Selection guide

# Biacore™ systems


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# Biacore™ systems

Biacore™ systems are designed to provide valuable information and high-quality interaction data for a broad range of molecular entities and scaffold types, including (but not limited to) of small molecules and fragments, antibodies, multidomain proteins and viruses. The systems are used in a wide range of applications across a range of scientific fields including: basic biological research, drug discovery and development, immunogenicity studies, vaccine development, and quality control. Biacore™ systems allow you to:

- Understand the relationship between molecular interactions and function or to confirm and validate your results from other techniques
- Screen and characterize for hits and optimize leads based on selectivity, affinity, and kinetics
- Screen, identify and characterize antibodies and proteins based on yes/no binding, affinity, and kinetics from the fastest on-rates to the slowest off-rates
- Quantitate protein by measuring the concentration of active protein with retained biological function

# Which system is right for you?






| Applications | Biacore™ X100 | Biacore™ 1 series | Biacore™ 8 series |
|---|---|---|---|
| Kinetics/affinity characterization | ● | ● | ● |
| Kinetics/affinity screening | ● | ● | ● |
| Biacore Single Cycle Kinetics (SCK)™ | ● | ● | ● |
| Parallel Kinetics™ | | | ● |
| 2D Kinetics™ | | | ● |
| LMW interaction analysis | ● | ● | ● |
| Fragment screening | | ● | ● |
| Epitope binning | ○ | ● | ● |
| Immunogenicity | ○ | ○ | ○ |
| Concentration analysis | ● | ● | ● |
| Calibration-free concentration analysis | ● | | |
| Parallel line analysis (PLA) | | ● | ● |
| Buffer scouting using ABA command | | ● | ● |
| Multi-complex analysis using Poly command | | ● | |
| GxP support | | ● | ● |
| Built-in knowledge library | ● | | |

● Application may be performed using the indicated product.

○ Application may be performed, but with limitations in software and/or hardware functionality.

## Specifications*

| | Biacore™ X100 | Biacore™ 1K | Biacore™ 1K+ | Biacore™ 1S+ | Biacore™ 8K | Biacore™ 8K+ |
|---|---|---|---|---|---|---|
| Association rate ($k_a$) | Proteins: up to $10^8$ $M^{-1}s^{-1}$<br>LMW molecules: up to $10^6$ $M^{-1}s^{-1}$ | Proteins: up to $3 \times 10^9$ $M^{-1}s^{-1}$<br>LMW molecules: up to $5 \times 10^7$ $M^{-1}s^{-1}$ | | | Proteins: up to $10^9$ $M^{-1}s^{-1}$<br>LMW molecules: up to $10^7$ $M^{-1}s^{-1}$ | |
| Dissociation rate ($k_d$) | $10^{-5}$ to 0.1 $s^{-1}$ | $10^{-6}$ to 1 $s^{-1}$ | | $10^{-5}$ to 6 $s^{-1}$ | $10^{-6}$ to 0.5 $s^{-1}$ | |
| Affinity range | pM to mM | fM to mM | | | fM to mM | |
| Concentration limit of detection (LOD) | 10 pM | ≥ 1 pM | | | ≥ 1 pM | |
| Precision (concentration analysis) | < 5% CV | < 5% CV | | | < 5% CV | |
| Molecular weight limit | Mr > 100 Da | No lower limit for organic molecules | | | No lower limit for organic molecules | |
| Short term noise | < 0.1 RU (RMS) | Typically < 0.03 RU (RMS) | | Typically < 0.01 RU (RMS) | Typically < 0.02 RU (RMS) | |
| Baseline drift | < 0.3 RU/min | Typically < 0.3 RU/min | | | Typically < 0.3 RU/min | |
| Blank subtracted drift | N/A† | <± 0.003 RU/min | | | <± 0.03 RU/min | |
| Sample consumption | Injection volume 2 to 100 µL plus 25 to 30 µL (application dependent) | Injection volume 1 to 400 µL plus 20 to 40 µL (application dependent) | | | Injection volume 1 to 200 µL plus 20 to 50 µL (application dependent) | |
| Immobilized molecule consumption | Typically 1 µg | 0.03 to 3 µg/flow cell | | | Typically 0.03 to 3 µg/flow cell | |
| Analysis temperature | Ambient<br>4°C to 40°C‡ | 25°C to 37°C | | 4°C to 40°C<br>(at least 20°C below ambient temperature) | 4°C to 40°C<br>(maximum 20°C below ambient temperature) | |
| Sample storage temperature | Ambient | 4°C to 37°C<br>(at least 18°C below ambient temperature) | | 4°C to 40°C<br>(at least 18°C below ambient temperature) | 4°C to 40°C<br>(maximum 18°C below ambient temperature) | |
| Data collection rate | 1 Hz | 1 or 10 Hz | | 1, 10, or 40Hz | 1 or 10 Hz | |
| Sample capacity | 15 vials | 1 × 96- or 384-well microplate, normal and deep-well<br>1 reagent rack with 21–43 positions compatible with 0.7–4.4 mL vials | 2 × 96- or 384-well microplates, normal and deep-well<br>2 reagent racks with 21–43 positions compatible with 0.7–4.4 mL vials | | 4 × 96 or 384-well microplates normal and deep-well | 12 × 96- or 384-well microplates normal and deep-well |
| Number of flow cells | 2 in 1 channel | 6 in 1 channel | | | 16 in 8 channels | |
| Flow cell addressing | Single, pairwise | Single, pairwise | Single, pairwise, serial up to six | | Single, pairwise | |
| Unattended run time | 24 h | 60 h | 72 h | | 60 h | 72 h |
| Buffer selector | No | No | Yes | | Yes | |
| Method queue | No | Yes | Yes | | Yes | |
| Software | Biacore™ X100 Control and Evaluation Software | Biacore™ Insight Software | | | | |
| Software extensions | Biacore™ X100 Plus Package | Extended Screening \| Concentration and Potency \| Epitope Binning \| Data Integration \| GxP \| Biacore Intelligent Analysis™ | | | | |
| Dimensions (W × H × D) | 596 × 563 × 593 mm | 755 × 725 × 666 mm | | | 902 × 875 × 616 mm | |

* Specifications are representative values, which can vary dependent on experimental conditions and individual properties of ligand and analyte.
† Not determined on Biacore™ systems released before 2016.
‡ Biacore™ X100 Plus Package

# Label-free interaction analysis — apply to your research, drug discovery and development, and QC

## Biacore™ X100

**Your research — boosted.**

Robust two flow-cell SPR system for reliable insights into biological processes in multiuser environments.

- One needle SPR system for small-scale interaction analysis.
- Characterize molecular mechanisms and interaction pathways based on kinetics and affinity.
- Gain increased understanding of structure-function relationships.
- Determine the active concentration without the need for standard curves.
- Guided workflows for novice users with easy access to a knowledge library.

## Biacore™ 1K

**Your research — streamlined.**

Six flow-cell SPR system for robust, reproducible interaction analysis from day one with minimal effort. Affordable cost and reduced running expenses.

- No programming skills needed to design, set up or start your assay.
- Fast and flexible exploratory studies using Interactive run. Take full control of the instrument and make decisions based on your results.
- The one needle SPR system with novel injection tool enables multicomplex analysis in one run.
- Upgradable to Biacore™ 1K+ for higher capacity and increased analytical flexibility.

## Biacore™ 1K+

**Your development — advanced.**

Six flow-cell SPR system with full flexibility for assay design and increased capacity for interaction analysis, with straightforward transfer of methods between systems.

- Serial injection over all six flow cells reduces analyte consumption by up to 40% for a small antibody screen, compared to a 4 flow-cell SPR system.
- The one needle SPR system tackles complex questions and samples. Queue up multiple methods, use buffer selector and the innovative sample injection tools to get quality data and results.
- Simpler data interpretation: compile, visualize and export data with results in minutes.
- Optimized for use in GxP regulated environment.

## Biacore™ 1S+

**Your discoveries — elevated.**

Six flow-cell SPR system with exceptional sensitivity, full flexibility, and high capacity for interaction analysis of most challenging targets or unstable binders with low response level.

- The one needle SPR system with the highest sensitivity and data collection frequency allows you to better distinguish tight binders.
- Broad analysis temperature range for expanded characterization and stability studies.
- Increase operational efficiency, line up methods, utilize the sample capacity for unattended runtime of 72 h.
- Optimized injection design reduces sample consumption by 13% compared to a typical kinetic experiment.

## Biacore™ 8K

**Your discovery — accelerated.**

16 flow-cell SPR system that efficiently delivers binding data with outstanding quality and high capacity, meeting your toughest challenges in screening, characterization, process optimization, and quality control.

- High sample capacity of up to 4 × 384-well microplates.
- 60 h unattended run time with queueing abilities and rapid multi-run evaluations; option for analysis in a GxP-regulated environment.
- Eight needle SPR system for interaction analysis allowing ranking, kinetics, affinity, epitope binning, concentration, and relative potency.
- Superb data quality while increasing your throughput 8 times vs one-needle SPR systems.
- Parallel analysis enables rapid optimization of assay conditions and troubleshooting.

## Biacore™ 8K+

**Your discovery — accelerated. With maximized capacity.**

16 flow-cell SPR system that efficiently delivers binding data with outstanding quality and maximized capacity, meeting your toughest challenges in screening, characterization, process optimization, and quality control.

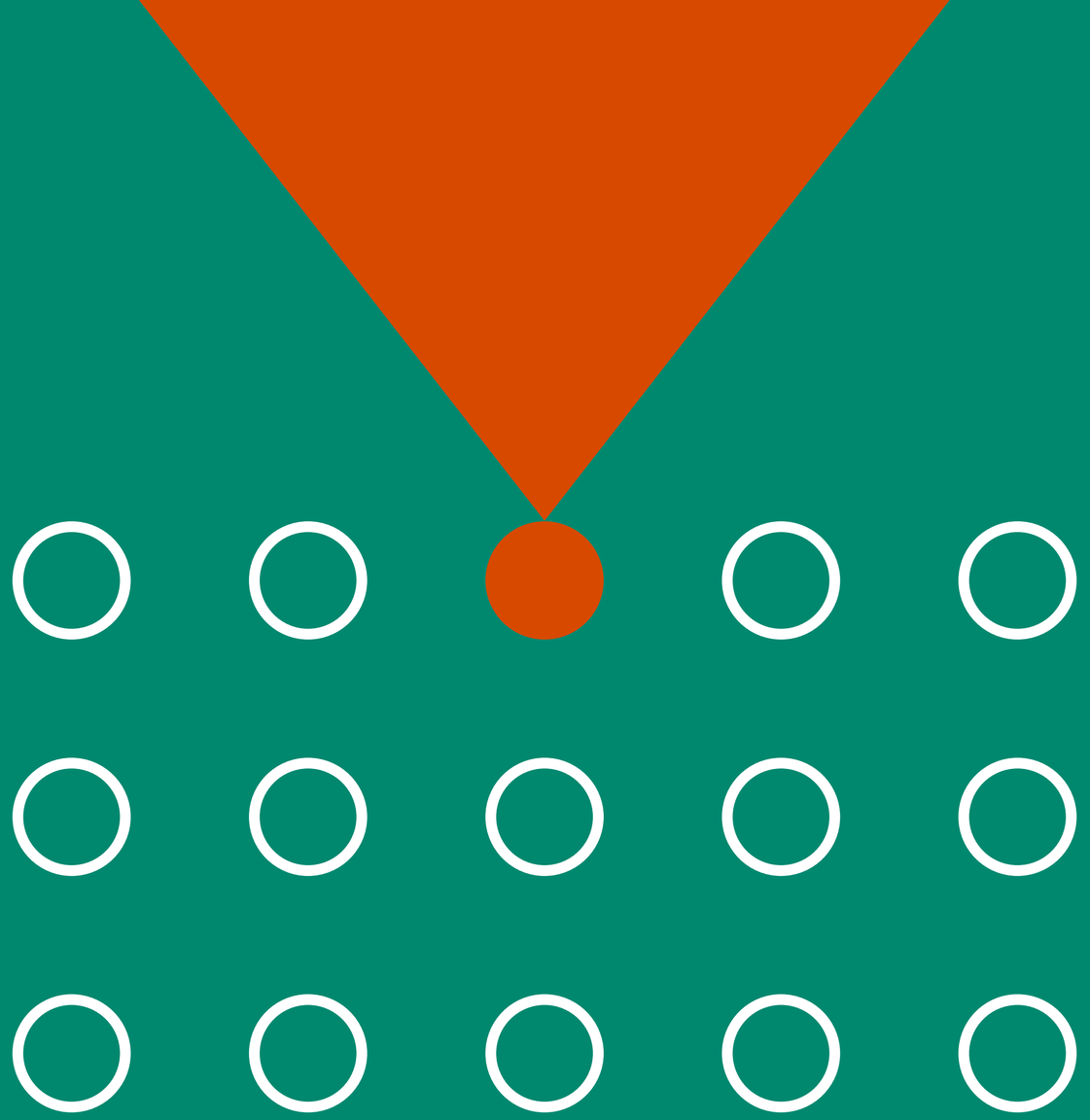
- Exceptional sample capacity of up to 12 × 384-well microplates.
- 72 h unattended run time with queueing abilities and rapid multi-run evaluation; option for analysis in a GxP-regulated environment.
- Eight needle SPR system for interaction analysis allowing ranking, kinetics, affinity, epitope binning, concentration, and relative potency.
- Superb data quality while increasing your throughput 8 times vs one-needle SPR systems.
- Parallel analysis enables rapid optimization of assay conditions and troubleshooting.

**cytiva.com/biacore**



For local office contact information, visit cytiva.com/contact

CY15684-27Mar23-SG



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