

Better Together: Discovery Life Sciences and AllCells Join Forces

In July of 2022, AllCells was acquired by Discovery Life Sciences (Discovery), the Biospecimen and Biomarker Specialists™. By combining over 30 years of cell and gene therapy (CGT) expertise, our clients now have access to an enhanced donor collection network, the world's largest biospecimen inventory, and a wide range of multi-omic biomarker services. AllCells' proven expertise in the procurement and customization of human cellular starting materials is bolstered by Discovery's integrated analytical and characterization services to help clients at every stage of their cell and gene therapy (CGT) programs. From target discovery to the final CGT product, our collective ability to serve CGT clients has been exponentially amplified.

As a Discovery Life Sciences Company, AllCells' end-to-end solutions include a full spectrum of blood and marrow-derived products, donor management services, hyper-annotated™ biospecimens, a full suite of multi-omic analytical solutions, and proven capabilities to perform prospective and retrospective clinical studies. From start to finish, researchers can identify ideal donors for their program and obtain high-resolution data to improve process knowledge and better control CGT product critical quality attributes (CQAs). We are actively working with CGT industry leaders to mitigate the inherent variability and complexity across their workflows to help bring new products to market more efficiently without sacrificing quality or safety.

Biospecimens

- Leukopaks, Mobilized Leukopaks, Bone Marrow from healthy human donors
- >10M Diseased and normal biospecimens
- Variety of sample formats and matched sets
- Inventory and prospective collections
- Pre-characterized, hyper-annotated™ samples available

Genomics and Proteomics

- Whole Genome, Exome, Targeted, RNA-seq, single cell and HiFi long read sequencing
- FFPE DNA/RNA isolation with consistent DV200 scores >20%
- Targeted and shotgun proteomics via Olink, Seer, Luminex, LC-MS, and Quanterix technologies

Cell Services

- Complete phenotypic and functional analyses
- Comprehensive and custom flow cytometry panels
- 10X scRNASeq, CITESeq, scBCRSeq, scTCRSeq
- Cell culture services
- Custom cellular processing, FACS, magnetic isolations, and custom sample preparations

Tissue Biomarker Services

- Expert IHC assay development and validation on Dako, Leica, Ventana and TechMate platforms
- Large-scale IHC testing of clinical trial samples
- Certified pathology and image analysis
- Expert mIF services with optimized digital pathology and AI



ALLCELLS – DISCOVERY LIFE SCIENCES' CELL AND GENE THERAPY DIVISION

AllCells has an extensive and successful history of partnering with biopharma and biomedical research companies, so we understand the common challenges faced by the CGT sector. The addition of Discovery Life Sciences' analytical capabilities fills an unmet need for high-resolution, multi-omic characterization data across all stages of drug development and diagnostic continuums.

In particular, healthy human donors are necessary for CGT success. However, the ability to find, access, and characterize them is a challenge. AllCells' key differentiator and strength is our curated network of altruistic donors who are motivated to be part of the cause and dedicated to the patients "we" are collectively seeking to help with CGTs. AllCells' robust and consultative approach can meet the needs of even the most unique program requirements:

- Access to the right donors with program-specific attributes
- Donor management services and a scalable supply of GMP-compliant products
- End-to-end biomaterial characterization solutions to support the entire CGT continuum

Unlike traditional biologics, CGTs are subject to the inherent biological variability that exists across donors, which poses some distinctive challenges. This variability can influence T cell transduction efficiency and T cell expansion capacity leading to a lack of process control in the manufacturing of the CGT product. Increasing the characterization of starting cellular materials provides high-resolution data to optimize donor selection and improve process knowledge to eliminate variability from the start of the manufacturing process through better understanding and control of CGT product CQAs. Regulators now have more experience evaluating CGTs and have increased their requirements for detailed characterization data from sponsor companies to ensure the safety and efficacy of the final therapeutic.

The value of enhanced characterization is being recognized industry wide. We are observing a trend where advanced methodologies such as genomics, immunophenotypic profiling, functional biomarker analysis, and single-cell sequencing are being added to augment the characterization and process development toolkits.

DISCOVERY LIFE SCIENCES' PROTEOMIC, GENOMIC, AND CELL SERVICES

End-to-end integrated analytics matter, and our clients now have easy access to these solutions with Discovery's Proteomic, Genomic, **and Cell Services**. It is essential for clients to obtain characterization in order to understand their CGT product from start to finish to streamline workflows and accelerate timelines. Our collective expertise in biomarker testing services, including next generation sequencing (NGS), qPCR/PCR, immunohistochemistry (IHC), multiplex immunoassays, flow cytometry, single cell analysis, Olink, Luminex, Seer, and other technologies enable large-scale projects and provide valuable and actionable data.

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The Cell Biology team can help execute *in vitro* assays to assess important metrics such as T cell purity, activation, and expansion, as well as evaluating the efficacy of the final CGT product (i.e., assess killing capacity of T-, NK-, iPSC-derived-CARs).

Flow Cytometry: Functional/phenotypic profiling	<i>In Vitro</i> Cell Culture and Analysis	10X Genomics & Single-cell Multi-omics
<ul style="list-style-type: none"> • TBNK Panel • T Cell Subsets (with Activation / Exhaustion Markers) • CD34 Enumeration • Rare Immune Cell Subsets 	<ul style="list-style-type: none"> • T cell activation / Expansion • Proliferative Index • Receptor Kinetics / Differentiation Status • T Cell Fitness 	<ul style="list-style-type: none"> • Whole Genome Sequencing • Exome Sequencing • RNA Sequencing • Short and Long Read Sequencing 

As the adoption of current immunotherapies grows and next-generation therapies are developed, CGT developers can utilize healthy and diseased samples to better understand the mechanism of action of their therapeutic in preclinical studies. This information can be used to improve the overall therapeutic efficacy and to help determine which patients will respond favorably (or unfavorably) to these new treatments.

As the industry matures and more companies enter the CGT arena seeking to treat a diverse range of diseases, it becomes a strategic imperative to partner with an end-to-end solutions provider to maximize efficiency and minimize delays. AllCells' donor expertise and consultative approach work synergistically with Discovery's comprehensive analytical capabilities to deliver unmatched program support at every stage from the very beginning.

DISCOVERY LIFE SCIENCES BIOSPECIMENS

The first step in any CGT program is the identification of a suitable molecular target. For instance, in chimeric antigen receptor (CAR)-T cell immunotherapies, early-stage identification of a suitable cancer antigen—ideally one that is only expressed on the surface of tumor cells—is a critical first step and access to high-quality biospecimens can help expedite research pipelines to streamline lead selection.

Discovery's biospecimen repository is the most comprehensive on the market consisting of hyper-annotated™ diseased human blood, bone marrow, immune cell subsets, tumor tissues and more. Matched set samples offer a direct side-by-side comparison to truly pinpoint differences between diseased and healthy donors. Get unparalleled access to viable diseased samples that can be analyzed to deliver potential therapeutic targets for a variety of cancers and other indications.

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