Signals LabGistics™
Workflow Orchestration Solution for Pharmaceutical Development
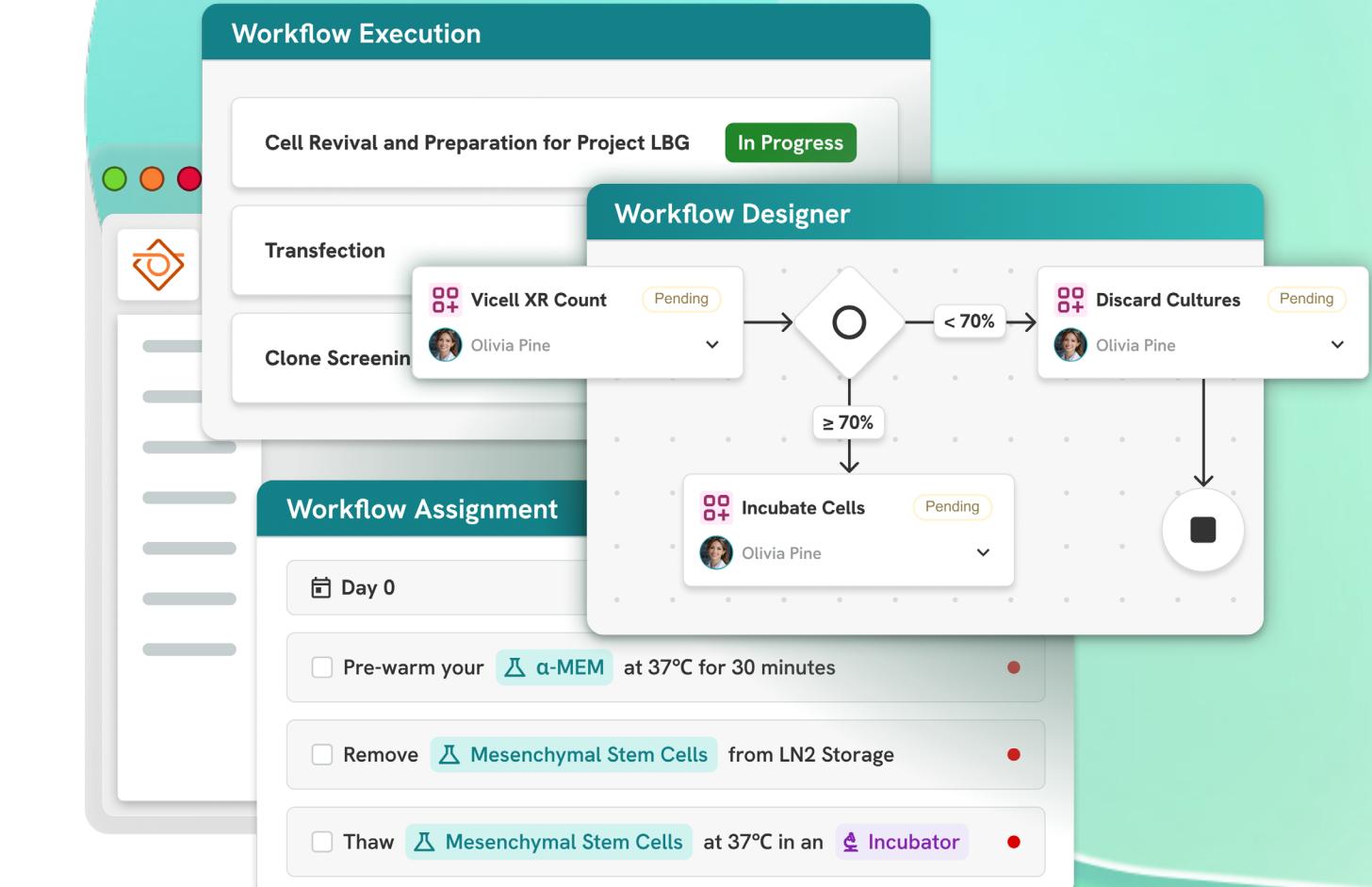
Unleash that big, beautiful science.

# Coordinating Complex Scientific Workflows from Discovery to Manufacturing

Signals LabGistics is a solution designed to streamline scientific workflows across the entire drug development lifecycle.

Pharmaceutical companies developing biologics and other innovative drugs face the challenge of coordinating dozens of interdependent teams across discovery, development, and manufacturing. These coordination gaps affect everything from manual equipment booking in large research facilities to email-based handoffs between synthesis and application teams, creating cascading delays that extend project timelines and inflate operational costs.

While existing laboratory informatics systems—LIMS, ELN, LES, and MES—excel at domain-specific data management, they struggle to orchestrate data flow between teams or drug development phases. Integrating point solutions from multiple vendors is costly, fragile, and difficult to scale.

Signals LabGistics is a workflow management solution designed to streamline scientific workflows across the entire drug development lifecycle. It allows teams to plan, execute,

and monitor tasks while ensuring that data flows seamlessly between processes, from research and validation to production. Signals LabGistics integrates tools, systems, and team members into one cohesive environment, eliminating silos and ensuring that decisions are based on real-time insights. This solution empowers teams to accelerate timelines, improve collaboration, and scale operations efficiently, supporting innovation at every stage.

Unleash that big, beautiful science.
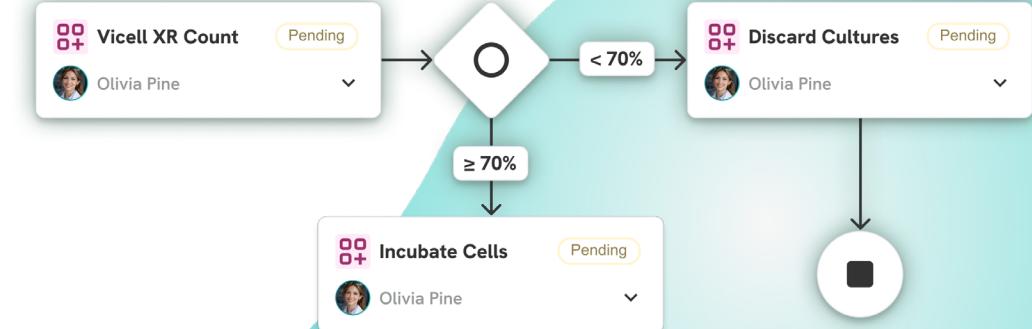
A Single Source of Truth for Scientific Operations

From pharmaceutical development to food science and materials science, scientific organizations in many industries are demanding more integration and control of their data. Teams want fewer tools and less friction, more automation and visibility, and a single source of truth to deal with this information.

Signals LabGistics provides a structured environment that supports the design, planning, execution, and monitoring of workflows across diverse scientific fields. Whether optimizing bioprocess development in the pharmaceutical industry, scaling production in food science, or managing cross-functional collaboration in materials innovation, Signals LabGistics allows seamless coordination among teams involved in research, development, quality, manufacturing, and regulatory activities. By eliminating inefficiencies and providing better insights, it empowers organizations to achieve greater precision and efficiency.

Signals LabGistics is powered to:

- Bridge workflow coordination gaps by eliminating email-based handoffs and manual coordination between sequential teams.

- Streamline task management and monitoring with tools that assign responsibilities, track progress, and ensure accountability at every stage.

- Accelerate technology transfer with seamless handoffs between development and manufacturing processes.

- Ensure workflow consistency from early research through production scale-up, minimizing disruptions and inefficiencies.

- Simplify regulatory compliance by supporting documentation and traceability across GxP and quality-controlled environments.

- Generate automated workflows using AI-powered tools that convert standard operating procedures (SOPs) and natural language descriptions into actionable processes.

Unleash that big, beautiful science.

Three-Tier Workflow Management:
Bridging Processes, Workflows, and Tasks
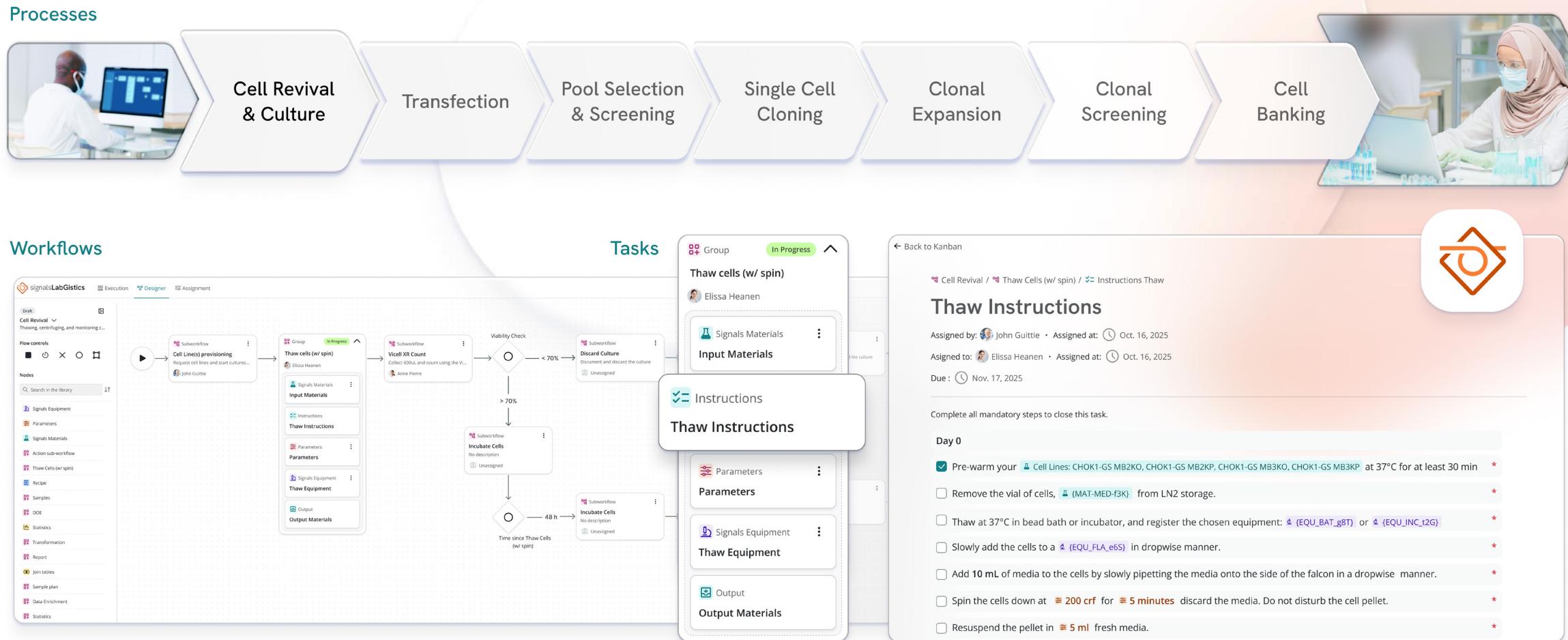
Figure 1
A bioproduction cell line development process workflow illustrating the three levels (from top to bottom) of process workflows, execution workflows, and tasks that follow standard operating procedures (SOPs).

Processes

Cell Revival & Culture → Transfection → Pool Selection & Screening → Single Cell Cloning → Clonal Expansion → Clonal Screening → Cell Banking

Workflows

Tasks

Group — In Progress
Thaw cells (w/ spin)
Elissa Heanen

Signals Materials
Input Materials

Instructions
Thaw Instructions

Parameters
Parameters

Signals Equipment
Thaw Equipment

Output
Output Materials

← Back to Kanban

Cell Revival / Thaw Cells (w/ spin) / Instructions Thaw

Thaw Instructions

Assigned by: John Guittie · Assigned at: Oct. 16, 2025
Assigned to: Elissa Heanen · Assigned at: Oct. 16, 2025
Due : Nov. 17, 2025

Complete all mandatory steps to close this task.

Day 0

☑ Pre-warm your 🔬 Cell Lines: CHOK1-GS MB2KO, CHOK1-GS MB2KP, CHOK1-GS MB3KO, CHOK1-GS MB3KP at 37°C for at least 30 min
☐ Remove the vial of cells, 🔬 {MAT-MED-f3K} from LN2 storage.
☐ Thaw at 37°C in bead bath or incubator, and register the chosen equipment: ⚗ {EQU_BAT_g8T} or ⚗ {EQU_INC_t2G}
☐ Slowly add the cells to a ⚗ {EQU_FLA_e6S} in dropwise manner.
☐ Add 10 mL of media to the cells by slowly pipetting the media onto the side of the falcon in a dropwise manner.
☐ Spin the cells down at ⚖ 200 crf for ⚖ 5 minutes discard the media. Do not disturb the cell pellet.
☐ Resuspend the pellet in ⚖ 5 ml fresh media.

Unleash that big, beautiful science.

Processes

Scientific operations are built on processes—strategic frameworks that guide high-level goals. Signals LabGistics allows organizations to model and execute these processes as workflows, breaking them down into actionable steps that drive precision, accountability, and efficiency across discovery, development, and production.

Workflows

Workflows in Signals LabGistics serve as the operational backbone for scientific activities, enabling the execution of strategic processes.

- Every operation, from lab experiments to production-scale activities, is modeled as a workflow.

- Workflows capture a series of steps, team handoffs, data movement, and decision points to ensure precision and accountability.

- By breaking down processes into actionable workflows, Signals LabGistics ensures alignment between high-level goals and daily execution.

Tasks

Tasks within workflows provide the detailed execution needed to ensure successful outcomes.

- Tasks are tied to SOPs, delivering structured accountability.

- Assignments, deadlines, and responsibilities are tracked to maintain operational efficiency.

- Tasks can also be executed automatically, with no human input required, leveraging system integrations, automation, or preconfigured triggers.

- Data captured during task execution supports traceability and compliance.

Scalable Workflow Execution and Monitoring

Signals LabGistics supports workflows across scientific disciplines, from research labs to manufacturing floors, with robust monitoring capabilities to ensure visibility and control at every step.

- **Collaborate:** Seamlessly connect teams, tools, and systems into cohesive workflows, ensuring alignment across disciplines.

- **Reduce inefficiencies:** Streamline operations by eliminating silos, accelerating timelines, and improving workflow continuity.

- **Drive accountability:** Ensure workflows are executed consistently, with clear roles, responsibilities, and traceability for every action.

- **Monitor workflow progress:** Gain visibility of workflow status, active tasks, and delays to proactively address challenges.

- **Identify bottlenecks:** Pinpoint root causes of workflow disruptions, allowing teams to take corrective action quickly.

- **Make proactive decisions:** Use monitoring tools like alerts and dashboards to make informed adjustments and

Unleash that big, beautiful science.

Built on the Revvity Signals Technology Framework

Signals LabGistics leverages the full capabilities of the Revvity Signals technology framework, inheriting its advanced architecture and integration-ready design. This foundation empowers Signals LabGistics to deliver critical functionality across ELNs, laboratory information management, laboratory execution, and manufacturing execution, while seamlessly integrating with third-party LIMS and other systems.

By building on the Revvity Signals technology framework, Signals LabGistics provides:

- A missing workflow coordination layer: Provides seamless coordination across fragmented laboratory IT environments.

- Integration capabilities: Enables connectivity with existing laboratory informatics systems to enhance operational continuity.

- Compatibility with current investments: Works alongside existing laboratory IT infrastructure to ensure maximum ROI.

Cloud-Native Architecture

Revvity Signals LabGistics is powered by AI with automated workflow generation, project management oversight, and centralized data pipeline management. AI is used as a design principle, not an add-on, to automatically configure workflows from natural language descriptions and SOPs. It can parse SOP content, extract the relevant steps, and generate an initial workflow model to reduce manual design efforts while allowing further configuration and customization. Single-login portal access offers a streamlined user experience.

While Signals LabGistics offers a library of out-of-the-box workflow templates, the templates are highly flexible to accommodate the wide variation in customer information networks.

Network

OPERATIONS

DISCOVERY

Workflow Orchestration
Design, plan, schedule

AI/ML Readiness
Assisted Configuration

Sample Management
Plan, storage, track, dispose

Workflows

Monitoring
Real Time Traceability

3rd Party Integrations
LIMS, ELN, LES, MES

Execution

MANUFACTURING

Task Management
Collaboration

Centralized Data
F.A.I.R. , Analytics, Reporting

GxP
Regulatory Compliance

DEVELOPMENT

Solutions

Unleash that big, beautiful science.

Core Application Capabilities

Workflow Execution

Cell Revival and Preparation for Project LBG	Complete
Transfection	In Progress
Clone Screening	Not Started

Workflow Designer

Vicell XR Count — Pending — Olivia Pine
Discard Cultures — Pending — Olivia Pine
Incubate Cells — Pending — Olivia Pine
< 70%
≥ 70%
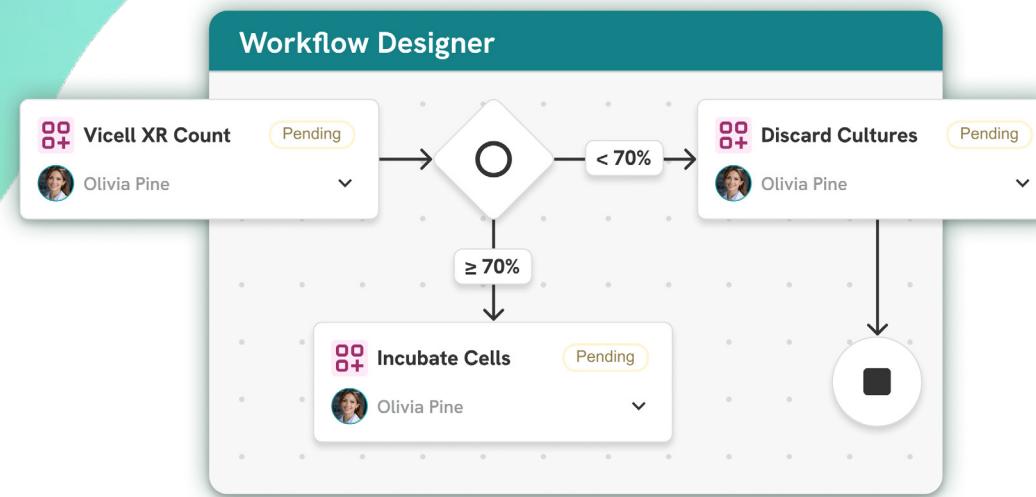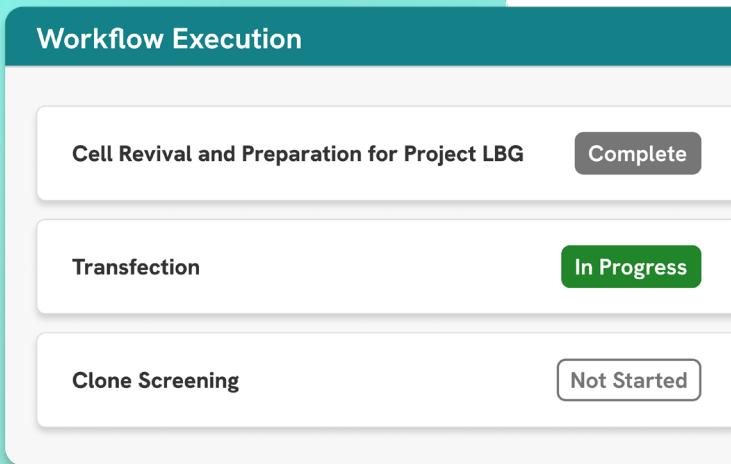
Workflow Orchestration & Management

- AI-powered workflow design from natural language descriptions and SOPs
- Multi-tier workflow execution
- Project management-style tracking with process oversight
- Task management and execution
- Real-time monitoring and visibility across the entire workflow continuum

Data Integration & Analytics

- Centralized data for analytics and reporting
- Integration with existing research tools and laboratory systems
- Process parameter tracking
- Enhanced decision-making through integrated visibility

Sample & Process Management

- Sample management coordination across interdependent teams
- Process consistency monitoring from discovery through manufacturing
- Streamlined experiment documentation and collaboration

Compliance & Quality Assurance

- GxP compliance maintenance across connected systems
- Regulatory submission support
- System integration
- Works alongside existing LIMS, ELN, and MES investments
- Laboratory instrument connectivity and real-time data acquisition
- Equipment management and automation coordination
- Single-login portal access across integrated systems

Unleash that big, beautiful science.

Core Functionaltiy for Each Phase

Discovery

- Generates workflows from structured descriptions, such as SOPs or experimental plans.

- Integrates seamlessly with research tools like ELNs, assay platforms, and compound libraries.

- Manages and coordinates experiments across teams for streamlined collaboration.

- Facilitates equipment booking and scheduling to reduce downtime.

- Tracks materials and samples across workflows and processes for efficient management.

- Provides workflows for failure tracking and structured reanalysis of experiments.

- Automates sample submission and analysis requests, reducing manual effort and turnaround times.

Development

- Tracks process parameters, facilitating control strategies for optimization.

- Manages samples and materials across interdependent teams, ensuring smooth operations.
- Enables workflow-driven regulatory documentation for compliance and traceability.

- Standardizes workflows for method development to ensure consistency.

- Automates decision points with objective pass/fail criteria for experiments.
- Captures experimental timestamps for troubleshooting and process refinement.

- Assigns tasks during workflow interruptions or failures, ensuring accountability.

Cross-Phase Capabilities

- Centralizes data for analytics, allowing informed decision-making across workflows.

- Provides real-time visibility to track progress and identify bottlenecks.

- Eliminates email-based communication, replacing manual handoffs with actionable workflows.

- Manages equipment and samples seamlessly between phases.

- Tracks projects with a management-style approach, ensuring deadlines and milestones are met.

- Automates handover dates between phases to maintain operational continuity.

- Handles platform-agnostic data across instruments, ensuring interoperability.

Unleash that big, beautiful science.

Operational Benefits

Signals LabGistics addresses several core operational challenges facing pharmaceutical companies during development and manufacturing of innovative drugs:

Email-based team handoffs	Digital workflow transitions with automated task assignments
Manual workflow generation	AI-generated workflows from natural language descriptions and SOPs
Fragmented data across systems	Centralized data connectivity and unified analytics
Sample tracking gaps across phases	Integrated sample lifecycle management with automatic ID tracking
Incomplete experimental records	Automated traceability with timestamps and deviation tracking
Time-consuming project onboarding	Streamlined resource allocation and timeline management
Coordination delays and bottlenecks	Reduces workflow inefficiencies by 20-30% through automation
Complex conditional pathways	Only show relevant experiments, SOPs, or operations based on real-time decisions
Modular configuration	Reusability of workflows, units of operations, analysis modules, and SOPs.
Data capture	Important data capture tools at the point of execution
Transfer of data between steps	Allowing FAIR principles for decision making based on data

Achieve Workflow Coordination with Signals LabGistics

Signals LabGistics coordinates people, processes, and data across discovery, development, and manufacturing. With AI-powered workflow generation, real-time visibility, and seamless integration with existing laboratory information systems, it eliminates bottlenecks, accelerates tech transfer, and ensures consistent, compliant processes.

Streamline collaboration, reduce costs, and realize faster, more efficient drug development—all from this single, cloud-native platform.

Unleash that big, beautiful science.

revvity signals

77 4th Avenue
Waltham, MA 02451 USA
(800) 762-4000
(+1) 203-925-4602
revvitysignals.com

Unleash that big, beautiful science.