



Pioneering the Next Era of
Universal Cell-Based Immunotherapies

Vycellix: At-A-Glance

- Founded by leading medical researchers at the Karolinska Institute (KI), Stockholm, Sweden at forefront of NK cell discovery & innovation
- Mission to deliver best-in-class, off-the-shelf cell-based therapies
- Lead asset is CD45 Engager allogeneic cell engineering platform (VY-UC)
- VY-UC is single-step, universal cell strategy designed to prevent immune synapse & generate immune privileged cells
 - ⇒ *Host evasion with complete abrogation of cellular immune response*
- Pivotal pre-clinical VY-UC validation studies ongoing showing optimized donor cell engraftment & persistence while retaining cell function
- Poised to establish VY-UC human proof-of-concept with Phase I trial evaluating off-the-shelf NK cell therapy
- Pipeline also includes broad suite of cell & gene platform solutions with market leading potential to lower production costs & improve efficiencies



Evren Alici, MD, PhD

Head of Cell & Gene Therapy Group, Dept of Medicine; Co-Director of Swedish Innovation Agency's NK Cell Competence Center at KI

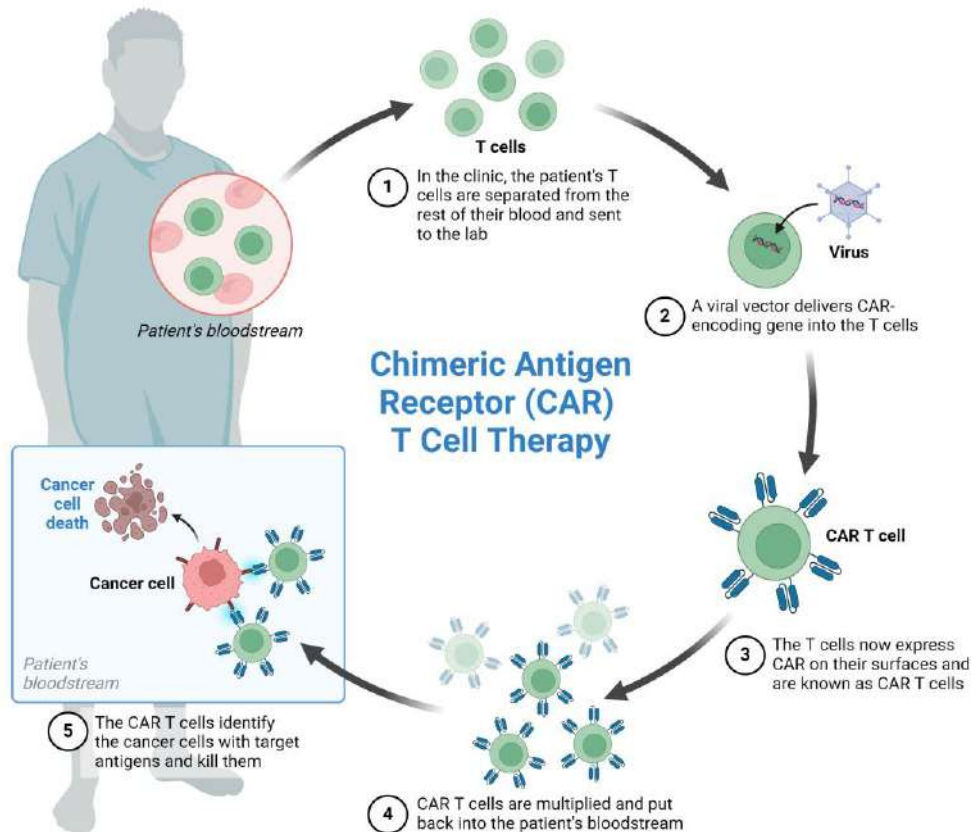


HG Ljunggren, MD, PhD

Former Dean of Research; Member of Nobel Assembly; Director of Swedish Innovation Agency's NK Cell Competence Center at KI



Unsolved Challenges Limit Broad Global Adoption of CAR-T & Other Effector Cell Therapies



Limitations of Current AUTOLOGOUS Cell Therapies:

- Ultra High Cost
- Lengthy “Vein-to-Vein” Time (Risk of Disease Progression)
- Lymphodepletion Requirements & Side Effects
- Highly Individualized Variables Can Lead to Manufacturing Failures:
 - Cell Collection
 - Cell Expansion
 - Cell Transduction

Limitations of Current ALLOGENEIC Cell Therapies:

- Has Failed to Match Clinical Benefit of Autologous
- Usually Requires Complex Gene Editing (“Knock-in”/“Knock-out”)
- Lymphodepletion Requirements Remain with Side Effects
- Host (Patient) Immune Rejection
- Lack of Persistence

Engineering Universal Cells That Evade Immune Detection

VY-UC exploits the spacial abrogation of immune synapse by engaging CD45 phosphatase to completely avoid cellular immune response

100% Stealth

- ✓ Proprietary binding molecules against CD45 that block any formation of immune synapse, thus avoiding graft rejection

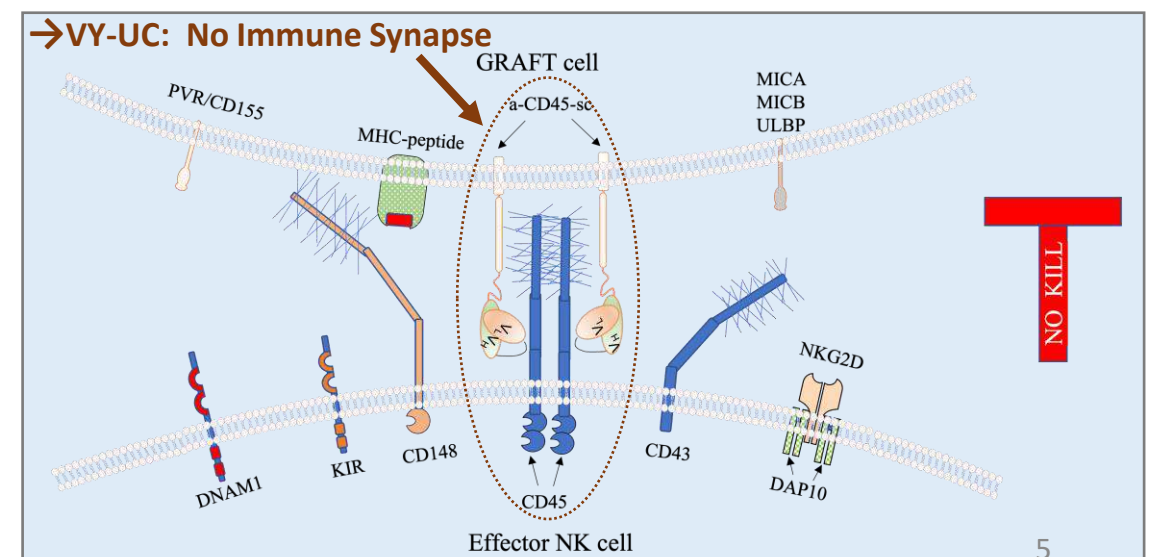
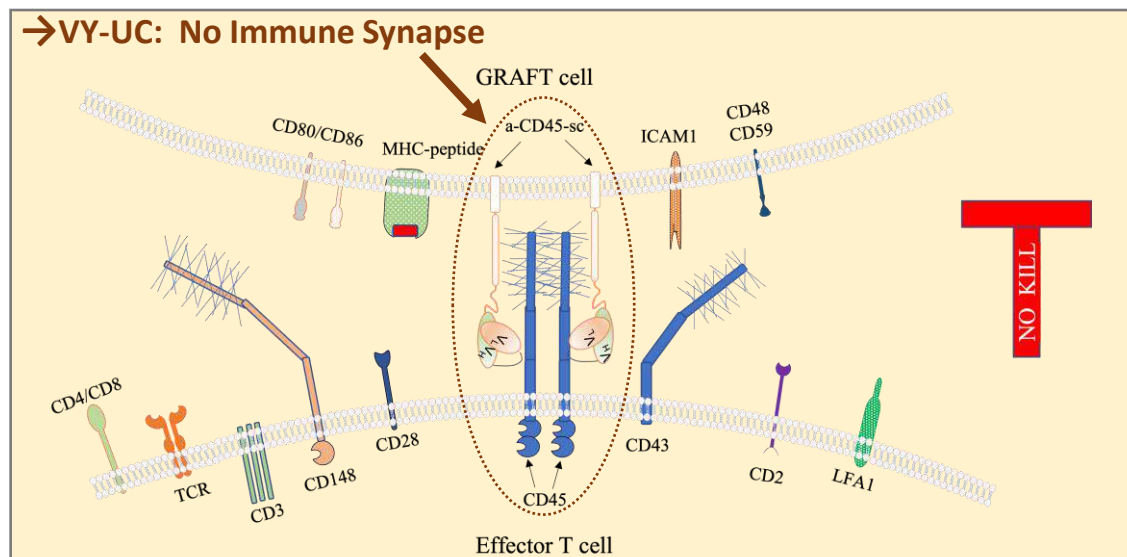
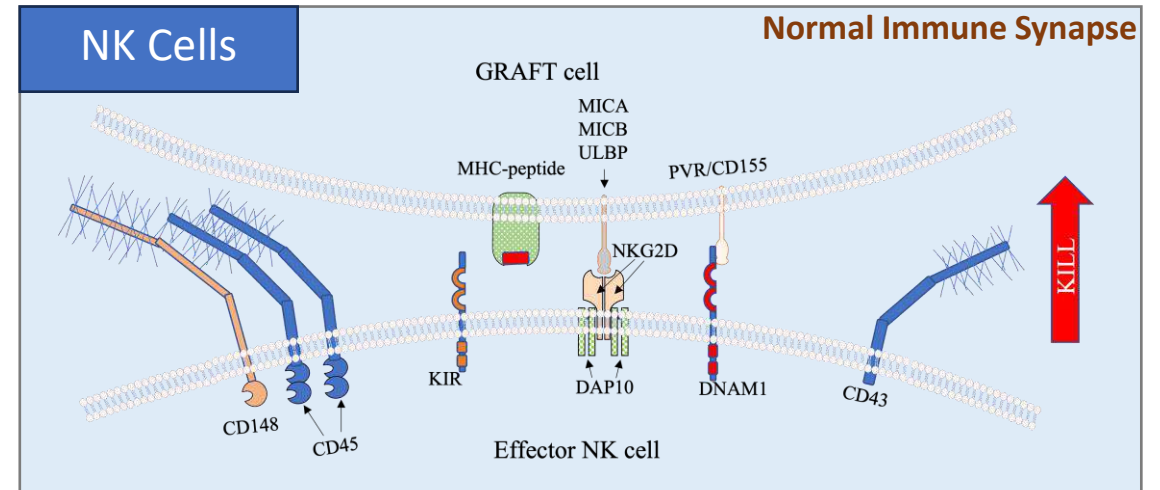
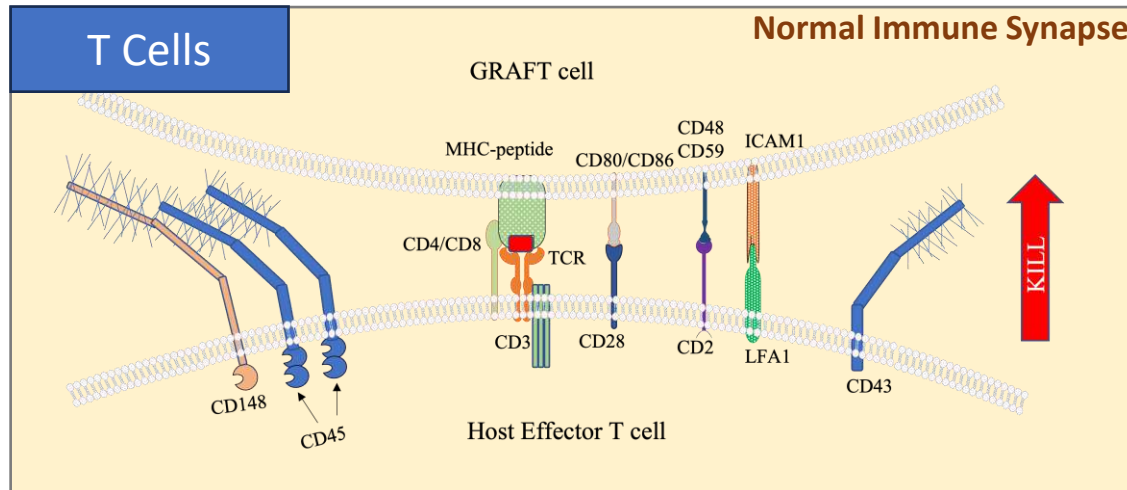
No Complex Gene Editing Steps

- ✓ Simple, single-step engineering without need for complex editing such as knocking-out “self” (HLA) & knocking-in inhibitory ligands

Highly Adaptable Across Cell Types

- ✓ Pre-clinical proof-of-concept for T cells, NK cells, tumor infiltrating lymphocytes (TILs), macrophages, hepatocytes, hematopoietic stems cells (HSCs), & induced pluripotent stem cells (iPSCs)

VY-UC: Proposed Mechanism for Immune Avoidance



VY-UC: Compelling Results To Date:

Disrupts Formation & Structure of Immune Synapse
Resulting in “Stealth” Graft Cells



Tissue Engineering

GENERATION OF UNIVERSAL CELLULAR GRAFTS UTILIZING SIGNALING-DEFICIENT MEMBRANE-BOUND CD45 ENGAGERS

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¹Division of Hematology and Regenerative Medicine (HERM), Department of Medicine Huddinge, Karolinska Institutet, Stockholm, Sweden; ²Center for infectious Medicine, Department of Medicine Huddinge, Karolinska Institutet, Stockholm, Sweden

Keywords: Universal Cell, Cell Therapy, Immune privileged cells.

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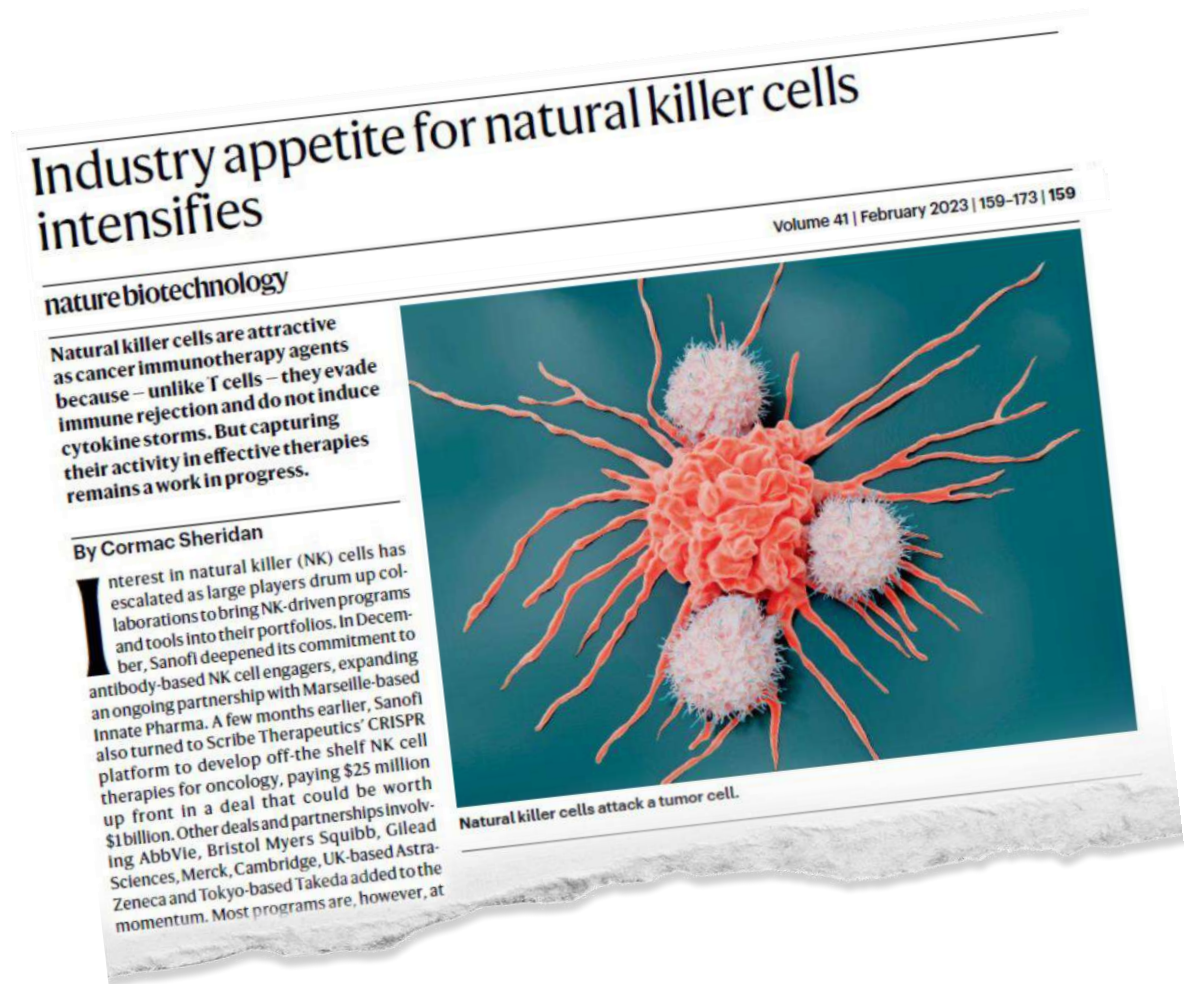
VY-UC Applicability Benefits:

- ✓ Single, Simplified Gene Modification Step
- ✓ No CRISPR or other Gene-Editing Approaches Needed
- ✓ No Manipulation of HLA Needed
- ✓ Does Not Impact Graft Effector Cell Machinery
- ✓ Significantly Cheaper than Other Strategies
- ✓ Can Be Applied to Pluripotent or Terminally Differentiated Cells Equally Effectively

VY-UC Immunogenicity Benefits:

- ✓ No T-cell Mediated Allereactivity
- ✓ No NK-cell Reactivity
- ✓ No Impact on Host Effector Cell Responses
- ✓ No Stimulation of PBMCs
- ✓ Designed to Obviate Need for Lymphodepletion

VY-UC: Maximizing the Cytotoxic Potential of NK Cells in Cancers

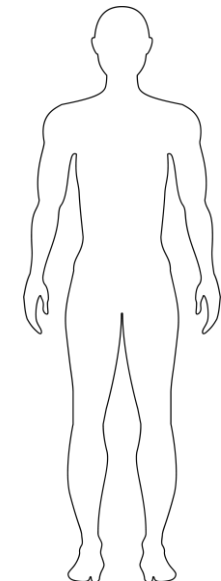
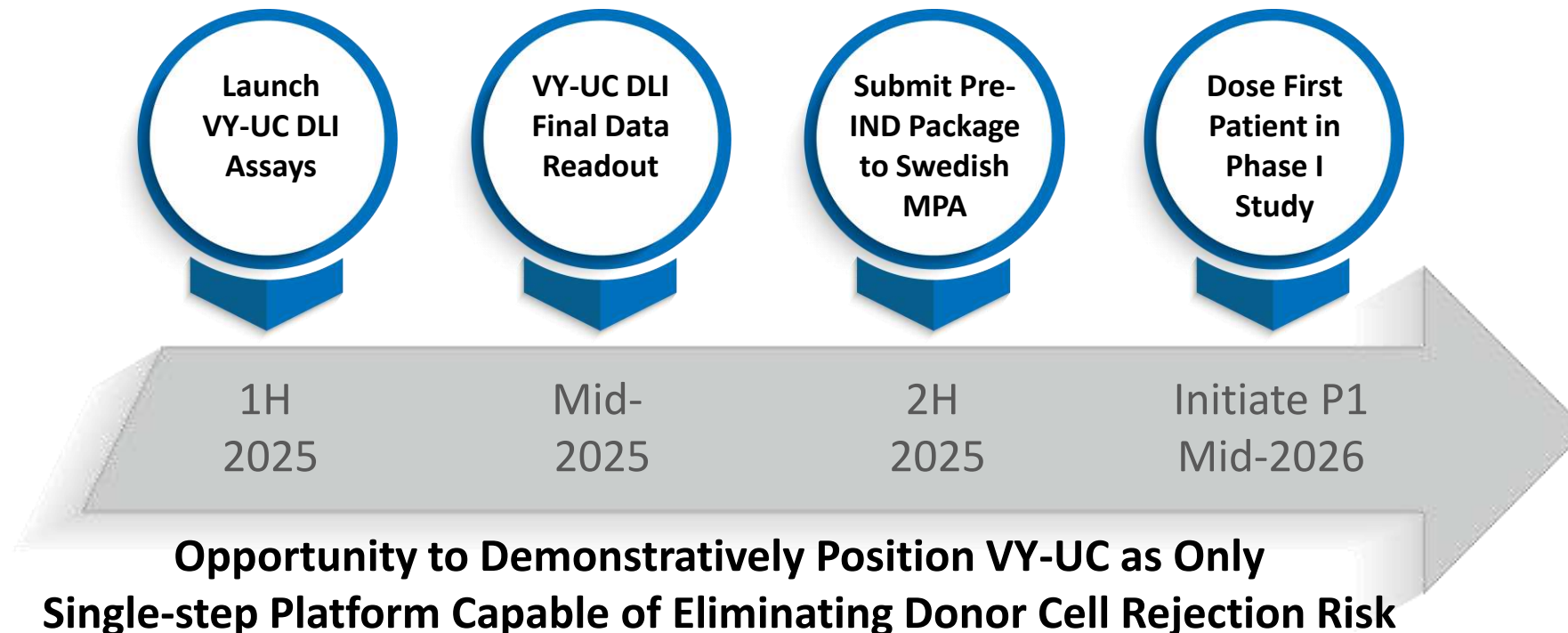


- Developing VY-UC to generate best-in-class allogeneic NK cell therapy pipeline across multiple cancer indications
- Initial product candidate is VY-UC NK cell therapy for Multiple Myeloma
- Leveraging KI's cell & gene therapy group, recognized at forefront of NK cell innovation
- Collaborating with NextGenNK, the Swedish Innovation Agency's NK Cell Competence Center
- Partnered with Charles River Labs on GMP manufacturing processes

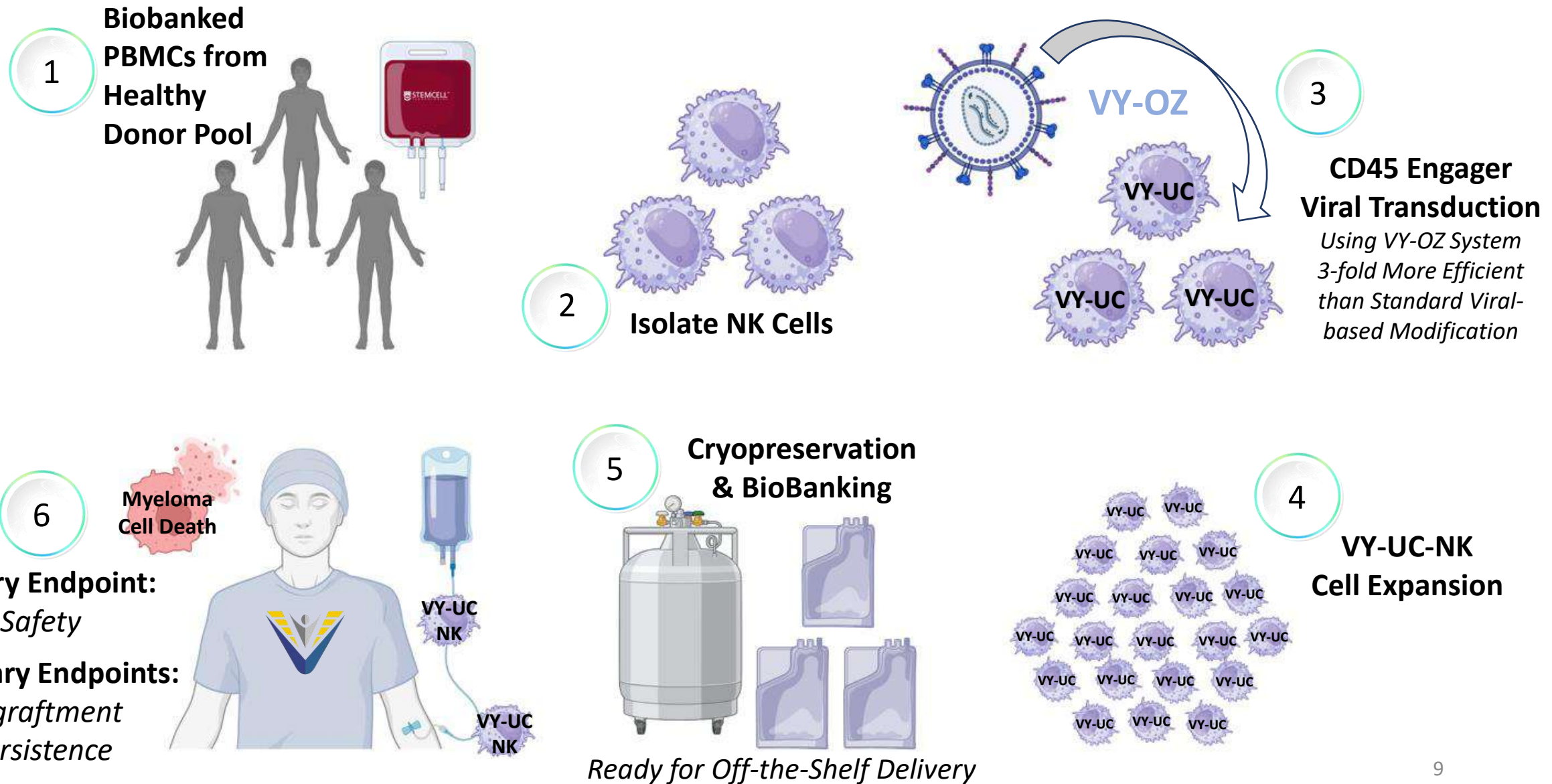


VY-UC-NK: Development Steps to Achieve Human Proof-of-Concept

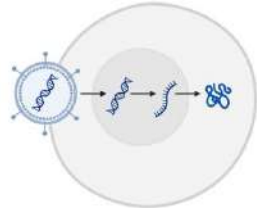
- 1) Complete Pivotal Pre-Clinical Donor Lymphocyte Infusion (DLI) Assays
 - VY-UC-modified NK cells from healthy human donors transferred to mouse population
 - Measuring safety, PK, engraftment, persistence & viability
- 2) Submit IND to Swedish MPA to Commence with First-in-Human Study
 - Working with expert manufacturing & regulatory partners
- 3) Launch Phase I Multiple Myeloma Trial at Karolinska University Hospital



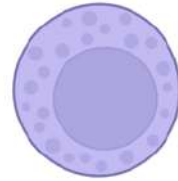
First-in-Human VY-UC Allogeneic NK Cell Therapy Phase I Trial



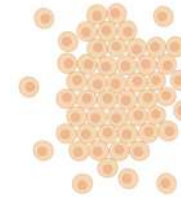
Additional Platforms to Enhance Cell Therapies: Broad Suite of Manufacturing Solutions



Gene
Delivery



Cell
Potency



Cell
Expansion

VY-OZ

- *Ex Vivo* Inhibitor Significantly Enhances Transduction Rates in Viral Gene Modification
- Lowers Manufacturing Costs (Less Virus) & Increases Production Efficiencies
- Increases CRISPR/Cas9 Gene Editing Rates

VY-X

- RNA Significantly Upregulates Perforin & Granzyme in Cytotoxic Lymphocytes
- Dramatically Increases Serial Tumor-Killing Capacity for T Cells & NK Cells
- Being Developed Both as *Ex Vivo* Reagent & as *In Vivo* Direct Cancer Therapeutic

VY-M

- *Ex Vivo* Reagent Accelerates Cell Expansion by Significantly Shortening Non-Dividing Lag Time
- Manufacturing Efficiencies Result in Shorter “Vein-to-Vein” Patient Delivery Times
- Utility in Broad Range of Cell Types

Senior Executive Team & Board of Directors



Evren Alici, MD, PhD: Founding Chairman of the Board

- Head of Gene & Cell Therapy Group, Division of Hematology, Department of Medicine at the Karolinska Institute & Karolinska University Hospital, Sweden



HG Ljunggren, MD, PhD: Founding Director

- Former Dean of Research & Founder of Center for Infectious Medicine at Karolinska Institute, Sweden; Managing Director, NextGenNK at KI; Member of Nobel Assembly



Thomas Poché, JD, PhD: CEO & Executive Director

- Former SVP & Head of Intellectual Property Management & Strategy at Allergan
- 25+ Years Experience as Senior Executive Life Science Attorney



Robert Finizio: Director

- Managing Director/Co-Founder of MintPharma Capital Investment Fund; Co-Founder, CEO, Vice Chairman of TherapeuticsMD (Nasdaq: TXMD); Co-Founder of CareFusion (sold to Cardinal Health in 2006); Chairman of BioFlorida



Douglas W. Calder: President & Executive Director

- Member of Board of Directors for NextGenNK, Swedish Innovation Agency's NK Cell Competence Center at KI
- 25+ Years of Senior Executive Biotech Experience



Jackson Streeter, MD: Director

- Partner at DeepWork Capital; Director of Ventures at University of Florida; Recognized for Founding & Leading Multiple Life Science Ventures to Exits



**Lara Silverman, PhD:
Director of Development & Regulatory Affairs**

- Founder, LIS BioConsulting, with Deep Expertise Leading Translational Cell & Gene Therapy Programs



Tommy Thompson: Director

- Former Secretary of US Health & Human Services (HHS); Former 4-term Governor of Wisconsin; Director at United Therapeutics (Nasdaq: UTHR) & at HealthPeak Properties (NYSE: DOC)



Dan Cartwright: Chief Financial Officer

- Seasoned Senior Accounting Professional Leading Public & Private BioPharma Companies including Therapeutics MD (Nasdaq: TXMD) & PleoPharma



David Adams: Director

- Co-Founder of MintPharma Capital Investment Fund & Managing Partner of Mint12, a Specialized Alternative Investment Management Company

Poised for Significant Growth: Pending Catalysts

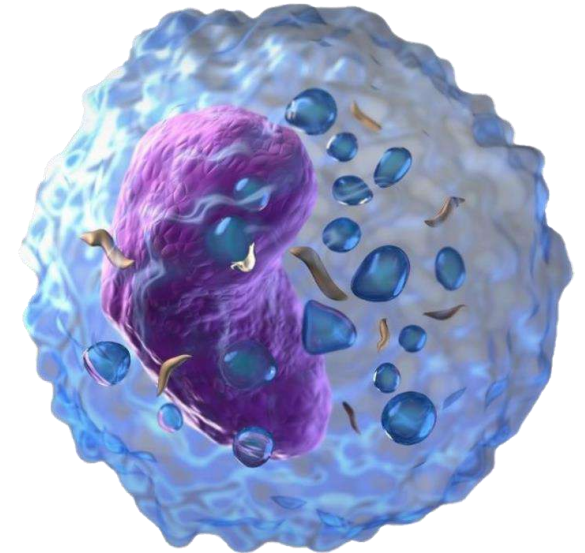
VY-UC: Pending Milestone Goals

<input type="checkbox"/> Report Pre-Clinical Effector Cell Engraftment/Persistence (DLI Data)	<input type="checkbox"/> Submit Pre-IND Package to Swedish MPA for VY-UC-NK Phase 1 Study	<input type="checkbox"/> Submit IND to Swedish MPA for Approval to Initiate VY-UC-NK Phase 1	<input type="checkbox"/> Initiate Patient Enrollment & Dosing for VY-UC-NK First-in-Human Phase 1	<input type="checkbox"/> Report Interim Phase 1 Study Results
2025	2025	2026	2026	2026

Other Key Initiatives

- Ongoing VY-UC Partnering/Licensing Activities
- Developing Multi-Antigen Engagement Platform (VY-GAGE)
- Positioning BioTools as Separate & Distinct Commercial Opportunities (Gene Delivery, Cell Expansion & Cell Potency)

Highly-Differentiated



Optimized VY-UC-NK



vycellix™

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