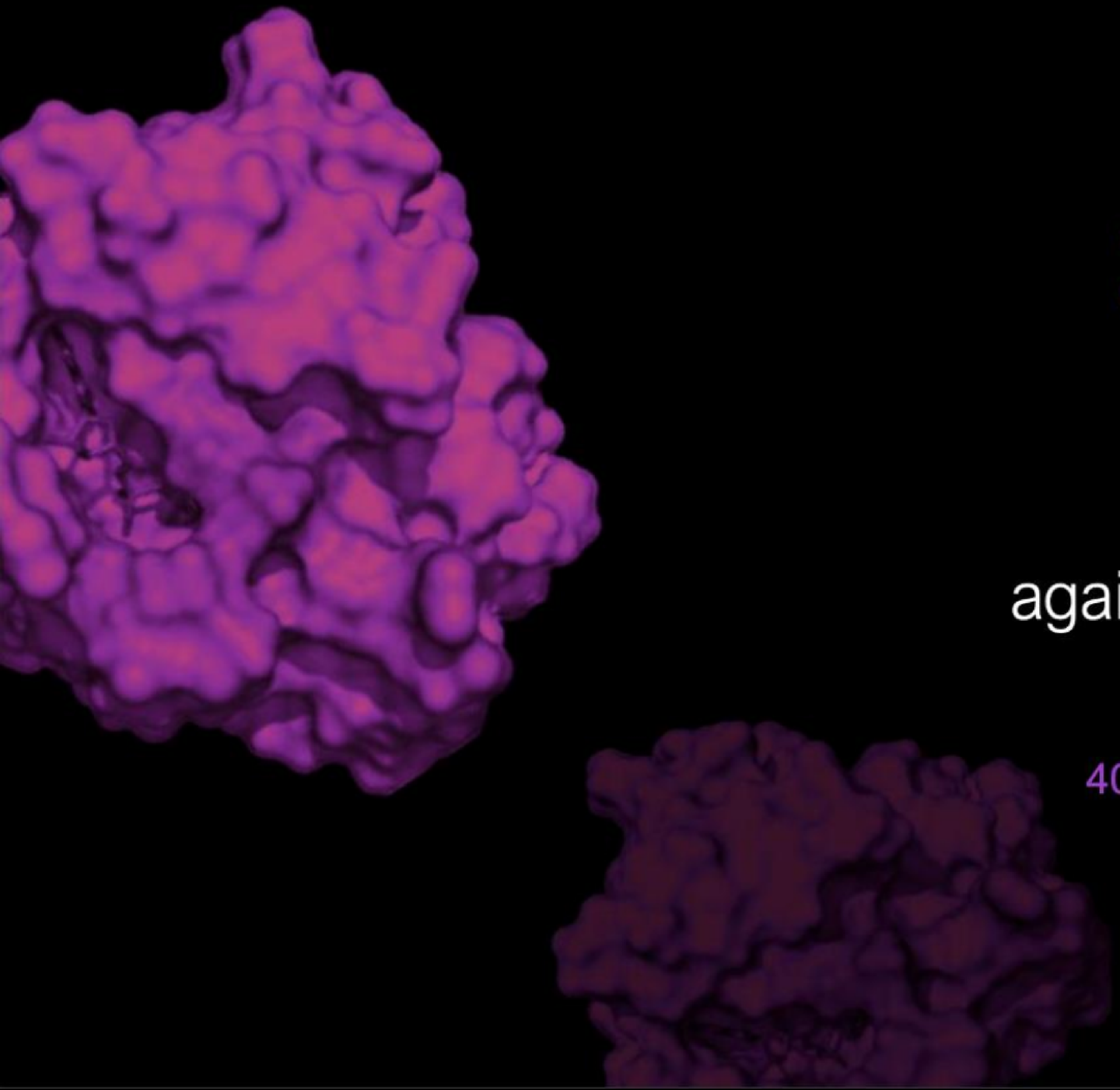

affini-T™

Unlocking the power of T cells against oncogenic driver mutations

40th Annual J.P. Morgan Healthcare Conference

January 2022

Forward-Looking Statements

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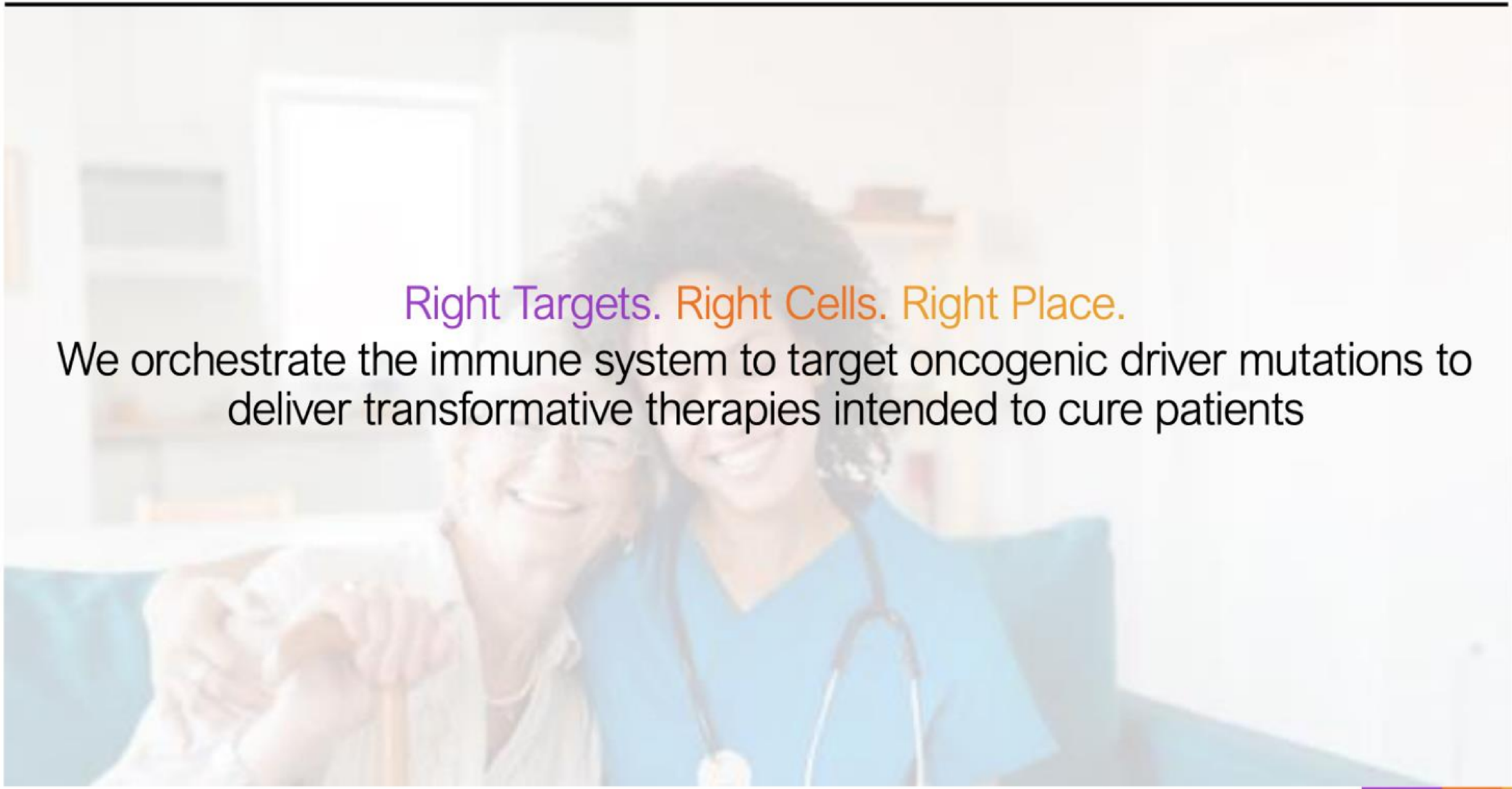
This presentation contains forward-looking statements that involve substantial risks and uncertainties. All statements, other than statements of historical facts, contained in this presentation, including statements regarding our operations and financial position, business strategy, product candidate development, research and development activities and costs, timing and likelihood of success of our business plans, plans and objectives of management, future results and timing of clinical trials, plans for regulatory submissions, treatment potential of our product candidates, and the market potential of our product candidates, are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. The words "anticipate," "believe," "estimate," "expect," "intend," "may," "might," "plan," "predict," "project," "target," "potential," "will," "would," "could," "should," "continue," and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. The forward-looking statements contained in this presentation reflect our current views with respect to future events, and we assume no obligation to update any forward-looking statements except as may be required by applicable law.

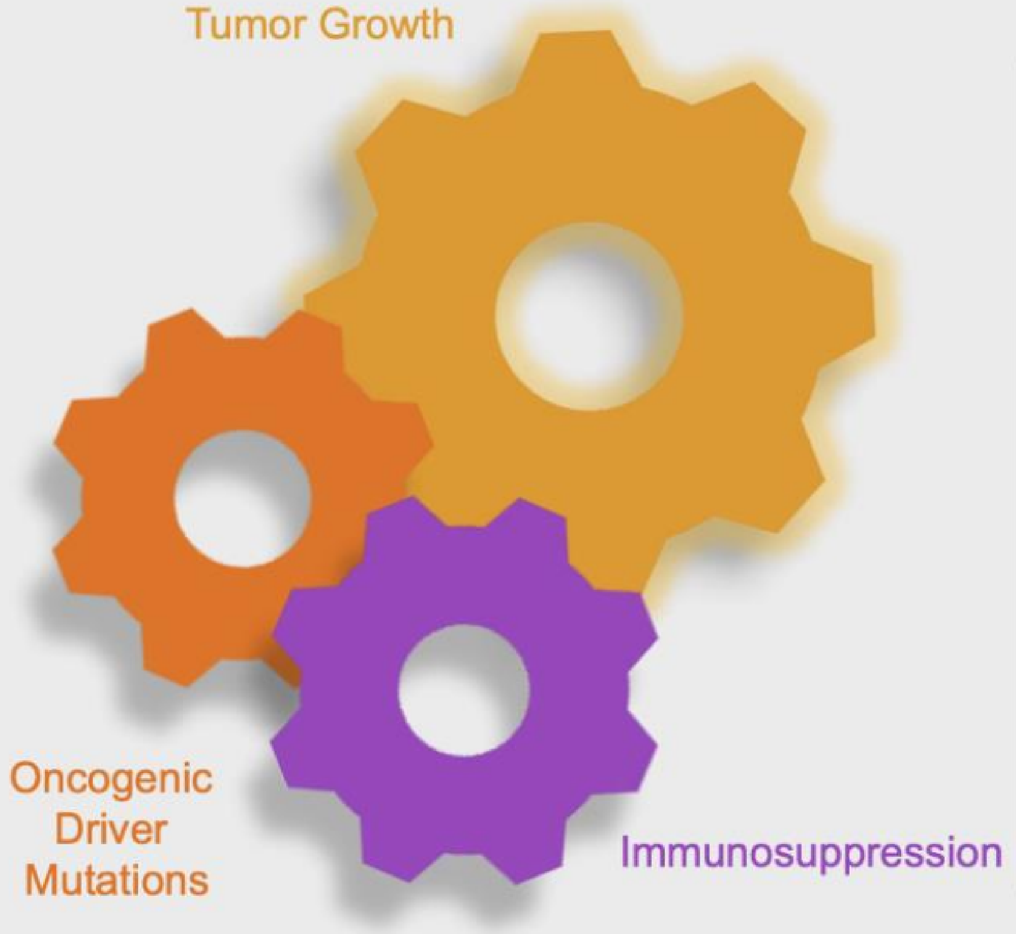
This presentation also includes statistical and other industry and market data that we obtained from industry publications and research, surveys and studies conducted by third parties as well as our own estimates of potential market opportunities. All of the market data used in this presentation involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such data. Industry publications and third party research, surveys and studies generally indicate that their information has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. Our estimates of the potential market opportunities for our product candidates include several key assumptions based on our industry knowledge, industry publications, third-party research and other surveys, which may be based on a small sample size and may fail to accurately reflect market opportunities. While we believe that our internal assumptions are reasonable, no independent source has verified such assumptions.



Right Targets. Right Cells. Right Place.

We orchestrate the immune system to target oncogenic driver mutations to deliver transformative therapies intended to cure patients

Tumor growth powered by oncogenic driver mutations and immune cell dysfunction



Oncogenic driver mutations are fundamental to tumor biology - critical for rapid growth and metastasis

Engineered immune cells targeting oncogenic driver mutations, like KRAS, minimize potential tumor escape mechanisms

We combine a validated TCR discovery platform with synthetic biology switches to attack tumor biology at its root cause

Engineering T cells with the potential to cure hard-to-treat solid tumors

Right Targets

- Solid tumors are dependent on oncogene driver mutations like KRAS
- Driver mutations are present in every cancer cell, not in healthy tissues, and cannot be easily lost

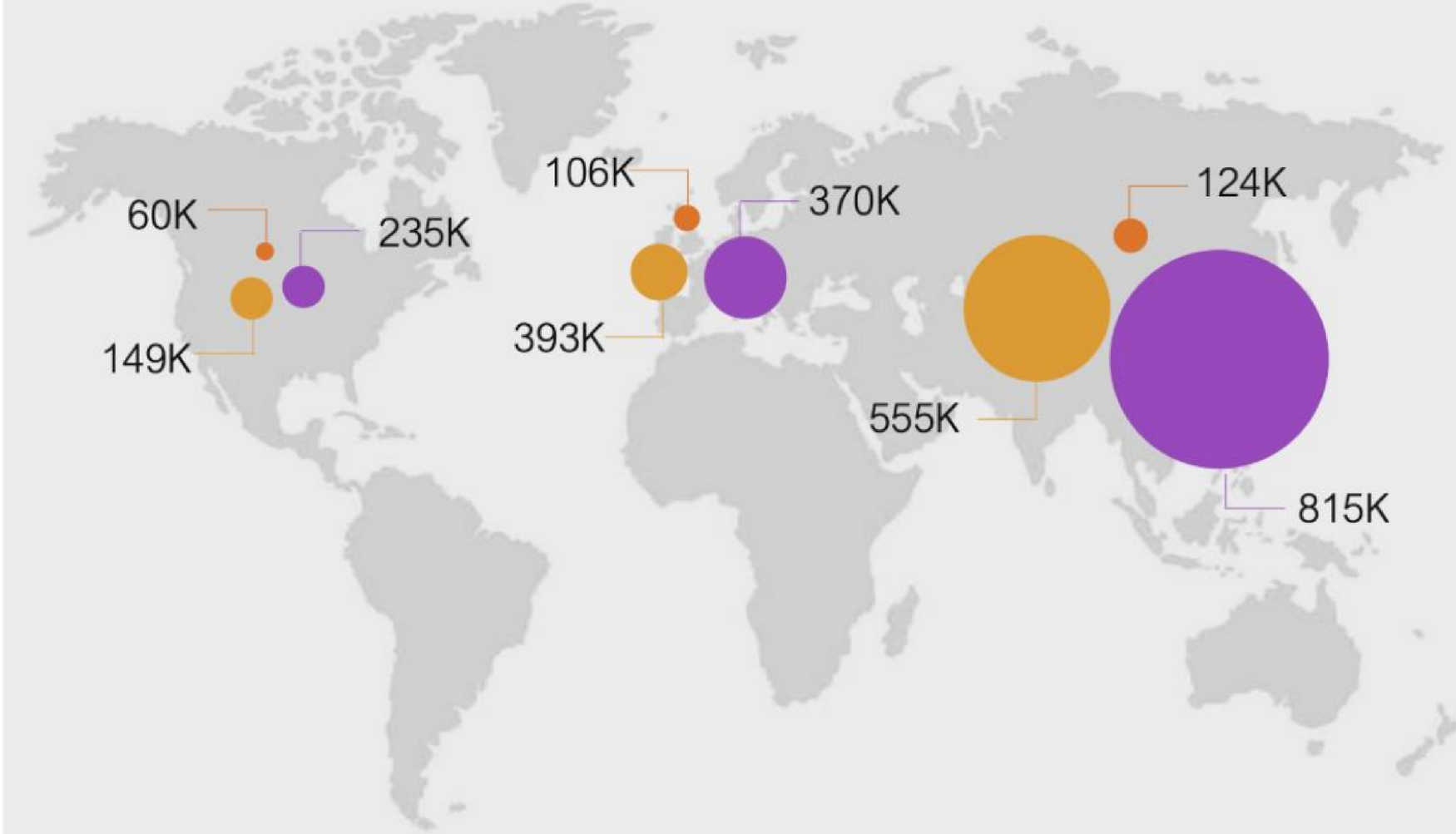
Right Cells

- Coordinate a $CD4^+$ and $CD8^+$ T cell response to sustain anti-tumor activity/response
- Select immune cells for stemness and central memory phenotype
- Manufacture to maintain cell naïveté and reduce terminal differentiation

Right Place

- Direct T cells to traffic into the solid tumor bed using proprietary TCRs
- Prevent deletion of T cells by converting Fas/FasL death signal to 41BB survival signal
- Convert immunosuppressive tumor microenvironment (TME) signals into stimulatory cues using additional synthetic biology switches

Solid tumors dependent on oncogenic drivers represent a large global market



2021 Global Market Opportunity & Mutation burden in these solid tumors

Pancreatic

Market $2.6B+, CAGR 7.5%

KRAS 86%

P53 53%

PIK3CA 4%

Colorectal

Market $12.1B+, CAGR 4.9%

KRAS 41%

P53 55%

PIK3CA 16%

Lung

Market $6.9B+, CAGR 6.7%

KRAS 35%

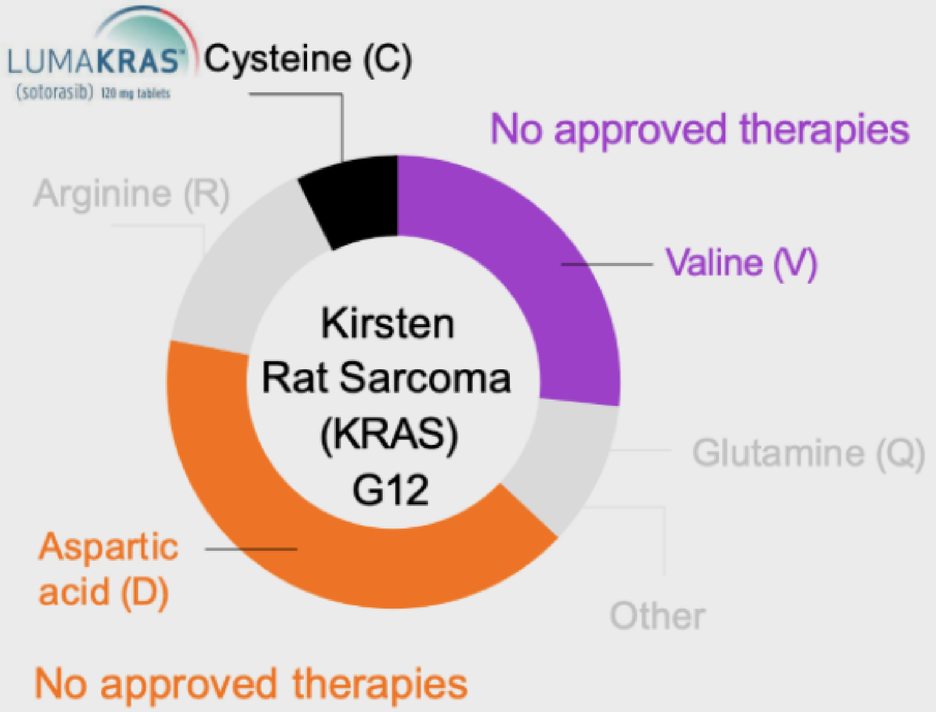
P53 41%

PIK3CA 4%

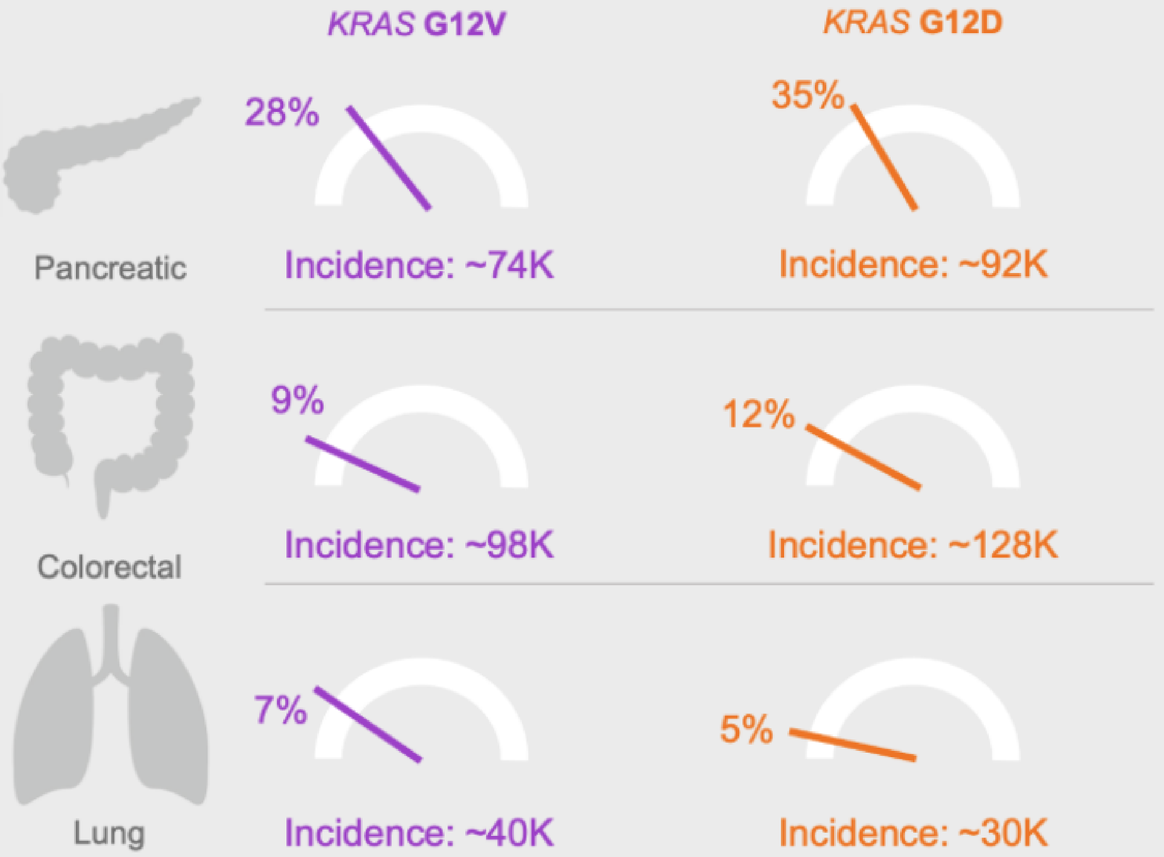
Incidence estimated using BBLSA Market Research; Market Data Forecast (Global '21-'26); 360 ResearchReports (Global '21-'27); Market Data Forecast (Global '21-'26):CAGR Compound Annual Growth Rate

Attacking KRAS: the most prevalent oncogenic driver mutation in solid tumors

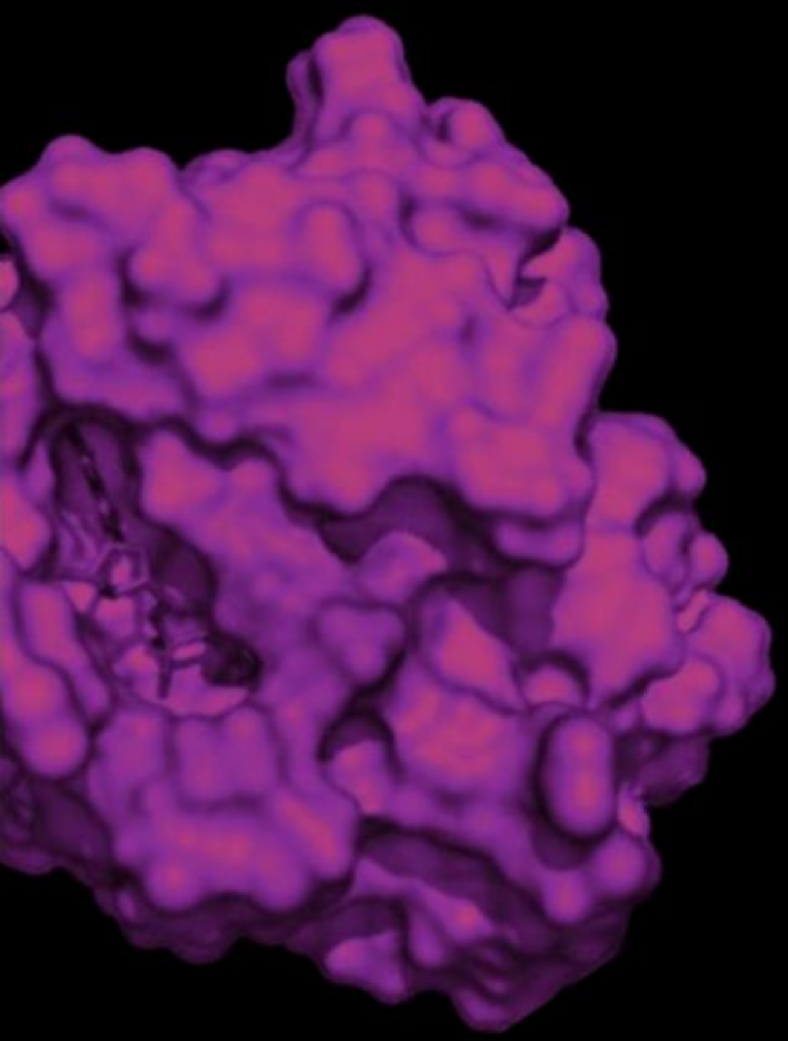
Relative frequency of G12 mutations



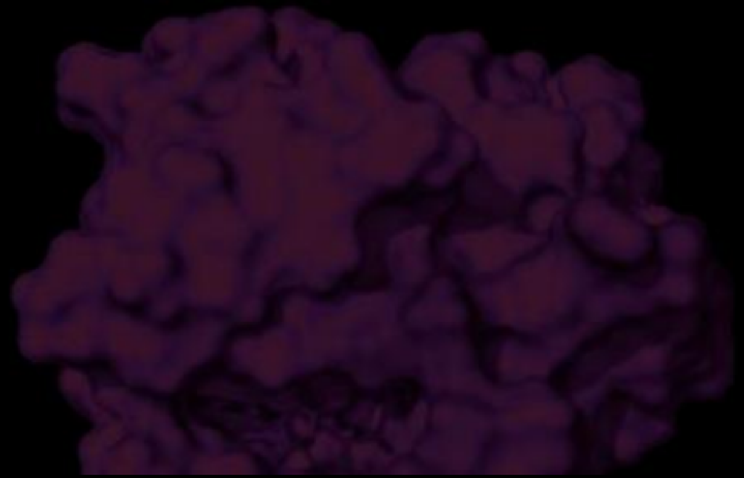
Incidence of G12V and G12D in certain adenocarcinomas



Prior et al, *Cancer Research* (2020); Henley et al, *Cancer* (2020); Nature Reviews | Cancer (2011 Macmillan Publishers); BBSLA Market Research; Incidence includes US, EU, and China only of newly diagnosed patients/yr



Exceptional Science Leaders and Experienced Team



Fred Hutch co-founders among the most prolific in the industry for generating T cell clinical programs

Phil Greenberg, MD

Aude Chapuis, MD

Tom Schmitt, PhD

Advanced over a dozen T cell therapeutic candidates

FRED HUTCH

bluebirdbio

Undisclosed industry partners

nature medicine

T cell receptor gene therapy targeting WT1 prevents acute myeloid leukemia relapse post-transplant

Aude G. Chapuis, Daniel N. Egan, Merav Bar, Thomas M. Schmitt, Megan S. McAfee, Kelly G. Paulson, Valentin Voillet, Raphael Gottardo, Gunnar B. Ragnarsson, Marie Bleakley, Cecilia C. Yeung, Petri Muhlhauser, Hieu N. Nguyen, Lara A. Kropp, Luca Castelli, Felecia Wagener, Daniel Hunter, Marcus Lindberg, Kristen Cohen, Aaron Seese, M. Juliana McElrath, Natalie Duerkopp, Ted A. Gooley & Philip D. Greenberg

Cancer Cell

T Cells Engineered against a Native Antigen Can Surmount Immunologic and Physical Barriers to Treat Pancreatic Ductal Adenocarcinoma

Ingunn M. Stromnes, Thomas M. Schmitt, Ayaka Hulbert, J. Scott Brockenbrough, Hieu N. Nguyen, Carlos Cuevas, Ashley M. Dotson, Xiaoxia Tan, Jennifer L. Hotes, Philip D. Greenberg, and Sunil R. Hingorani

Chapuis et al, *Nat Med* (2019); Stromnes et al, *Cancer Cell* (2015)

Guided by a world class SAB specialized in T cell biology and immunology

Scientific Advisory Board

Phil Greenberg, MD
Scientific Co-Founder

Aude Chapuis, MD
Scientific Co-Founder

Tom Schmitt, PhD
Scientific Co-Founder

Jim Allison, PhD

Pam Sharma, MD, PhD

Rafi Ahmed, PhD

David Kranz, PhD

Susan Kaech, PhD

Experienced management poised to advance multiple T cell therapies

C-Suite

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CEO

CytoSen Therapeutics · Century Therapeutics · Nexonics Therapeutics · Bayer

Loïc Vincent, PhD
CSO

Takeda · Sanofi · Endotis Pharma · adaptate

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Kathy Yi, MBA
COO/CFO

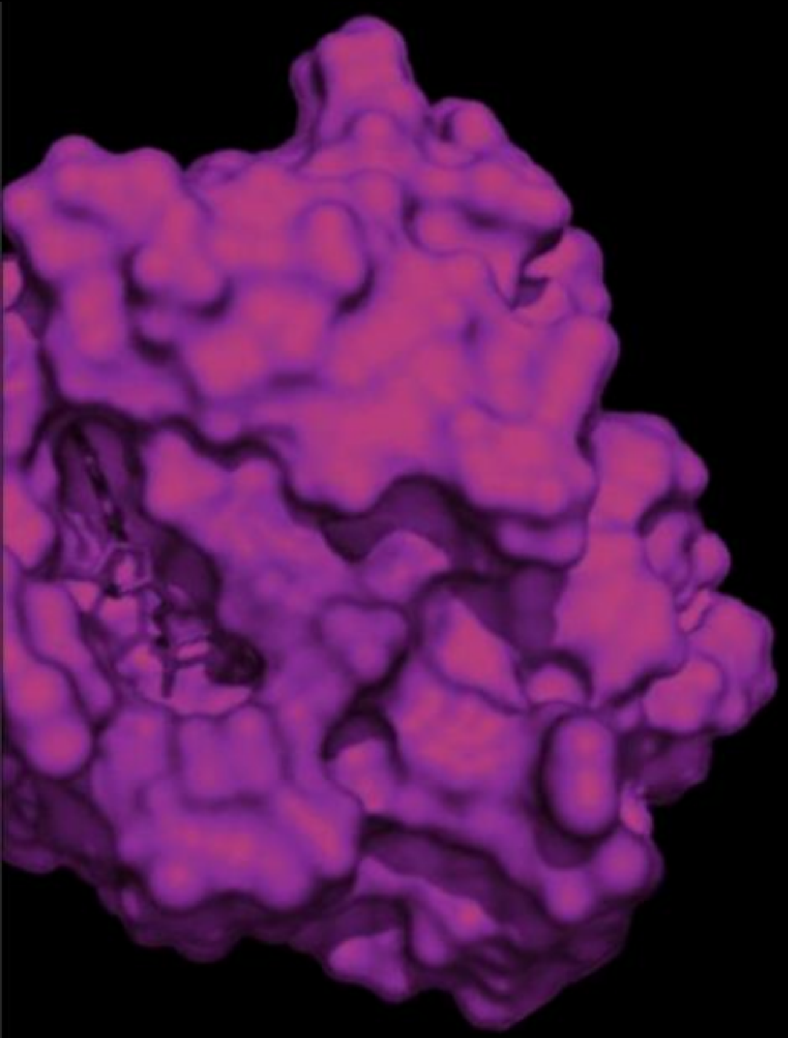
cerevel · Sangamo · Novartis

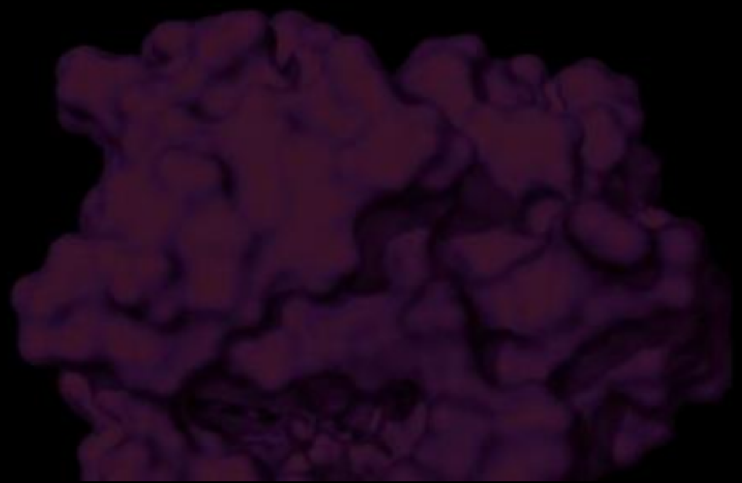
Seed Investors

VIDA ventures · leaps by Bayer · humboldt · Agent Capital · Alexandria

affini

Solving Hard-to-Treat Solid Tumors

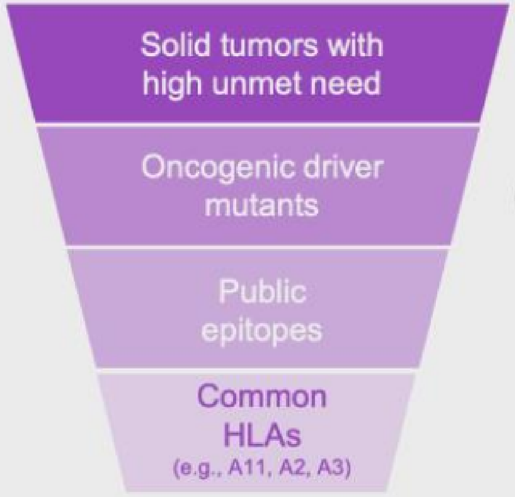




Affini-T's discovery platform has identified multiple TCR clinical candidates

Prioritize

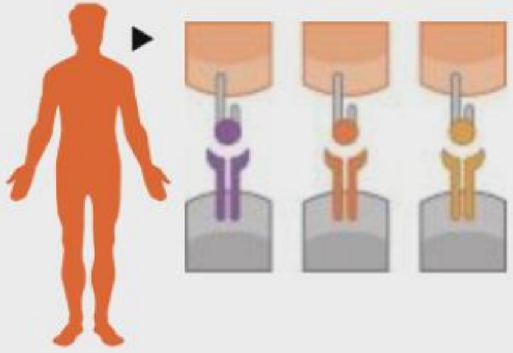
Streamline top targets to prosecute



Candidate targets

Discover

Isolate high affinity TCRs from panel of healthy donors



TCRs with de-risked safety profile that have cleared thymic selection

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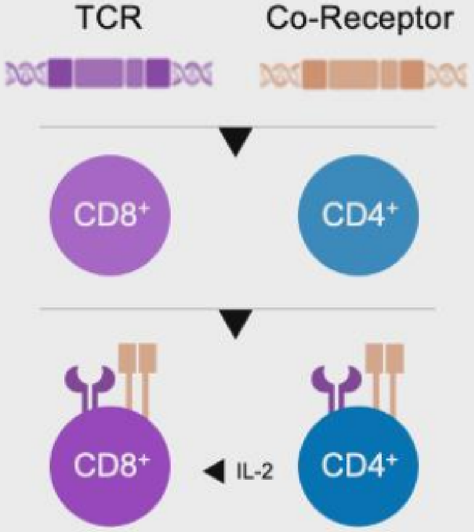
Robust and proven TCR discovery platform

Engineer

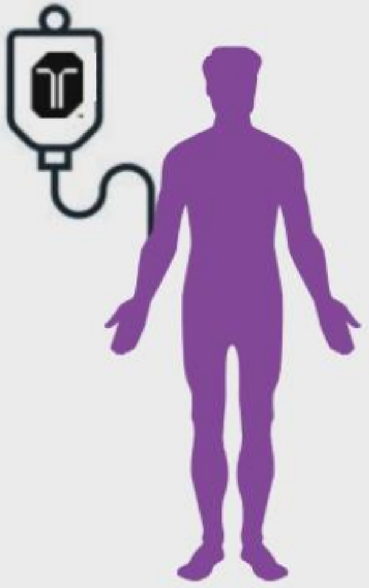
Lentiviral engineering of patient T cells



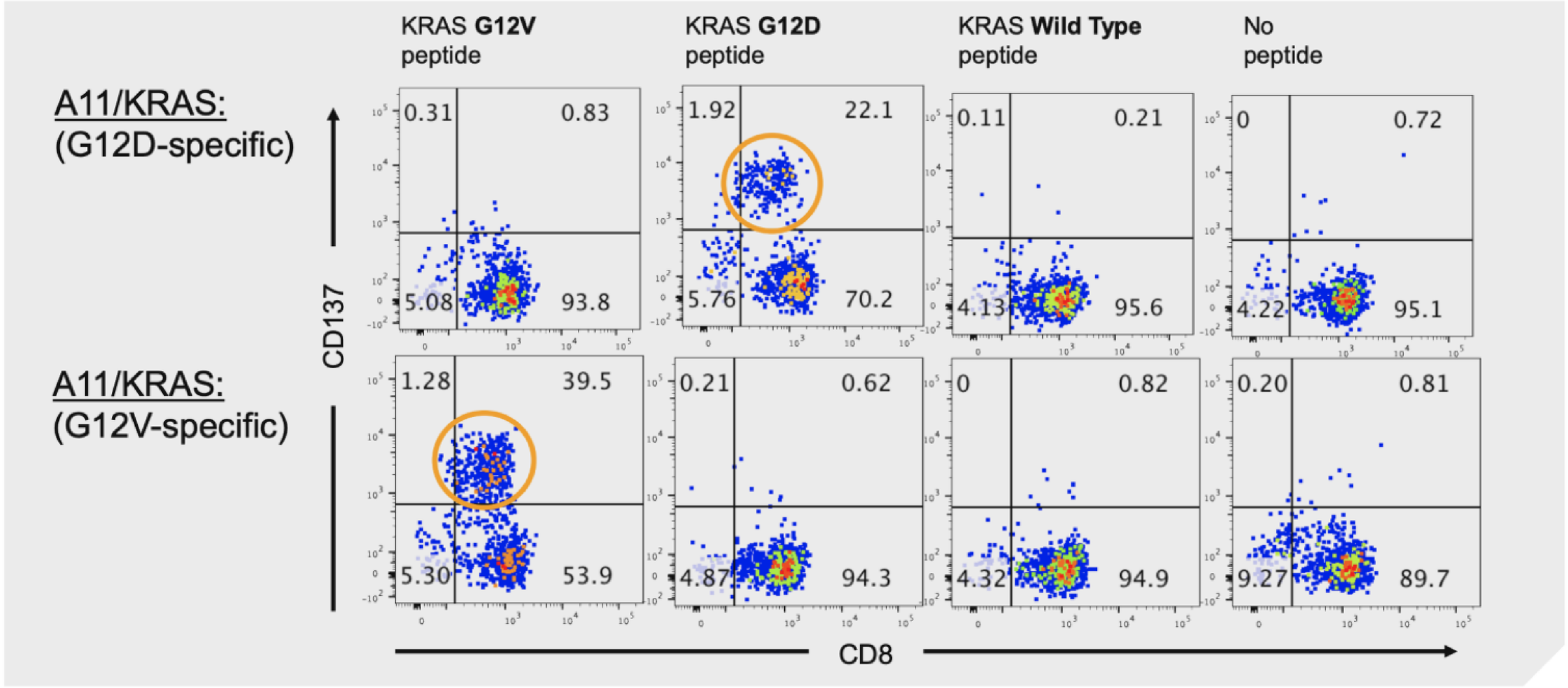
Leverage coordinated CD4/CD8 T cell response for improved efficacy and durability

Treat

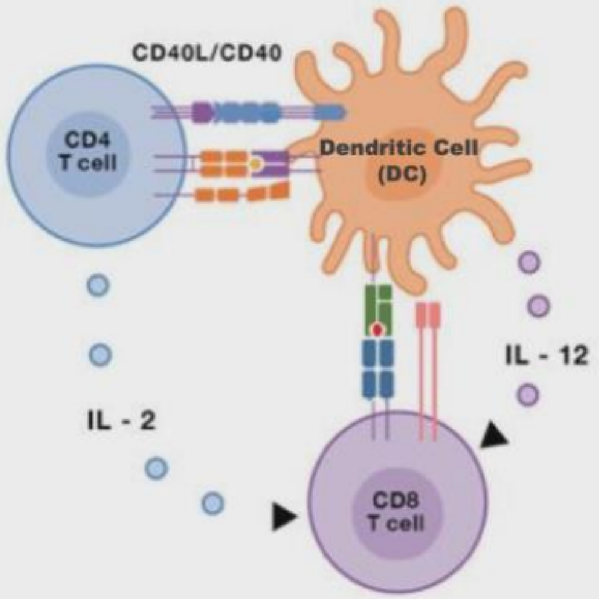
Infuse engineered T cell therapeutic



KRAS G12V and G12D TCRs are highly selective and do not react to Wild Type peptide

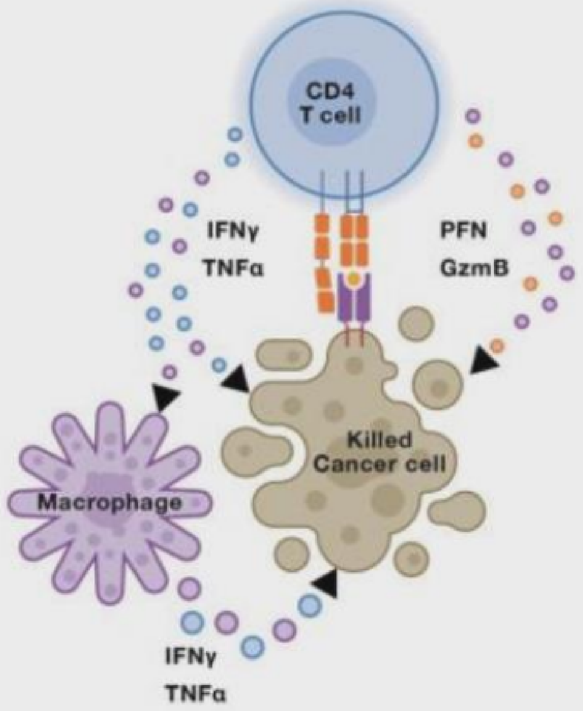


Fundamental immunology: CD4 T cells can orchestrate durable anti-tumor responses



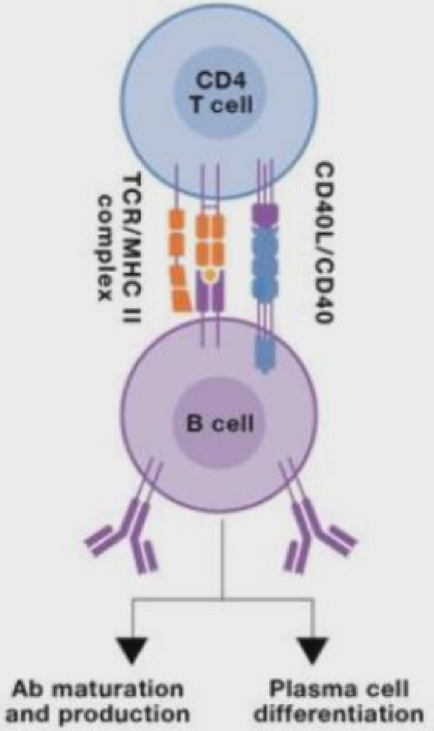
CD4 Helper

Promotes CD8 T cell function, proliferation and survival



CD4 Effector

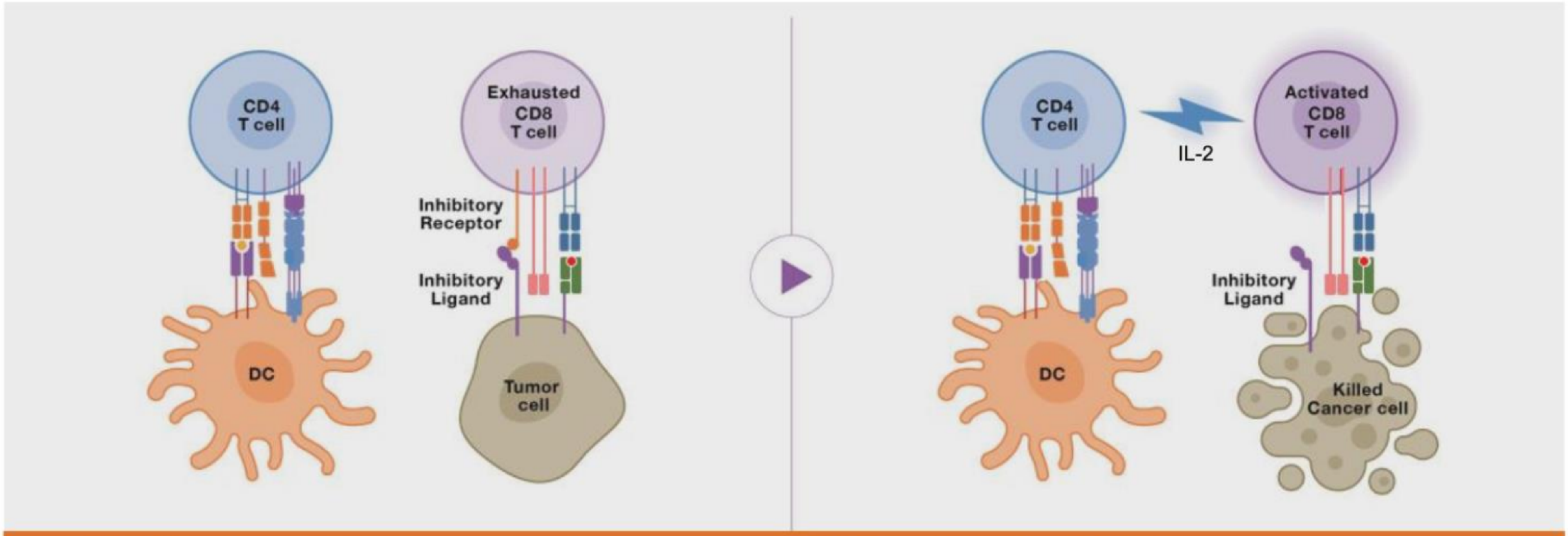
Direct and indirect killing of tumor cells



CD4 Activator

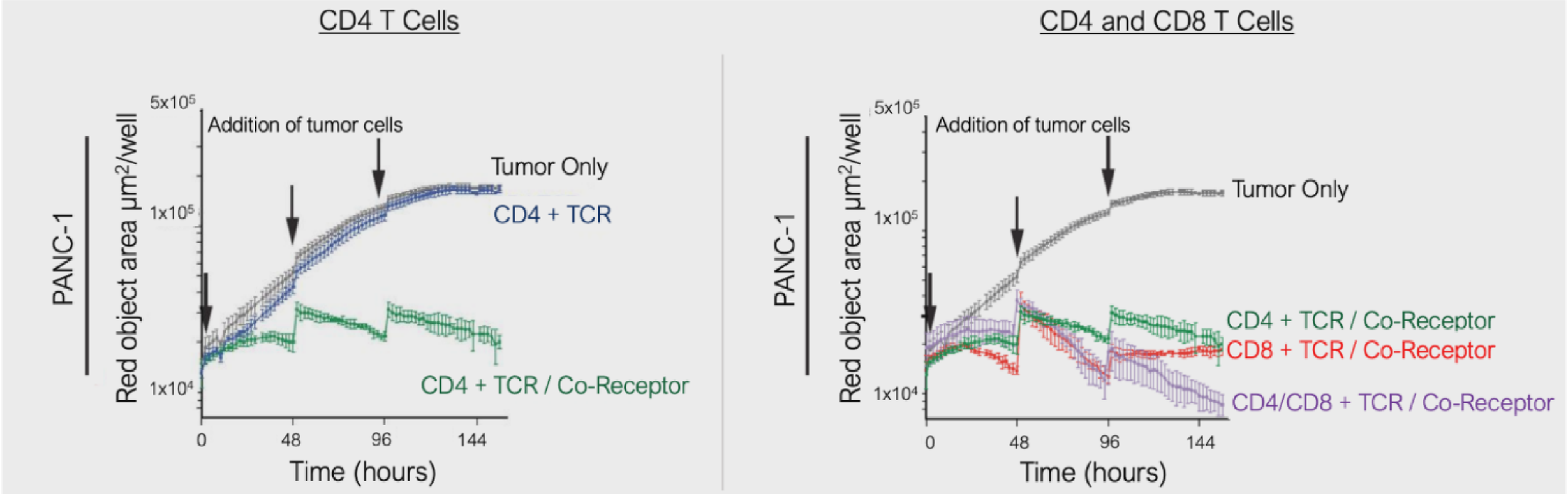
Drives B cell maturation and antibody production

CD4 T cells prevent CD8 T cell exhaustion and prolong persistence in the hostile TME



CD4 T cells retain helper phenotype, engage CD8 T cells in the TME to promote effector activation and prevent CD8 T cell exhaustion leading to enhanced CD8 persistence

CD4/CD8 coordinated T cell response induces deep and durable anti-tumor activity

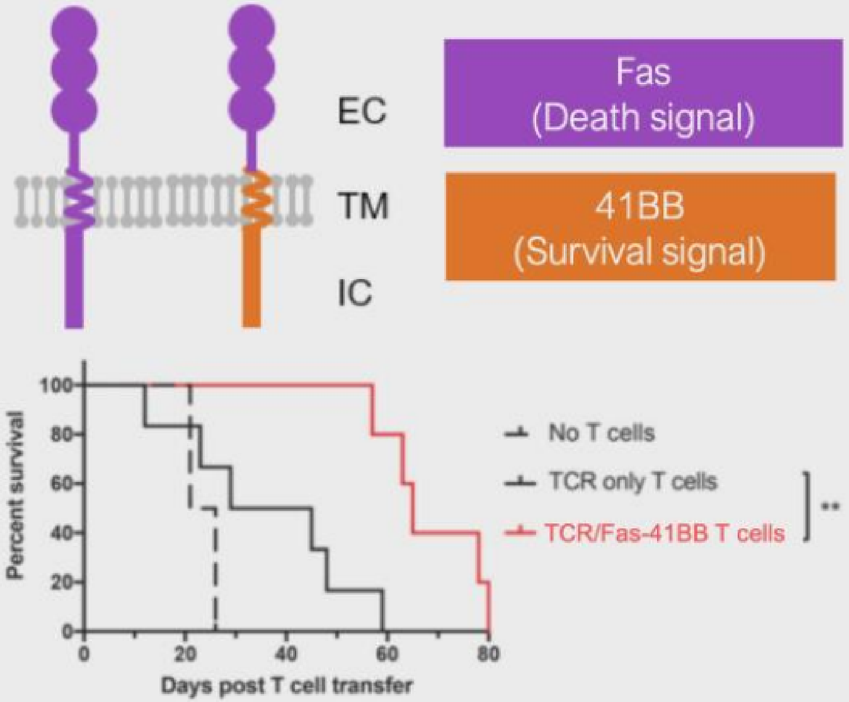


Addition of co-receptor to CD4 T cells creates additional effector function for tumor killing

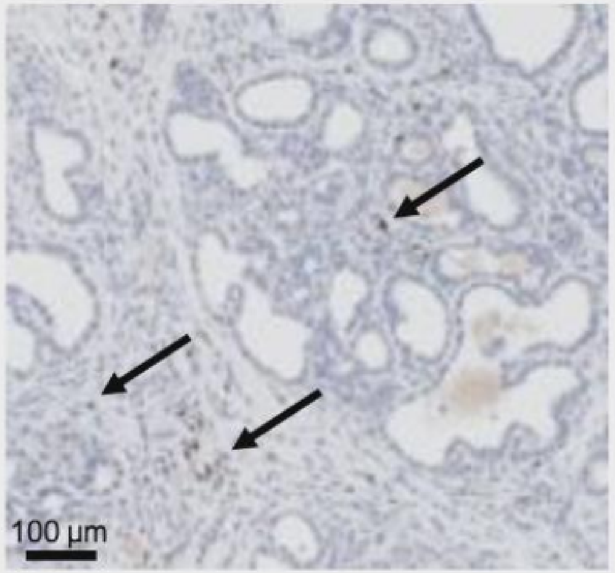
CD4 T cells synergize with CD8 T cells to enhance anti-tumor activity

Adapted Chapuis et al. – WT1 Representative Data Presented at AGC-ESMO 2021

Enhancing T cell survival and function in the TME to create durable responses

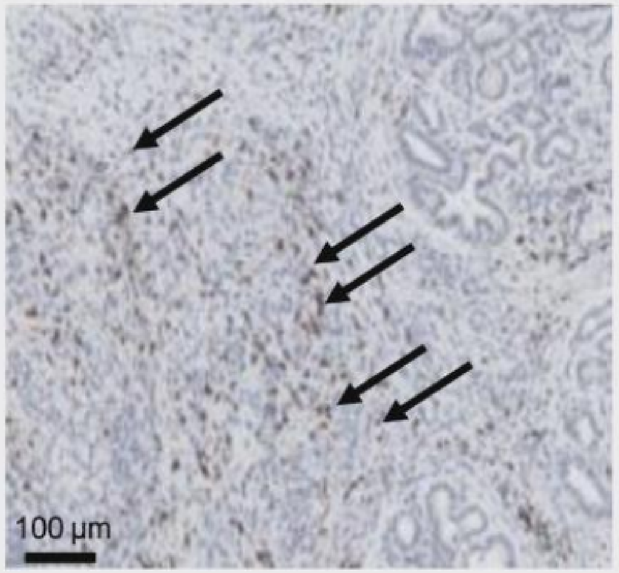


TCR only T cells



No / limited T cell invasion in tumor bed (blue)

TCR/Fas-41BB T cells

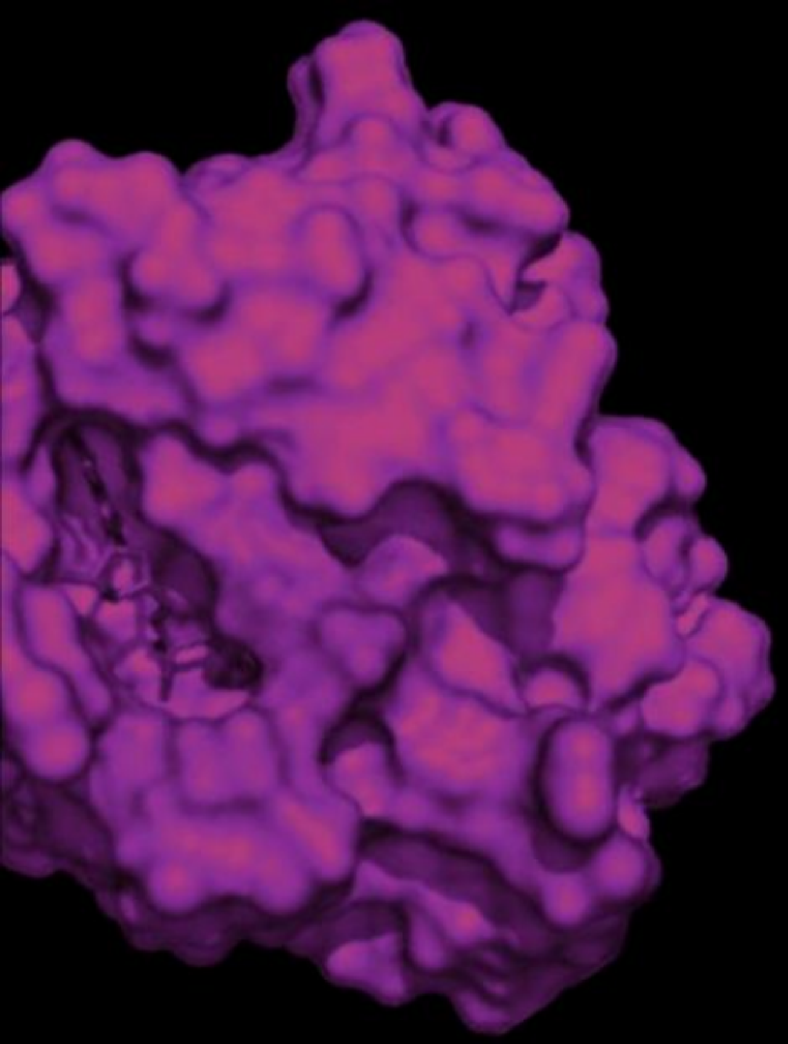


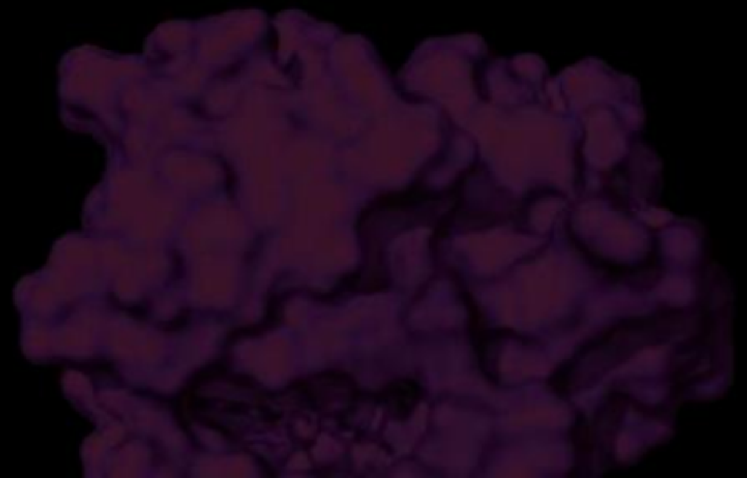
Tumor bed (blue) are invaded by T cells (brown)

Fas-41BB switch improves survival in the aggressive KPC pancreatic cancer model

Fas-41BB switch enhances T cell function, proliferation, serial killing and persistence in the TME

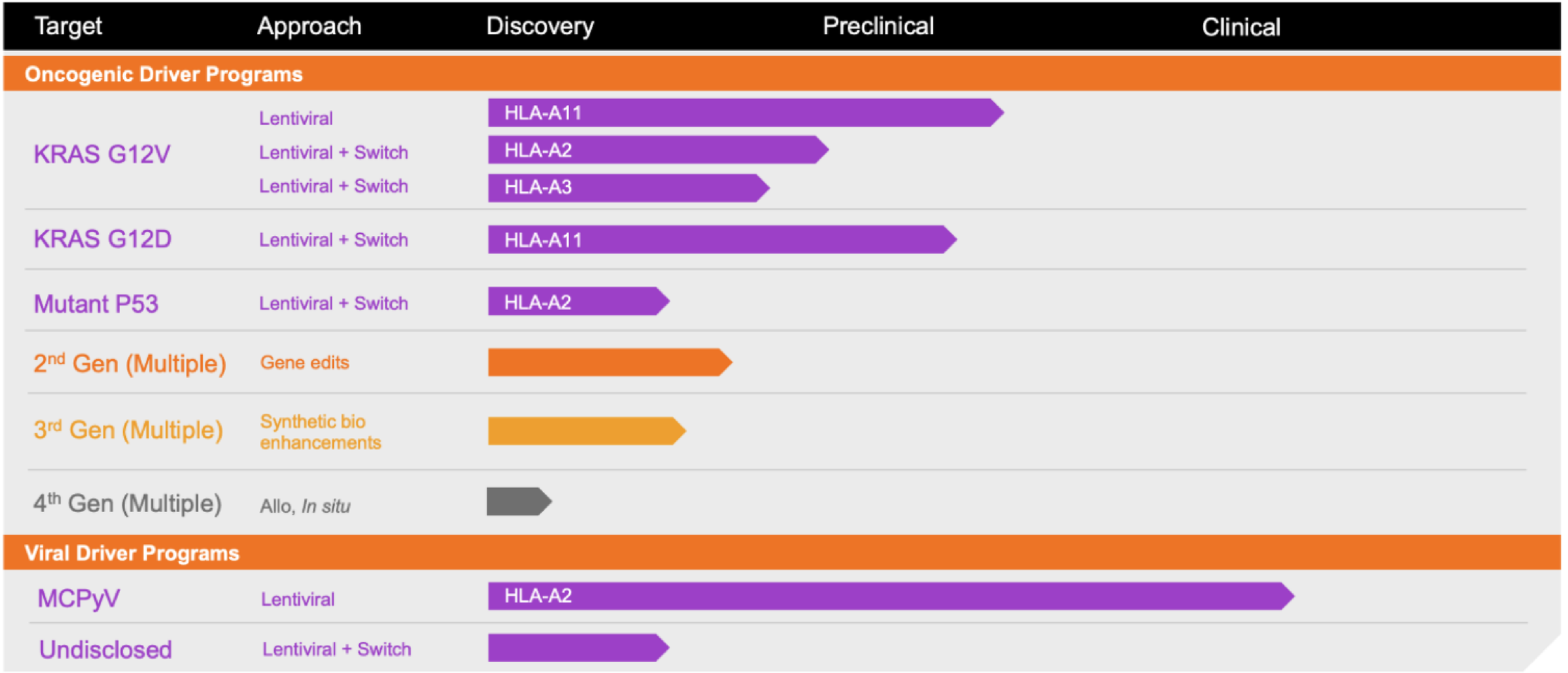
Adapted from Oda, et. al...Greenberg. *JEM* (2020)





Differentiated Pipeline of TCR T Cell Therapies

Deep and differentiated pipeline of TCR T cell therapies



Affini-T technologies positioned to advance a robust pipeline of immune innovation

First-Generation

- Coordinated CD4/CD8 response
- Fas-41BB durability receptor
- Switch receptors (e.g., inhibitory receptors, cytokine receptors)
- Boost MHC expression
- Disrupt endogenous TCR

Next-Generation

- CD28 costimulatory chimeric receptors (e.g., PD-1)
- Cytokines to increase immune response
- Enzymes to break down fibrotic tissue
- Epigenetic modification
- Immune adjuvants
- Chemokine receptors to improve trafficking

Building infrastructure to support rapid bi-coastal company growth

Seattle Research Lab

- TCR Discovery
- Manufacturing Support
- Early-Stage Process and Analytical Development
- Alliance Management

Boston Interim Lab

- Gene Editing
- Next-Gen Engineering
- Synthetic Biology
- CMC

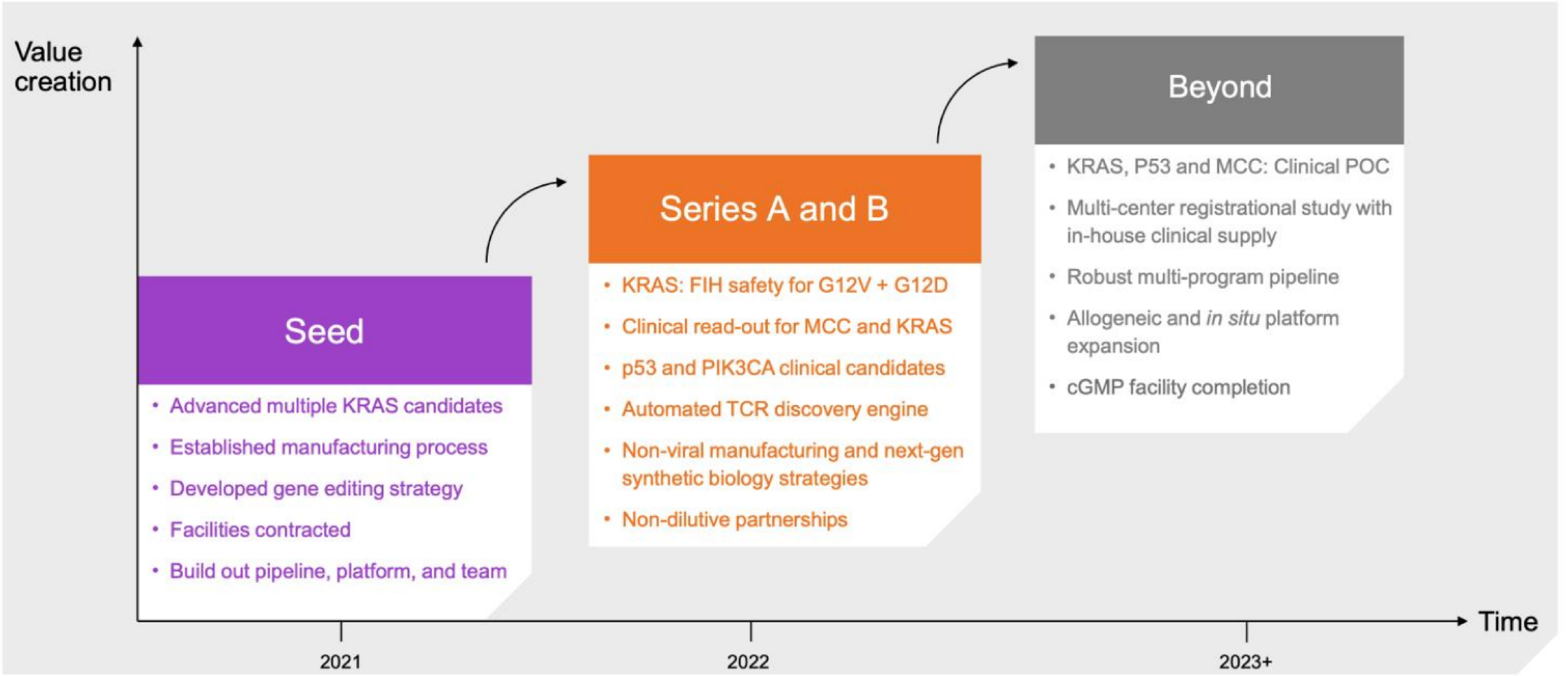
Boston HQ

- Executive Management
- Discovery Research
- Regulatory and Quality
- Clinical Operations
- CMC
- Operations and Finance
- Business Development
- HR and Legal

Boston cGMP Clinical and Commercial Manufacturing

- 95,000 sq.ft.
- Clinical and Commercial Production
- Quality Assurance and Quality Control
- Facilities and IT
- Warehousing

Multi-generational pipeline will create meaningful value



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