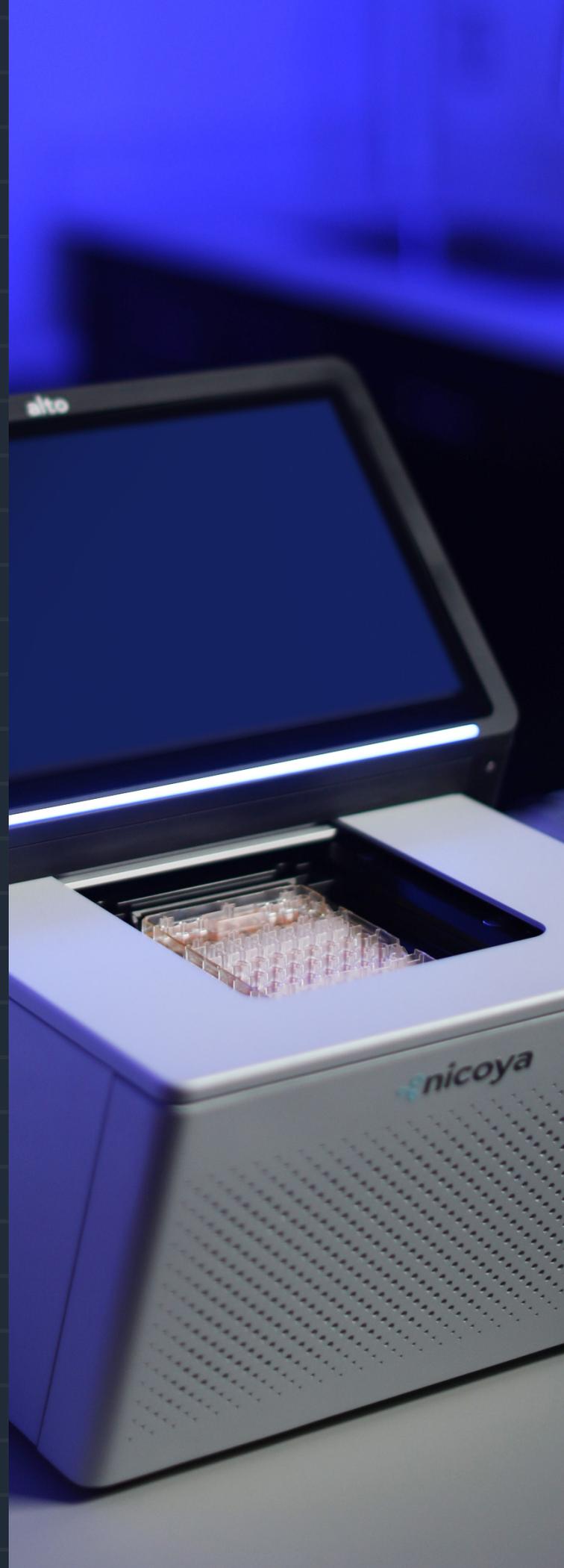


alto

Accelerate your
drug discovery
with digital SPR

 nicoya





Make discoveries, not compromises

The label-free solution for characterizing biologics

As the world's only surface plasmon resonance (SPR) system powered by digital microfluidics, Alto revolutionizes real-time interaction analysis by eliminating the need to compromise on quality and time. Go from sample to answer within hours while streamlining even the toughest of biologics applications with Alto's intuitive and automated ecosystem. Designed to take the complexity out of SPR, Alto will empower your team with the data they need to take their discoveries to the next level.



Maximize data quality

Automate error-prone steps while eliminating sample dispersion and evaporation.



Save precious sample

Get full kinetic analysis from 2 μ L of crude or purified sample, 100X less than traditional SPR platforms.



Future-proof your lab

Scale effortlessly with cloud-first software, external automation, and expanded protocols unconstrained by hardware.



Liberate your team

Spend 70% less time at the bench - no purification, dilutions, tagging, degassing, cleaning, or manual assay design required.

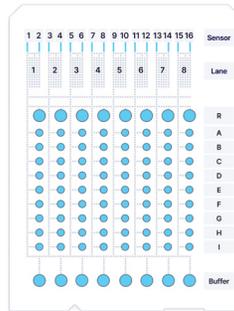
Beyond traditional SPR

Empower your team with a label-free platform designed for biologics research.



Universal hardware

A robust benchtop instrument free of fluidic components and easily upgradeable.



Disposable cartridge

Sensors, fluidics and reagents all integrated in one consumable powered by digital microfluidics.



Flexible software

Designed for any skill level, with local or cloud access to your data anytime.

What is digital microfluidics (DMF)?

DMF is a liquid-handling technology capable of accurately controlling and manipulating discrete nanoliter-sized droplets across an array of electrodes. The fluidics are contained within a disposable cartridge, allowing Alto to overcome the major limitations associated with increasingly complex fluidic systems present in traditional label-free instruments. The elimination of pumps, valves, tubes and flow cells virtually eradicates maintenance and allows for greater flexibility, accuracy, and performance.

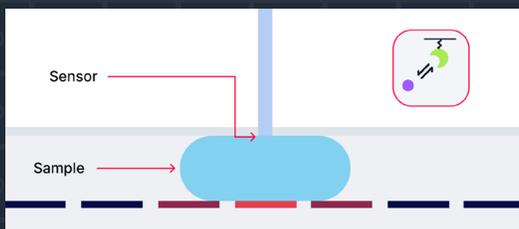


Figure 1: Voltage moves drops across the cartridge in discrete, programmable pathways to deliver, modify, and remove reactants at the sensor surface.

Run with confidence

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, and flexible cartridge designs enable you to run hundreds of interactions in a variety of formats. As a legitimate "sample in, answer out" instrument, your only task at the bench is to load your cartridge and press play.

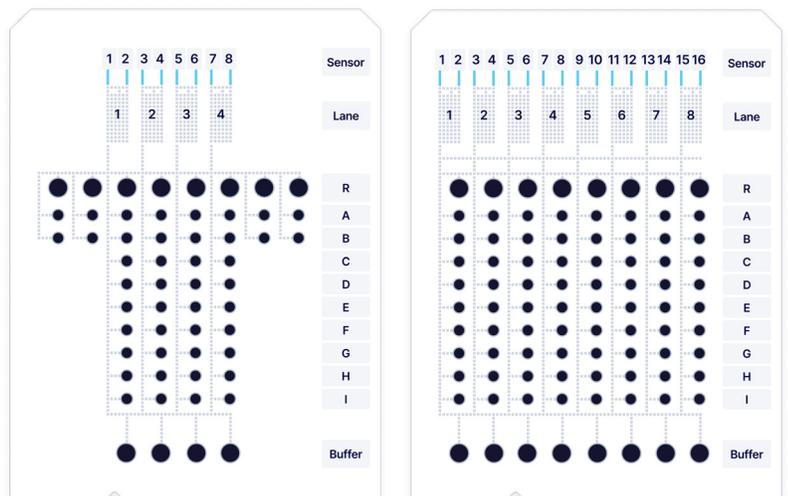


Figure 2: 8-channel and 16-channel cartridge layouts.

Work from anywhere

Take the guesswork out of SPR with Alto's intuitive cloud-based software: The Nicosystem

A first of its kind, the Nicosystem provides a one-stop centralized hub for accessing and sharing data, while offering you the flexibility of accessing your experiments on the cloud or locally.

Design on the go

Map your sample layout, set up your assay, and build your experiment all without needing to be at the bench. Any experiment designed on the Nicosystem will be immediately available to run on your instrument once you're back in the lab. And with Alto's application-centric design modules, you will always be in control of when and how your team runs experiments.

Built-in analysis

Eliminate lengthy post-processing with Nicosystem's one-click analysis. A diverse range of models and investigative tools are available to accurately interpret your data and provide high-quality insights. With Nicosystem's seamless end-to-end handling of your experiments, you'll be empowered to scale your workflow and quickly share new discoveries.



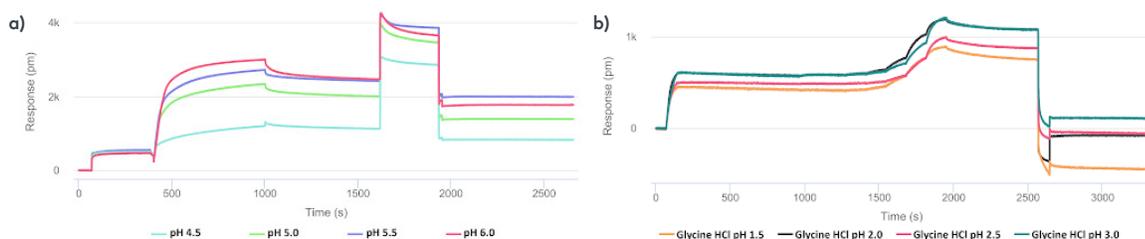
Built for biologics

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

Optimize your conditions

Optimize your entire assay 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 to quickly determine the optimal conditions for your interaction.

Figure 3: Simultaneous analysis of 4 immobilization buffers and 4 regeneration solutions in a single test. a) Optimal ligand immobilization on carboxyl sensor achieved at pH of 5.5. b) Optimal regeneration achieved with 10 mM glycine-HCl pH 2.5.



Choose the right format

Introduce flexibility and control over your assay design by selecting the protocol that is best suited for your interaction.

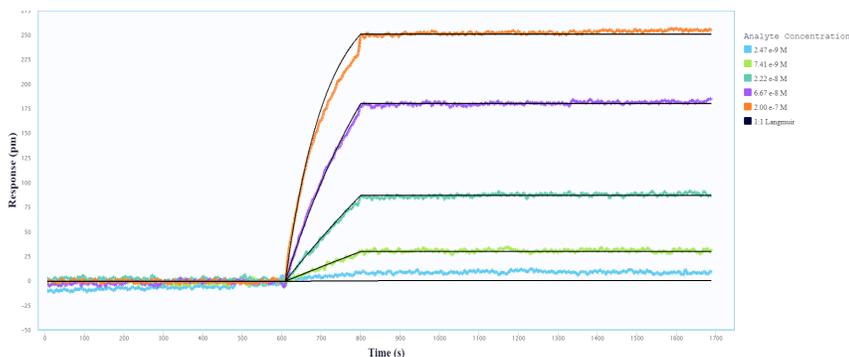


Figure 4: MCK binding of influenza A protein to immobilized influenza A antibodies.

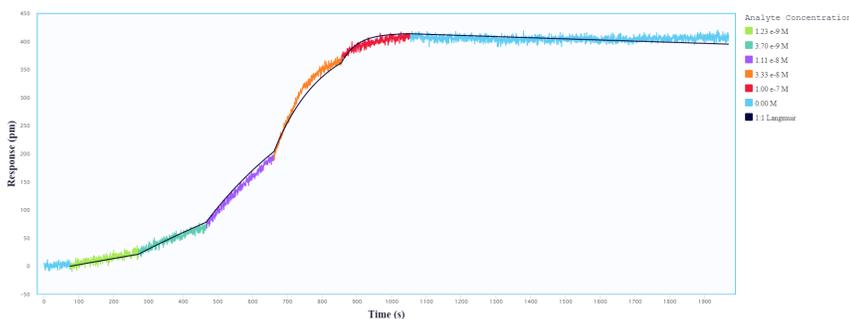


Figure 5: SCK binding of influenza A protein to immobilized influenza A antibodies.

Multi-cycle kinetics (MCK)

Alto's 16-channel design and automated serial dilutions allow you to fully automate MCK assays, especially when working with large sample libraries.

Single-cycle kinetics (SCK)

Alto enables the exchange of droplets on the sensor surface without the need for buffer flow between samples, allowing you to dramatically shorten your assay times. SCK assays are ideal for tight binders, rapid condition scouting, and other challenging applications.

At a glance

Specifications

Fluidics	
Channels	16
Fluidics Technology	Digital microfluidics
Sample Handling	
Sample Capacity	48 (240 interactions)
Sample Volume	2µL per well
Referencing	1:1
Automation	Automated dilutions (3x) Robotics compatible*
Unattended Run Time	24+ hr
Crude Sample	Yes
Fluidic Maintenance	None
Performance	
Association Range	Up to 10^9 1/M*s
Dissociation Range	10^{-5} – 1.0 1/s
Affinity Range	pM – mM
General	
Assay Types	Kinetics & Affinity Quantitation Screening Epitope Characterization
Temperature Control	Analysis: Off, 25°C, 37°C Sample storage: Off, Chilled, 25°C
Mode	Cloud, Local
Weight	51 lbs
Dimensions	1.5H x 1W x 1.5D ft
GxP Compatibility	Please inquire for your specific needs

*Please inquire for your specific needs

Applications

- Kinetics/affinity characterization
- Kinetics/affinity screening
- Quantitation
- Epitope mapping/binning

Compatible with

- Proteins / Peptides
- Antibodies
- Nucleic acids
- Crude samples
- Viruses
- Small molecule
(application dependent)

Surface chemistries

- Carboxyl
- Streptavidin (kit)
- Protein A (kit)
- Anti-His (kit)



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