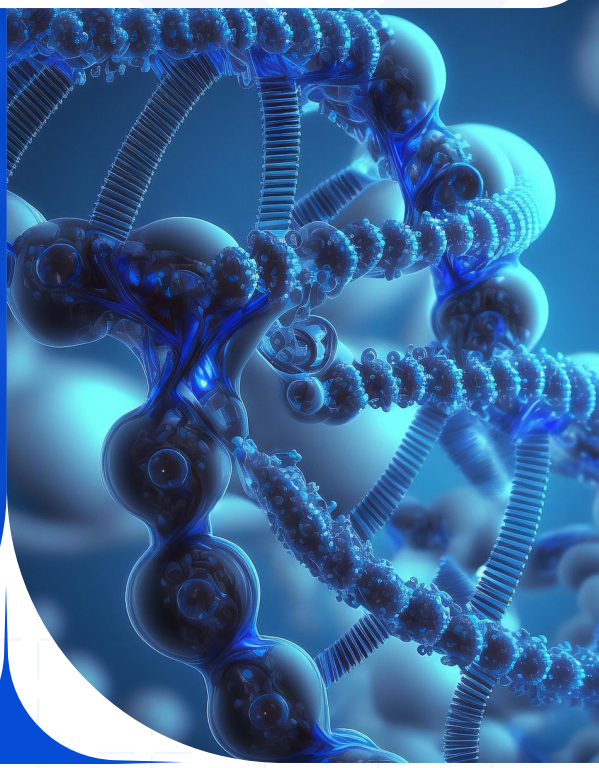
RECOCHAIN
Recochain Private Limited

Innovative Solutions for Biotech Challenges:

The Impact of Recochain AI on HLA Allele Production

Case Study ›



About the Customer

A US-based biotech company specializes in allogenic cell therapies, collecting cells from healthy donors to treat multiple patients. Human Leukocyte Antigen (HLA) matching is a crucial technique used to identify genetic similarities between patients and donors.

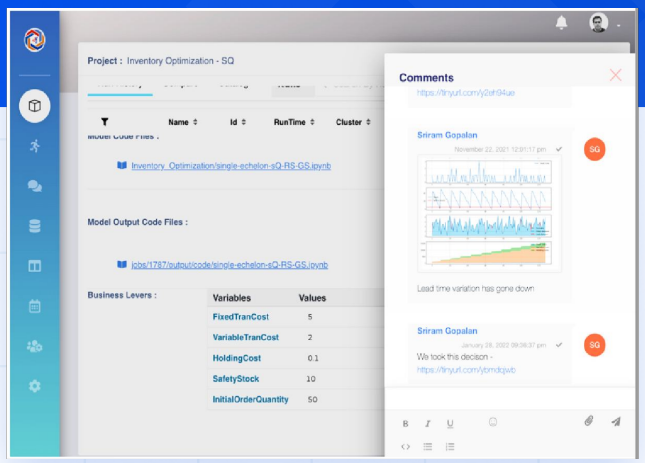
Business Challenges

Producing HLA alleles for clinical trials and commercial purposes is essential but challenging. The primary challenges include:

- Sourcing and Quality of Donor Cells
- Manufacturing Challenges
- Regional Variations
- Cost Management

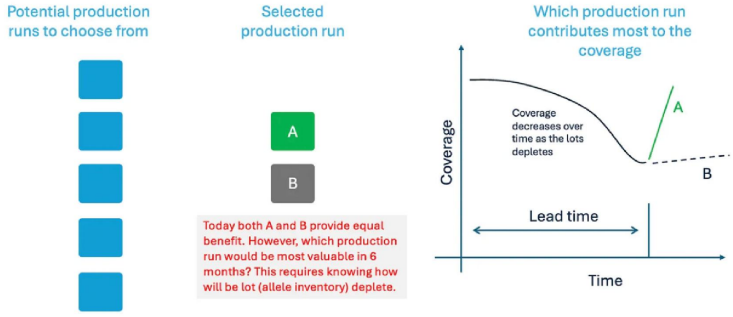
Mass production of high-frequency HLA alleles and maintaining a large inventory can be inefficient for cell therapy due to regional variations. The same HLA allele inventory may offer different patient coverage in different areas. Traditional methods, such as Excel-based calculations, are time-consuming and complex, making it difficult to manage various attributes or parameters.

The Solution



Recochain's AI/ML solution offers a collaborative system to model and identify optimal donor selections based on high-frequency HLA alleles. Given that sourcing donor cells from apheresis centres costs approximately $50K per donor, the algorithm simulates high-prevalence allele populations.

Recochain's Solutions enables the company to run billions of combinations, incorporating various business lever parameters to forecast drug consumption and patient coverage. This system allows business operations to adjust factors such as lead time, available inventory, and regional constraints to optimize the manufacturing plan. The main objectives are to maximize coverage and reduce donor acquisition costs.



Once decisions are made, Recochain tracks scenarios to revisit the context and inputs used. This feature is crucial for internal audits to explain outcomes to regulatory bodies and prioritize manufacturing.

The Impact

By analysing depleting allele inventory, the company can determine that Lot A may be more valuable than Lot B in six months. With production costs of $500K per run, unnecessary production can be reduced, focusing on runs that sustain high patient coverage.

Recochain AI has streamlined the biotech company's HLA allele production, enhancing efficiency and cost management while improving patient coverage and regulatory compliance.

Goal

Efficiently produce HLA alleles for clinical trials and commercial use while overcoming challenges in donor cell sourcing, manufacturing, regional variations, and cost management.

Story

A US-based biotech company, specializing in allogenic cell therapies, struggled with the complexities and inefficiencies of traditional HLA allele production methods. The process was time-consuming and costly, hindering their ability to maintain an optimal inventory and meet patient needs effectively.

Solution

Recochain's AI/ML solution was introduced to model and identify optimal donor selections, simulating high-prevalence allele populations. This solution enabled the company to run billions of combinations, adjust operational parameters, and track decision-making scenarios for regulatory compliance. Sourcing donor cells from apheresis centres, which cost about $50K per donor, became more efficient and targeted.

Result

Recochain AI enhanced HLA allele production efficiency, reducing unnecessary production costs by $500K per run. The company achieved better patient coverage, optimized inventory management, and improved regulatory compliance, leading to more effective and streamlined operations

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