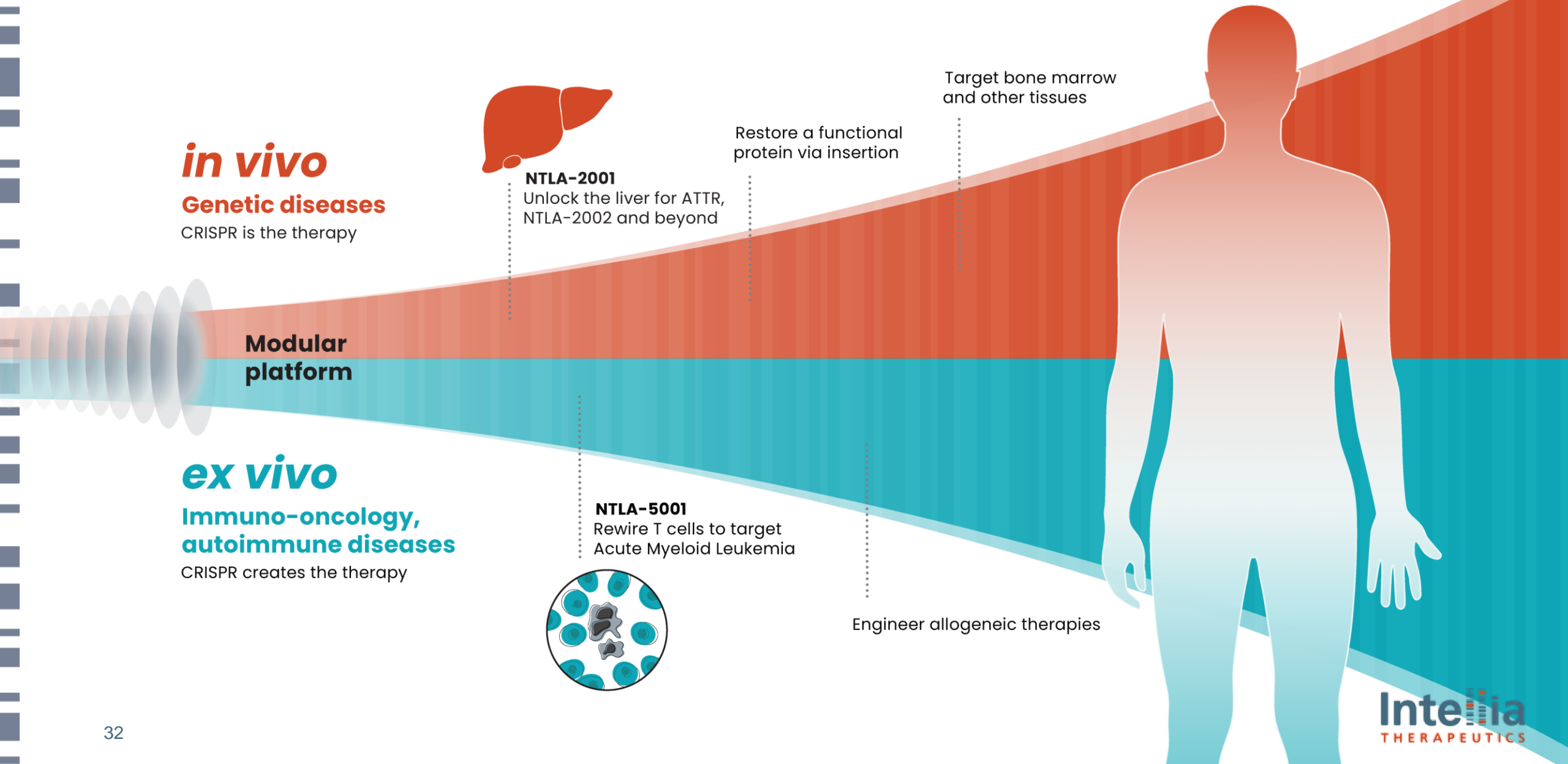
- Enroll first patient in the Phase 1 study in 2021

**R&D
Advancements**

- Nominate at least 1 new development candidate in 2021
- Nominate first allogeneic development candidate by 1H 2022

Unlocking the Full Potential of CRISPR

Solving *in vivo* delivery supports rapid expansion of pipeline to broad patient population



Intellia

THERAPEUTICS