Alto™ Nicosystem™ Software

Take the guesswork out of SPR with Alto's intuitive, flexible software

Designed for any skill level

Take the guesswork out of Surface Plasmon Resonance (SPR) with Alto's comprehensive software - the Nicosystem™. A first of its kind, the Nicosystem provides a one-stop centralized hub for acquisition and analysis of real-time binding data, while offering you the flexibility of accessing and sharing your experiments from anywhere.

Setup **Run** **Analyze**

Flexible experiment setup

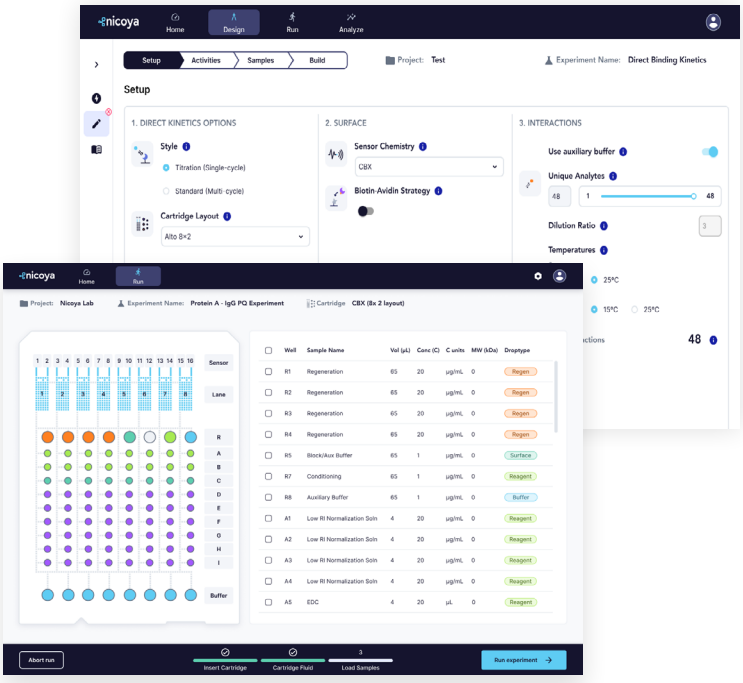
Map your sample layout, set up your assay, and build your experiment. Nicosystem offers a full suite of applications for characterization of biomolecules, including kinetics, screening, quantitation and epitope binning. Simply choose your assay template, enter your sample information, and build.

Plug-and-play run

Alto's plug-and-play design makes it easy for anyone in your lab to confidently operate SPR. Pre-designed experiments are readily accessible via a touch-screen interface. As a "sample-in, answer-out" instrument, your only task at the bench is to load your cartridge and press start.

Automated analysis

Eliminate lengthy post-processing with Nicosystem's one-click analysis. Its seamless end-to-end handling of your experiments will empower you to quickly scale your workflow and output new discoveries.



The Design tool guides you through the setup of experimental parameters required for your assay. All pre-designed protocols are then available on Alto to guide sample preparation and loading at the bench.

Questions? Speak with an Application Scientist today:
info@nicoyalife.com | www.nicoyalife.com

Connectivity

Nicosystem is available in two connectivity formats: Cloud Mode or Local Mode.

- **Local Mode** offers a traditional biosensor experience, enabling you to work with an instrument-laptop connection. And with Virtual Support, you can call or email our Nicoya® experts for live support.
- **Cloud Mode** enables you to complete your workflow from anywhere, with data transferring seamlessly to and from the device. And with our Remote Support feature, Nicoya experts can remotely access your data when support is needed.

Both connectivity modes share the same functionality in terms of experiment formats & capabilities, as well as continual updates & unlimited seats.

	Local	Cloud
Operation	Within company network	Anywhere with internet
Data storage	On device	On device + Nicoya cloud server
User accounts	Multiple	
Computer OS	Windows 10 (recommended)	Any
Support	Virtual support	Remote Support (with data view access)

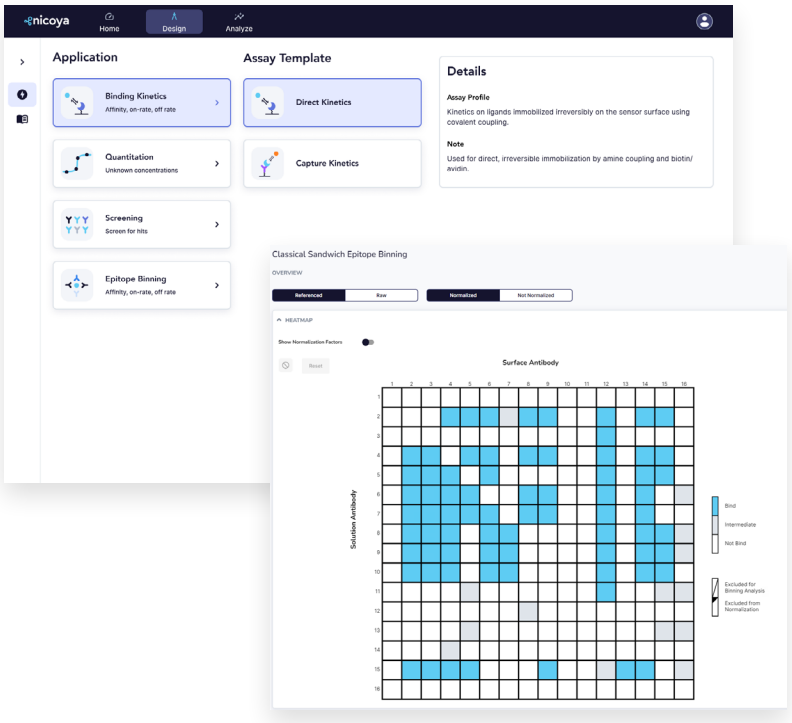
A comparison of capabilities offered in Local and Cloud Mode.

Assay design

Investigate a wide range of applications with a platform built to handle the unique complexities and constraints of biologics. Alto's 16-channel design and automated serial dilutions allow you to fully automate your SPR applications, especially when working with large sample libraries.

Applications

- **Binding Kinetics:** Elucidate the binding profiles of your targets with Alto by measuring the association rate (k_a), dissociation rate (k_d), equilibrium dissociation constant (K_D), maximum binding response (R_{max}), and mass transport coefficient (k_t).
- **Screening:** Screen up to 96 interactions in just a few hours and use Alto's visualization tools to select the most relevant hits.
- **Epitope Binning:** Process up to 256 interactions in a single cartridge with one-click analysis. Alto simplifies competition assays to identify unique binders with its 16x16 binning format, with results summarized as a heatmap for easy interpretation.
- **Quantitation:** Determine up to 40 unknown analyte concentrations per experiment. Alto automates on-cartridge dilutions of the known standards to seamlessly generate a calibration curve with five-parameter logistic (5PL) fitting and quantify the unknowns.



Select from a variety of templates to simplify assay design based on your desired application and output. Upon analysis, Alto displays your data in a variety of formats to simplify interpretation.

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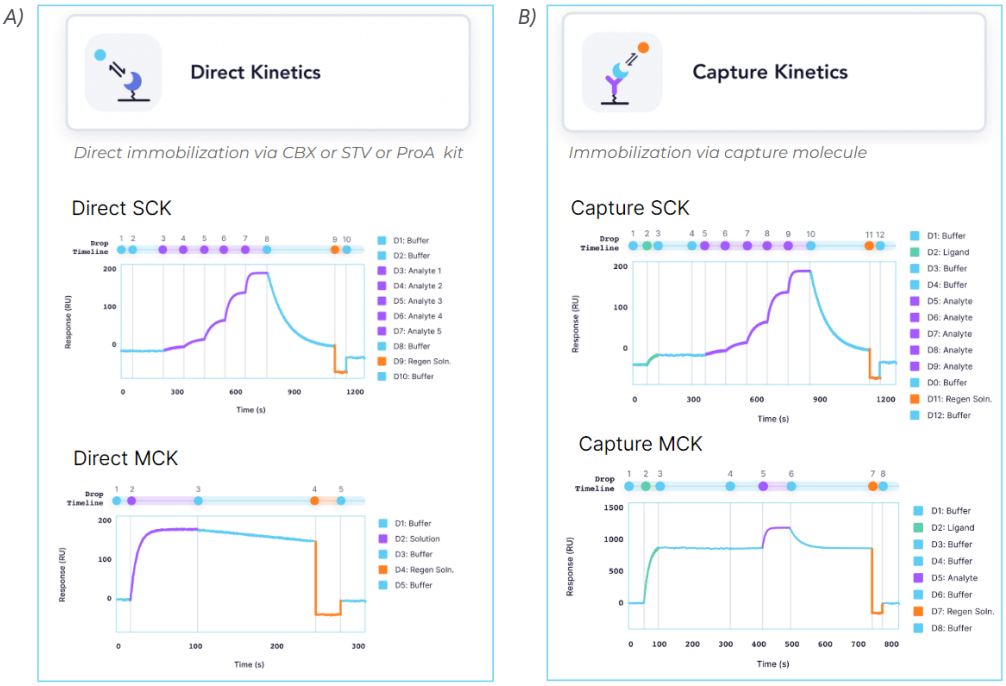
Immobilization strategies

- **Direct Assay**: Immobilize your target ligand directly onto a sensor with a pre-determined surface chemistry. Alto cartridges are compatible with a variety of chemistries to cover a wide range of application types.
- **Capture Assay**: Build your own surface chemistry with our capture protocol, or immobilize a capture molecule for applications that require a greater degree of control over the orientation of your ligand.



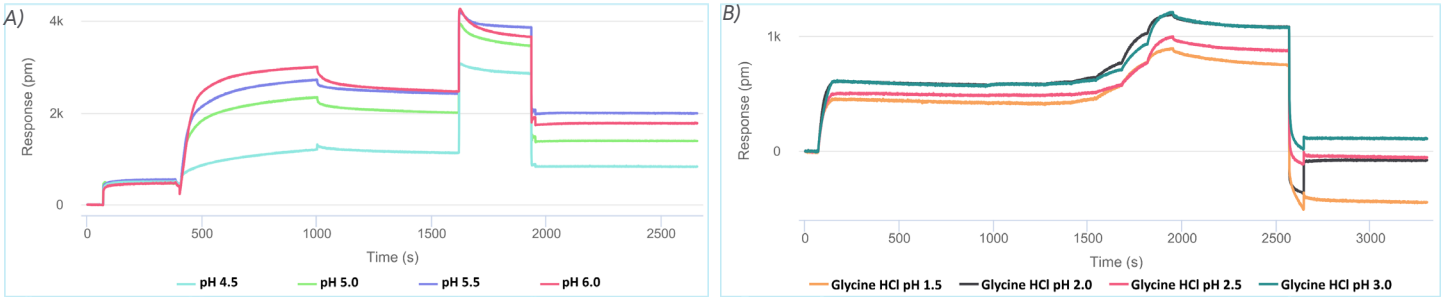
A: Single-cycle and multi-cycle kinetics obtained from direct immobilization of ligand on the sensor.
B: Single-cycle and multi-cycle kinetics obtained from capture of ligand on sensor via capture molecule.

Cycle styles

- **Multi-Cycle Kinetics (MCK)**: For common applications requiring individual binding curves, Alto's all-in-one sensor cartridges expedite your MCK workflow by automating sample dilutions and eliminating the need to prepare large volumes of buffer and surfacing solutions.
- **Single-Cycle Kinetics (SCK)**: Alto enables the exchange of sample droplets on the sensor surface without the need for buffer flow in between, allowing you to reliably perform kinetic titrations. Ideal for tight binders, rapid condition scouting, and other challenging applications, Alto's SCK assays allow you to dramatically shorten your experimental times while ensuring the integrity of your samples.

Optimization strategies

Optimize your assay for its ideal conditions in a single, automated experiment. Alto's multiplexing capabilities allow you to scout and test a variety of reagents when working with new binding partners, so you can quickly determine the optimal conditions for your interaction.



Simultaneous analysis of 4 regeneration solutions and 2 immobilization buffers in a single test. A) pH scout for ligand immobilization to the CBX sensor with sodium acetate buffer. B) Full regeneration achieved with 10 mM glycine-HCl pH 1.5.

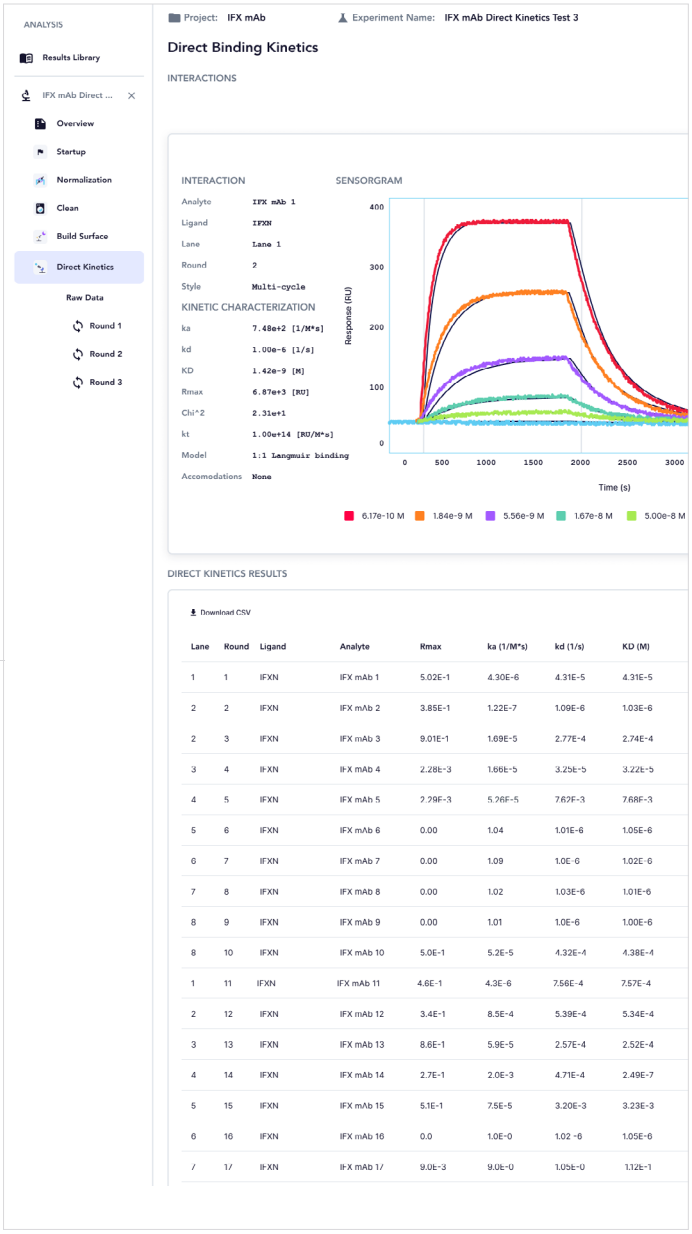
Data processing

One-click analysis

A diverse range of models and investigative tools are available to accurately interpret your data and provide high-quality insights. Accommodations can be made to both individual interactions and cartridge-wide to refine your data and produce high-quality figures.

Flexible export

Export your data in a variety of file types. Raw and analyzed interaction data for each activity can be exported as CSV files and images in one-click for continued data processing, reporting of results, or company databases.



The Analyze tool offers a variety of views and accommodations to streamline data analysis.

Specifications

Performance	
Association rate (k_a)	Up to 10^9 1/M*s
Dissociation rate (k_d)	10^{-5} – 1.0 1/s
Affinity range (K_D)	pM - mM
Software	
Application types	• Binding Kinetics • Screening • Epitope Characterization (Mapping & Binning) • Quantitation
Connectivity modes	• Local • Cloud
Analysis models and accommodations	• 1:1 Langmuir • Mass Transport Limited (MTL) • Off-rate
Immobilization	• Direct Immobilization • Capture Immobilization
Cycle styles	• Single-Cycle Kinetics (SCK) • Multi-Cycle Kinetics (MCK)
Kinetics interaction types	• Multi-Analyte • Multi-Ligand
Direct file output	• Image • CSV
Compliance	Please inquire for your specific needs

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