



Powering the Future of Cell
Therapy: Capability Building,
Current Challenges and
What's Next for Cartherics

ANZ Biologics 2026
Walid Azar CSO

FEBRUARY 2026

Cartherics at a Glance

Cartherics is a late preclinical stage cell therapy company developing 'off-the-shelf' iPSC-NK treatments for solid cancers and endometriosis.



- Based in Melbourne, Australia
- Commenced operations Jan 2016
- Currently ~30 staff



- >US\$50M raised to date from private capital, competitive grants and R&D tax incentives



- Operating from a dedicated 1,800m² purpose-built facility
- Recently updated clean rooms

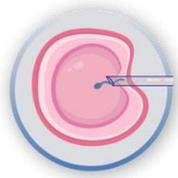


- 'Off-the-shelf' platform, using gene-edited iPSCs to produce immune cells with enhanced function

A Legacy of Excellence and Innovation



Prof. Alan Trounson AO
Co-founder and Deputy Chairman
[linkedin.com/in/alanotrounson](https://www.linkedin.com/in/alanotrounson)



Pioneered and commercialized IVF.



Ex-President of California Institute for Regenerative Medicine.
Led and managed US\$3B fund.



International stem cell expert.
“ Alan Trounson is ranked among the world’s most prominent scientists ”
Research.com (April 2022)

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Experienced Management Team



Dr Ian Nisbet

Chief Executive Officer
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CSL, Millennium Pharmaceuticals
[VELCADE® & Synribo™]



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CSL, Peter MacCallum
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CSIRO, Avipep P/L



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Project Manager,
Principal Scientist



Ms Telma Mantas

Director of IP and Licensing
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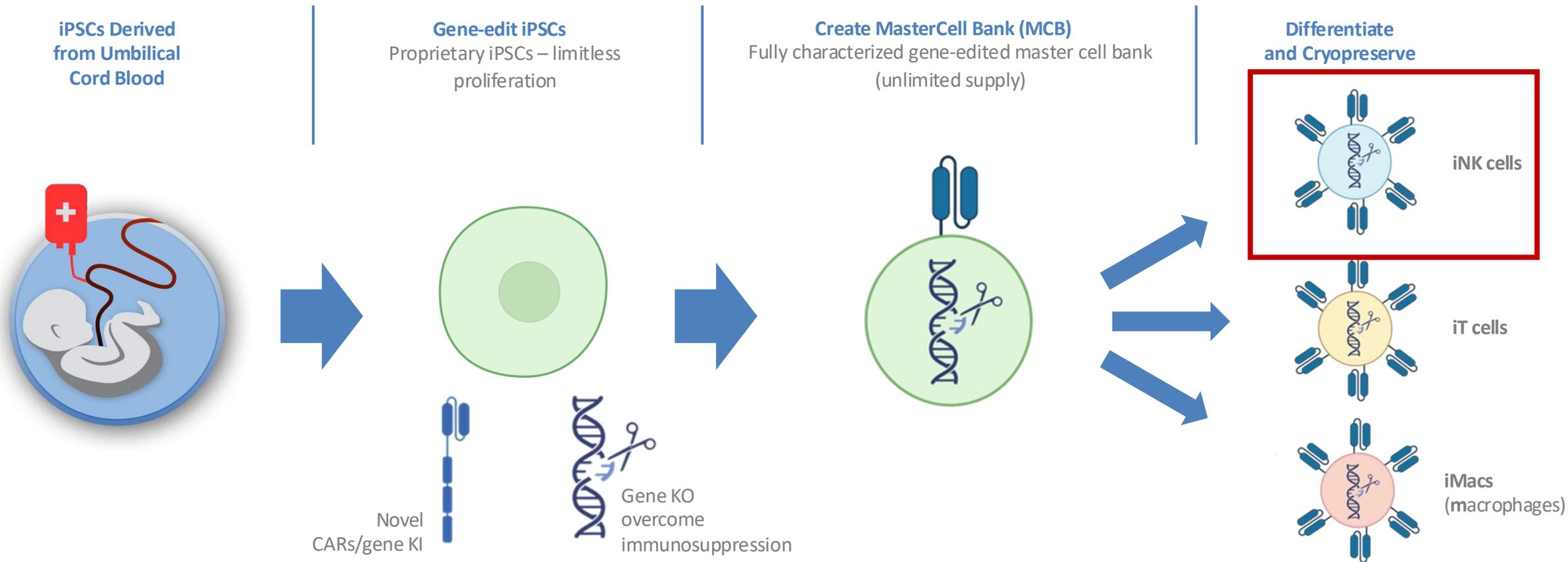
CERN, IP Australia
IP Manager, Patent Examiner



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Cartherics Cell Therapy Platform

Enables the Rapid Development of a Diverse Range of Products and Immune Cell types.



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Robust IP Protecting Cartherics' Core Innovations

Key Metrics: >50 active filings globally, 17 issued patents (across 6 families), complemented by strategic in-licensed IP.

Patented Innovations

- **Novel CAR constructs:** Protecting CAR designs targeting validated antigens (e.g., TAG-72, TF).
- **Proprietary gene edits:** Covering knock-outs and knock-ins to boost efficacy, persistence, and TME resistance.
- **Engineered iPSC Platform:** Foundational patents on our engineered iPSC lines and their differentiation into therapeutic immune cells (iNKs, etc).
- **Further innovations:** Including novel receptor fusions and cell engineering strategies.



Valuable Trade Secrets

- Methods for feeder-free differentiation of iPSCs to functional immune cells.

IN-LICENSED IP / TECHNOLOGY PARTNERS:



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Multi-Billion Dollar Solid Tumour Market

Blood cancer cellular immunotherapy

The blood cancer cellular immunotherapy market is more advanced despite significantly lower disease incidence:

- **Number of products approved:**
6 autologous CAR-T cell products

Disease incidence

New cases diagnosed in 2020



Solid tumour cellular immunotherapy

Massive unmet need: Over 15 million new cases annually.

A nascent but promising field for Solid Tumours: While only two T-cell products have been approved, their emergence demonstrates the feasibility of cell therapies in this area, with encouraging new data now emerging.

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The Crippling Burden of Neglected Women's Health

A Two-Part Crisis in Women's Health: A Lethal Cancer and a Debilitating Disease

1

Ovarian Cancer: A Lethal Disease of Late Diagnosis

- ~325,000 new cases diagnosed and ~200,000 deaths globally each year.
- Severely limited treatment options.
- >75% of cases diagnosed at a late stage (III/IV).
- 5-year survival rate for stage III is 41% and only 20% for stage IV.

2

Endometriosis: The Widespread and Overlooked Cancer Precursor

- Affects 190 million women globally.
- Cause of debilitating pain, organ damage and infertility.
- Current treatments are inadequate.
- There is no cure.
- Endometriosis is a risk factor for ovarian cancer.

Evidence suggests a strong link between ovarian cancer and endometriosis, and they may have overlapping biology. Cartherics is developing therapies that target specific antigens common to both diseases.



- **Key Takeaway:** Our strategy leverages a de-risked entry in ovarian cancer as a gateway to treating the broader endometriosis crisis.

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Our Pipeline: A Phased Approach to Clinical Strength

A Deliberate Strategy: Validate the Platform, Then Unleash its Full Potential.

1

Program 1: CTH-401, Platform Validation – Lead Program

- **Indication:** Relapsed/refractory ovarian cancer, with expansion potential into earlier-stage ovarian cancer, other TAG-72+ solid tumours and endometriosis.
- **Strategic Goal:** Achieve **first-in-human data** to validate the safety and activity of our core iPSC-NK platform. This is our top priority.

2

Program 2: CTH-501, Next-Generation Target

- **Indications:** Endometriosis.
- **Strategic Goal:** Rapidly expand our pipeline with additional product candidates.

3

Program 3: CTH-502, Tumor Microenvironment ("TME")-Resistant "Armoured" Cells

- **Indications:** Ovarian cancer, triple negative breast cancer, other solid tumours expressing TAG-72 or TF.
- **Strategic Goal:** Create a "best-in-class" product with maximal efficacy, designed to overcome the toughest solid tumour microenvironment challenges.

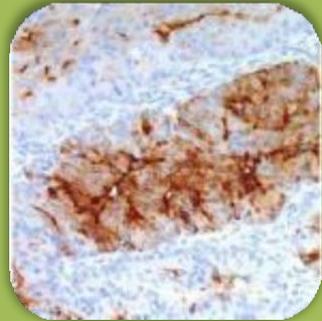
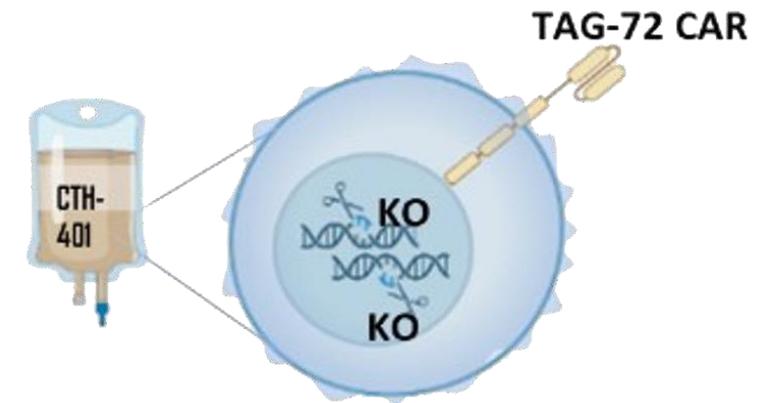
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Lead Product Candidate: CTH-401

First TAG-72 CAR-NK cell therapy

iPSCs gene-edited using CRISPR/Cas9

- **TAG-72 CAR knock-in**
 - Complements normal NK cell killing functions
- **Immunosuppressive gene knock-outs**
 - Enhance anti-tumoral efficacy
- **KI and KOs validated in autologous CAR-T cells**



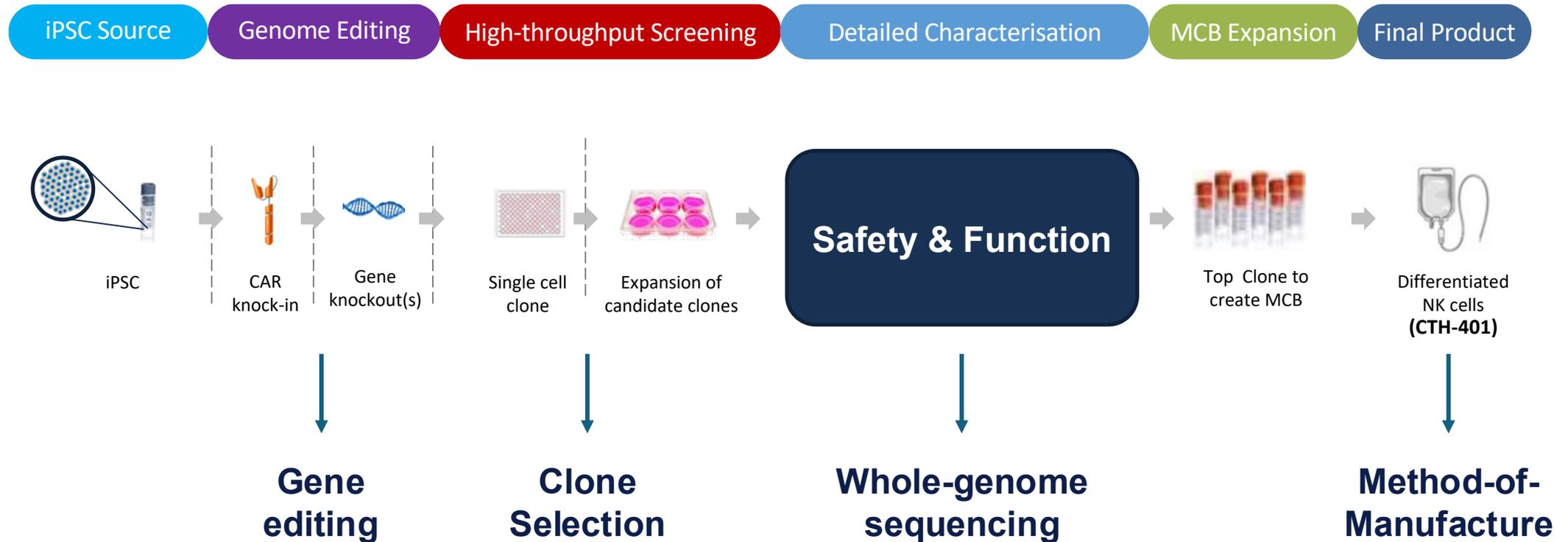
Tumour-associated glycoprotein-72 (TAG-72)

- Well-validated tumour target
- Found on many adenocarcinomas including ovarian, gastric, colorectal, pancreatic cancers

Image: Ovarian cancer biopsy with TAG-72 staining (brown) by immunohistochemistry

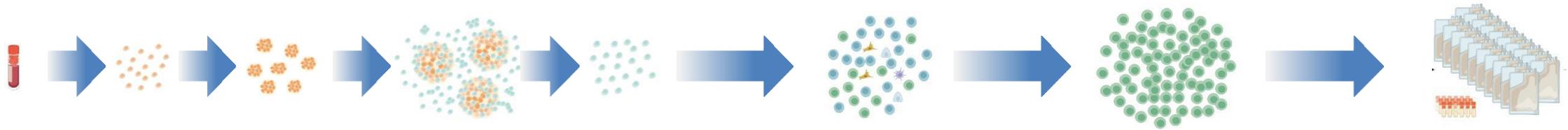
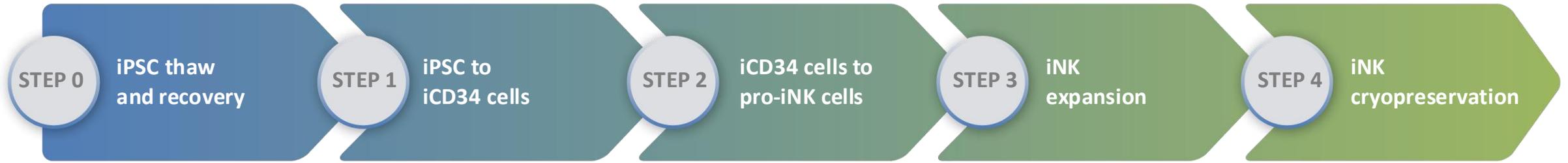
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A Scalable and Robust iPSC-Derived CAR-NK Platform



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One vial of iPSC into ~20 billion CAR-iNK cells (CTH-401)



Vertical wheel bioreactor (0.5L)

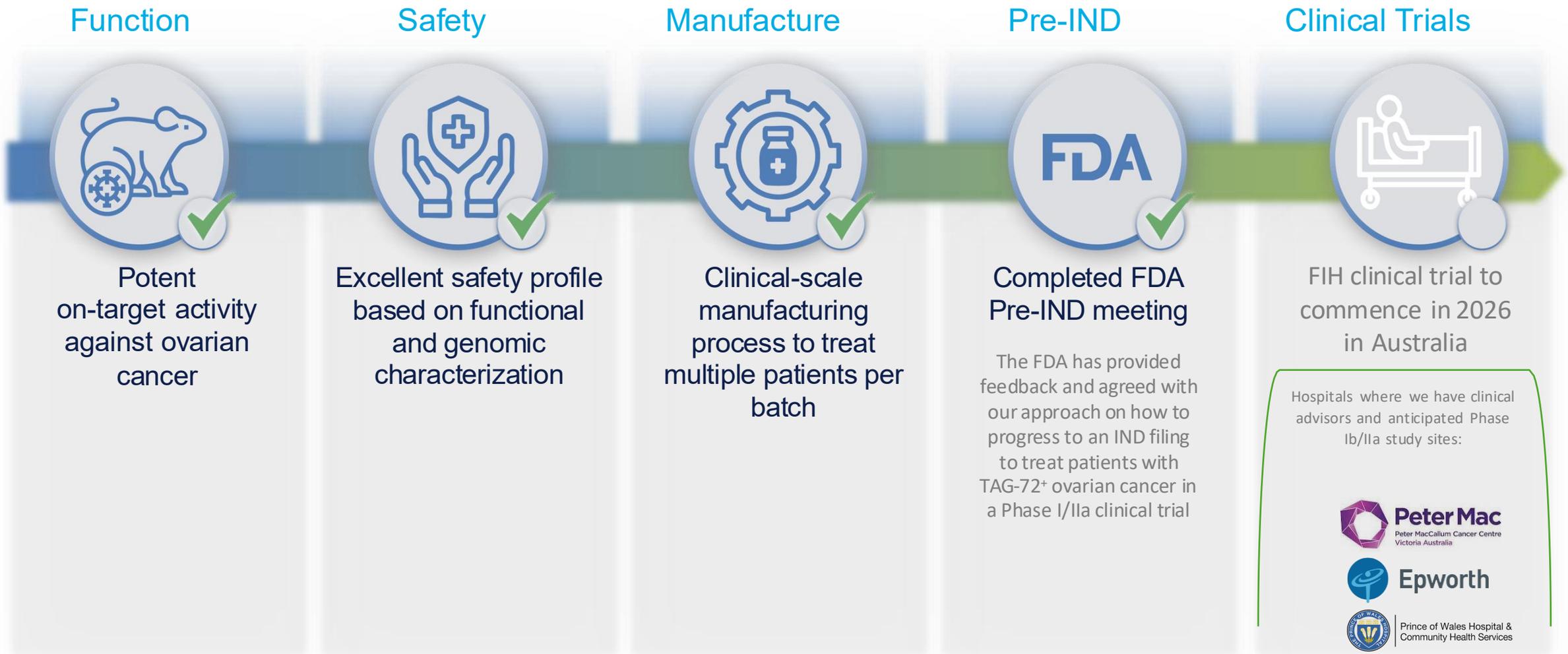


SCALE-UP TRANSITION



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CTH-401: Clear, De-Risked Path to First-in-Human Trials



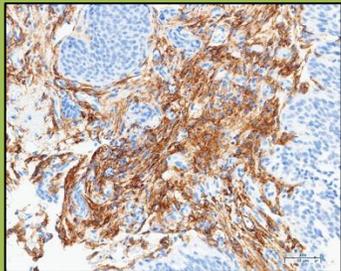
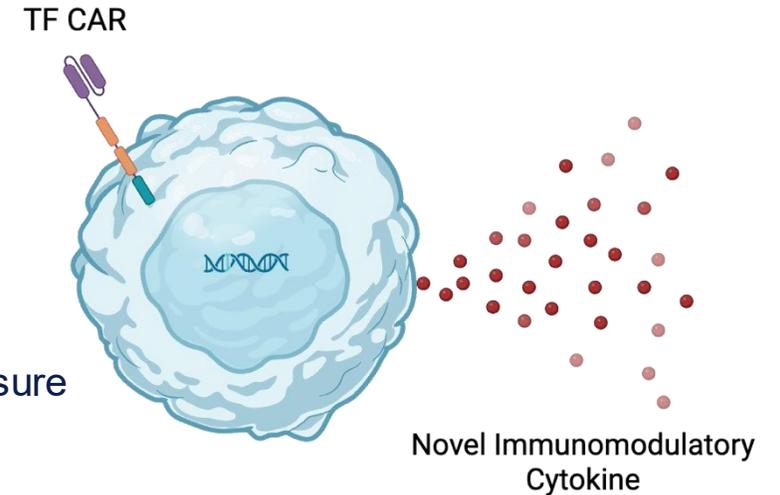
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Second Product Candidate: CTH-501

First CAR-NK cell therapy for Endometriosis

iPSCs gene-edited using CRISPR/Cas9

- **TF CAR knock-in**
 - Complements normal NK cell killing functions
- **Novel immunomodulatory cytokine knock-in**
 - Enhances local immune activation in endometriosis and cancer high systemic exposure
 - Improves iNK function through autocrine and paracrine immune activation

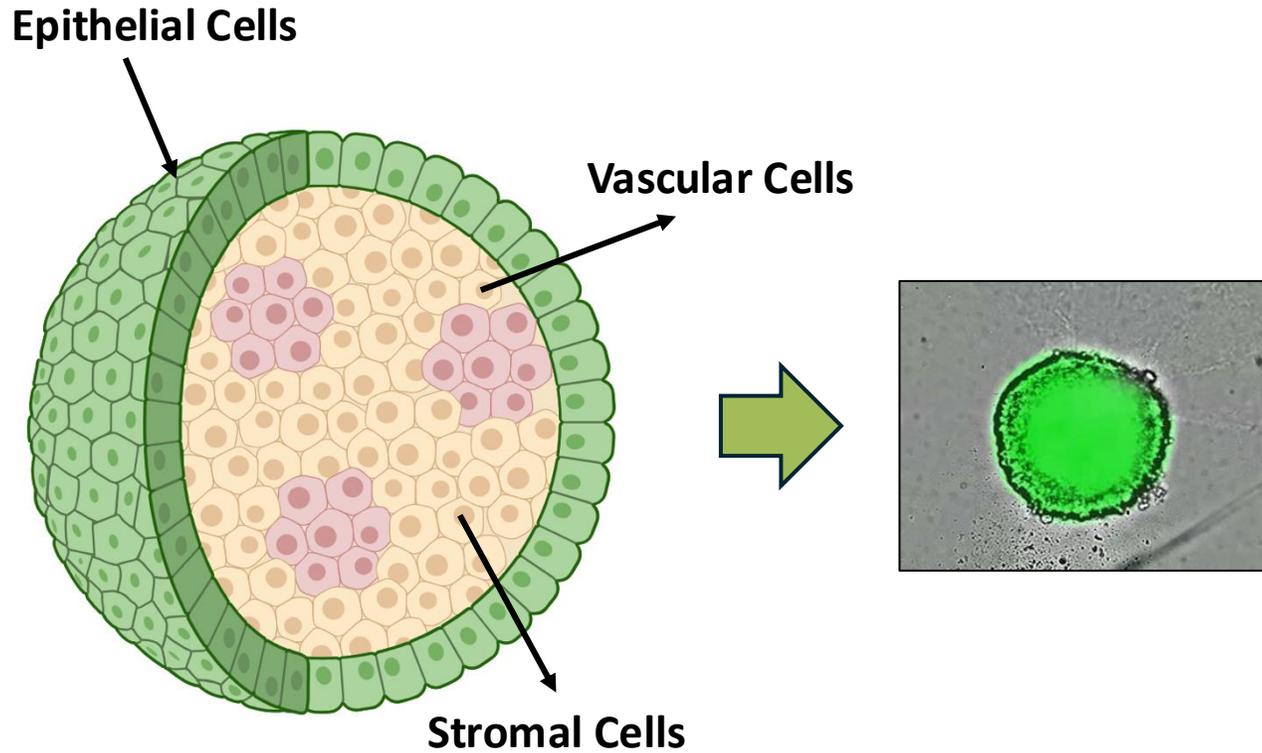


Tissue Factor (TF)

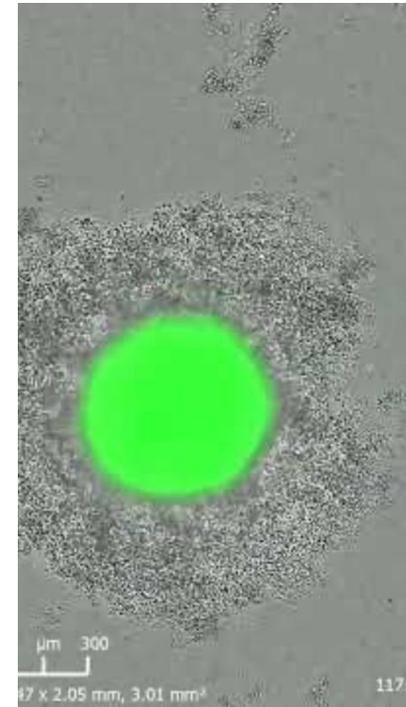
- Well-established literature demonstrating TF expression in patients with endometriosis
- Found on many adenocarcinomas including ovarian, gastric, colorectal, pancreatic cancers

Image: Endometriosis biopsy with TF staining (brown) by immunohistochemistry (in-house data)

CTH-501- Preliminary Data



Unedited iNK cells



Control: iNK Cells without TF CAR.

TF CAR-iNK cells



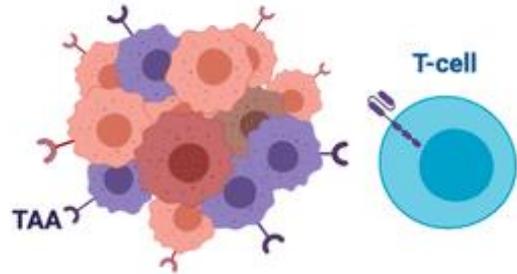
Cartherics' engineered iNK cells rapidly killing endometriosis spheroid.

Endometriosis 3D model

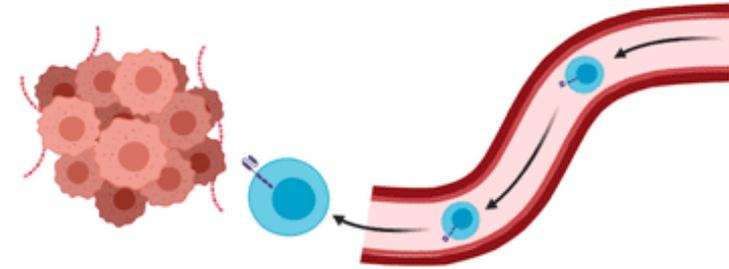
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Challenges for Adoptive Cell Therapy in Solid tumours

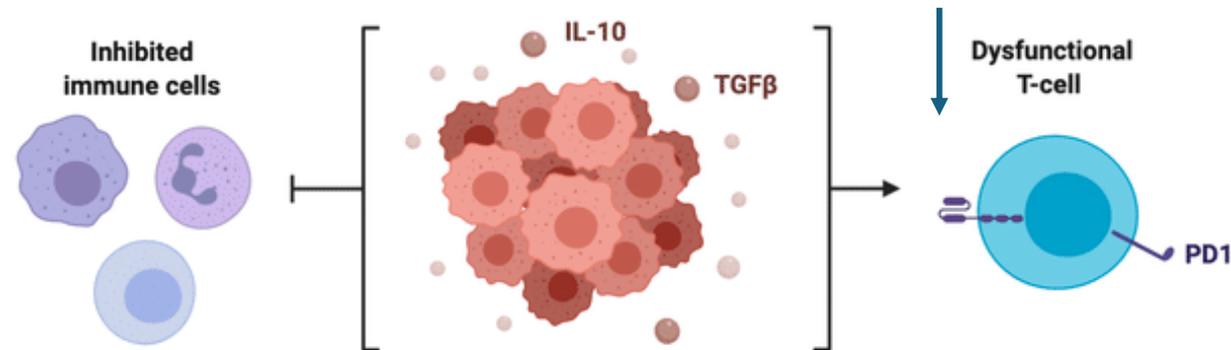
1 Tumor heterogeneity & antigen escape



2 T-cell trafficking and infiltration



3 Immunosuppressive tumor microenvironment



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How Cartherics is Tackling These Challenges

- Developing AI-designed NK therapy for solid tumours
- Have engaged a Stanford-based AI company
- Set the following criteria
 - Synergy with current gene-edits
 - IP freedom
 - Feasibility



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How Cartherics is Tackling These Challenges

Findings from Quinn:

- ~20,000 genes analysed across 11 CRISPR screens through meta-analysis (2024-2025)
- 20 top-scoring candidates selected for deep mechanistic and IP evaluation
- 5 final candidates prioritised based on synergy, IP freedom and feasibility
- 2 candidates with the clearest IP ready for immediate development
- 3 additional validated targets with manageable IP considerations

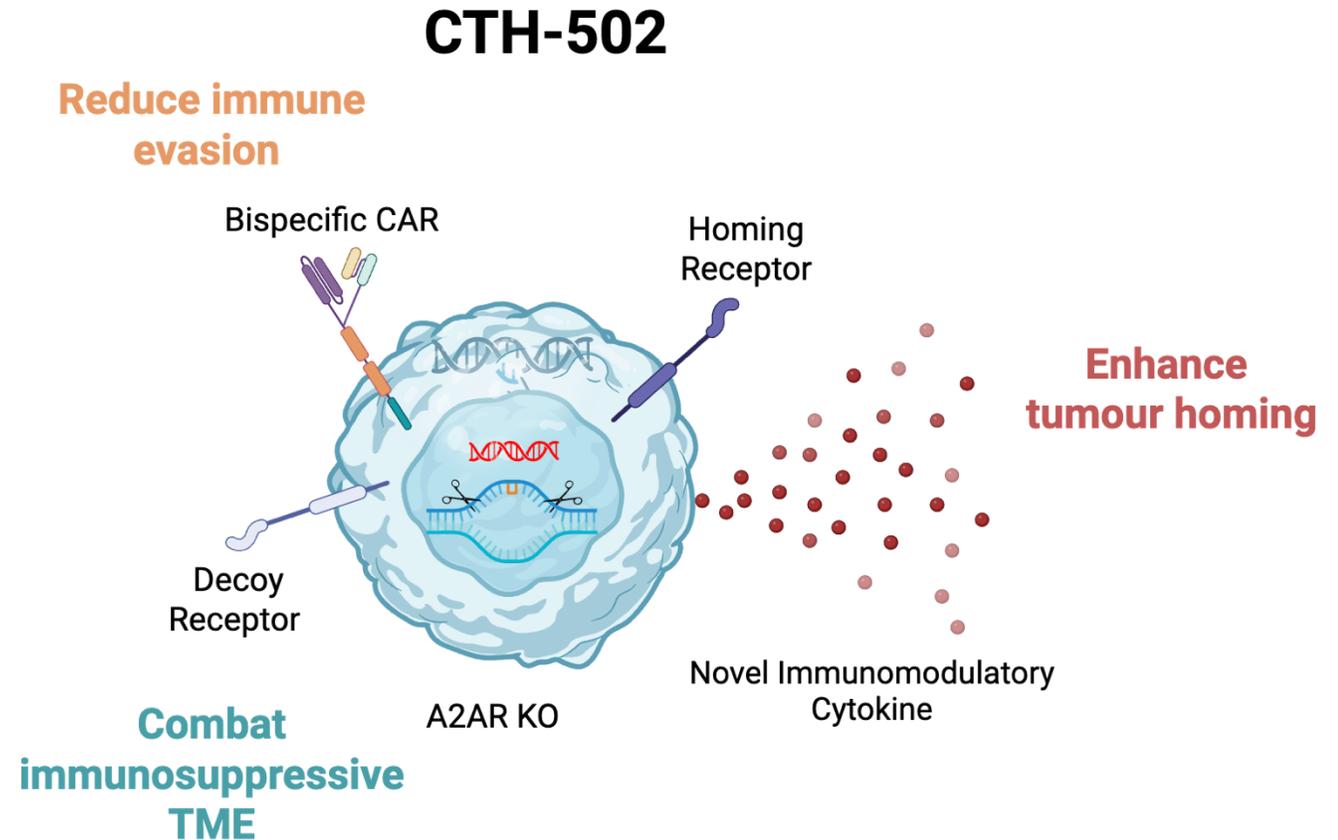
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Third Product Candidate: CTH-502

AI-designed CAR-NK cell therapy for Solid Tumours

iPSCs gene-edited using CRISPR/Cas9

- **Bispecific CAR knock-in**
 - Complements normal NK cell killing functions
- **Novel gene-edits identified by Quinn**
 - To reduce immune evasion
 - To combat immunosuppressive TME
 - To enhance tumour homing



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 [youtube.com/watch?v=6tOtfMMDals&t=10s](https://www.youtube.com/watch?v=6tOtfMMDals&t=10s)



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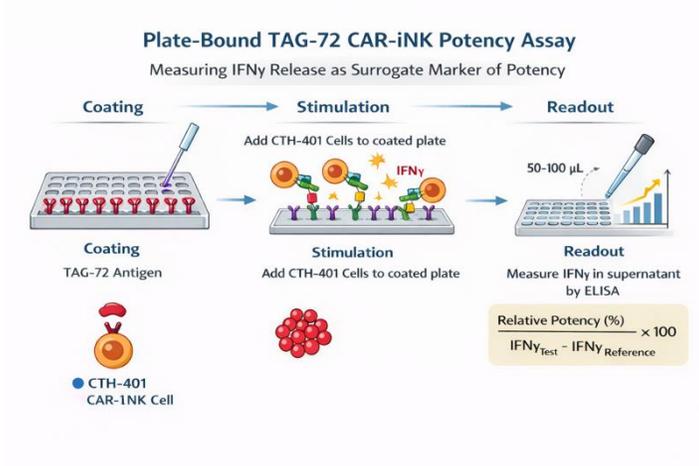
ongoing validity of patents covering our drug development candidates, and our freedom to operate under third party intellectual property; our ability to obtain necessary regulatory approvals; our ability to enter into and maintain partnerships, collaborations, and other business relationships necessary to the progression of our drug development candidates; changes in the competitive landscape pertaining to our drug development candidates; the timely availability of necessary capital to pursue our business objectives; changes in the public policy environment in one or more countries in which we operate or may seek to operate which disfavours our business; our ability to attract and retain qualified personnel; changes from anticipated levels of customer acceptance of existing and new products and services; and other factors, including the COVID-19 pandemic and the conflicts in Ukraine and Middle East.

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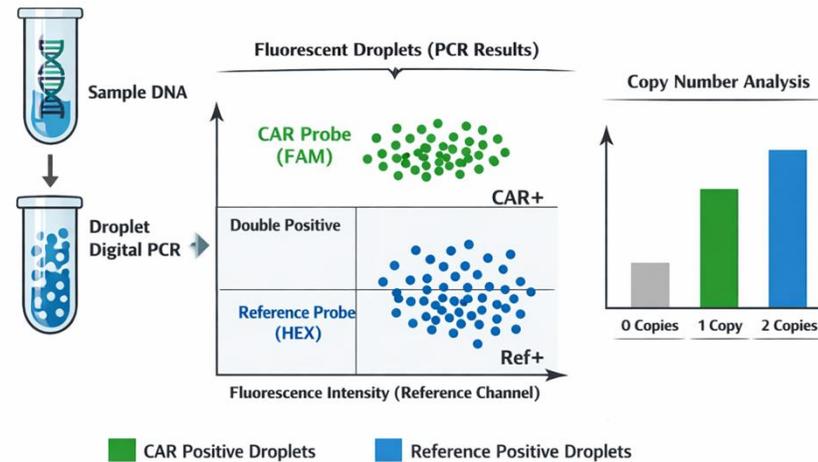
Development of Key Release Assays

Potency Assay

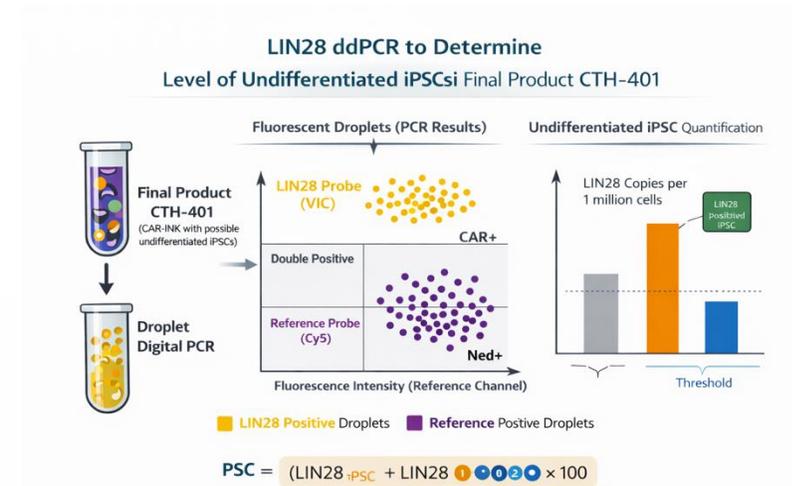


CAR Copy number Assay

ddPCR CAR Copy Number Analysis

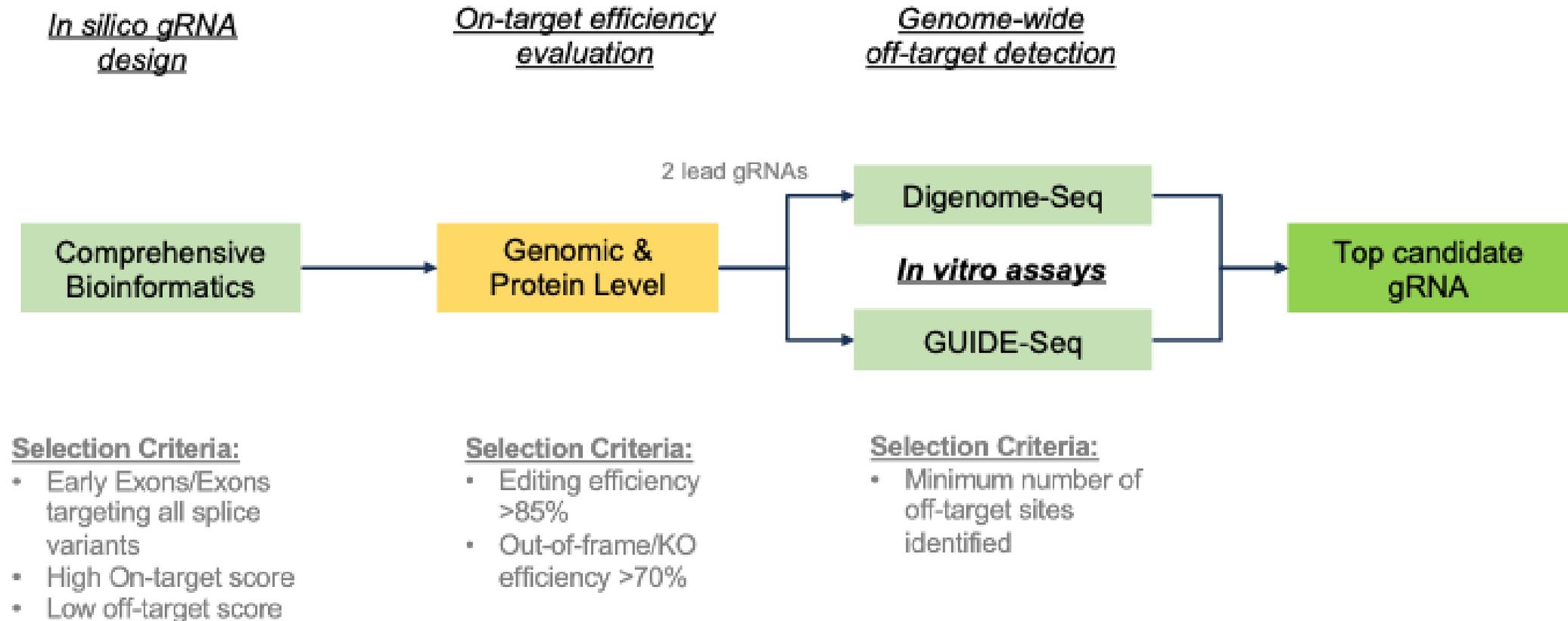


LIN28 Expression ddPCR Assay



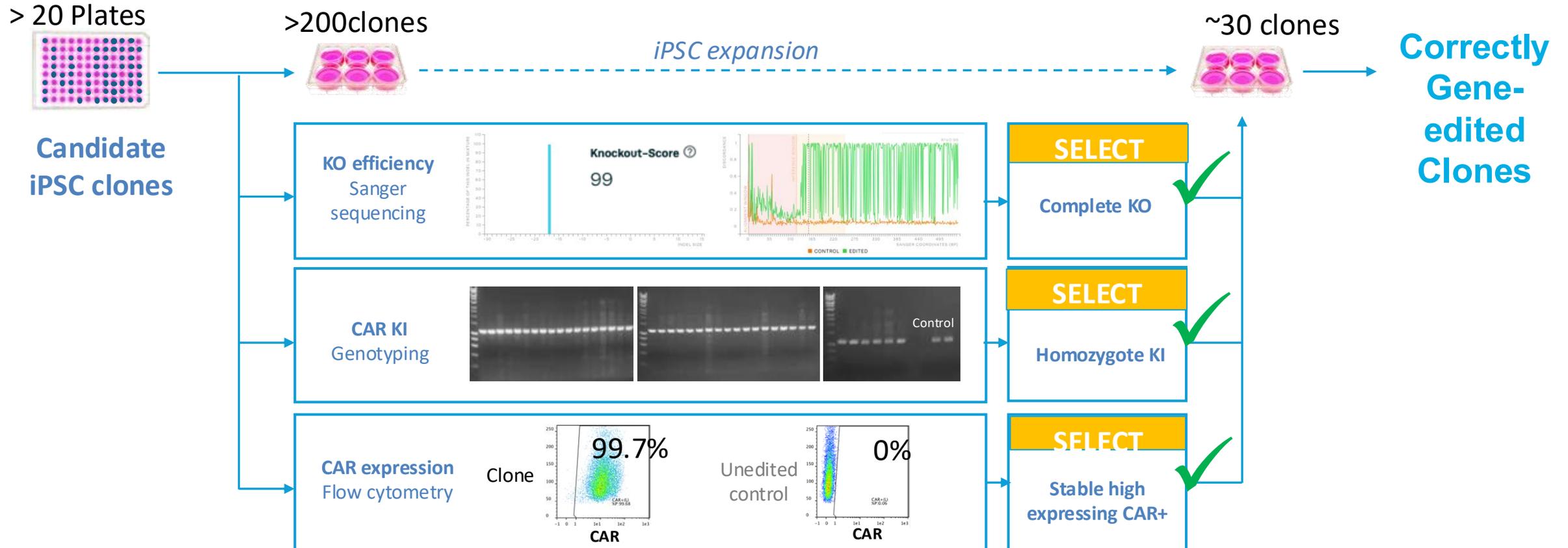
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Robust Genome Editing Strategy Using CRISPR/Cas9



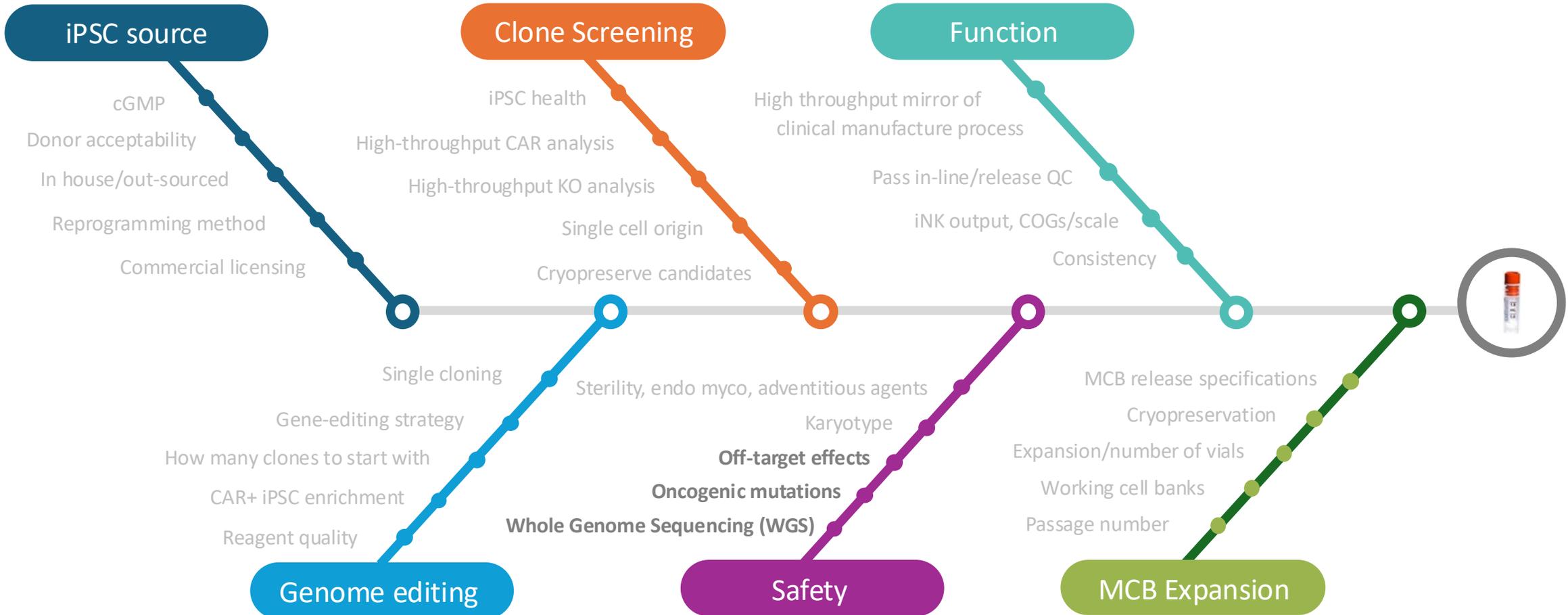
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High-Throughput Clone Screening for Correct Gene-Edits



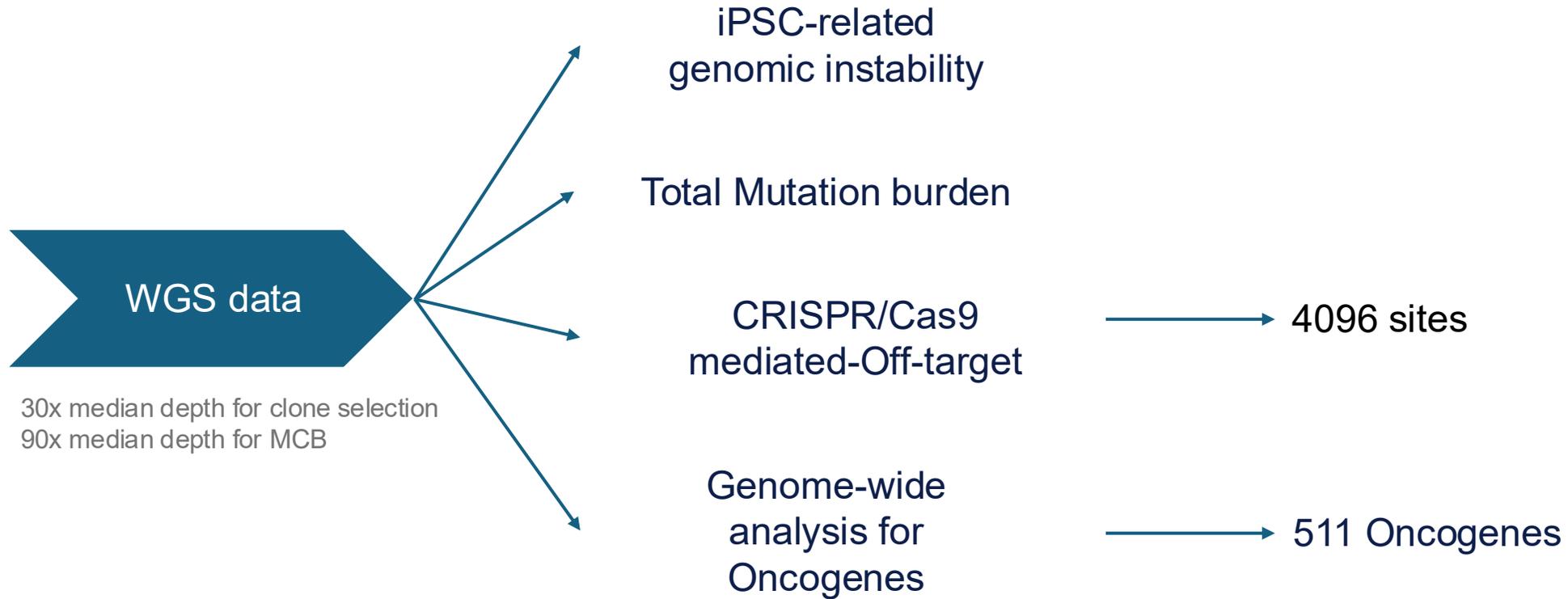
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CTH-401 Master-Cell-Bank Development Workflow



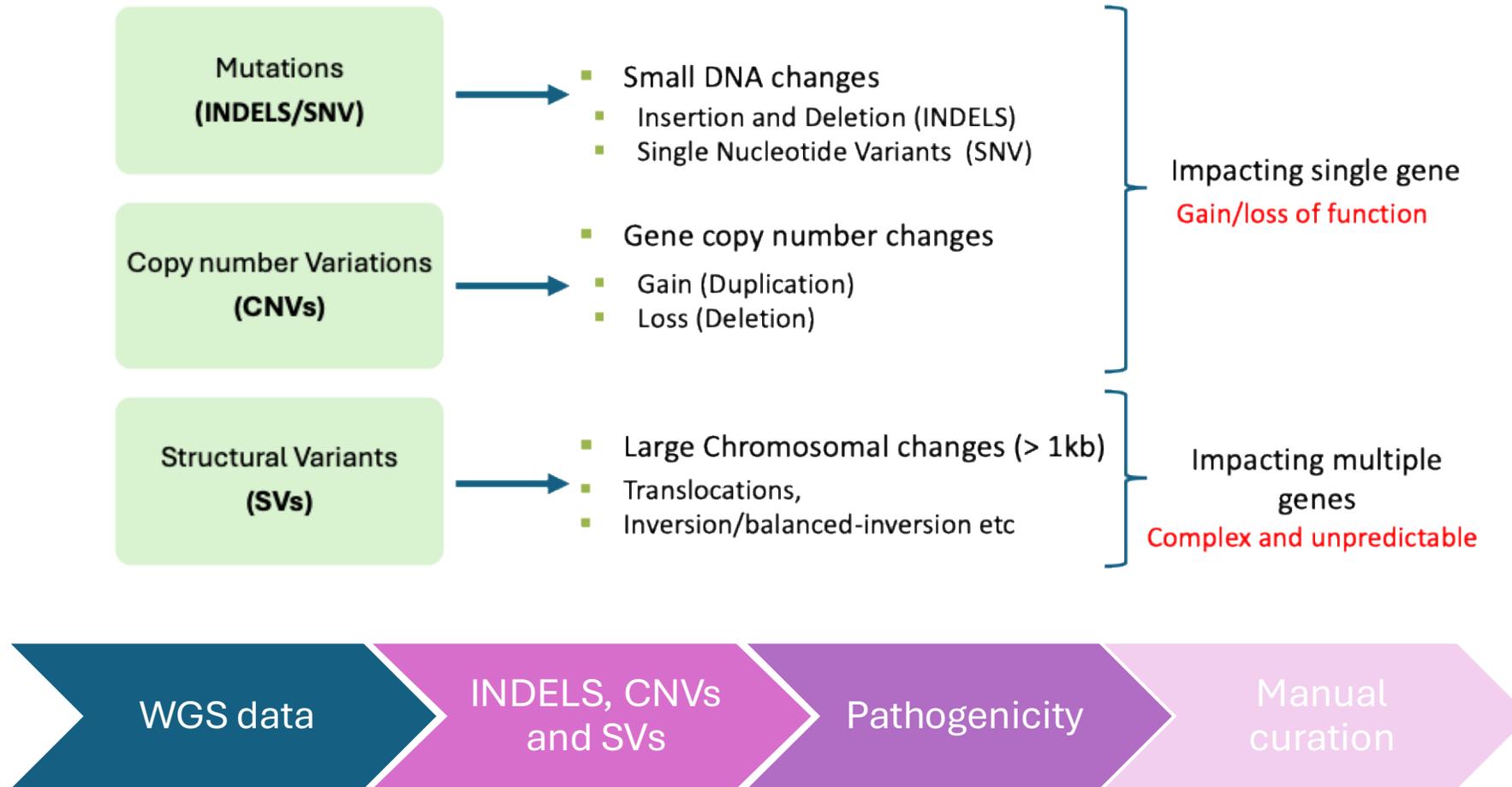
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Developing a Robust and Comprehensive WGS Pipeline



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What have we looked in the WGS data?



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