

Pioneera Discovery 4.0™ **Redefining CAR-T & CAR-NK with AI-Powered Modular Engineering**

Next-generation cell therapies require a next-generation design platform. That's why we built Discovery 4.0™.

The Challenge

Current cell therapies face significant obstacles:

- Tumor immune escape
- Suppressive tumor microenvironments (TME)
- Inefficient, slow design cycles

These hurdles delay go-to-market (Go2M), limit therapeutic efficacy, and drive up cost of goods (COGS), compromising scalability and patient access.

Our Solution

Pioneera Discovery 4.0™ is a modular, AI-driven platform accelerating next-gen CAR-T and CAR-NK therapies with precision, speed, and adaptability.

1. AI/ML Design Engine

- Transformer-based models for optimal target recognition
- Reinforcement learning for construct optimization
- 3D Tumor Microenvironment simulation for functional validation

2. Modular CAR Architecture

- Bispecific and trispecific targeting
- Tunable spatial configuration and linker design
- Engineered for tumor heterogeneity and immune evasion

3. Flexible Delivery Toolbox

- Compatible with mRNA-LNP, lentiviral vectors, electroporation
- Enables rapid prototyping and customized programs

Why It Matters

Discovery 4.0™ delivers:

- Faster design cycles
- Highly optimized CAR constructs
- Improved targeting of solid tumors
- Lower COGS and enhanced scalability

Partner With Us

Join forces with Pioneera to:

- Accelerate your CAR-T/NK innovation pipeline
- Access next-gen modular CAR designs
- Co-develop customized constructs for oncology, autoimmunity, and infectious disease
- Enter solid tumor markets with confidence

Pioneera Discovery 4.0™ isn't just a platform—it's the engine powering the future of intelligent immunotherapy.

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