

Fast track your therapeutic discoveries.

Cell engineering and
screening services

revvity



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Impossible is an invitation

Therapeutic research and development labs have their challenges — shortages of in-house resources and expertise, tight timelines, and even tighter budgets. But where others say impossible, we say challenge accepted.

Revvity's outsourcing services for screening and cell line engineering alleviate common obstacles you face, gaining time back to focus on higher-priority tasks. We've tailored all our services to fit your unique projects, while consistently delivering high-quality reproducible data.

From project management to data analysis to field expertise, we're here to support your research and guide you in the right direction, so you can accelerate your therapeutic development.

Expand the boundaries of your lab

When it comes to creating a healthier world, we share the same purpose — delivering life-saving medicines to market faster.

We work with you, supporting your research with our stellar cell engineering and screening platform services. We're dedicated to providing you with the data and tools you need to understand and interrogate the biology behind diseases. Because we're in this together.

4 reasons to work with us

Controls:

trust the data with absolute confidence

Optimization:

use the most effective solutions

Consistency:

get reliable and reproducible results

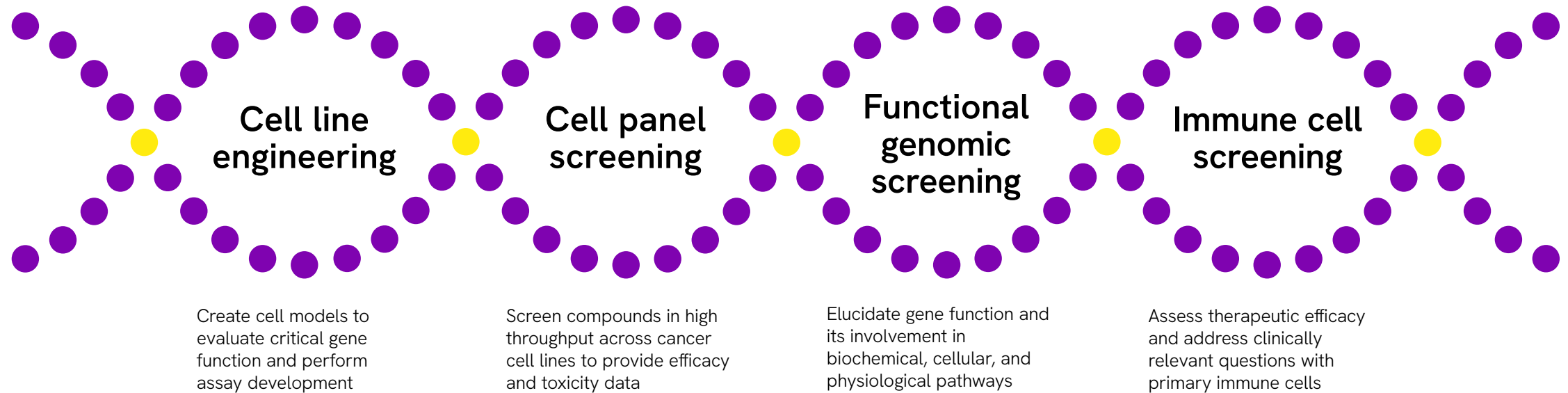
Discipline:

work with expert scientists

We go beyond the basics

Our services are designed to help you throughout your preclinical drug discovery and development workflow.

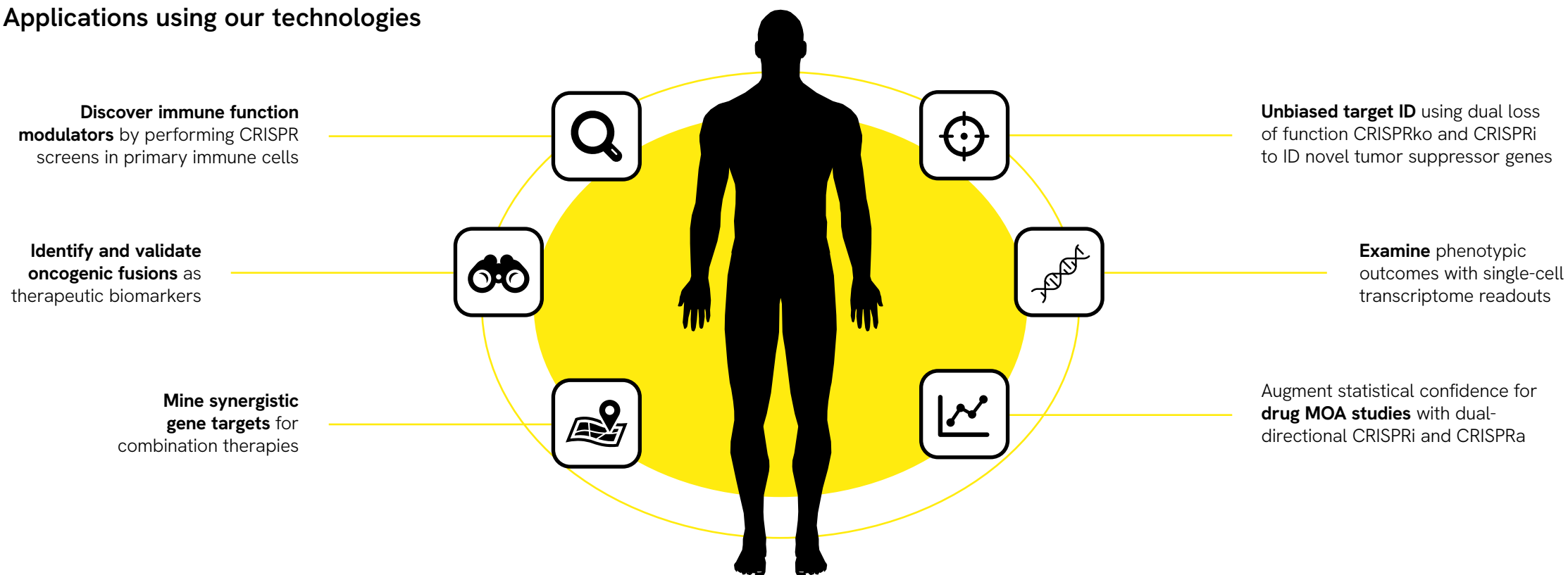
Our spectrum of services



Conquer the unattainable

Whether your research leads you to CRISPR screening or gene mining, our unmatched technologies support you every step of the way.

Applications using our technologies


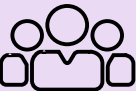




Discovery, empowered

Our specialized services in cell line engineering, backed by an extensive portfolio of gene-editing licences and expertise across hundreds of cell lines, ensure you get the right edited cell line solution.

Our capabilities include multigene targeting, large knock-ins, iPSC, and primary T-cell experience — powered by trusted Dharmacon reagents. Let's work together to engineer healthier outcomes.

4 reasons for peace of mind

-  More than a decade of technical expertise to tackle complexities
-  Flexible and responsive service that fits your needs
-  Comprehensive data package
-  Low risk — upfront cell and target suitability evaluation

Ready to discover your next breakthrough?

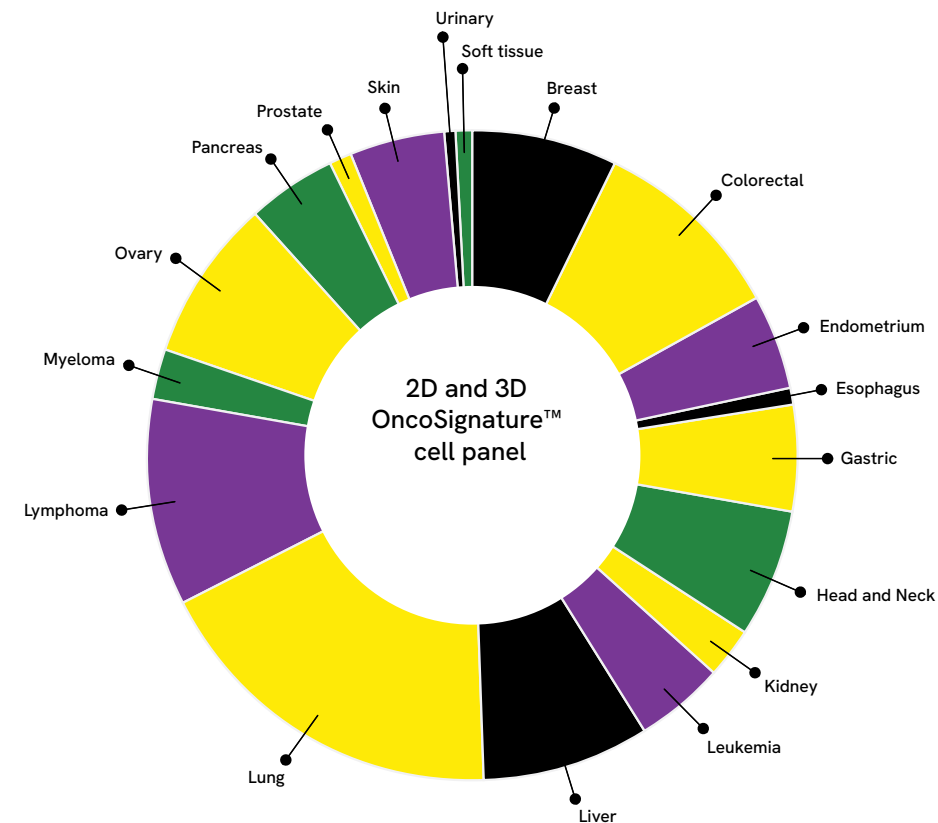
Maximizing data, minimizing efforts

Experience the forefront of phenotypic cell panel screening with our advanced 2D and 3D OncoSignature™ platforms. They enable you to test efficacy and antiproliferative effects of your molecules to streamline your therapeutic pipeline and enhance your patient stratification strategy..

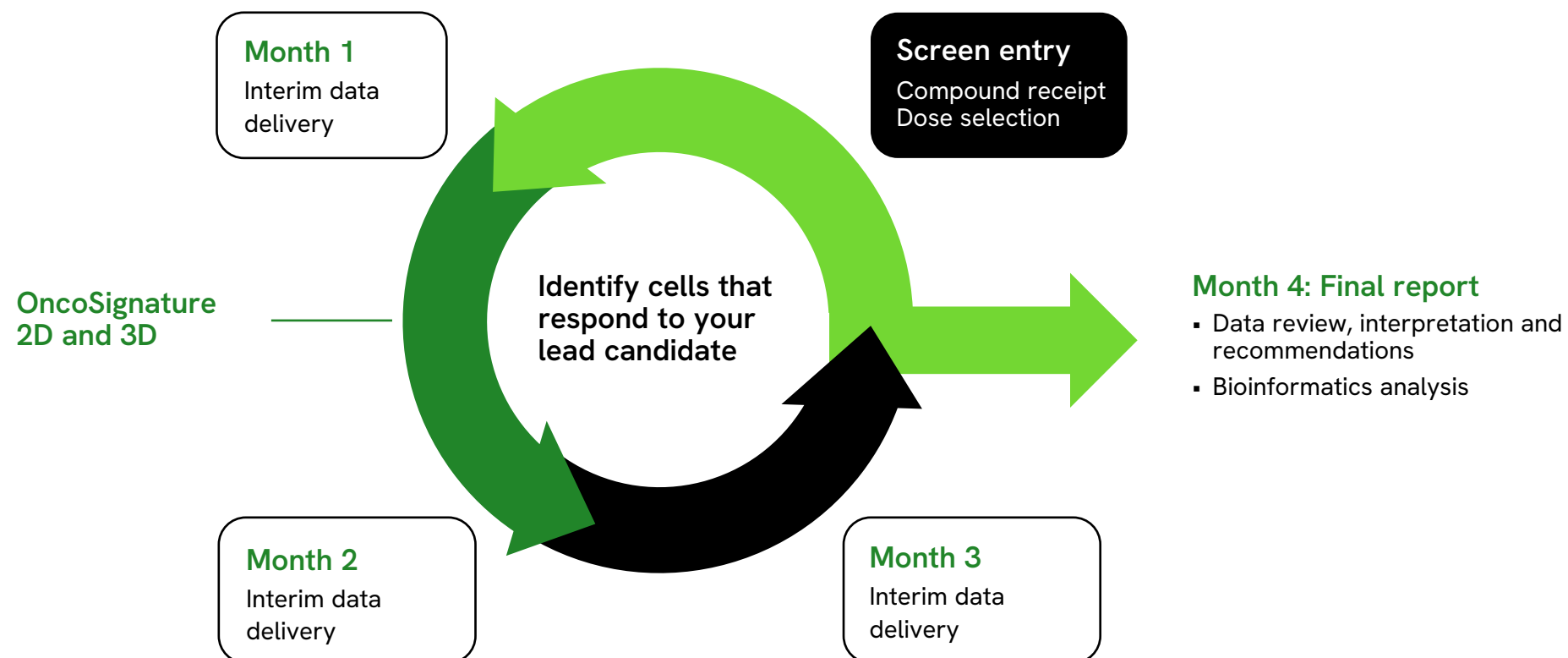
2D and 3D standard screen

- Features a broad panel of 300 (2D) and 200 (3D) characterized cancer cell lines
- Aligns with 90% of the CCLE Database
- Includes monotherapy and combination drugs
- Analyzes large screening datasets with proprietary Chalice™ software
- Performs bioinformatics analysis, linking the response of your drug candidate to biomarkers
- Offers flexible project onboarding — first results in one month; final detailed report in 4 months

Ready to discover your next breakthrough?



Unlock the possibilities with OncoSignature 2D and 3D cell panel screening



Revolutionizing research with a tailored screening platform

Whether you're searching for screening solutions that closely mimics the tumor microenvironment, uncover the complex underlying biology of drug responses, or canvassing the vast combinatorial space to discover novel drug therapeutics, our custom services have you covered.

With adaptable, personalized solutions and the scientific expertise to provide actionable data, you can take the right next step in your drug discovery pipeline.

Long-term screen

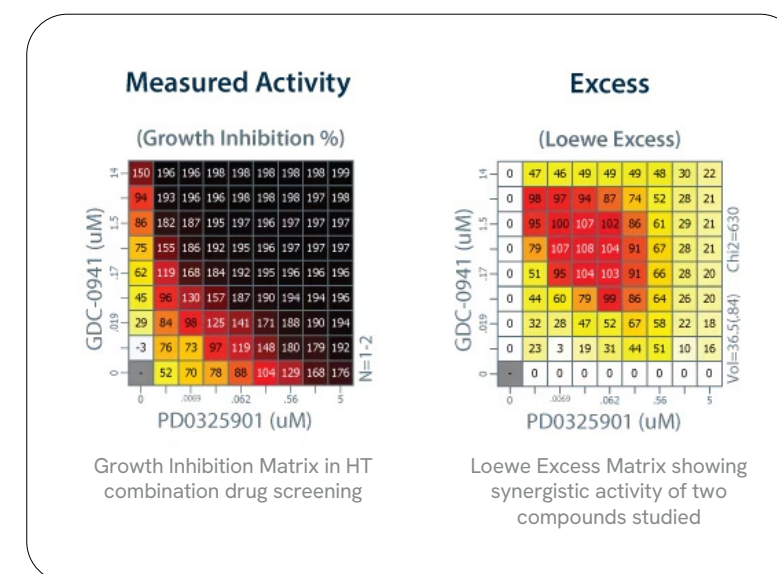
- Features 248 characterized cancer cell lines
- Offers long-term (10-day) treatment, delivering additional insights for slower-acting drugs and epigenetic targets
- Brings high cell quality and robust standardized cell-seeding process for consistent, reproducible experimental results
- Delivers a sufficient 10-day assay signal to indicate optimal cell growth and viability with extended duration

Custom services

- Features more than 1,000 genetically defined isogenic and knockout human haploid cell lines to accurately model disease-causing mutations found in patients
- Offers specialized growth conditions and complex treatment formats
- Offers extended assay readouts
- Delivers in depth analysis and biological interpretation

Fully flexible options are also available, including dose matrix format, assay endpoints, drug sequencing, and tumor microenvironment conditions.

Ready to discover your next breakthrough?

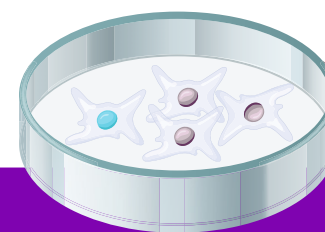


Revealing the biology of novel targets through gene modulation

Interrogate the biological activity of hundreds and even thousands of genes using functional genomic screening. In just a single experiment, you can understand mechanisms of action, identify therapeutic targets, determine genetic drivers, and locate critical mutations.

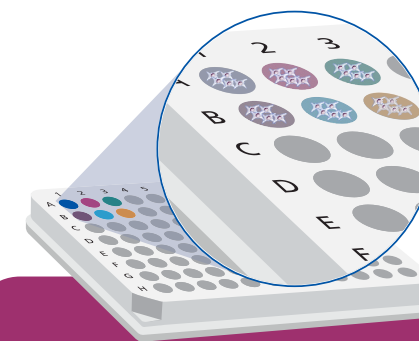
We offer both pooled and arrayed screening formats, depending on the biological questions you need answered. Which is right for you?

Ready to discover your next breakthrough?



Pooled screening

- Pooled edited population
- Up to whole genome-level screening
- Limited scope readouts (NGS-linked)
- Proliferation or phenotypic (e.g., FACS)
- Longer assay time points



Arrayed screening

- Individual perturbation per well
- From very low to whole genome-level screening
- Multiple or multiplexed readouts
- Complex growth models (e.g., 3D, co-culture)
- Shorter assay time points (48-144 hours)

Pooled vs. arrayed: comparing CRISPR screening methods

Applications for pooled CRISPR screening

Drug-gene interaction

Determine the genetic factors affecting drug efficacy & function



- Mechanism of action analysis at WG level
- Identify potential combination targets
- Stratify genotypes by response to impact clinical analysis

Genetic interaction

Target ID: start novel drug pipelines



- Mine cell response at a fundamental biological level
- Find and validate novel synthetic lethal targets

Biomanufacture improvement screening

Increase biologic manufacture output with an unbiased approach



- Increase cell survival and tolerance to expression
- Identify genes which increase secretory output
- Find genes which improve post-translational maturation

Phenotypic screening

Use pathway specific markers to understand cell death



- Disease markers measured by protein abundance
- Cell surface expression or intracellular staining
- Monitor secreted markers by Golgi-block treatments

Applications for arrayed CRISPR screening

Study cell behaviour

High-content screening microscopy



- Multi-parametric analysis
- Changes to cell/organelle morphology
- Protein localization or intensity
- Complex assays: cell migration, invasion, neurite outgrowth
- Complex growth: 3D (soft-agar, or spheroid culture)

Analyse gene function

Multi-mode plate reader



- Reporter assays
- Cell toxicity and apoptosis
- Enzyme activity and function
- Cell proliferation

Gene expression analysis

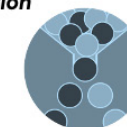
High-throughput RT-qPCR



- Transcriptional response to compound
- Analyse response to cell differentiation
- Biomarker mRNA expression level

Protein expression or secretion

High-throughput flow cytometry



- Immune cell activation status
- Immune cell secretion (cytokine release)
- Cell surface staining

Extend your lab's capabilities

With our CRISPR technologies, you have complete gene control. CRISPRa and CRISPRi use dead Cas9 for expression modulation, offering insights into the loss and gain of functions. Maximize your results with paired CRISPRa/i for drug-gene interaction analysis. Validate gene behavior using reverse-orthologous CRISPR-Cas9 screening. The choice is yours.

CRISPR KO	CRISPRa	CRISPRi	Dual CRISPRa/i
Study complete loss-of-function effects to understand gene involvement	Study gain-of-function effects on a genome-wide scale	Study the effect of repressing essential genes and genes in amplified loci	Study both gain- and loss-of-function in parallel at genome scale
Identify and prioritize drug targets	Explore drug-gene interactions by studying gain-of-function phenotypes	Model the effect of druggability more closely	Explore drug mechanisms of action
Find genes required for cell viability, drug sensitivity, or resistance	Validate loss-of-function effects with a reverse-function orthologous tool	Simulate hypomorphic mutations and partial loss-of-function	Identify novel biomarkers
Guide patient selection for clinical trial	Target non-protein coding regions (e.g., lncRNA)	Target non-protein coding regions (e.g. lncRNA)	Identify new combination therapy targets
Identify targets or pathways for potential combination therapies		Validate hits from a KO or RNAi screen with an orthologous tool	De-orphan and reposition drugs for new therapeutic applications

Ready to discover your next breakthrough?

Investigate the effects of therapeutics on the immune system

Developing reliable immune cell-based assays requires specific knowledge and dedicated time to ensure accurate and consistent processing. Functional genomic CRISPR KO screens — with edited T and B cells, in arrayed and pooled formats, on a fully optimized platform — gets you closer to the clinic faster.



Screen using multiple donors



Identify functional markers *in vitro*

Primary immune cell screening services

Offers collaboration across various analyses, including:

- Target identification of novel genes involved in immune modulation
- Therapeutic sensitivity and resistance with immune physiological readouts
- Mechanisms of action of therapeutic candidates in primary immune cells

Ready to discover your next breakthrough?

Exceptional results, compounded

Rapidly evaluate therapeutic efficacy in relevant immune cell-based models with our ImmuSignature™ assays — a full suite of compound screening technology that produces actionable, consistent, relevant data from 3 weeks.



Fast analysis of
biologics and small
molecules



Miniaturized
semi-automated
384-well platform



Extensive
primary immune
cell QC



Multiple
physiological
readouts



Leveraging
HTRF®
technology



Statistically
robust
data sets

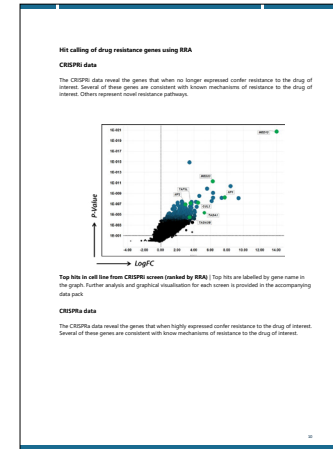
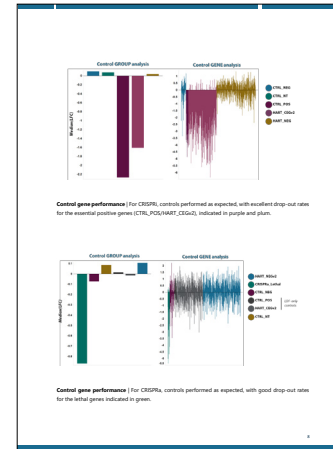
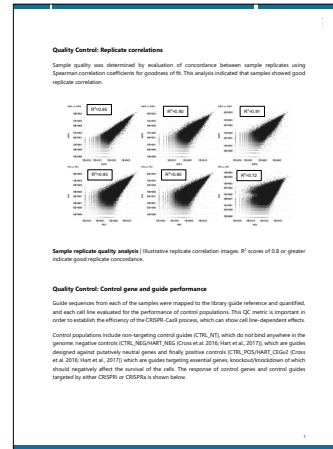
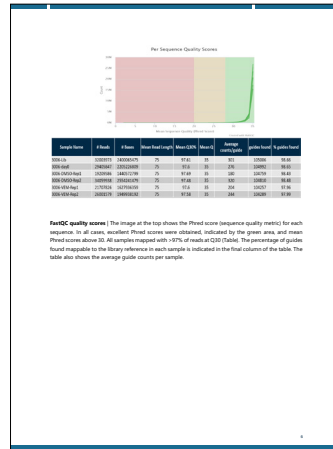
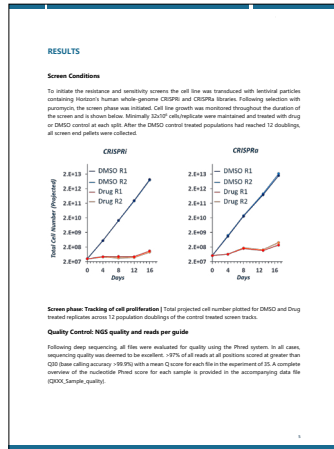
Ready to discover your next breakthrough?

ImmuSignature: assays and applications

ImmuSignature Assay	Application	Ready to discover your next breakthrough?
Mixed lymphocyte reaction (MLR) assay	Immunogenicity assessment in a dendritic cell: T-lymphocyte co-culture microenvironment	
T cell activation (TCA) assay	Assess the isolated effect of a developed molecule to promote or block cell proliferation and T-cell activity	
iTreg polarization assay	Provides insight of drug effects into treg function at the preclinical stage to help predict clinical applications	
iTreg suppression assay	Evaluate compound effect in the interaction between treg and effector T-cells at the preclinical stage to help predict clinical applications	

Fuel new findings with comprehensive data

Our complete data package provides the essential tools and insights you need to streamline your research, drive discoveries, and fast track your therapeutic breakthroughs.



Top hits in cell line from each screen track (ranked by RRA) | Top hits are labelled by gene name in the graph. Further analysis and graphical visualization for each screen is provided in the accompanying data pack.

Hit calling of drug resistance genes using Drug2

The table below shows the top 20 genes that impact resistance to the drug when Drug2 is used to analyse the datasets.

Table 1 CRISPRi resistance hits

Gene	name1	log2	log2	log2	log2	log2	log2	log2	log2
1	CTE_NG28181	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	CTE_NG28181	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3	CTE_NG28181	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4	CTE_NG28181	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5	CTE_NG28181	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Table 2 CRISPRa resistance hits

Gene	name1	log2	log2	log2	log2	log2	log2	log2	log2
1	CTE_NG28181	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	CTE_NG28181	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3	CTE_NG28181	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4	CTE_NG28181	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5	CTE_NG28181	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Solutions for drug discovery workflows

The only way to advance disease research and bring new drugs to market quickly is through innovative solutions that deliver fast, accurate, and reproducible results that lead to novel insights. With this in mind, we've strategically designed our solutions portfolio to help you meet key criteria across critical lab workflows.

Automated liquid handling

From dedicated workstations designed for a diverse variety of applications to the ability to customize liquid handling based on your needs, our innovative solutions enable you to minimize errors, reduce hands-on time, and increase throughput and reproducibility. And with flexibility in throughput, capacity, and dynamic volume range; high-quality manufacturing standards; and outstanding customer service and support, we meet the needs of even the highest volume labs.

Automated cell counting for GPCR screening

With our high-throughput solutions, you can measure live-cell concentration, viability, and cell size distribution in a single cell sample or in multiple cell samples simultaneously. You can perform traditional trypan-based or advanced fluorescence-based viability assays for GPCR-expressing cell lines. What's more, you can quickly and automatically capture and document cell images and size histogram reports to monitor cell line quality for efficient and reliable workflows.

High-content screening instruments

With powerful, yet simple imaging and analysis capabilities for a wide range of applications — from basic research to assay development and screening — these robust systems produce the highest possible image quality, taking your research further than ever before.



Live-cell imaging instruments

The MuviCyte™ live-cell imaging system operates inside your cell culture incubator, enabling you to maintain your cells under optimal conditions and perform a wide range of assays in a variety of culture vessels, for a deeper understanding of functions, disease mechanisms, and responses to treatments.



Cellular imaging and research microplates

Our OptiPlates™, AlphaPlate™, and ProxiPlates™ research-grade microplates are made using quality plastic injected into a mold in a clean room and designed to give you optimal performance. Our PhenoPlate™ microplates have been engineered to deliver superior images and the highest quality data for high-content applications. Our ViewPlate™ microplates are engineered for bottom-reading systems and high-content imaging for use in a range of cell-based assay applications, including imaging, fluorescence, luminescence, and absorbance.

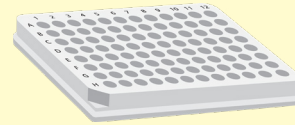
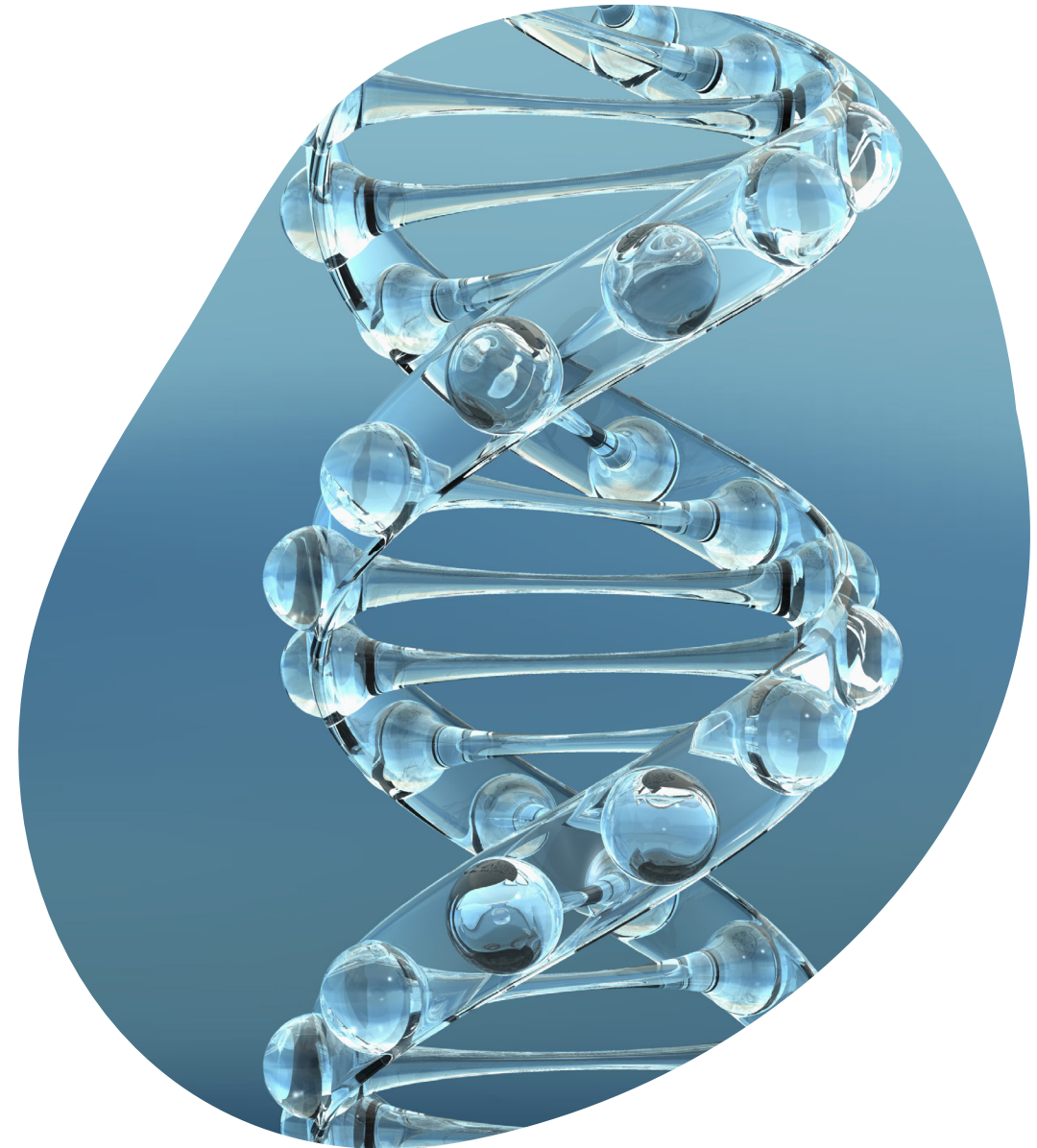
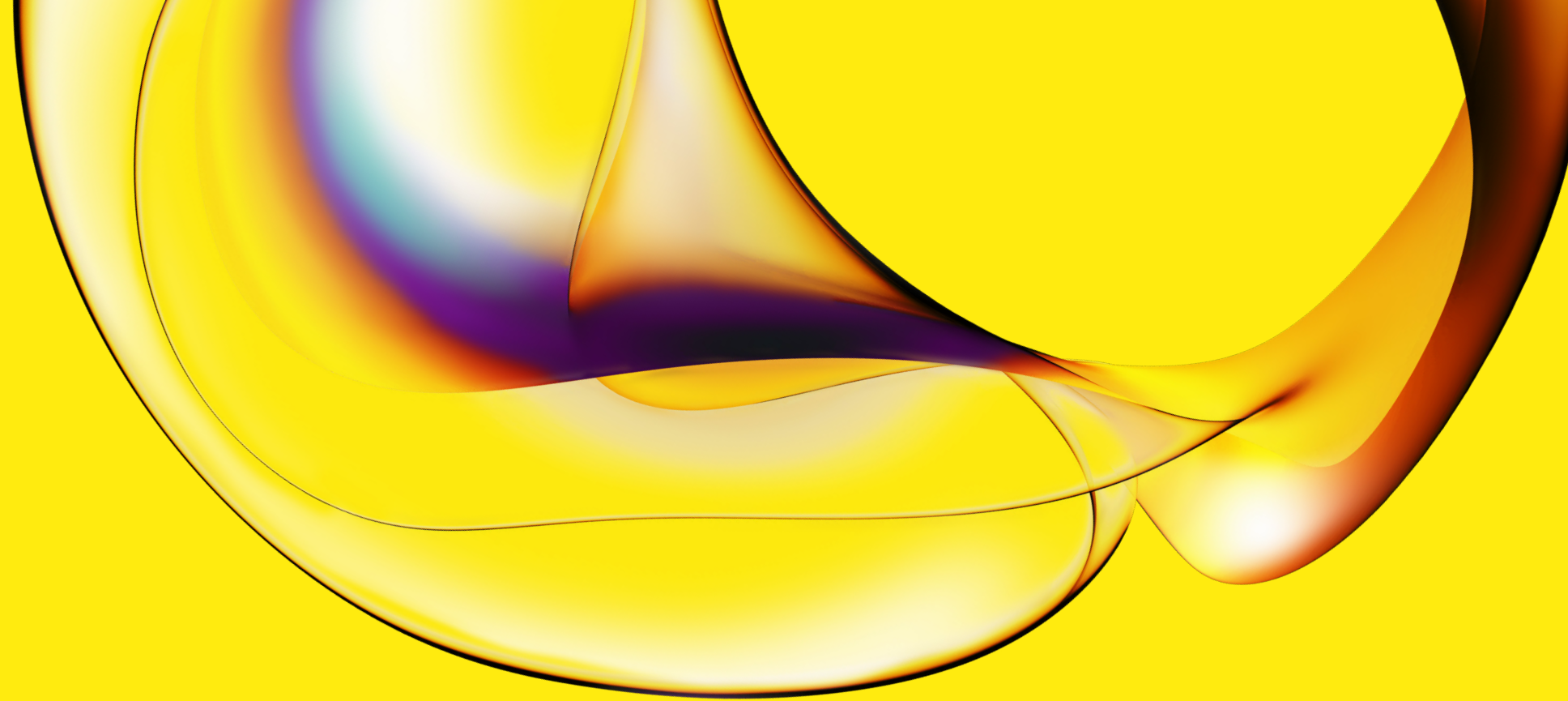


Image analysis and management

Our Signals Image Artist™ image data storage and analysis system is an instrument-independent image analysis and management platform. It's the only system that provides universal high-volume image-data storage and analysis and brings access to images from a wide range of sources, including all major high-content screening instruments.





www.revivity.com

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Revvity, Inc.
940 Winter Street
Waltham, MA 02451 USA
www.revivity.com

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