Biacore™ 8 series systems

LABEL-FREE INTERACTION ANALYSIS

Biacore™ 8 series systems efficiently deliver quality binding data to meet your toughest challenges in screening, characterization, process optimization, and quality control (Fig 1). Our 16-flow-cell surface plasmon resonance (SPR) systems, Biacore 8 series systems, come in two configurations: Biacore 8K for high-throughput screening and characterization and Biacore 8K+ for a significantly higher capacity.

These eight-needle high-sensitivity SPR systems rapidly provide reproducible kinetics, affinity and concentration data, and shortens your time to results by up to eight times compared to one-needle systems.

The blend of system flexibility and throughput reduces the experimental cycle time, even for complex targets and drug formats such as bispecific antibodies. This offers more opportunity for screening in drug discovery and development of small molecules to large viruses in pure or complex samples.

Application methods are easily transferred to other labs or other Biacore 8 series systems and to our one-needle SPR platform Biacore 1 series.

Biacore 8 series SPR systems provide:

- Excellent data quality while increasing your throughput eight-fold, compared to one-needle SPR systems.
- Interaction analysis for screening, kinetics, affinity, epitope binning, concentration, and relative potency.
- Higher operational efficiency with capacity options and streamlined assay development in parallel.
- Modular configuration with option for analysis in a GxP-regulated environment.
- Rapid optimization of assay conditions and troubleshooting.
- Full integration of run and evaluation data into your organization's data management systems utilizing application programming interface (API) included in Biacore Insight Data Integration Extension.

Fig 1. Biacore 8K and Biacore 8K+ systems efficiently deliver high-quality affinity and kinetics data for small molecule and biotherapeutic screening and characterization.

One SPR platform for small molecule and biotherapeutic screening and characterization

Biacore 8 series systems give you a single solution for interaction analysis in screening, characterization, process optimization, and quality control. They are suited to the analysis of samples containing the smallest fragments to large multidomain proteins, even in crude matrices. Applications include:

- Selection of biotherapeutic or small-molecule hits based on affinity and kinetic ranking.
- Characterization and optimization of selected binders based on detailed kinetic and affinity information.
- Identification and binning of antibodies based on epitope, even when the antigen dissociates rapidly.
- Reproducible and reliable determination of protein concentrations and potency.
- Generation of information on titer, concentration, and kinetics for your biologic candidates in a single assay cycle.

High-quality data in less time, even for the toughest applications

The eight-needle parallel setup boosts efficiency regardless of the number of samples running. With 2D Kinetics™ methodology, detailed kinetics for a single interaction can be obtained in 35 min without spending time on assay development. When working with multiple samples, Parallel Kinetics™ screenings efficiently identify hits from 384 samples in less than 6 h. Both systems support fast scouting of assay conditions, screening 96 buffer conditions in 80 min, which optimizes your assay to deliver concentration and interaction data you can rely on. An 8 × 8 epitope binning array (64 interactions) can be performed in about 2 h using a tandem assay set up.

To help you get the best possible data, we support you and your applications with a broad portfolio of consumables and method protocols, while providing you with access to our local application experts.

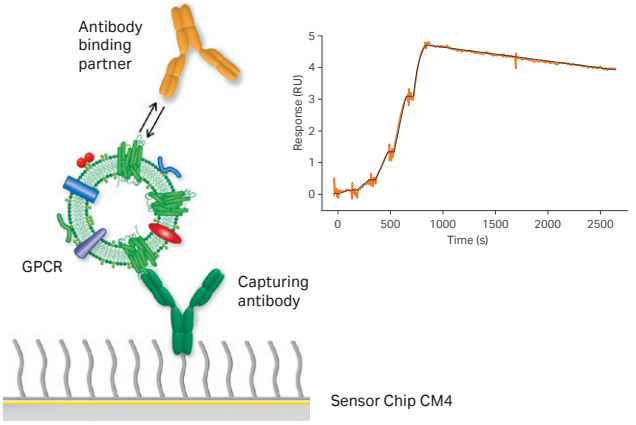


Fig 2. The high sensitivity and robustness of Biacore 8K and Biacore 8K+ systems allow the analysis of GPCRs in crude membrane preparations.

Biacore 8 series systems provide the same data quality as our one-needle Biacore systems and come with the sensitivity and stability that is crucial to generate binding data with quality to support important decision making. The sensitivity allows for screening and characterization of the smallest organic compounds and enables confident kinetic analysis over a wide kinetic range, from very fast on-rates to the slowest off-rates. High sensitivity also opens up for analysis of low-abundance molecules or sensitive complex targets.

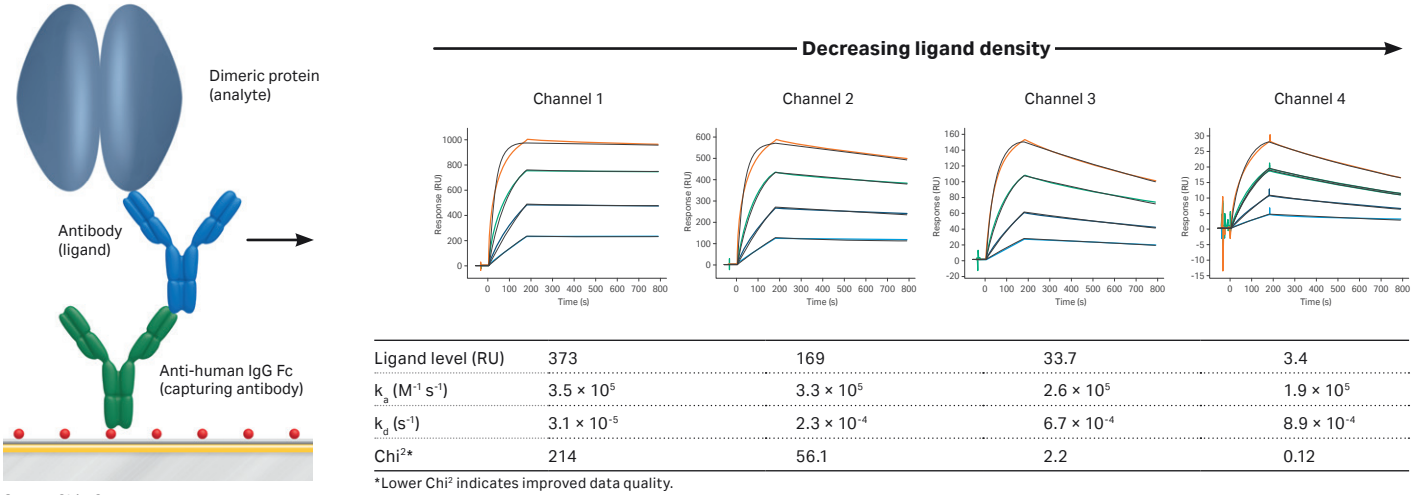
Interactions involving challenging targets

Analyzing G protein-coupled receptors (GPCRs) and other sensitive targets

The high sensitivity of Biacore 8 series SPR systems generates reliable data for rare or sensitive targets such as GPCRs (Fig 2) where only a fraction of the protein might retain its biological activity throughout the analysis. Analysis may be performed directly in crude matrices such as a membrane preparation. This avoids unnecessary sample handling that risks negatively affecting the activity level. The high sensitivity also allows for analysis of the smallest organic compounds even for low-affinity interactions (K_D in the millimolar range), which is important for reliable, small molecule fragment screening.

Analysis of bivalent analytes

The systems allow for full flexibility in the characterization of bivalent analytes such as antibodies or dimeric proteins. Complication from avidity is minimized by using very low immobilization levels, which renders reliable data (Fig 3). Low immobilization levels generally give fewer secondary interactions and increase the proportion of target accessible for binding; some targets even exhibit surface aggregation at higher densities. Cleaner interaction data not only gives more accurate results but also makes analysis simpler and faster, saving time.



Ligand level (RU)	373	169	33.7	3.4
k_a (M^{-1} s^{-1})	3.5×10^5	3.3×10^5	2.6×10^5	1.9×10^5
k_d (s^{-1})	3.1×10^{-5}	2.3×10^{-4}	6.7×10^{-4}	8.9×10^{-4}
Chi^2*	214	56.1	2.2	0.12

*Lower Chi^2 indicates improved data quality.

Fig 3. Analysis of a bivalent, dimeric protein with a molecular weight (M_r) of 660 000 Da. The avidity diminishes with the ligand density revealing the true kinetics of the interaction. Data obtained using Biacore 8K system, courtesy of Schraeml, Biehl, von Proff, Roche Diagnostics GmbH, Centralised and Point of Care Solutions, Penzberg, Germany.

High sensitivity enables accurate measurement of fast on-rates and slow off-rates

Biacore 8 series systems enable measurement of exceptionally fast on-rates that allows for differentiation between rapid binders. This is an important feature when studying biological processes limited by bioavailability (Fig 4). At the other end of the kinetic spectrum, today's antibody discovery often generates many high-affinity hits in every campaign. Differentiating these stable binders increases the challenge on the analytical system used as it requires both high sensitivity and stability over time. The high sensitivity of Biacore 8 series systems, in terms of low baseline noise and drift, provides effective differentiation between stable binders, and allows reliable determination of very slow off-rates down to 10^{-6} s^{-1} (Fig 5).

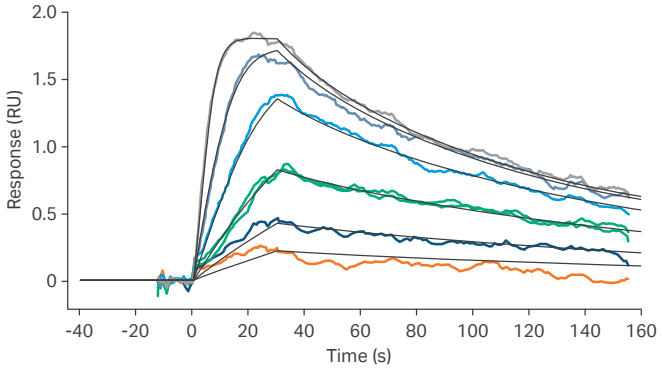


Fig 4. The high sensitivity of Biacore 8K and Biacore 8K+systems enable confident analysis of fast on-rates. Sensorgram showing binding of melagatran to thrombin: association constant (k_a) 4.0 × 10^7 M^{-1} s^{-1}; k_d 0.014 s^{-1} analyzed on Biacore 8K system.

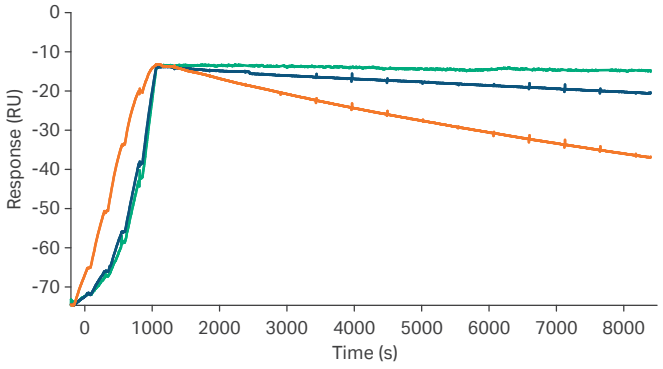


Fig 5. Biacore 8 series systems provide sensitivity and stability that enables the differentiation of tight binders with dissociation rate constants (k_d), down to 10^{-6} s^{-1}.

Parallel setup maximizes operational efficiency

Biacore 8 series systems are designed to maximize operational efficiency by combining rapid high-quality data with the smooth operation that comes from user-friendly and application-specific software modules and interactive hardware. The systems feature an eight-channel parallel setup with a microfluidic injection concept which enables each channel to provide high quality, reference-subtracted data (Fig 6). The simple 8 × two-flow-cell setup makes planning, preparation, and operation straightforward and easy to understand. A fluidic delivery system is required for accurate kinetic determinations and the microfluidic system has been refined to optimize stability and robustness while not compromising on performance. Biacore 8 series systems provide interaction data directly from crude matrices such as hybridoma supernatants, membrane preparations, or serum samples.

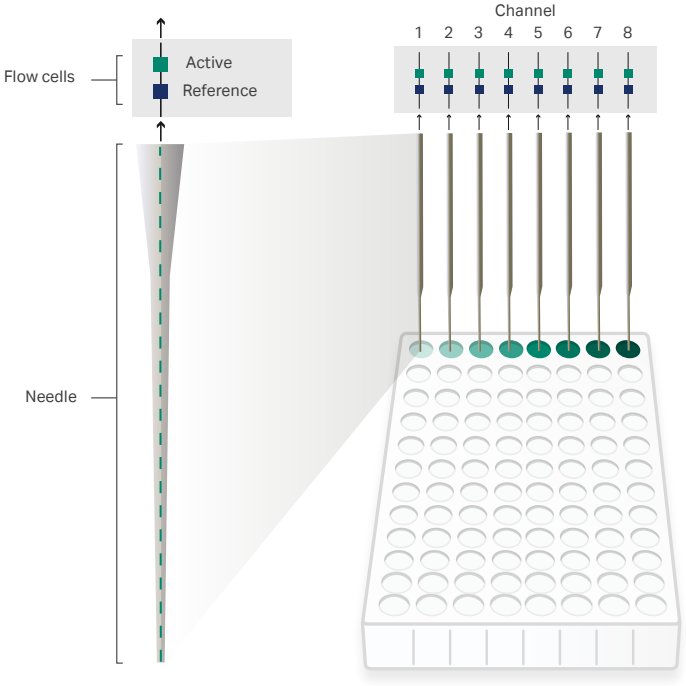


Fig 6. The simple, eight-needle, eight-channel concept with two flow cells per channel simplifies assay setup and operation of Biacore 8 series systems. This allows assay optimization of eight samples in parallel.

Sample capacity

Biacore 8 series systems support the use of 96- and 384-well microplates in standard and deep-well formats of up to 2 mL volume (Fig 7). Both samples and reagents are taken from standard microplates with no need for special vials.

The sample hotel of Biacore 8K system accommodates two trays. The sample hotel of Biacore 8K+ system accommodates up to six trays, which increases up-times and asset utilization by up to 30% per week. Each tray can hold two microplates which translates to a maximum unattended run capacity of 1536 and 4608 samples for Biacore 8K and Biacore 8K+ systems, respectively. This makes it possible to screen a full fragment library (with an average size of 2000 compounds) in a single experiment, without manual intervention or the need for external robotics.

Trays may be accessed during run to optimize operational efficiency for both systems. The sample hotel is temperature-controlled. Optimal assay performance is obtained by keeping samples at the same temperature as the analysis temperature. To ensure the integrity of samples and reagents in extended runs, the sample hotel can be kept refrigerated.

Biacore 8 series systems are equipped with a buffer selector enabling change of up to four different running buffers without the need for manual intervention, allowing for even higher efficiency.

Fig 7. Biacore 8K system accommodates up to four 96- and 384-well microplates simultaneously, all in a temperature-controlled environment for optimal assay performance or to ensure sample integrity in extended runs.

Interaction data at physiological temperatures

Biacore 8 series systems provide reliable data at physiological analysis temperature enabling better prediction of *in vivo* behavior of therapeutic candidates. Heated or cooled needles ensure that the samples have the appropriate temperature when being analyzed, even at elevated flow rates (Fig 8).

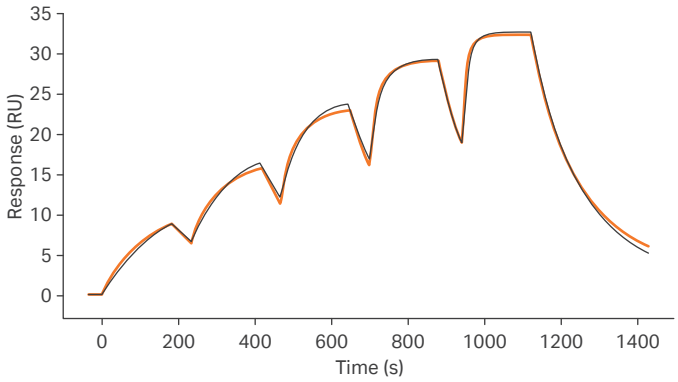


Fig 8. Biacore 8 series systems provide high-quality data at physiologically relevant temperatures. Data shows the analysis of β2-microglobulin vs anti-β2-microglobulin at 37°C.

Rapid selection of the most relevant hits

With its parallel eight-channel setup with multiple microplate capacity, Biacore 8 series systems rapidly generate screening data for selection of the most relevant hits based on binding information. More than 2300 small molecule fragments may be screened using ***Binding level screen*** and ranked in 24 h based on binding response and desired sensorgram profile.

For screening based on kinetic information, an initial single concentration screen of 384 samples is performed in less than 6 h, leaving time for setting up and starting the follow-up experiment on the samples with the best kinetic profile before going home for the day.

For rapid and automated analysis of large data sets, Biacore 8 series systems can significantly reduce the manual, time-consuming steps of data curation and quality control by adding supervised machine learning, Biacore Intelligent Analysis™ Software. This software is an optional, add-on software extension that currently offers support for two analysis types, ***Binding level screen*** and ***Affinity screen*** for fragments.

Characterization and optimization of the most promising binders

Regardless of your application, the systems provide efficient approaches to kinetics and affinity analysis. Affinity can be determined either with steady-state affinity analysis or via the ratio of kinetic rate constants. For small molecule fragments, specific affinity screening tools such as control based R_{max} are also available using Biacore Insight Software, Biacore Insight Extended Screening Extension, and Biacore Intelligent Analysis software.

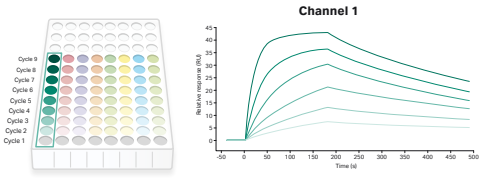
For kinetic evaluation, the parallel setup can be utilized in several ways to ensure the shortest possible run time regardless of number of samples (Fig 9). By distributing the sample concentration series with associated blanks along the microplate, multicycle high-quality kinetic parameters can be obtained up to eight-fold faster than with one-needle systems.

For a single sample, faster determination can be obtained by distributing the concentration series across the plate without loss of accuracy. Kinetic analysis can also be performed using Biacore Single-Cycle Kinetics (SCK)™ to simplify analyses involving unstable targets as it can be performed without surface regeneration between concentrations. It also reduces assay run time and is the preferred choice for rapid kinetic characterizations of many samples, enabling analysis of 64 samples in 5 h.

For samples where prior knowledge of affinity is lacking, a novel 2D Kinetics approach can be applied to deliver full kinetic characterization data within 35 min without extensive assay development. 2D kinetics combines the eight-channel parallel sampling setup of Biacore 8 series with Biacore Single-Cycle Kinetics (SCK). The sample is diluted in two dimensions creating a large concentration matrix. All dilutions are thereafter injected in a single cycle and globally fitted to provide reliable, high-quality kinetic data. If a capture approach is used, several consecutive samples can be analyzed using 2D Kinetics approach without the need for regeneration scouting.

Biacore Multi-Cycle Kinetics (MCK)™

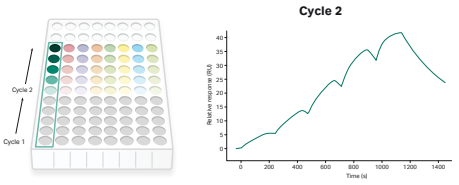
- Suitable when different ligands are to be immobilized
- Suitable also for many samples against one ligand



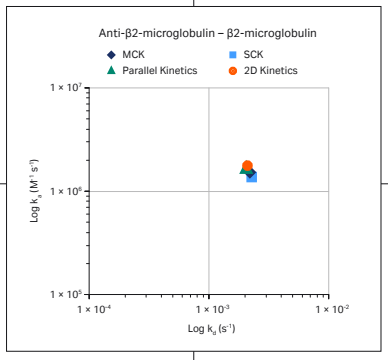
Ex. Cycles 1 to 9: sample concentrations and blanks are placed per channel

Biacore Single-Cycle Kinetics (SCK)

- Fast run time
- No regeneration needed
- Two to five concentrations per injection
- Beneficial for long dissociation times and kinetic screen

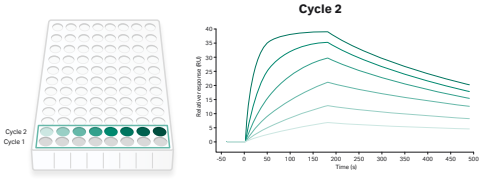


Ex. Cycle 2: 5× sample concentrations (cycle 1: 5× blank concentration).



Parallel Kinetics

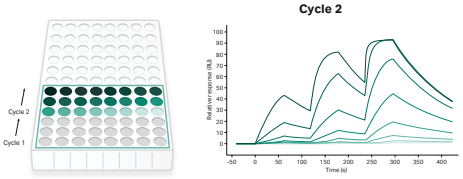
- Short run time for few samples
- Kinetic analysis in only two cycles (one blank cycle)
- Beneficial for samples with long dissociation times
- Alternative setup: two samples, four concentrations



Ex. Cycle 2: sample in eight concentrations (cycle 1: blank cycle)

2D Kinetics

- In-depth analysis in only one sample cycle
- Sample diluted directly into plate
- Sample diluted in two dimensions to cover a wide range
- No preknowledge about affinity or regeneration needed



Ex. Cycle 2: sample in 24 concentrations (cycle 1: blank cycle)

Fig 9. Biacore 8 series systems approaches to kinetic determinations.

Fast assay optimization for better results

Within drug discovery, an increasing amount of work is performed with more challenging targets such as membrane-bound receptors like GPCRs, and ion channels. These proteins are sensitive in nature, and it is very important to identify the right assay conditions that retain their activity over the duration of the entire assay. Biacore 8 series systems are equipped to facilitate efficient assay development and optimization. The eight-channel setup increases the number of conditions tested per unit time up to eight-fold, compared with one-needle systems. With the ***ABA*** command, large matrices of buffer variations can be prepared in microplates and rapidly tested (Fig 10). The ***ABA*** buffer scouting approach allows testing of 96 buffer variations in less than 80 min.

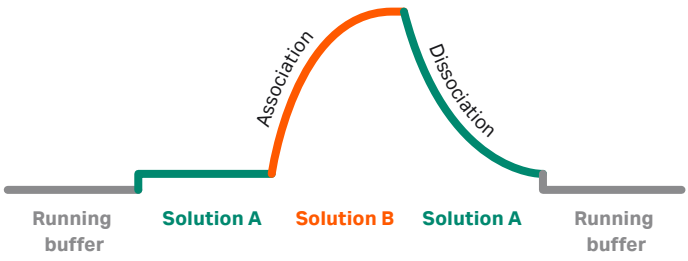


Fig 10. ***ABA*** command allows two different solutions to be injected over the surface in the same cycle in the following order: solution A, solution B, then solution A. This enables buffer scouting to be run directly from one microplate. The ***ABA*** command may also be used in competition assays. In this case from left to right: Solution A = assay buffer + competitor; Solution B = assay buffer + competitor + analyte.

Explore epitope diversity quickly

Biacore Insight Epitope Binning Extension enables automated identification and control to maintain unique and diverse epitopes that may broaden intellectual property protection. This add-on, application-specific extension provides support from run setup through to data evaluation, including predefined methods and an automatic sample plate layout tool to shorten your assay development. All three main assay formats for epitope binning analysis are supported: sandwich, tandem, and premix.

A challenge in epitope binning is that the low affinity of binding between the antigen and the first antibody can lead to the dissociation of the antigen, resulting in the underestimation of binding level of the second antibody. ***Dual*** command compensates for this by injecting the antigen and the second antibody solutions in direct sequence with no intermediate washing steps, minimizing the dissociation of antigen before the secondary antibody is injected. Predefined evaluation methods automatically process data generated on Biacore 8 series systems.

Concentration determinations and potency

Drug development and quality control demands increased efficiency to allow for higher productivity without compromising data quality. Biacore 8 series systems are equipped with tools that allow for efficient concentration determination.

The eight-channel setup can be used to minimize time to results by running in a parallel fashion allowing eight concentrations to be determined in 30 min. A full 96-well sample plate is, with a serial setup, determined in 100 min. See Table 1 for typical run times for applications using Biacore 8K and Biacore 8K+ systems, respectively.

Biacore Insight Concentration and Potency Extension facilitates reproducible and robust concentration determinations of biologically active protein, not the total protein amount that would be obtained from an A280 determination. The software enables seamless determination of drug potency and parallel line analysis (PLA) without the need for tedious data import or export between different software. The precision and automation of the system reduces hands-on time and generates highly reproducible data over a wide dynamic range with coefficient of variation (CV) typically below 5%. The possibility to include control samples allows you to ensure rigorous quality control for your assay.

Table 1. Typical run times for various applications using Biacore 8K and Biacore 8K+ systems

Biacore 8 series systems	No. of samples	Run time Biacore 8K system	Run time Biacore 8K+ system
Kinetic characterization	64	4 h	4 h
Kinetic screen, single concentration	384	9 h	9 h
2D Kinetics of unknown	1	35 min	35 min
Clean screen	1536 (Biacore 8K) 4608 (Biacore 8K+)	3 h	8.5 h
Binding level screen	384	4 h	–
	3456	–	33.5 h
Affinity screen	64	5 h	5 h
Epitope binning	Up to 30 × 30 array	33 h	–
	Up to 40 × 40 array	–	59 h
Concentration analysis using serial calibration curve	96	100 min	100 min
Concentration analysis using parallel calibration curve	8	30 min	30 min

Queue up methods — save time and sensitive samples

To maximize instrument usage, utilize the ***Activity queue*** feature in Biacore Insight Control Software. The steps you usually take during analysis on a Biacore SPR instrument, from changing buffer solutions, chip docking, immobilization methods, analysis methods, temperature changes to cleaning procedure can be added to the ***Activity queue*** — which minimizes unnecessary waiting times. For automatic control of the ligand attachment levels, immobilization checkpoint can be added to the ***Activity queue***. This function reduces the need of manual confirmation of adequate immobilization prior to analysis by comparing the surface immobilization levels with acceptance criteria entered by the user. If any results fall outside the acceptance criteria, the ***Activity queue*** is paused, and user input is required to resume or stop the ***Activity queue***. If results are within the acceptance criteria, the ***Activity queue*** continues with subsequent activities (Fig 11).

Following start of the ***Activity queue***, remaining samples and reagents can be prepared while the instrument is running. Run status display helps you further plan lab time.

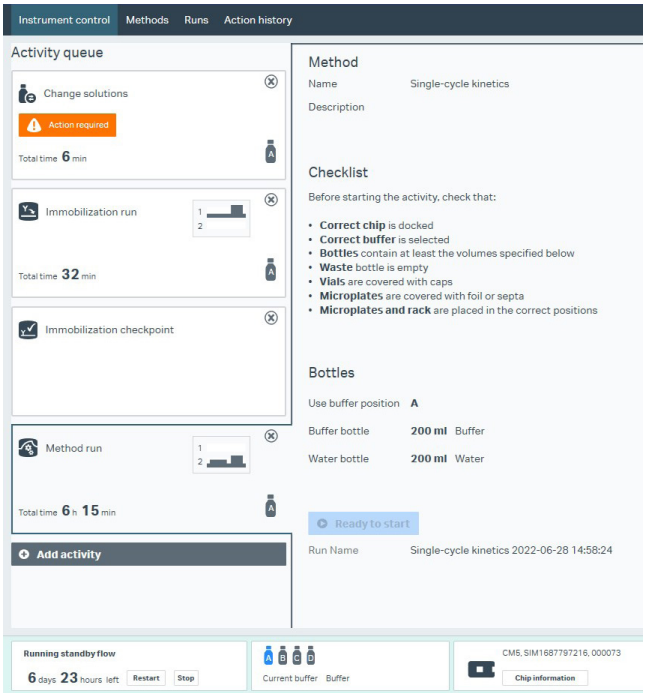


Fig 11. ***Activity queue*** lined up with ***Change solutions***, ***Immobilization run***, ***Immobilization checkpoint*** followed by a Biacore Single-Cycle Kinetics (SCK) method run.

When working with sensitive samples, the ***Activity queue*** and the temperature-controlled sample hotel is a powerful combination that lets you save samples, time, and costs. Assays using surfaces with sensitive ligands can be queued up in a time efficient manner overnight or over the weekend. Sensitive analytes requiring extensive sample preparation to maintain stability can be loaded in plates and stored in the sample hotel at 4°C until analysis.

Biacore Insight Software makes SPR simpler and faster

Biacore Insight Software offers a streamlined approach to running, analyzing, visualizing, and exporting SPR data from Biacore 8 series and Biacore 1 series instruments. This unified platform for instrument control and data evaluation aims to streamline all steps in your SPR workflows, while ensuring a user-friendly experience and maximum flexibility.

With our modular toolbox approach, you can choose the right tool for your analysis needs. Optional software extensions provide tailored solutions for key applications, enhancing functionality and further reducing your time to result:

- Biacore Insight Extended Screening – Accelerate discovery with precision and efficiency.
- Biacore Insight Concentration and Potency – Confidently determine active concentration and potency.
- Biacore Insight Epitope Binning – Flexible and streamlined epitope characterization.
- Biacore Insight Data Integration – Seamlessly integrate your SPR data for actionable insights.
- Biacore Insight GxP – Ensure compliance and quality in your SPR work.
- Biacore Intelligent Analysis – Speed up your evaluation workflows with machine learning.

The Interactive run workspace within Biacore Insight Control Software empowers you to take full control of the instrument, while the software provides immediate feedback. Unlike predefined run methods, interactive run allows you to add commands and make decisions based on the results of previous injections, progressively building up the run cycle.

Biacore Insight Software facilitates quick and efficient evaluations with just a few clicks. The versatile tools for data selection and visualization scale seamlessly with the size of your experiment, ensuring fast and reliable results. The interface can be customized to suit your preferred way of working. Integrated help, tooltips and guidelines accommodate users at any experience level, use case, or stage of research. Together with automated QC features, SPR data evaluation becomes a breeze.

After evaluation flexible export features provide the means to export selected, or complete data sets for continued processing, result reporting, or storage. You can transfer data to Microsoft PowerPoint (Fig 12) and modify the presentation of your data using the extensive tool sets and layouts available. Additional export options are enabled by Biacore Insight Data Integration Extension. Allowing manual export in the machine-readable JSON format as well as access to application programming interface (API) for fully integrated and automated data transfer to your organizations data management systems.

Fig 12. The flexible result export feature in Biacore Insight Evaluation Software lets you export selected or comprehensive data for continued data processing, result reporting, or storage in a shared database. You can export data in Microsoft Excel, PDF, and Microsoft PowerPoint format. In this example, you can see a streamlined analysis of a kinetics experiment as a presentation in slide format.

For more details, please refer to the data file for Biacore Insight Software.

Support for working in regulated environment

Cytiva has a comprehensive offering to support the use of Biacore systems for interaction analysis in a regulated environment. The optional products and services that can be used in combination with Biacore 8 series and Biacore 1 series systems are:

- **Biacore Insight GxP Extension:** a software extension that enables operation in compliance with current GxP regulations and is specifically designed with a high level of built-in support for 21 CFR Part 11 compliance. Features include ***Data integrity***, ***User authorization levels***, ***Audit trail***, ***Version history***. ***Electronic signatures*** are used for review and approval of regulated procedures and evaluated results.
- **Validation support file:** a system assessment report, conformance certificates, and Biacore Insight GxP Handbook with recommendations for system setup considering 21 CFR Part 11 compliance.
- **Change control notification:** a subscription service allowing users to be notified of system changes, giving increased process robustness in regulated environments.
- **Cytiva's OptiRun™ qualification service:** ensures that systems are kept in a qualified state throughout their lifetime.

For more details, please see our data file Biacore Insight GxP Extension and qualification services.

Biacore consumables for reproducible data with minimum time and effort

Biacore 8 series systems operate using the extensive range of Biacore Series S sensor chips, which offer support for analysis of a wide range of interactions. A variety of capture kits offer several options for capturing the most common antibodies and tags to significantly reduce the time and effort you need to spend on developing your assay. The range of Biacore consumables also includes coupling kits, with selected reagents for stable, covalent attachment of the ligand to the surface. Convenient, ready-made buffers and solutions developed and verified to work in Biacore systems are also available to further enhance analysis efficiency.

Predefined methods with application-relevant settings are available in Biacore Insight Control Software for all major assays. Experiments using predefined methods and Biacore consumables can be started in minutes.

Join our family, Biacore SPR community

As an owner of a Biacore system, you are connected to a world of knowledge and experience in interaction analysis. A Biacore system comes with professional local application support from highly skilled and experienced application scientists who can help you get the most out of your Biacore system in all applications.

Thousands of Biacore systems are installed globally and over 60 000 scientific articles are published in peer-reviewed journals.

All Biacore system users are invited to share their experiences and learn more at regional user days, Developments in Protein Interaction Analysis (DiPIA) conferences and on LinkedIn, Biacore SPR community.

Our instrument service is performed by specially trained service engineers available close to you, who can help improve efficiency by minimizing system downtime. Streamlined maintenance of your equipment and fast response times let you focus on your work to deliver reliable binding analysis results.

Systems specifications

Technical specifications and characteristics	
Detection technology	Surface plasmon resonance biosensor
Information provided	Kinetic and affinity data (k_a, k_d, K_D), specificity, selectivity, screening data, epitope binning, concentration and relative potency data
Data presentation	Monitoring of real-time sensorgrams or evaluation data for result tables, result plots, heat map and bin chart
Analysis time per cycle	Typically 2 to 15 min
Automation	60 h unattended run time for Biacore 8K
	72 h unattended run time for Biacore 8K+
Sample type	Small molecule drug candidates to high molecular weight proteins (also DNA, RNA, polysaccharides, lipids, cells, and viruses) in various sample environments (e.g., in DMSO-containing buffers, plasma, and serum)
Required sample volume	Injection volume plus 20 to 50 µL (application-dependent)
Injection volume	1 to 200 µL
Flow rate range	1 to 100 µL/min
Flow cell volume	40 nL
Flow cell height	70 µm
Data collection rate	1 or 10 Hz
Sample/reagent capacity	4 × 96- or 384-well microplates, normal, and deep-well (Biacore 8K)
	12 × 96- or 384-well microplates, normal, and deep-well (Biacore 8K+)
Typical run times	Clean screen (384-well plate): 45 min
	Binding level screen (384-well plate): 4 h
	Affinity screen (64 samples): 5 h
	Kinetic characterization (64 samples): 4 h
	Kinetic screen, single concentration (384-well plate): 9 h
	Epitope binning, 8 × 8 array (64 interactions): 2 h
Analysis temperature range	4°C to 40°C (maximum 20°C below ambient temperature)
Sample storage	4°C to 40°C (maximum 18°C below ambient temperature)
Sample refractive index range	1.33 to 1.39
In-line reference subtraction	Automatic
Number of flow cells	16 in eight channels
Dimensions (W × H × D)	902 × 875 × 616 mm
Net weight total	127 kg (Biacore 8K) 141 kg (Biacore 8K+)
Mains requirements	Processing unit: autorange voltage 100 to 240 V~, frequency 50/60 Hz
Power consumption	Processing unit: Maximum. 350 VA (Biacore 8K) Maximum. 550 VA (Biacore 8K+)

Minimum computer requirements
64-Bit Windows 10 Enterprise or Professional Edition (English) or 64-Bit Windows 11 Enterprise or Professional Edition (English)
CPU with at least four cores, 2 GHz or faster
At least 16 GB internal memory
At least 200 GB free hard disk space
Screen resolution at least 1920 × 1080
One USB2 port available for instrument connection

SQL Database Server requirements
Biacore Insight Software includes SQL Server Express 2022 for local database setup only. A separate networked SQL database is required for full functionality. Performance improvements are seen with SQL Server Standard, SQL Server Enterprise, or SQL Data Warehouse version 2022 (available separately from Microsoft).

Note: The server needs to be supplied by the end user. Contact your local representative for the latest information regarding on-site requirements.

Typical working ranges	
Association rate constant (k_a)	Proteins: up to 10^9 M^{-1} s^{-1} LMW molecules: up to 10^7 M^{-1} s^{-1}
Dissociation rate constant (k_d)	10^{-6} to 0.5 s^{-1}
Sample concentration	≥ 1 pM
Molecular weight detection	No lower limit for organic molecules
Baseline noise typically	< 0.02 RU (RMS)
Baseline drift typically	< 0.3 RU/min
Blank subtracted drift	< ±0.03 RU/min
Immobilized interactant consumption	Typically 0.03 to 3 µg/flow cell

Compliance	
Compliant with	CE, cETLus, EAC, FCC, ICES-001, KC, RCM
Safety	IEC/EN/UL/CSA-C22.2 61010-1, IEC/EN/UL/CSA-C22.2 61010-2-081, EN ISO 12100
Electromagnetic compatibility (EMC)	EN/IEC 61326-1, FCC Part 15 B, ICES-001
Environmental	EN 50581, China RoHS

Ordering information

Product	Product code
Biacore 8K Includes: Biacore 8K instrument only	29327020
Biacore 8K System Includes: Biacore 8K instrument (29327020) Table with wheels (29717908) Waste container (29308541) 2 licenses for Biacore Insight Software (29310602) 2 licenses for Biacore Insight Extended Screening Extension (29310610)	29722782
Biacore 8K+ Includes: Biacore 8K+ instrument only	29283382
Biacore 8K+ and Instrument Kit Includes: Biacore 8K+ instrument (29283382) Table with wheels (29717908) Waste container (29308541) 2 licenses for Biacore Insight Software (29310602) 2 licenses for Biacore Insight Extended Screening Extension (29310610)	29722783
Biacore Insight Software extensions	Various licenses[1]

[1] See cytiva.com/biacore for details of the various e-licenses available.

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CY11892-08Oct24-DF