

OPTIMIZING CLINICAL RESEARCH OUTCOMES THROUGH A DISTRIBUTED CELL PROCESSING AND **CRYOPRESERVATION NETWORK FOR CLINICAL SAMPLE PROCESSING**

OVERVIEW

- Sponsors conducting clinical trials require the collection of participant blood samples at specific intervals and over a rolling period, necessitating an experienced cell processing solutions provider in the regions the trials are conducted.
- CROs and clinical sites often lack the laboratory infrastructure and staff to support sample processing and cryopreservation capabilities, limiting clinical site selection for Sponsors.
- Extended transport times lead to process uncertainty, exacerbating risk for Sponsors.
- Sponsors typically de-risk their clinical trials by stringent supplier selection criteria, including:
 - 1. Maintain robust quality and process controls within the required processing times.
 - 2. Scale processing capacity to accommodate dynamic supply and demand schedules.
 - 3. Reduce risk via client-centric project management teams to actively manage complexities.
- OrganaBio established a novel bi-coastal Hub Processing Model in Miami, FL and Irvine, California to support clinical trials of two large cap, global pharmaceutical companies.



Figure 1: Key metrics surrounding performance since May 2022. OrganaBio's Cell Processing and Cryopreservation (CPC) Services has been able to efficiently and rapidly process samples, exceeding Sponsor requirements.

REDUCED COMPLEXITY, LOWER COSTS, SPEED

- Co-located and integrated processing and cryopreservation capabilities reduce complexity.
- OrganaBio's cell Isolation and cryopreservation (CPC) services team collaborates closely with Sponsors, clinical sites, and couriers, optimizing clinical outcomes and the execution of time-sensitive deliverables.
- Sample batch-shipment reduces shipping costs.
- New sites (geographies) can be operationalized within 6-12 weeks, under a unified eQMS, with standardized operator training and qualifications and transfer of SOPs and protocols internally from one site to another.

COMPREHENSIVE DATA MANAGEMENT

- The OrganaBio sample database recorded process steps beyond Sponsor requirements.
- Additional databases analyzed clinical site behaviors, enabling robust forecasting plans to track participant data and efficient, real-time communication with sites, and for allocation of dedicated resources to each study.
- The additional data capture enabled tracking and trending of KPMs, assisted the quality department in reviewing any deviations or observations, and enabled automated process implementation, adding speed and efficiencies.



Figure 2: Site trends for trial end-point variance data. Upon receiving a participant's first time-point sample, an extrapolated schedule is populated and compared to actual receipt dates, for demand planning and resource allocation, enabling process efficiencies.

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NEAR FLAWLESS AND RAPID SAMPLE PROCESSING



CONSISTENTLY HIGH PBMC RECOVERY AND CELL VIABILITY





CONCLUSIONS

Over a 24-month period, nearly 2,000 samples were processed, culminating in OrganaBio being the preferred partner for one large pharma sponsor, processing >70% of clinical samples in South Florida.

Samples were processed with >99.9% success rate (only 2/2000 experienced a processing error). The Sponsor's requirement for processing was set at less than six hours, or 360 minutes, post sample collection / blood draw. On average, OrganaBio's processing time was 150 minutes post-sample collection. SOWs for new trials were executed within a week (sometimes 24 hours) for rapid response to Sponsor needs.

> Figure 3: Processing time (including transit time), in minutes, correlated with success rate (as a %). OrganaBio achieved an average processing time of ~150 minutes, a nearly 50% reduction from the maximum allowable time, while maintaining a >99% success rate of the samples positively completing all processing and storage steps, per the Sponsor's QC and manufacturing requirements. (*n*=1,400+ from May 22 to Nov 23)

Over a 24-month period, nearly 2,000 samples were processed with average PBMC viability of 99.1% PBMC yield from nearly 2,000 participant blood samples was consistent, averaging 2.93 e6 cells/ ml.

• A unique and novel hub processing model performs more efficiently and faster than the required four- to sixhour sample processing window, ensuring consistency and validity of sample data.

• Bi-coastal operations allow for timely coverage across the continental United States, with expansion facilities planned for even greater geographic coverage.

• OrganaBio's CPC Services has successfully scaled processing and cryopreservation capacities to fulfill initial and growing demand to cover the lifespan of the trials.

• OrganaBio's client-centric and data-driven approach enables seamless operation and timely processing and delivery of crucial clinical trial participant samples.





Figure 4: Average percent viability for PBMCs over a 25-month period. OrganaBio has achieved an exceptional average viability of over 99.1% in 2024 and tighter process control, reducing standard deviation by a factor of four since 2022 measures. (n=1,802)

Figure 5: Average PBMC recovery has increased over a 25-month period. OrganaBio has achieved an industry-leading *PBMC recovery of 2.93 e6 / ml. (n=1,802)*