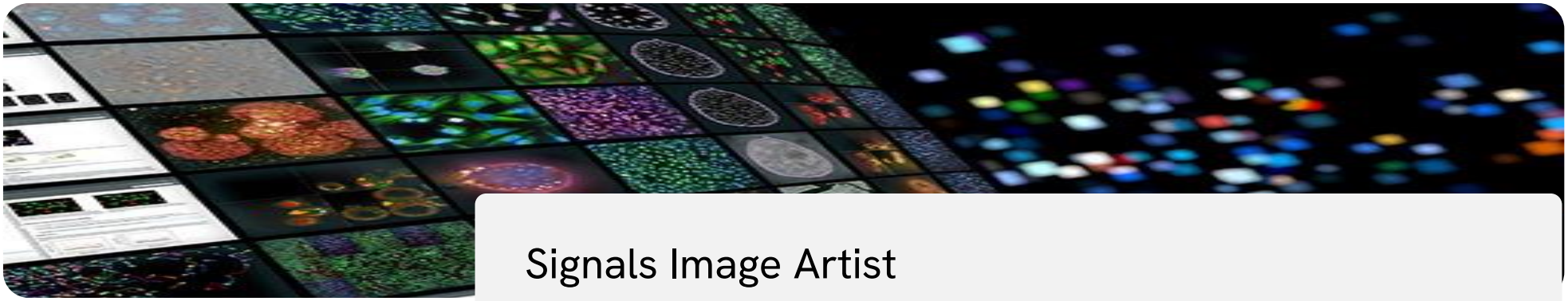


Signals Image Artist

At a Glance

With Signals Image Artist, researchers working in HCS and cellular imaging can quickly process, analyze, share, and store all their image data in one place.

Faster Insights: Process, access, and analyze the image data, quicker and easier than ever before.

Scalable Storage: Industry-standard object storage provides a multiuser solution that can expand with your needs.

Powerful Analysis: Easy-to-use building blocks allow for advanced analysis.

Next-Generation HCS Image Management

Signals Image Artist™ is the latest image analysis and management platform for high-content screening (HCS) and cell imaging data. Quickly upload, process, analyze, share, and store vast volumes of data generated by high-content screening and cellular imaging. That data includes live-cell imaging, 3D imaging, phenotypic screening, and cell painting – so you can get answers sooner. As the only commercially available platform that provides universal high-volume image data storage and analysis, Signals Image Artist supports image data from all major high-content screening and cellular imaging systems. Using high-performance computing combined with object storage, the system provides a multiuser solution that's scalable to expand with your lab's changing needs.

Key Features

- Fast image data processing and image analysis powered by high-performance computing
- Easy-to-use assay building blocks with integrated AI – with improved 3D imaging analysis capabilities
- A central location to store all image data with associated instrument metadata

About Signals Research Suite

Signals Image Artist is part of our Signals Research suite that makes everyday assay data analysis more efficient and repeatable. Uncover unexpected insights, advance collaborations, unify data across multiple sources, and scale up – without IT overhead and resources.

Our Signals brings automated workflows to Spotfire® and supports a broad spectrum of experiment types, regardless of the assay stage.

signalsResearch

- Compatible with all major HCS and cell imaging systems – with an expanded range, including the Nexcelom from Revvity Celigo® image cytometer
- Multiuser solution that can support your entire lab
- Scalable data storage that can expand over time
- Cloud and wide range of on-premises options – now with AWS S3 support
- Seamless integration with our Opera Phenix® Plus and Operetta® CLS™ HCS systems
- Easily transfer data to Signals for profiling image data, hit selection, and more

For HCS and Cellular Imaging Data

HCS and cellular imaging experiments generate tons of image data that need to be managed effectively. This data volume continues to increase as technology enables new, more advanced applications such as phenotypic screening, cell painting, 3D, and organoid imaging.

To help you maximize all this valuable data, Signals Image Artist offers a single, central platform that brings together cell imaging data from a wide range of different sources, enabling you to store, share, analyze, and reanalyze seamlessly.

With cloud deployment options (such as AWS S3), your IT team also have just one platform and installation to manage and store research image data which can easily be scaled. They can also have peace of mind with enhanced security for cloud deployments.

Image Analysis Designed for Biologists

Whether you're performing phenotypic screening, cell painting, 3D imaging, live-cell imaging, or more routine assays, Signals Image Artist is designed to make it easy for biologists to perform sophisticated image analysis – even without coding experience.

The software platform's image analysis building blocks encapsulate many years of knowledge and expertise in cellular imaging and analysis, so that you can focus on biology. By simply adding together building blocks such as "Find Nuclei" and "Calculate Cell Painting Properties", users can quickly create image analysis protocols in just a few simple steps.

Signals Image Artist has been further optimized for 3D cell applications, with improved segmentation and analysis capabilities – so you can generate more accurate results than ever.

Furthermore, built-in AI and machine-learning technologies allow operators to train the software to develop image analysis algorithms – you don't need an expert to do it for you. Using a learn-by-example approach, segmented images can be classified with ease in a few clicks.

This is all powered by high-performance computing, so you can get answers faster.

Figure 1. Measure morphologies and volumes in 3D and count nuclei within spheroids.

From Images to Insights

With Signals Image Artist, it's not just about storing beautiful images. It's about the rich information within those image data sets. Extracting deeper insights moves your research forward, whether that's understanding a disease or finding the next breakthrough treatment.

Using the platform's advanced analytics capabilities, you can perform a range of data analysis tasks, including:

- Measure complex and subtle phenotypic responses
- Compare multiple samples, plates, or batches to quality check results
- Measure kinetics including cell tracking, changes in cell properties, and assessing cell movement
- Cell-painting image analysis and quantification using the dedicated cell-painting building block
- 3D image segmentation and volumetric parameter calculations

For further statistical analysis, you can transfer data into Signals to perform screening data analysis and validation, QC analyses, calculate reliable normalization, multivariate hit stratification, dose response curves, and drug response profiling.

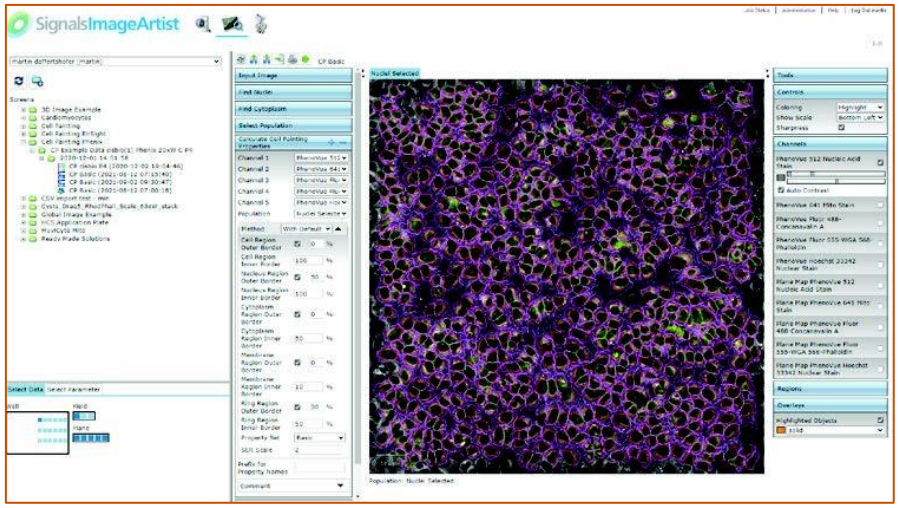
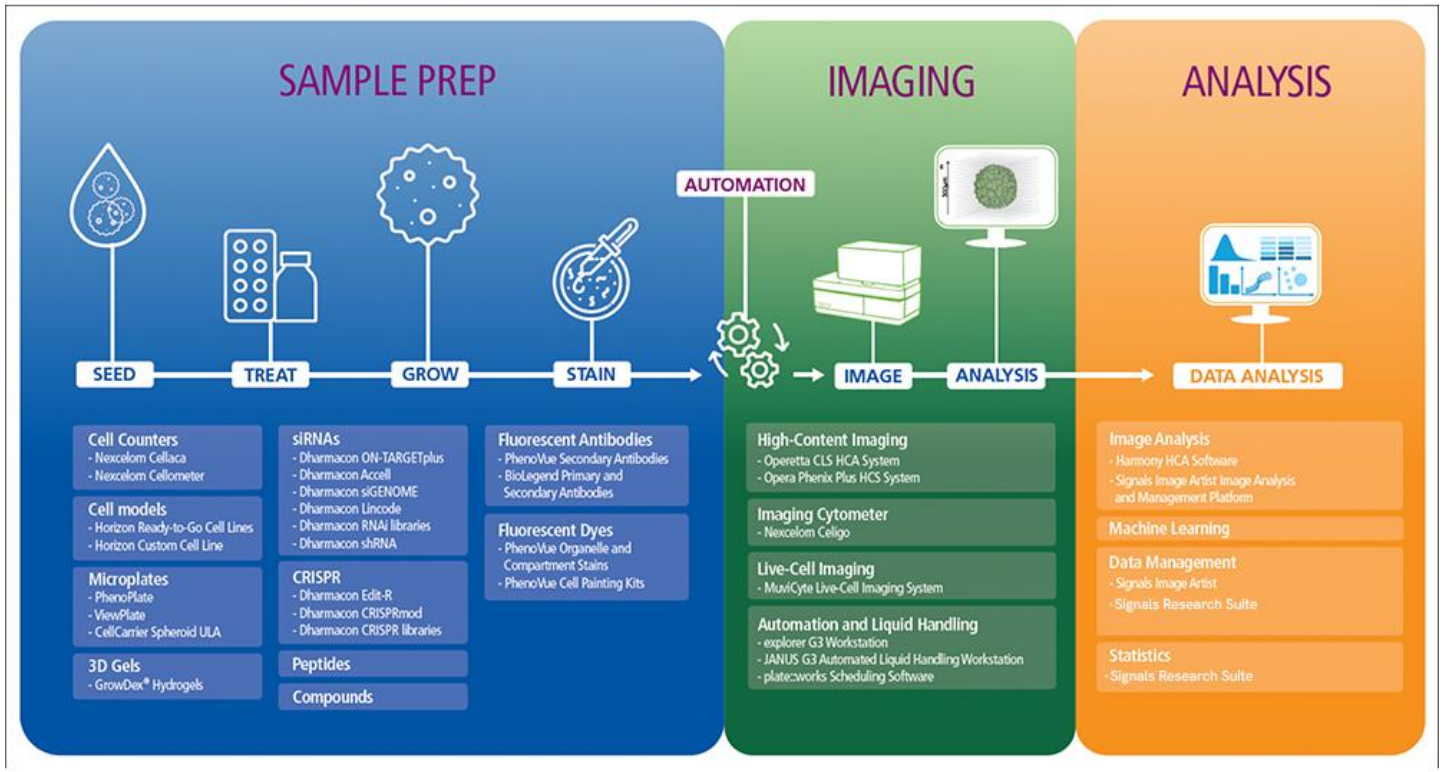


Figure 2. Phenotypic features can be extracted from images using the Calculate Cell Painting Properties

HCS Workflow

We offer solutions across the high-content screening workflow, from sample preparation to imaging and analysis.
To learn more about our Signals Image Artist software, please visit
https://revvitysignals.com/products/research/signals-image-artist



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