Selection guide

Biacore™ systems

Biacore systems are designed to provide valuable information and high-quality interaction data of ions, small molecules, multidomain proteins, or viruses with targets. The systems are used in a range of scientific fields including: basic biological research, drug discovery and development, immunogenicity studies, vaccine development, and quality control. Biacore systems enable you to:

- Understand the relationship between molecular interaction and function or to confirm your results from other techniques
- Screen and characterize for hits and optimize leads based on selectivity, affinity, and kinetics
- Screen 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

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Which system is right for you?

Applications	Biacore 8K+	Biacore 8K	Biacore S200
Kinetics/affinity characterization	●	●	●
Kinetics/affinity screening	●	●	●
Single cycle kinetics	●	●	●
LMW interaction analysis	●	●	●
Fragment screening	●	●	●
Epitope mapping	○	○	○
Immunogenicity	-	-	-
Concentration analysis	●	●	-
Parallel line analysis	●	●	-
Calibration-free concentration analysis	-	-	-
Thermodynamics	-	-	●
Comparability	-	-	-
Sample recovery MS	-	-	-
Built-In knowledge base	-	-	-

Specifications*

Association rate (k_a)	Proteins: up to 10^9 $M^{-1}s^{-1}$ LMW molecules: up to 10^7 $M^{-1}s^{-1}$		Proteins: 10^3 to 3×10^9 $M^{-1}s^{-1}$ LMW molecules: 10^3 to 5×10^7 $M^{-1}s^{-1}$
Dissociation rate (k_d)	10^{-6} to 0.5 s^{-1}		10^{-5} to 2 s^{-1}
Affinity range	fM to mM		fM to mM
Concentration range	LOD < 1 pM		-
Precision (concentration analysis)	< 5% CV		-
Molecular weight limit	No lower limit		No lower limit
Baseline noise	Typically < 0.02 RU (RMS)		< 0.015 RU (RMS)
Baseline drift	Typically < 0.3 RU/min		< 0.3 RU/min
Sample volume (kinetics)	Injection volume plus 20 to 50 µL (application dependent)		50 to 400 µL
Immobilized molecule consumption	Typically 0.03 to 3 µg/flow cell		0.03 to 3 µg/flow cell
Analysis temperature	4°C to 40°C		4°C to 45°C
Sample storage temperature	4°C to 40°C		4°C to 45°C
Data collection rate	1 or 10 Hz		1, 10, or 40Hz
Sample capacity	12 × 96- or 384-well microplates, normal and deep-well	4 × 96- or 384-well microplates, normal and deep-well	1 × 96 or 384
Number of flow cells	16 in 8 channels		4
Unattended run time	72 h	60 h	48 h
Data evaluation time	96 curve sets < 5 min		32 curve sets < 5 min
GxP support	Yes (GxP Extension software package)		-
Additional packages	Biacore Insight Evaluation Software and application specific packages • Extended Screening and Characterization • Concentration and Potency • GxP Extension		Biacore Insight Evaluation Software and application specific packages • Extended Screening and Characterization • Concentration and Potency

● Application may be performed using the indicated product.
○ Application may be performed, but with limitations in software and/or hardware functionality.
* Specifications are representative values, which can vary dependent on experimental conditions and individual properties of ligand and analyte.

Biacore T200	Biacore X100	Biacore C
●	●	-
●	●	-
●	●	-
●	○	-
●	-	-
○	○	-
●	○	-
●	●	●
○	-	-
●	●	-
●	○	-
●	-	-
●	-	-
-	●	-

Proteins: 10^3 to 3×10^9 $M^{-1}s^{-1}$ LMW molecules: 10^3 to 5×10^7 $M^{-1}s^{-1}$	Proteins: 10^3 to 10^7 $M^{-1}s^{-1}$	N/A
10^{-5} to 1 s^{-1}	10^{-5} to 0.1 s^{-1}	N/A
fM to mM	fM to mM	N/A
1 pM to 2 mM	10 pM to 2 mM	10 pM to 1 mM
< 5% CV	< 5% CV	< 5% CV
No lower limit	M_r > 100	M_r > 180
< 0.03 RU (RMS)	< 0.1 RU (RMS)	< 0.6 RU (RMS)
< 0.3 RU/min	< 0.3 RU/min	< 0.3 RU/min
50 to 400 µL	32 to 120 µL	5 to 325 µL (concentration analysis)
0.03 to 3 µg/flow cell	Typically 1 µg	Typically 1 µg
4°C to 45°C	Ambient/4°C to 40°C (Plus)	25°C (fixed)
4°C to 45°C	Ambient	Ambient (external thermostating possibility)
1 or 10 Hz	1 Hz	1 Hz
1 × 96 or 384	15 vials	2 × 96
4	2	4
48 h	24 h	24 h
32 curve sets < 10 min	1 curve set < 0.5 min	Total analysis time < 5 min/sample
Yes (Biacore T200 GxP Software Package)	-	Yes (Included)
Biacore Insight Evaluation Software and application-specific packages • Extended Screening and Characterization • Concentration and Potency • GxP Extension	Plus	-

Label-free interaction analysis —from research, through drug discovery and development, to QC

Biacore 8K+

Discover more, with maximized capacity

Efficiently delivers binding data of outstanding quality, meeting your toughest challenges in screening, characterization, process optimization, and quality control.

- Single solution for interaction analysis allowing ranking, kinetics, affinity, concentration, and relative potency
- Screening of 2300 molecules in a day
- High-quality kinetic characterization of 64 interactions in 4 h
- Exceptional sample capacity of up to 12 × 384-well microplates
- 72 h unattended run time with queueing abilities and rapid multirun evaluation

Biacore 8K

Discover more, more efficiently

Efficiently delivers binding data of outstanding quality, meeting your toughest challenges in screening, characterization, process optimization, and quality control.

- Single solution for interaction analysis allowing ranking, kinetics, affinity, concentration, and relative potency
- Screening of 2300 molecules in a day
- High-quality kinetic characterization of 64 interactions in 4 h
- High sample capacity of up to 4 × 384-well microplates
- 60 h unattended run time with queueing abilities and rapid multirun evaluations

Biacore S200

Empowers low-molecular weight drug discovery programs

Our most sensitive SPR-based sensor for cutting-edge applications.

- Determine affinity and kinetics with exceptional quality for confident lead optimization even for difficult targets where response levels are low
- Find site-selective binders directly using competition experiments
- Obtain fragment binding data from 384 single-concentration samples in less than 16 h

Biacore T200

Versatility all the way from research to discovery and quality control

Versatile system for high-quality characterization of molecular interactions—from ions to viruses.

- Increase understanding of molecular mechanisms and structure-function relationships
- Select and optimize lead compounds during drug discovery
- Select, characterize, and assess comparability of biotherapeutics
- Perform time- and cost-efficient concentration analysis

Biacore X100

Boost your protein interaction research

Reliable insights into biological processes in multiuser environments/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

Biacore C

Confident concentration analysis in GxP environments—from preclinical development to QC

The world's first SPR instrument dedicated to rapid determination of concentration in GxP environments.

- Determine the active concentration of mAbs, protein therapeutics, and vaccines or quantitate process-specific impurities
- Monitor quality and stability in formulations development and protein manufacturing
- Perform biopharmaceutical release testing

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