Alto™ Nicosystem Software

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

Designed for any skill level

Take the guesswork out of surface plasmon resonance (SPR) with Alto's comprehensive software - the Nicosystem™. It 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**

Intuitive experiment design

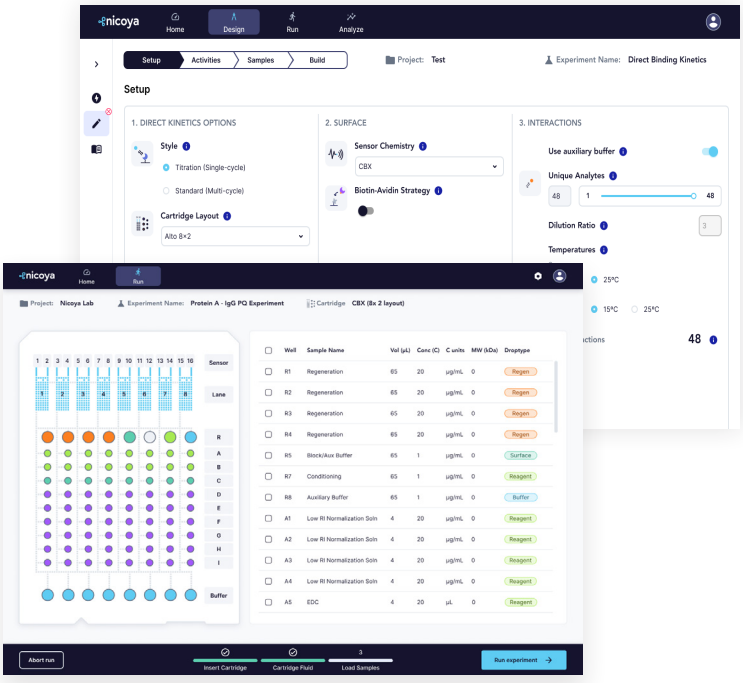
Map your sample layout, design your assay, and build your experiment. Nicosystem offers a full suite of workflows for characterizing biomolecules, including kinetics, screening, quantitation and epitope binning / mapping. Simply choose your assay template, enter your sample information, and build.

Plug-and-play run

Alto's plug-and-play design makes it easy for anyone in your lab to confidently perform SPR experiments. 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 accelerate 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 our Application Scientist today:
info@nicoyalife.com | www.nicoyalife.com

Connectivity

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

- **Local Mode** offers a traditional biosensor experience, enabling you to work with an offline instrument-laptop connection. A local intranet connection can also be enabled to use within a locally controlled network.
- **Cloud Mode** enables you to design and analyze experiments from anywhere with an internet connection with data transferring seamlessly to and from the Alto system.

Both connectivity modes share the same streamlined user experience and experiment capabilities. Multiple user accounts are supported with either Administrator or User privileges.

	Local	Cloud
Operation	Offline or Within company network	Anywhere with internet
Data Storage	On-device	On-device + Nicoya Cloud Server
User Accounts	Admin + Users	
Computer OS	Any	
Supported Browser	Google Chrome or Microsoft Edge	

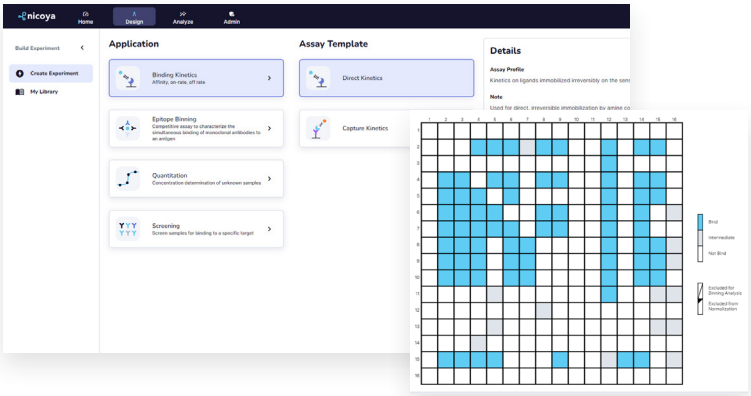
Nicosystem capabilities offered in Local and Cloud Mode operation.

Assay design

Investigate a wide range of applications with a platform built to handle the unique complexities and constraints of biologics.

Applications

- **Binding Kinetics:** Elucidate the real-time kinetic binding profiles (k_a, k_d, K_D) of up to 48 targets using multi-cycle or single-cycle kinetic analysis styles.
- **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/mapping:** 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.

Two options of Nicosystem are available to fit your research needs and budget.

Nicosystem Essentials

Ideal for basic research.

- Kinetics / affinity

Expansions are available

Most popular

Nicosystem Pro

Ideal for biologics discovery.

- Kinetics / affinity
- Quantitation
- Screening
- Epitope mapping / binning

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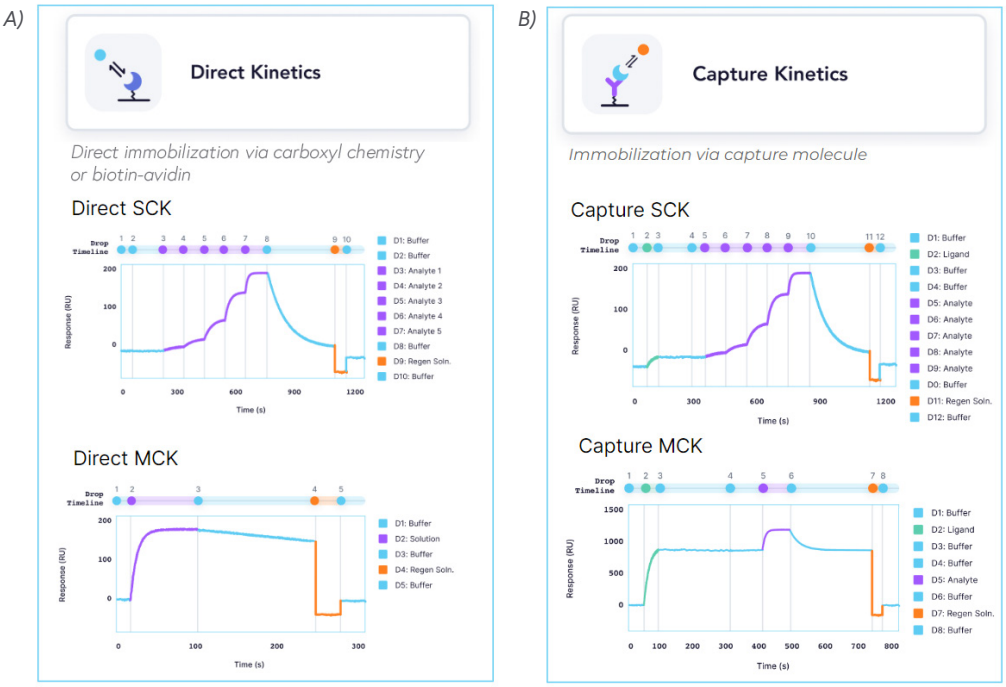
Immobilization strategies

- **Direct Assay**: Immobilize your target ligand irreversibly onto the sensor surface using amine coupling or biotin-avidin strategies.
- **Capture Assay**: Immobilize a capture molecule onto the sensor surface to reversibly bind and improve control of the orientation of your ligand.



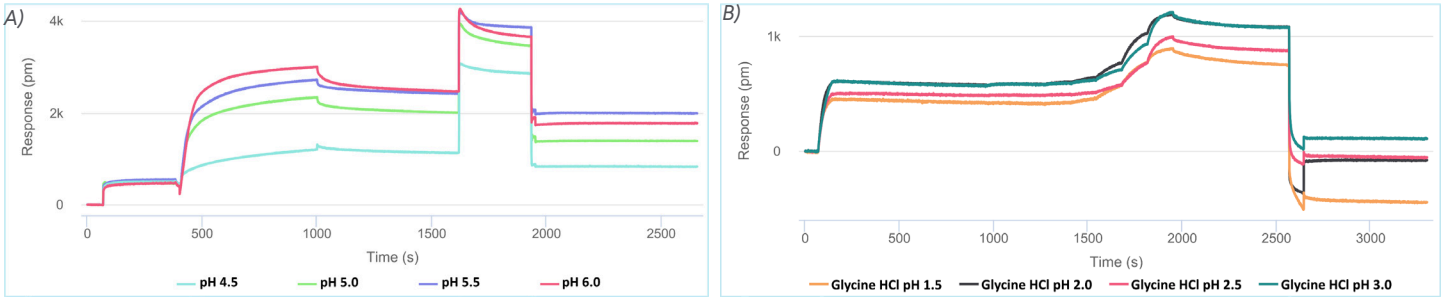
A: Single-cycle and multi-cycle kinetics obtained from direct immobilization of ligand on the sensor.
B: Single-cycle and multi-cycle kinetics obtained from capture of ligand on sensor via capture molecule.

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 asssociated reagents.
- **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 2 immobilization buffers and 4 regeneration solutions 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.

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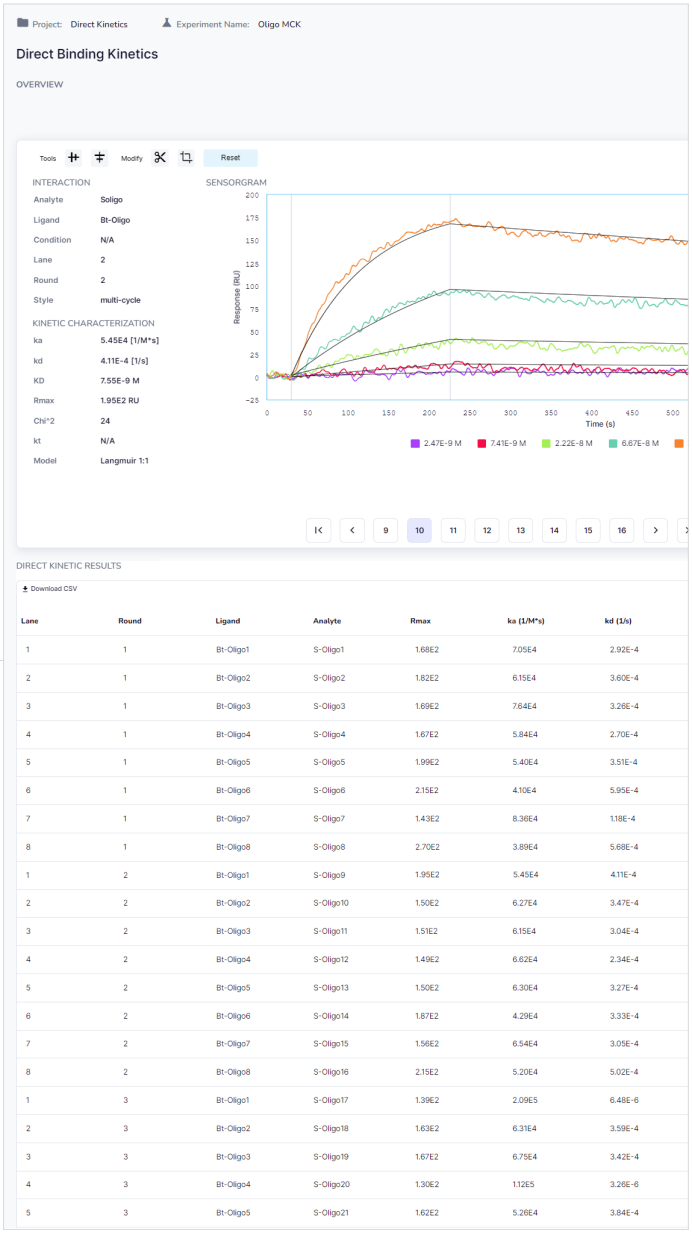
Data processing

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 Binning / Mapping* • 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

*Available only in Nicosystem Pro package

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