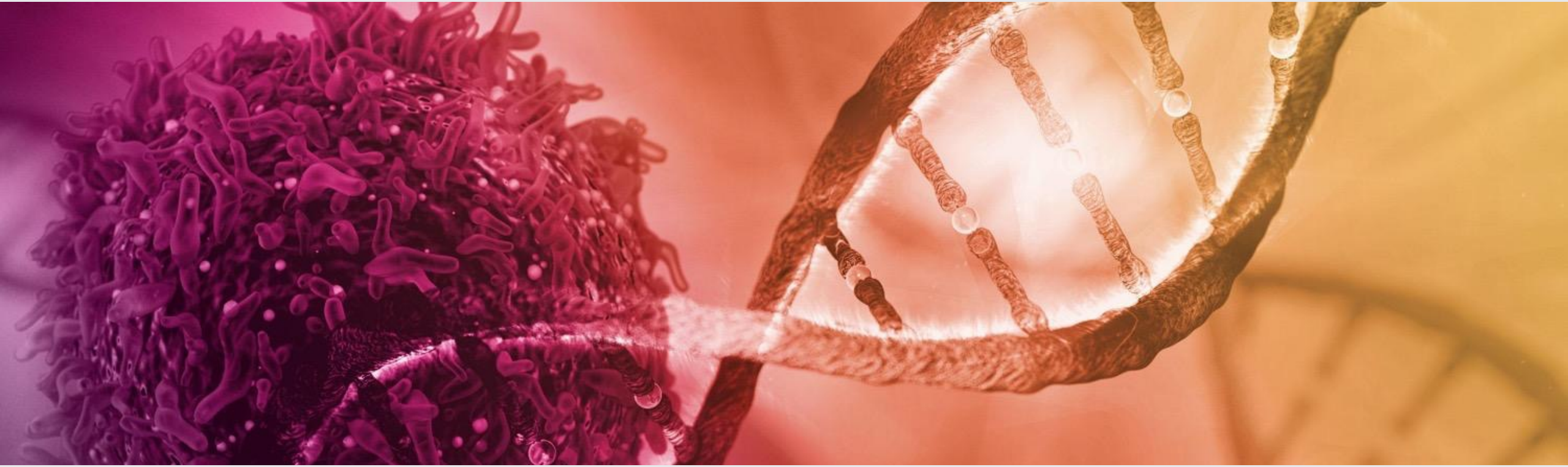


Achilles Therapeutics

Precision Cell Therapy Targeting All Tumor Cells

November 2023

Forward-Looking Statements

This presentation contains “forward-looking statements,” including statements regarding the proposed development plans and timelines for the Company’s product candidates and the success, cost and timing of its research activities and clinical trials. Forward-looking statements can generally be identified by the use of words such as “anticipate,” “believe,” “continue,” “could,” “estimate,” “expect,” “forecast,” “intend,” “may,” “plan,” “project,” “potential,” “seek,” “should,” “think,” “will,” “would” and similar expressions, or they may use future dates.

Such forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause actual results to be materially different from any future results, performance or achievements expressed or implied by such statements. These and other risks which may impact management's expectations are described in greater detail under the heading "Risk Factors" in the Company's quarterly report or Annual Report on Form 20-F and in any subsequent periodic or current report that the Company files with the SEC.

All forward-looking statements reflect the Company's estimates only as of the date of this presentation (unless another date is indicated) and should not be relied upon as reflecting the Company's views, expectations or beliefs at any date subsequent to the date of this presentation.

Clinical-stage precision targeting for solid tumors using clonal neoantigen-reactive T cells (cNeT)

Targeting clonal neoantigens: a novel class of cancer target present on all tumor cells

We have developed a proprietary patent protected AI platform (PELEUS®) that is validated on real world patient data (TRACERx) and which can be used to identify personal clonal neoantigens

Controlled precision therapy

Scientific platform that can quantify, characterize and track tumor reactive T cells, target engagement and mechanism of action

Emerging PoC for cNeT in NSCLC

Durable disease control achieved with cNeT monotherapy, 71% (5/7) NSCLC patients (including 1 PR and 4 SDs) with encouraging safety and tolerability

Near-term clinical milestones

Clinical and translational updates in Q1 2024: 15-20 new patients across NSCLC (CHIRON) monotherapy and melanoma (THETIS) monotherapy and in combination with checkpoint inhibitor (anti-PD-1)

Strong cash position supports all planned operations through 2025

Cash runway of $140M as of September 30, 2023

Working to transform the treatment of solid tumors with precision T cell therapy

Company founded 2016

Nasdaq IPO: ACHL 2021

Early clinical proof of concept 2022

Clinical Update Q1 2024

Global Headquarters
London, UK

Two active clinical programs with near-term clinical milestones

Emerging PoC for cNeT in NSCLC

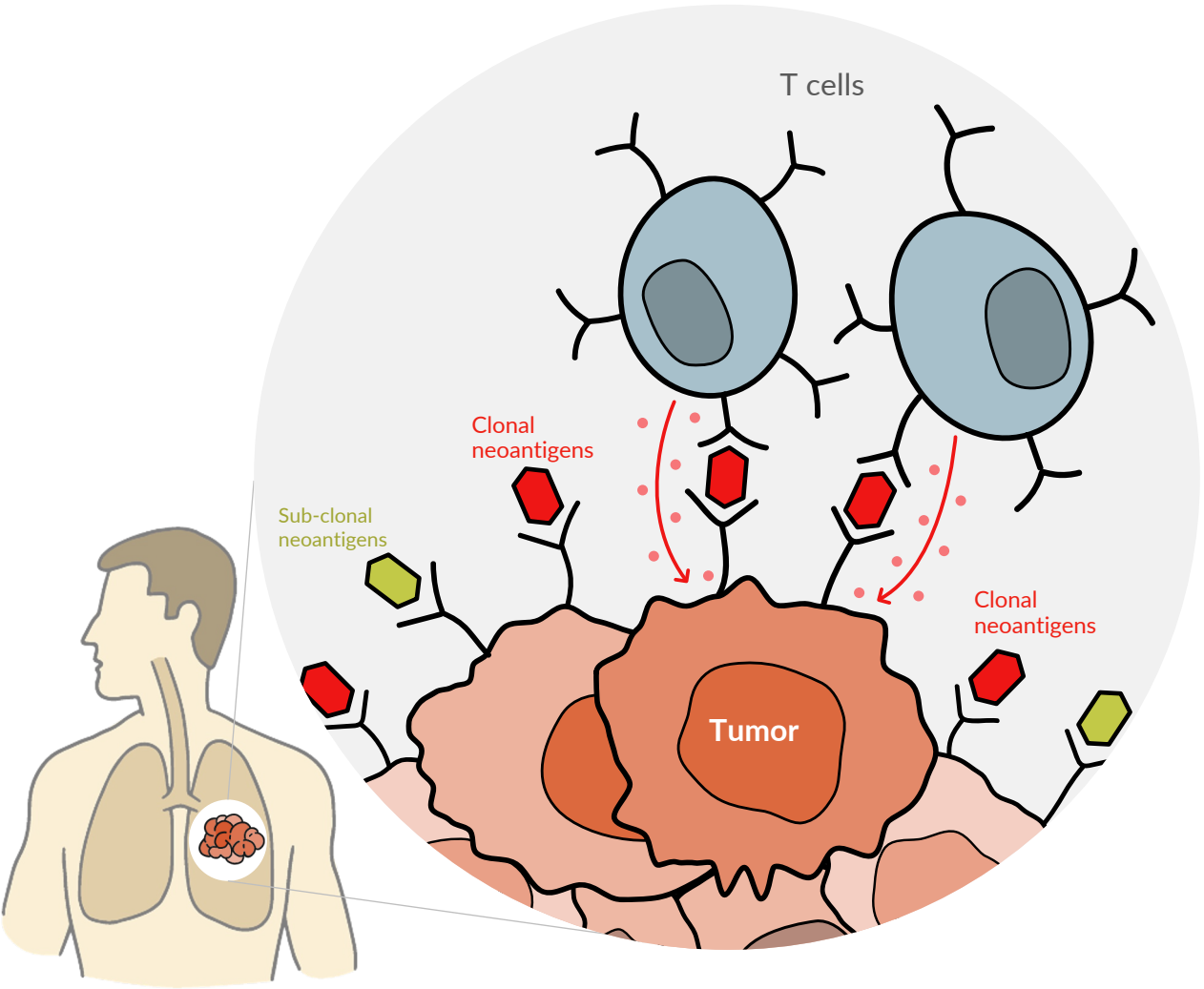
$140 M[1] cash supports operations through 2025

~180 employees

Catapult Cell and Gene Therapy Centre
Stevenage, UK

1. As of September 30, 2023

Unlocking efficacy in the solid tumors through precision targeting



Clonal neoantigens: the ideal cancer target	**Present on all cancer cells & absent from healthy tissue**
PELEUS: a proprietary AI capability	**Validated method to identify immunogenic targets on all tumour cells**
Defined product and mechanism of action	**Demonstrated target engagement**

Experienced leadership with decades in cell therapy drug development

Sergio Quezada
CSO

UCL · CANCER RESEARCH UK · Memorial Sloan Kettering Cancer Center

Karl Peggs
CMO

UCL · NIHR | National Institute for Health Research · Memorial Sloan Kettering Cancer Center

Robert Coutts
CFO

KPMG · Syncona

Iraj Ali
CEO

Syncona · McKinsey&Company

Daniel Hood
General Counsel

Intercept · GILEAD

Shree Patel
EVP, Patient Supply Operations

Cell Medica

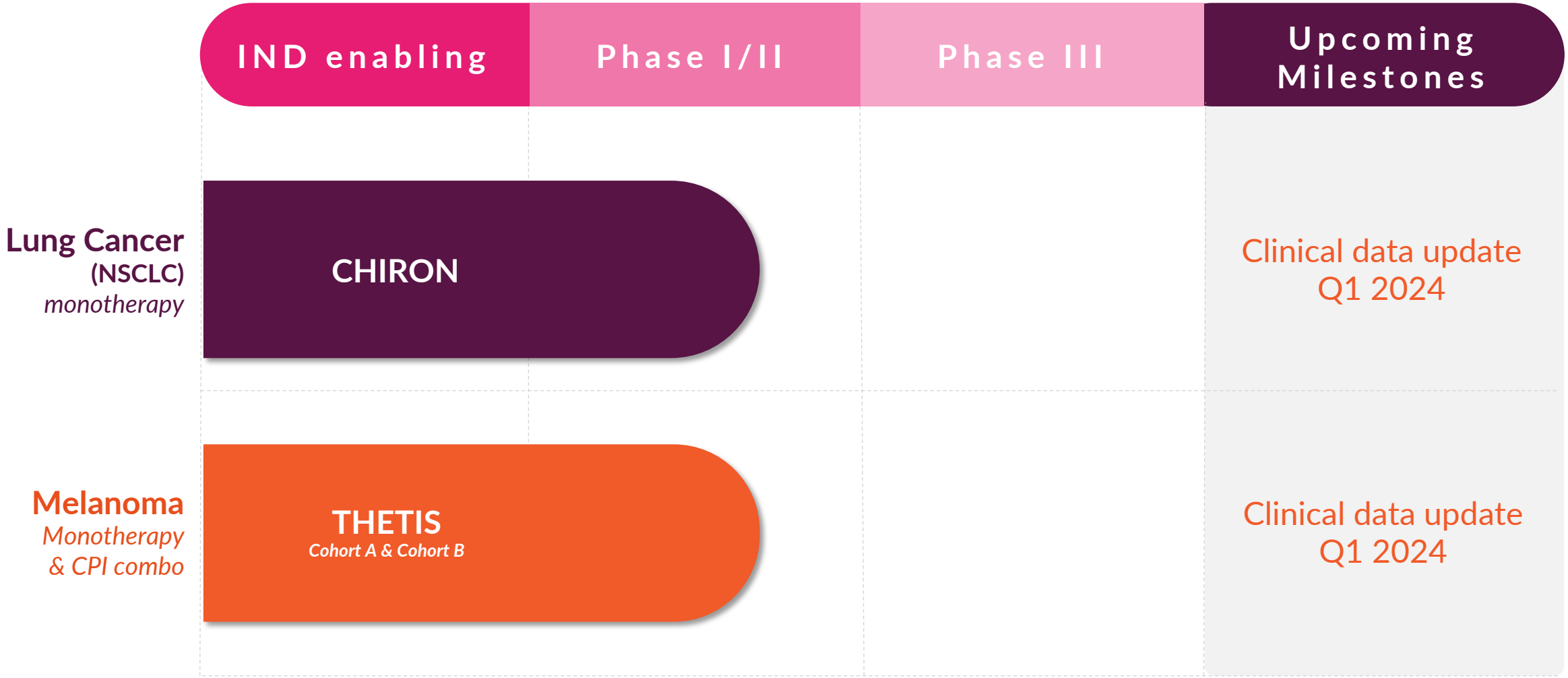
Jim Taylor
CBO

sosei HEPTARES · GSK

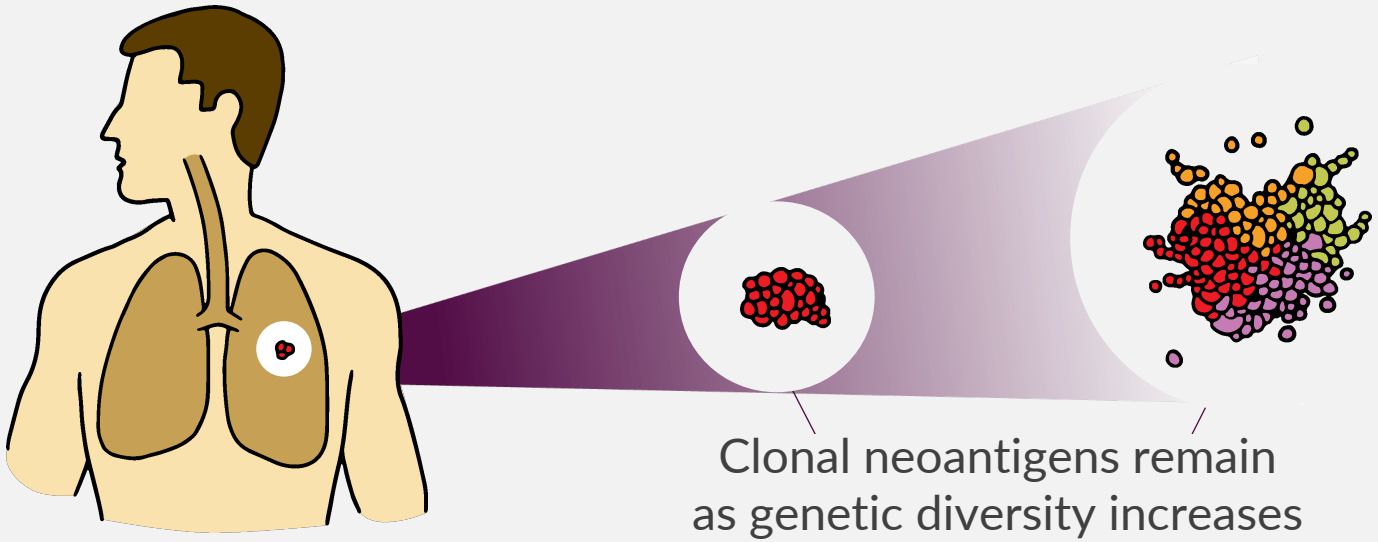
Ed Samuel
EVP, Technical Operations

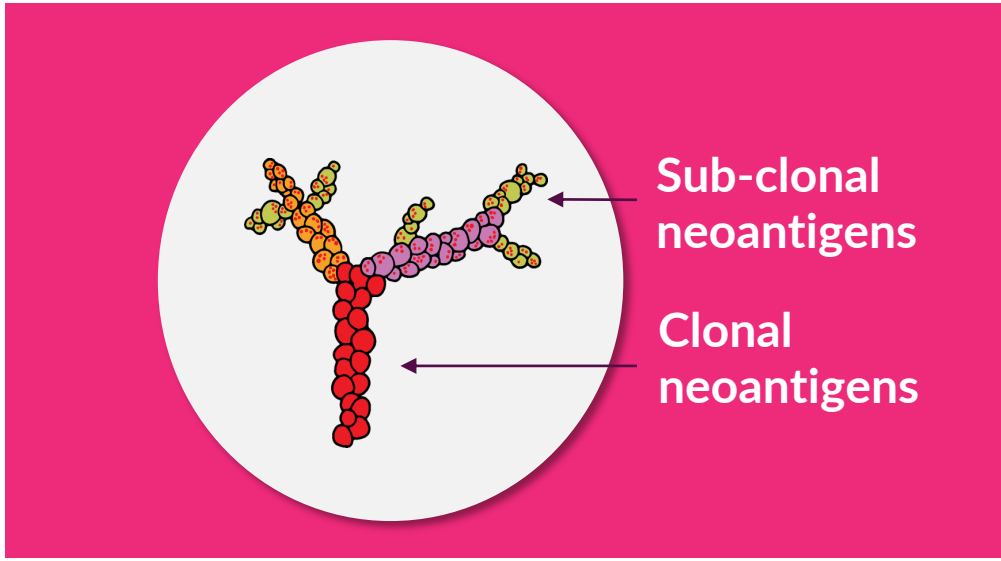
Orchard therapeutics · COGNATE BIOSERVICES

Differentiated pipeline of precision T cell therapies across multiple solid tumors



Clonality has been convincingly demonstrated in the landmark TRACERx study





Tumors constantly evolve and acquire new mutations

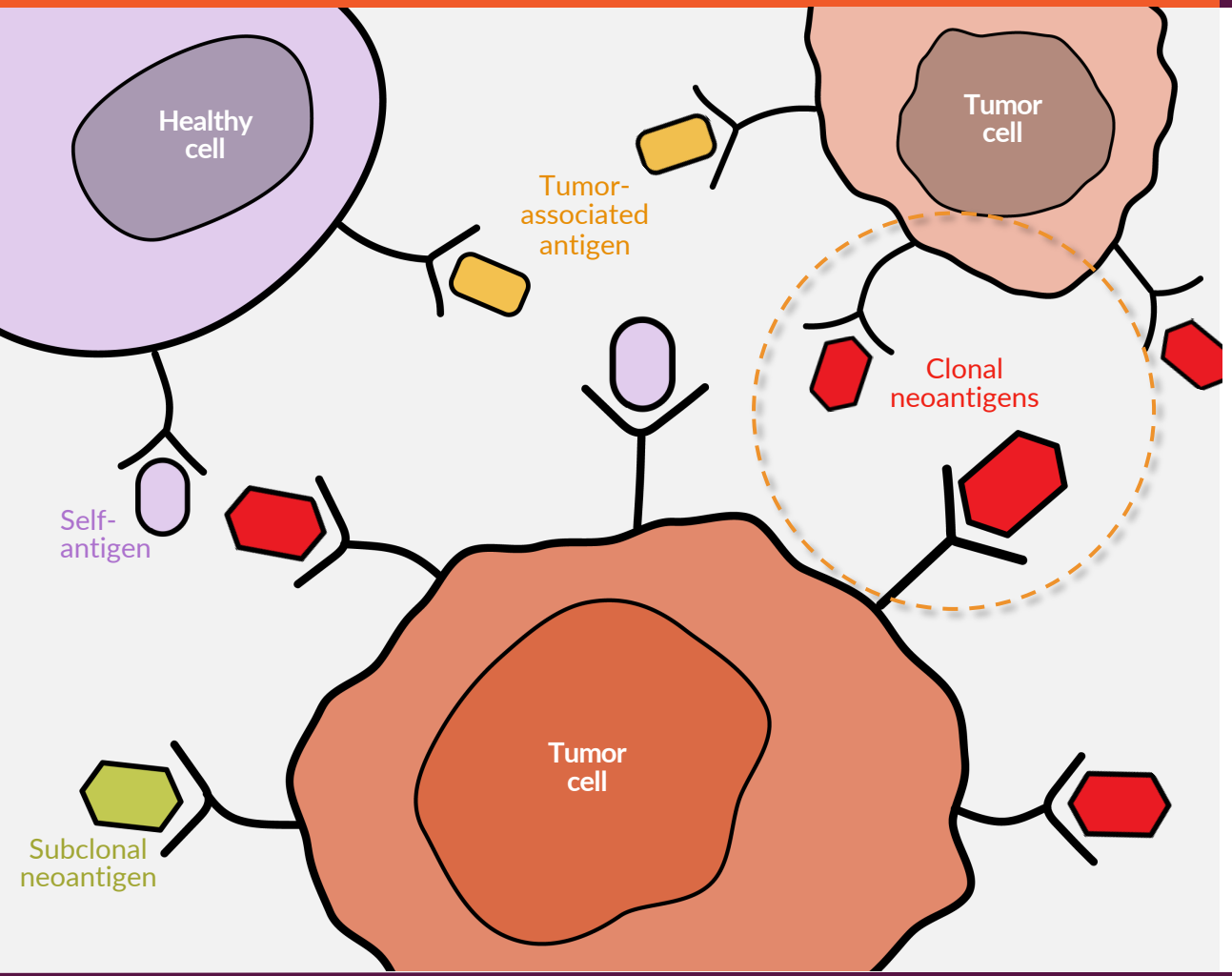
Original, clonal mutations passed down and remain in all tumor cells[1-4]

Achilles can identify clonal mutations for each patient & target multiple antigens only on tumor cells[2-4]

1. Gerlinger et al., NEJM, 2012
2. Jamal-Hanjani et al., Plos Biol, 2014
3. Jamal-Hanjani et al. NEJM, 2017
4. Abbosh et al., Nature, 2017

Clinical evidence supports clonal neoantigens as the best targets in the solid tumors

Clonals are the only known targets present on all tumor cells & absent from healthy tissue



Multiple clinical modalities validate neoantigens but only clonals drive overall survival

Neoantigen-reactive T cells correlated with **improved outcomes** for **CPI and TIL** therapy[1-3]

Only clonal neoantigens are correlated with **overall survival** in **checkpoint (CPI) therapy**[4-6]

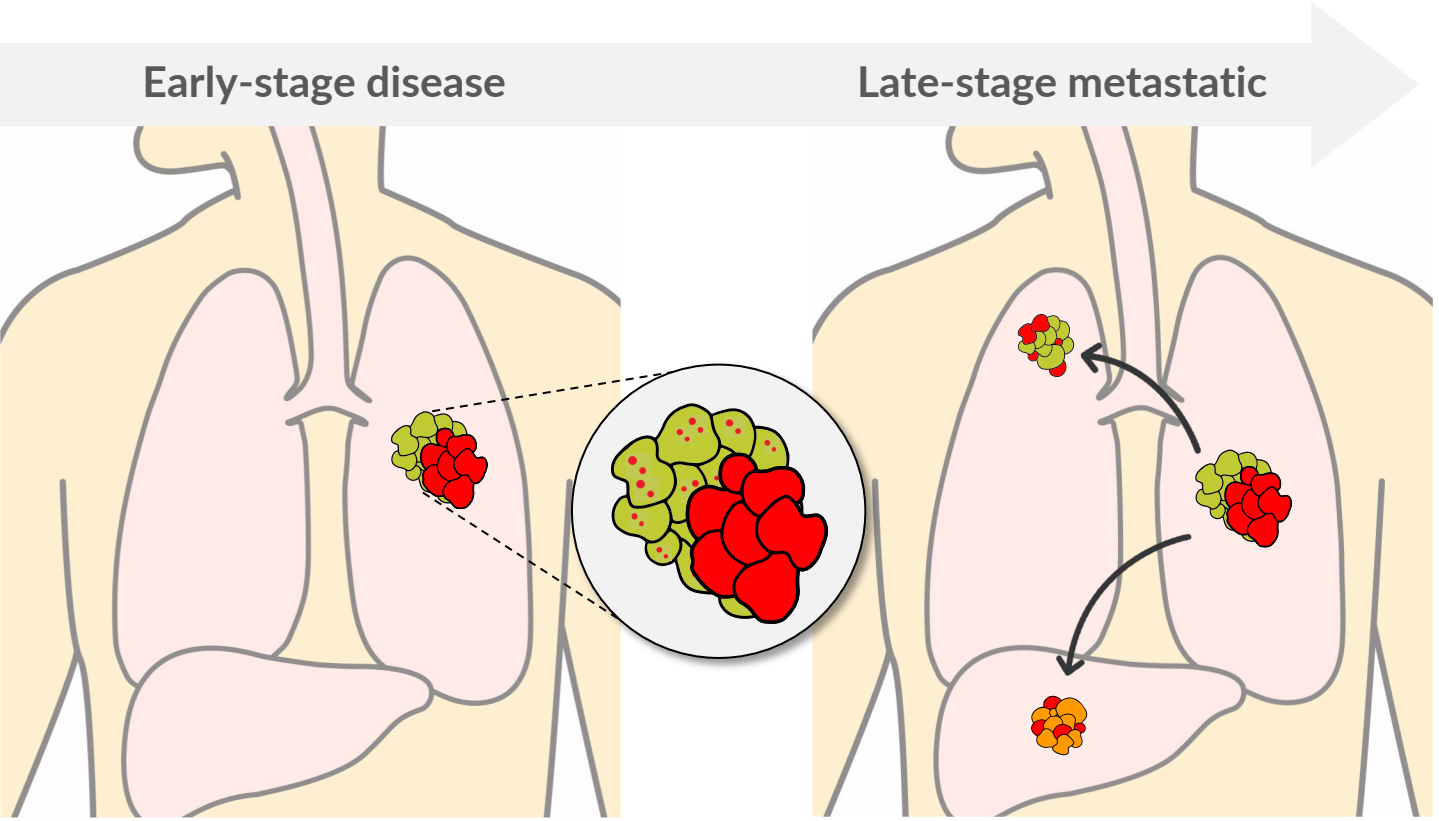
mRNA vaccines targeting neoantigens clinically validated showing **recurrence-free survival benefit** vs anti-PD-1 alone[7]

Tumor heterogeneity and sub-clonal neoantigens **impair anti-tumor response** to **CPI**[8-10]

1. Litchfield et al. Cell 2021
2. Lauss et al. Nat Commun. 2017 Nov 23;8(1):1738
3. Kristensen et al. J Clin Invest. 2022 Jan 18;132(2):e150535
4. Rizvi et al. 2015 Cancer Immuno 348(6230):124-8
5. McGranahan et al. 2016 Science 351:1463-1469
6. Litchfield et al. Cell 2021
7. https://clinicaltrials.gov/ct2/show/NCT03897881
8. Wolf et al. Cell 2019
9. Wescott et al. Nat Gen 2023
10. Reading et al. Nat Gen 2023

TRACERx is a unique asset that enables Achilles' neoantigen identification capability

819 patients enrolled with early stage to advanced NSCLC and followed up to nine years



Biopsies taken over five years tracking disease progression

Genetic analysis confirms clonal neoantigens are conserved at all tumor sites

TRACERx

Largest longitudinal real-world patient data set of its kind[1-4]

Extensive sequencing data (>4,000 biopsy samples) **identify clonal neoantigens** at **primary and metastatic sites**[1-4]

Clonal neoantigens identified by specific sequence "signatures" using **patent protected** PELEUS platform

1. Jamal-Hanjani et al., Plos Biol, 2014
2. Jamal-Hanjani et al. NEJM, 2017
3. Abbosh et al., Nature, 2017
4. Rosenthal et al., Nature, 2019

PELEUS™: A patent protected world-leading AI-platform for identifying the most potent and immunogenic targets

Superior clonal calling: only platform to use multi-region analysis proven to overcome limitations of traditional VAF based methods[1]

Most immunogenic targets: our proprietary and validated "NeoRanker" AI-technology can identify >70% of all T cell reactivities in just 30 antigens (at least twice as good as current deep-learning tools)

Mitigates immune evasion:[2] PELEUS prioritizes antigens not impacted by immune evasion mechanisms (i.e. loss of HLA heterozygosity)

1. Jamal-Hanjani *et al* 2017
2. McGranahan *et al* 2017

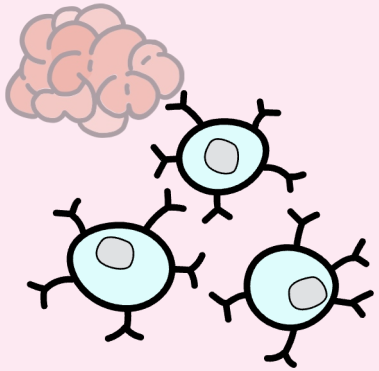
Clonal neoantigens can be targeted with a range of therapeutic modalities

Current Achilles approach

Alternative modalities

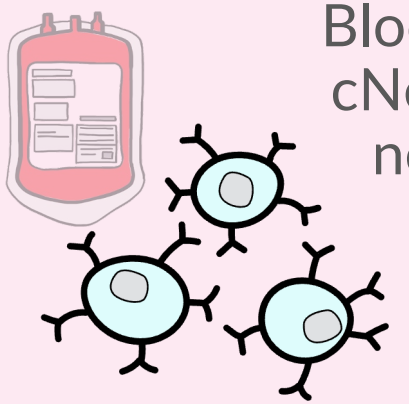
TIL-based cNeT

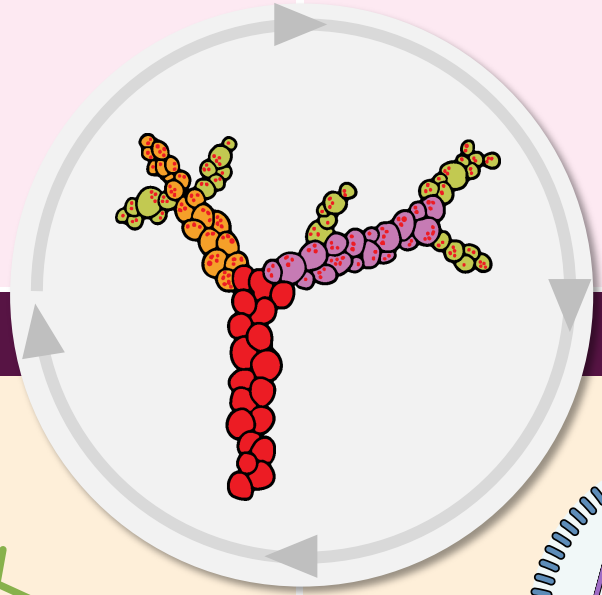
Clinically validated across multiple solid tumor settings



Blood-based cNeT

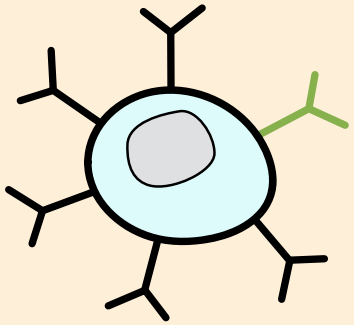
Blood as source of cNeT, without the need for surgery





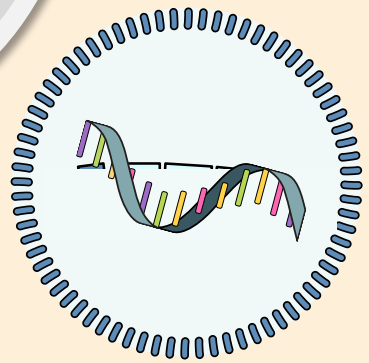
TCR-therapy

T cells engineered with receptors that target shared neoantigens



Clonal neoantigen vaccines

mRNA vaccines using highly immunogenic clonal neoantigens to improve efficacy



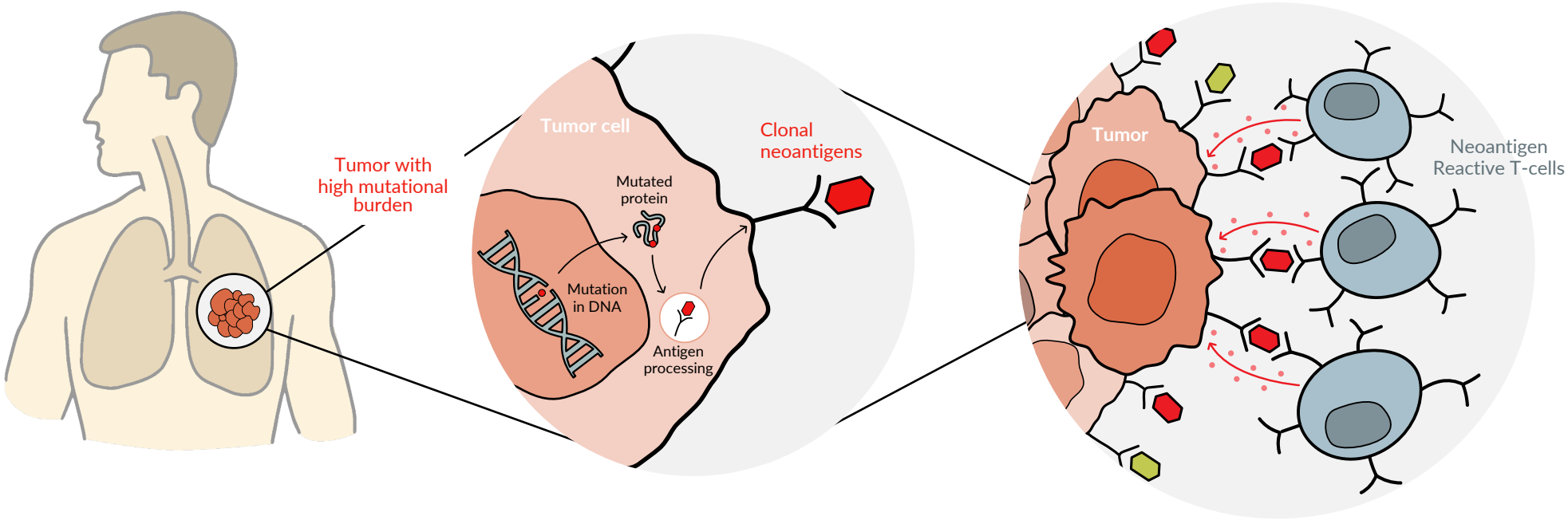
Multiple lines of clinical evidence show neoantigen reactive T cells driving efficacy in TIL

TIL-based studies have demonstrated impressive clinical responses in multiple solid tumour settings[1-3]

Targeting neoantigens has been shown to drive durable anti-tumor responses in multiple TIL case studies[4,5]

Improved clinical outcomes in TIL are correlated with high mutational burden and neoantigen load[6]

Efficacious TIL products found to have higher frequency of neoantigen reactive T-cells[7,8]



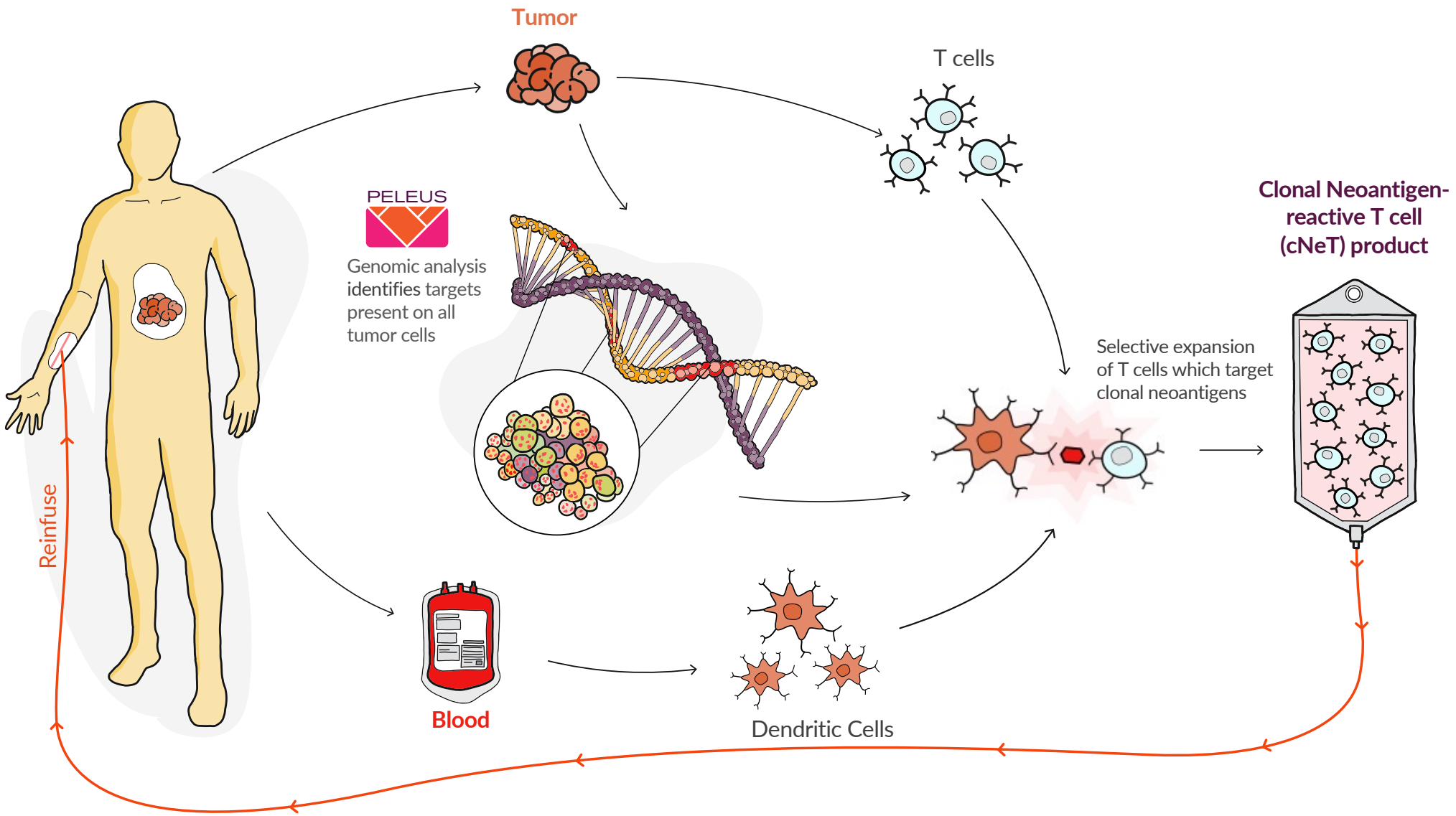
Achilles' approach aims to **enrich for the active component of TIL therapy** (neoantigen reactive T cells) and **improve activity by addressing the most potent and immunogenic targets**

1. Chesney et al. Journal for ImmunoTherapy of Cancer 2022;
2. IOVANCE Cohort 3B;
3 IOVANCE ASCO abstract May 2019

4. Tran et al. N Engl J Med 2016;
5. Zacharakis et al. Nat Med 24 2018;
6. Lauss et al. Nat Commun. 2017
7. Kristensen et al. J Clin Invest. 2022
8. Levi et al. Clin. Cancer Res. 2022

Achilles process delivers precision clonal neoantigen targeting T cell therapy (cNeT)

Cutting edge personalized genomics and machine learning enable targeting of all cancer cells



Two studies open in advanced NSCLC and melanoma

CHIRON
Advanced NSCLC

Monotherapy

- Advanced unresectable or metastatic Stage III-Stage IV NSCLC
- Never-smokers and EGFR/ALK/Ros-1 mut excluded
- Open-label
- n = up to 40

Evaluating safety, tolerability and activity (RECIST) and biomarkers of clinical activity

Ongoing in UK, Europe and US

THETIS
Melanoma

Cohort A – Monotherapy

- Recurrent or metastatic malignant melanoma (n = up to 40); Open-label
- Acral, uveal and mucosal melanoma excluded

Cohort B – Combination with PD-1 inhibitor (nivolumab)

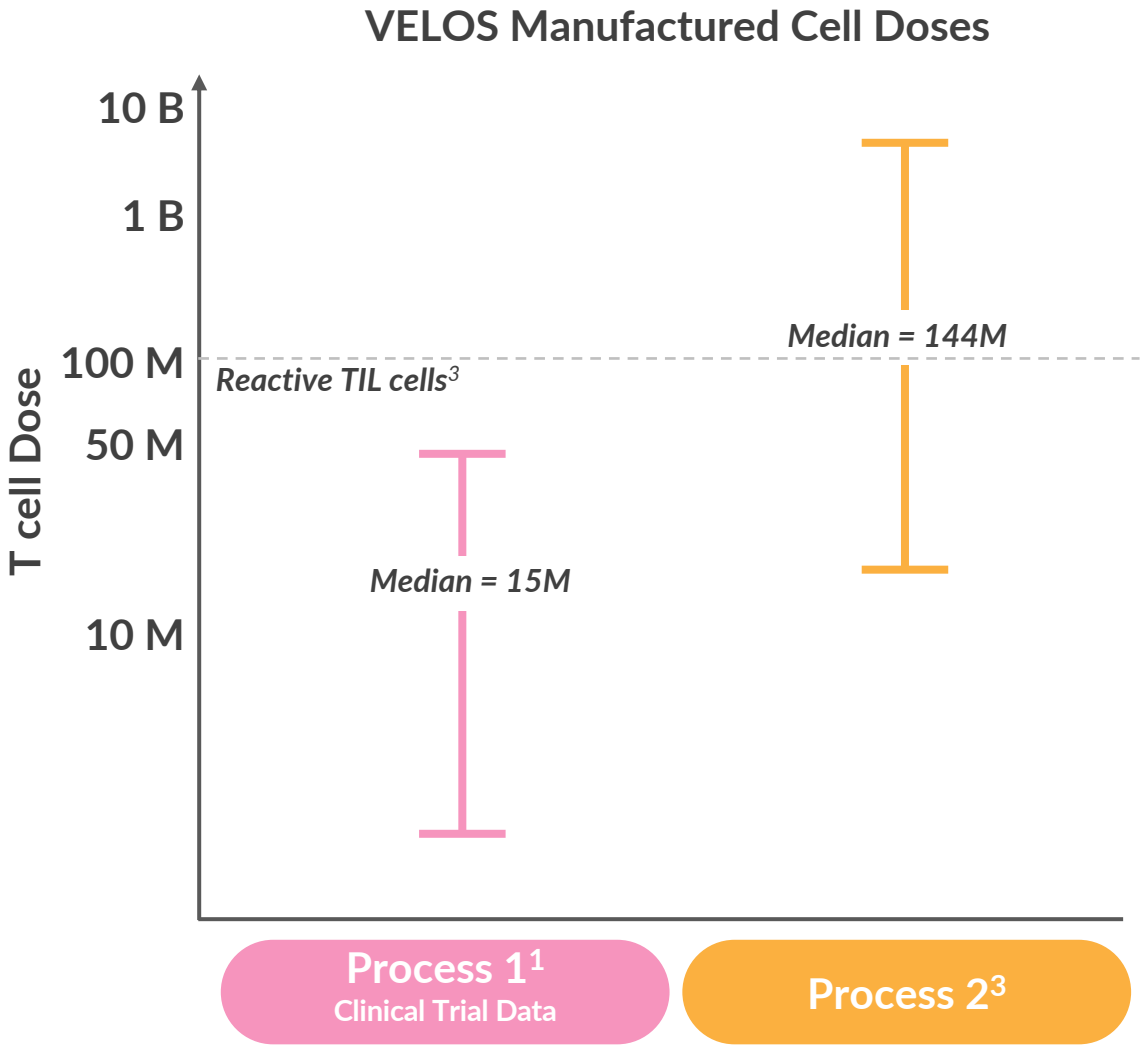
- n = up to 20 checkpoint refractory patients; Open-label
- CPI dosed 7-13 days prior to cNeT and restarted day 14 post-cNeT

Evaluating safety, tolerability and activity (RECIST) and biomarkers of clinical activity

Ongoing in UK and Europe, expanding to US

VELOS™ manufacturing process delivering median 144M cNeT to patients in 2023

	Process 1	Process 2
Pre-Expansion	T cells are harvested from the tumor	Optimized upfront TIL extraction + cytokines boost for tumor-reactive cell harvest
Expansion	Dendritic cells loaded with clonal peptides activate and drive cNeT expansion	Optimized DC-driven co-culture followed by short T cell boost increases final cNeT dose



1. SITC 2021 Poster 543
2. ESMO IO 2021 Poster 58P
3. All dosable P2 doses manufactured in 2023 as of July 2023

cNeT were generally well tolerated in the fourteen patients treated in CHIRON & THETIS

Heavily pretreated patients with advanced cancer

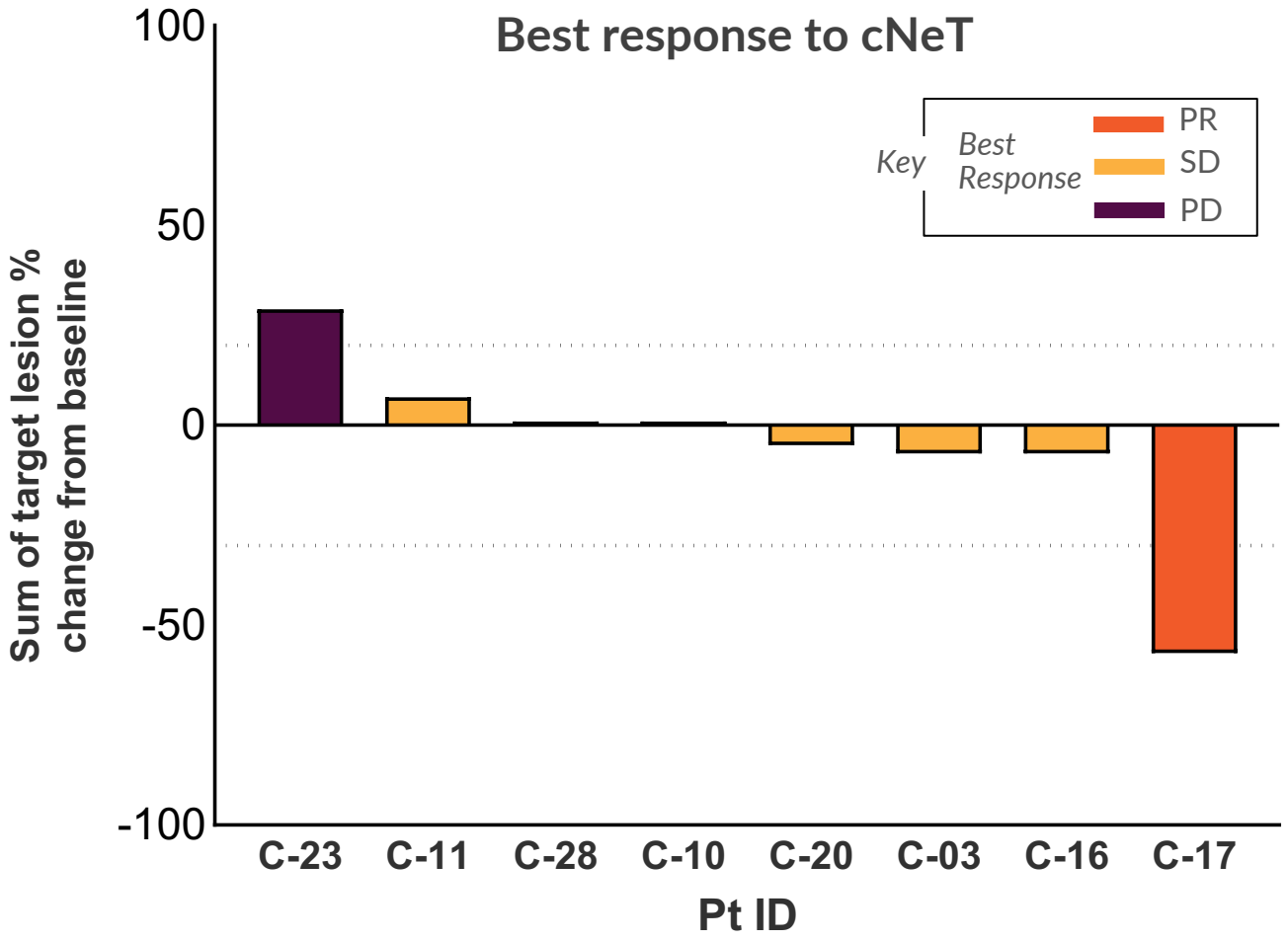
- Eight advanced unresectable or metastatic NSCLC patients (CHIRON)
- Six relapsed/refractory melanoma patients (THETIS)
- Two median lines of prior therapy, all patients refractory to checkpoint inhibitor (CPI)
- All patients had progressive disease at time of lymphodepletion
- Process improvements delivering median cNeT dose of 78M (n=3 dosed patients)

cNeT tolerability profile[1]

- Tolerability similar to standard TIL
- Lymphopenia and neutropenia the most common AEs

1. Safety data cut-off on September 7th 2022, at which point 13 of the 14 pts had been dosed

8 CHIRON (NSCLC) patients dosed with Best Response of PR and SD[1]

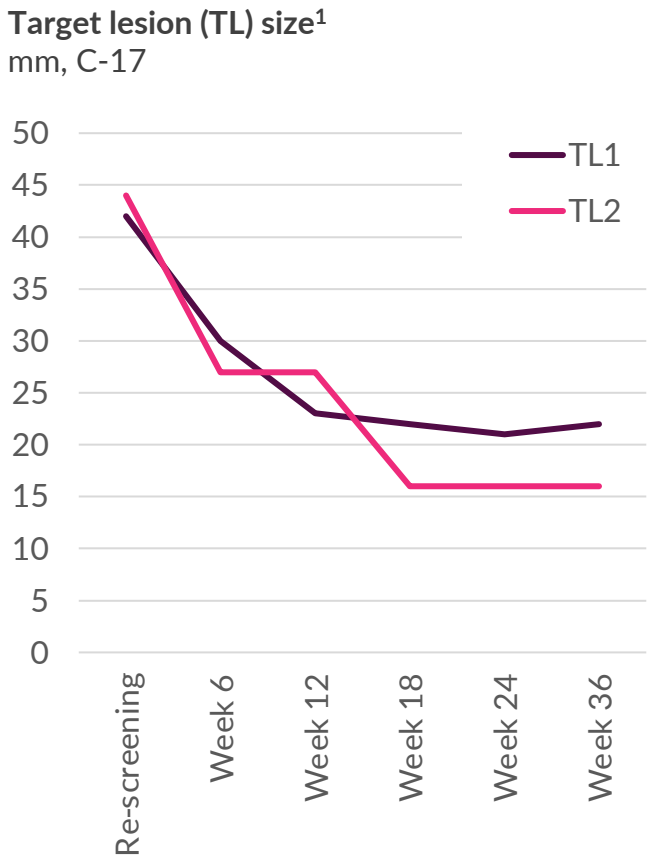


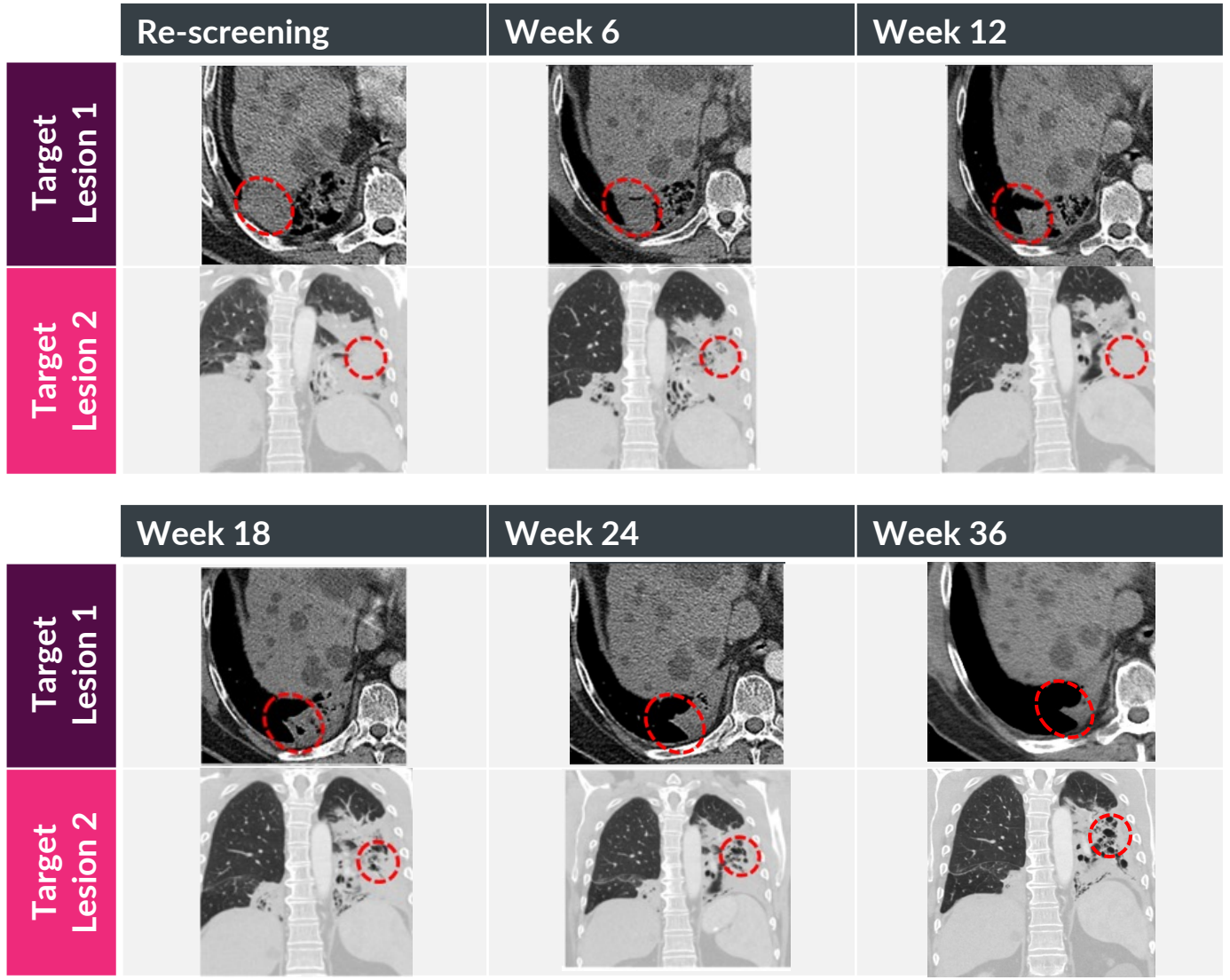
Early proof-of-concept demonstrated in NSCLC

- Disease control at >12 weeks observed in 5 of 7 evaluable patients (71%), including one PR (>36 weeks)
- 4 of 7 (57%) out to >18 weeks

1. *As reported at ESMO IO 2022*

Patient C-17: 56% reduction in total target lesion size vs. baseline at week 36



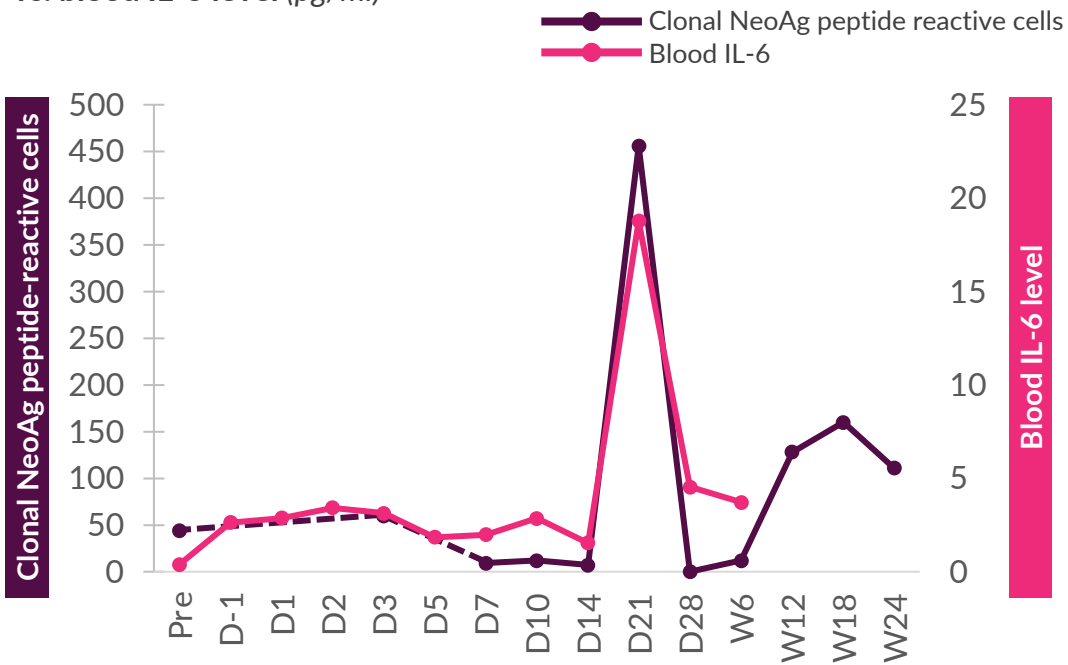


Total target lesion reduction of 56% at week 36, with a 64% reduction in Target Lesion 2

1. Site-reported lesion size
NB C-17 known to have polycystic liver disease

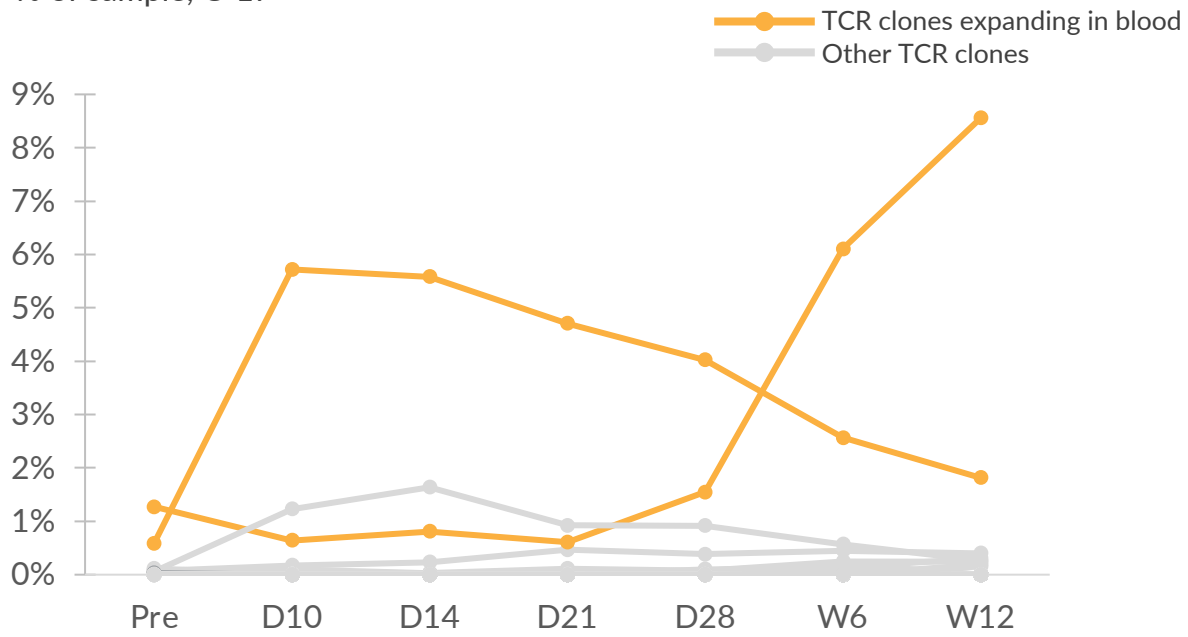
Patient C-17: cNeTs expand and persist beyond week 12 coincident with tumor regression

Clonal neoantigen peptide-reactive cells in blood *(normalized spot count)* **vs. blood IL-6 level** *(pg/ml)*



Clonal neoantigen reactive T cells detected in blood-post dosing, with peak at Day 21 – coincident with peak in serum cytokine associated with T cell activity (IL-6)

Detection of T cell receptors from the product
% of sample, C-17



T cell clones that are clonal neoantigen-specific are identified expanding in the patient beyond 12 weeks and to a greater extent than other patients

Efficient scale-up of GMP manufacturing to align with clinical and commercial need

Flexible manufacturing allows efficient alignment of scale-up

RFH

GMP facilities at Royal Free Hospital in London and Catapult site in Stevenage, UK support global clinical trial manufacturing

Catapult

Identified and initiated tech transfer to CDMO in Philadelphia, USA, in preparation for expansion

Center for Breakthrough Medicine

Focus for CHIRON and THETIS data readouts

Clinical

Dose 15-20 additional patients in 2023 & deliver data in Q1 2024 with cNeT monotherapy (lung & melanoma) and CPI combo (melanoma)

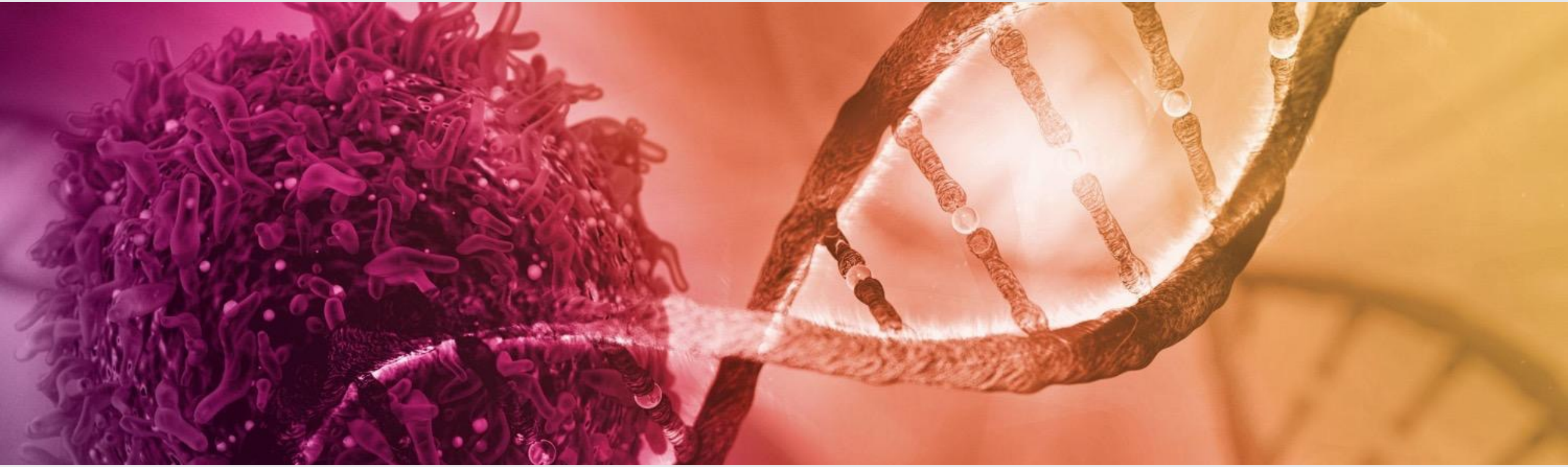
Drive additional confirmed responses in CHIRON and THETIS patients with higher cNeT doses

Translational

Leverage world-class translational science platform to define actionable cNeT features of response

Process

Continue PELEUS™ and process development to optimize dose and identify new sources of clonal neoantigens



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AI-Powered Precision Cell Therapy Targeting All Tumor Cells

November 2023