Octet® R Series Systems

Accelerate your research with an upgradeable, label-free protein analysis platform

Simplifying Progress

SARTORIUS

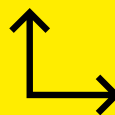# Real-Time, Label-Free, Stress Free Protein Analysis

The Sartorius Octet® systems, built using label-free Bio-Layer Interferometry (BLI) optical technology, offer a fast, robust and fluidics-free approach to protein analysis.

Octet® Platform Advantages

Fast Time to Results

Analyze up to 96 samples in as little as 5 min. Faster time to market and faster publications.

Scalable Throughput

96-well plate format for parallel processing of up to 96 samples.

Easy to Use

Simple, integrated user interface designed for biologists. Spend less time learning instrumentation and more time deriving insights.

Real Time Analysis

Binding interactions are continuously monitored as they happen. Don't miss out on quick associations and dissociations.
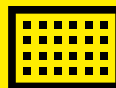
Robust, Low Maintenance System

Run your experiments round the clock, with minimal instrument downtime.

Crude Sample Compatibility

Only molecules that bind to or dissociate from the biosensor surface produce a signal. No time consuming sample pre-treatment or purification required.

Sample Reuse | Recovery

Samples remain intact after use for alternate processing. Get more data from the same samples.

One System, Many Applications

The Octet® platform is a comprehensive tool for screening and characterizing molecular interactions such as protein-protein or protein-drug interactions. It enables a huge variety of applications performed at various stages of biologics development — from early selection to validation to manufacturing.

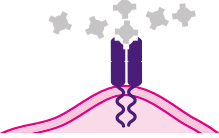## Octet® Platform Applications
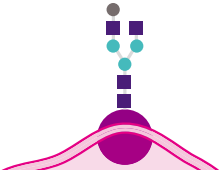
Competition | Inhibitor Assays
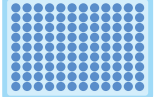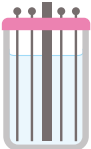
DNA | RNA BInding Proteins
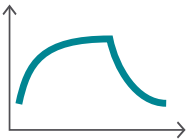
Viruses | Vaccines

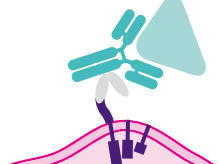Ligand Binding Assays

Glycans

ELISA Replacement

Bioprocessing

Small Molecules

Binding Kinetics

FC Receptors

Aptamers

Biosimilars

Futureproof Your Research and Investment

The Octet® portfolio's newest offering, the Octet® R series, consists of three different configurations:

- **Octet® R2** with two channels
- **Octet® R4** with four channels
- **Octet® R8** with eight channels

Along with the high sensitivity and performance offered by the Octet® platform, this new series offers field upgradeability for maximum flexibility and future proofing of your investment. Increase your system's throughput when you need it.

Octet® R8

Unmatched throughput, sensitivity and versatility for biologics development workflows.

Octet® R4

Perfect balance of cost and throughput for biomolecular interaction analysis

Octet® R2

Quality biomolecular interaction analysis at entry level prices

Go from a 2-channel to a 4-channel or 8-channel systems or from a 4-channel to an 8-channel system without the hassle of down time or system trade-in. R2 and R4 systems are single visit field upgradable.

Biosensor® Tips
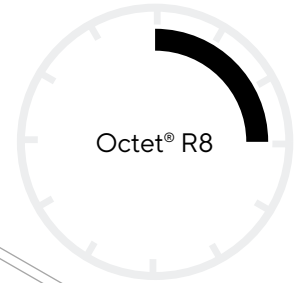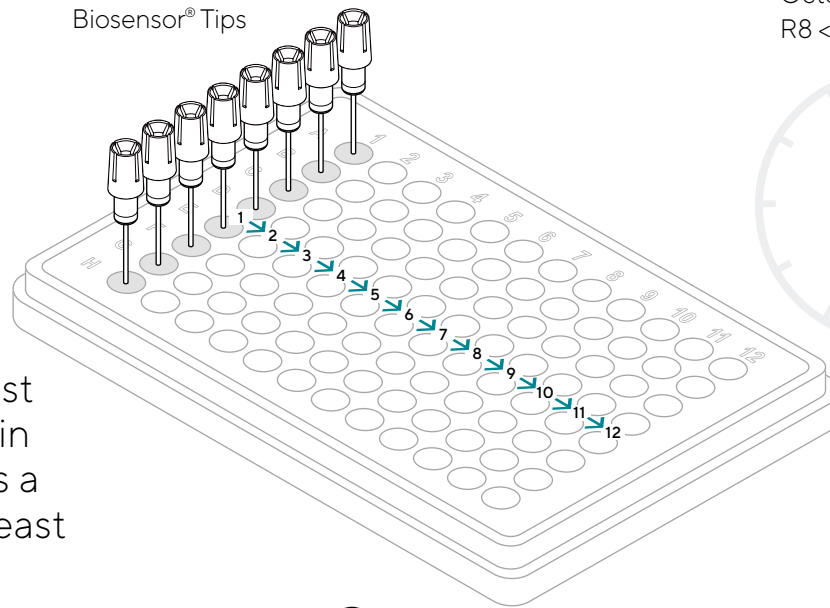
Octet® R8

Octet® R8, the highest throughput offering in the R series, analyzes a 96-well plate in the least amount of time.
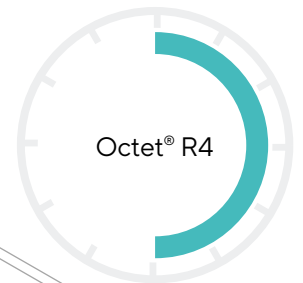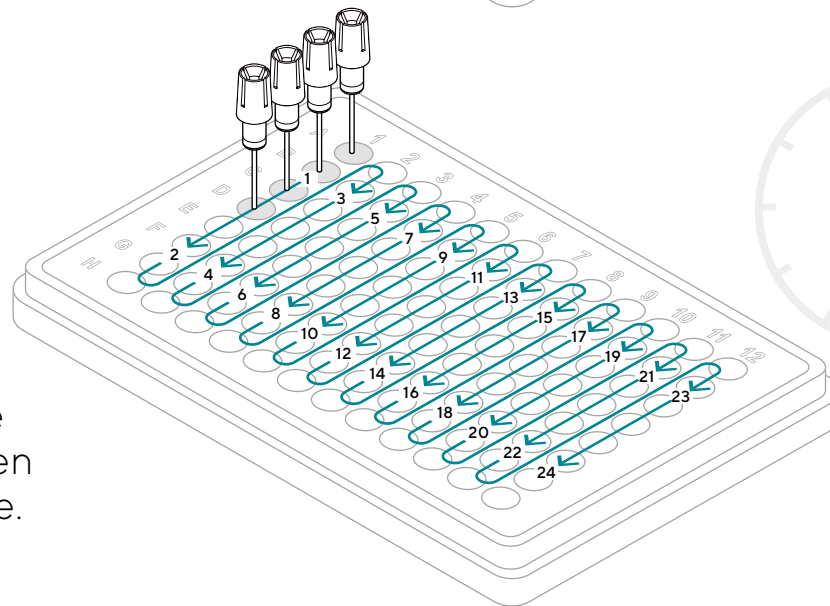
Octet® R4

Octet® R4 strikes the right balance between throughput and price.
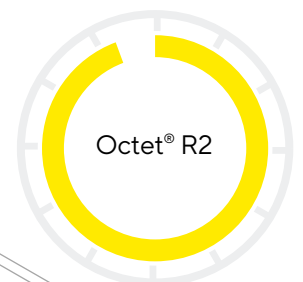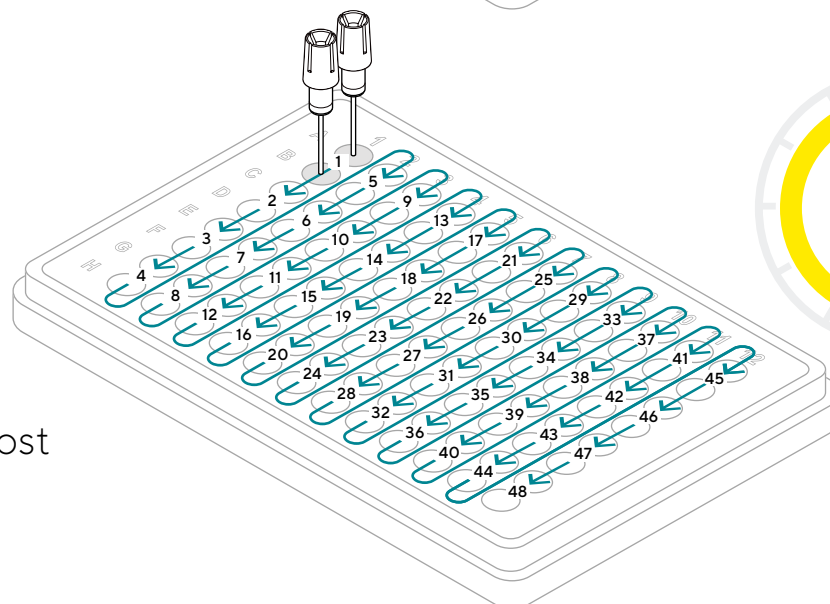
Octet® R2

Octet® R2 provides throughput at the most affordable price.

Get Broad Application Versatility

The Octet® R series of systems serve as an analytical workhorse with a broad range of application and workflow requirements. Your local Sartorius representative can provide detailed information on system capabilities and our extensive library of Octet® application solutions to help you choose the system that's right for your lab.

Octet® R2

Octet® R4

Octet® R8

Relative time for measuring the same number of samples and replicates: R8 < R4 < R2

Octet® R Series Assay Capability

Each member of the Octet® R Series has comparable sensitivity and flexibility for the following applications:

| Application	R-Series Benefit
Quantitation assays (ELISA replacement)	Get precise, real time results
Screening Application (epitope binning, off-rate ranking)	Screen mAbs rapidly - obtain multiple critical attributes for optimal candidate selection
Large molecule applications (e.g., viruses, VLPs, nanoparticles)	Study a wide range of molecules with one platform and maximize your investment
Antibody characterization, DNA, RNA, Peptides, Protein analytes	Easily characterize a diverse range of biologics
Measuring Weak Binding Affinities	Detect low affinity binders often missed by ELISA
Measuring Tight Binding Affinities	Measure binders with down to pM affinity
Small Molecule Applications	Enjoy high sensitivity — measure molecules down to 150 Da
Target ID/Lead Optimization	Early Discovery and Development — made easy with the flexibility of increasing throughput
Pre-clinical Development	Measure exact antibody responses after treatment or vaccine regime
Process Development / Monitoring	Detect and accurately measure process related critical quality attributes
Quality Control	Perform lot release and in-process testing with complete confidence

Octet® R Series Technology Comparison

	Octet® BLI	SPR	ELISA	HPLC
Label-free Technology	■	■	☐	☐
Real Time Analysis	■	■	☐	■
Assay Speed (Time to results)	■	◧	◧	☐
Assay Simplicity	■	☐	■	■
Assay Precision	■	■	☐	■
Walk Away Capability	■	■	☐	■
Crude Sample Capability	■	☐	☐	☐
Low System Maintenance Requirement	■	☐	■	☐

■ Yes—Strong   ☐ No—Weak

Octet® R Series Technical Specifications

Common Technical Specifications for All Octet® R Systems	
Microplate Compatibility	96-well plate
Sample Volume	180–220 µL/well, non-destructive testing
Molecular Weight Detection	>150 Da
On-rate (k_a) Range (M⁻¹s⁻¹)	$10^1 - 10^7$
Off-rate (k_d) Range (s⁻¹)	$10^{-6} - 10^{-1}$
Affinity (K_D) Range	1 mM – 10 pM
Temperature Control	15 – 40°C in 1°C increments
Data Collection Rate	2, 5 or 10 Hz
Orbital Flow Capacity	Static or 100–1500 rpm

Specific Technical Specifications for Each Octet® R System			
	Octet® R2	Octet® R4	Octet® R8
Number of Spectrometers	2	4	8
Maximum Simultaneous Reads	2	4	8
Evaporation Cover	No	No	Yes
GxP Compatibility	No	No	Yes
Upgradeability	To 4 and 8 channels	To 8 channels	No

Performance Comparison of the Octet® R Series

The Octet® R2, Octet® R4 and Octet® R8 show comparable results for quantitation and kinetic analysis of biomolecules. However, there is significant difference in the total time required to assay the complete set of samples and replicates between the three modules. Please refer to the comparison application note (PN# 4046) for details.

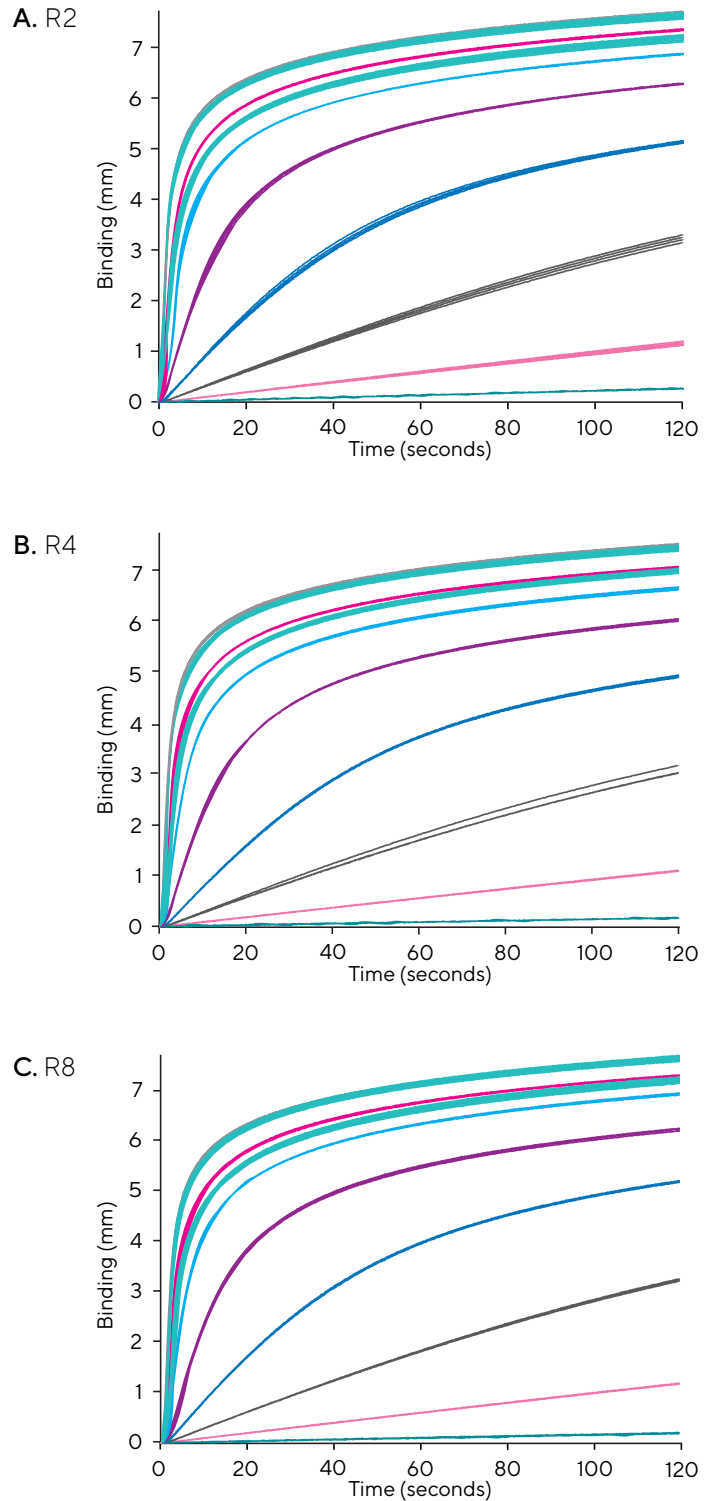## Quantitation Performance Across Octet® R Series

Figure 1: Direct comparison of raw data obtained from the 3 modular Octet® R series. A–C show the standards dose response binding curves (0.5 – 2000 ug/ml) as well as 500 and 1500 ug/mL concentration point unknown sample binding curve replicates (in blue color).

Kinetic Performance of Large Molecules Across Octet® R Series
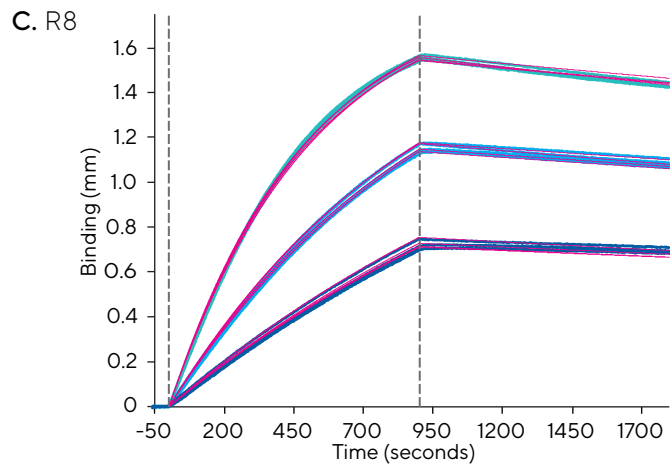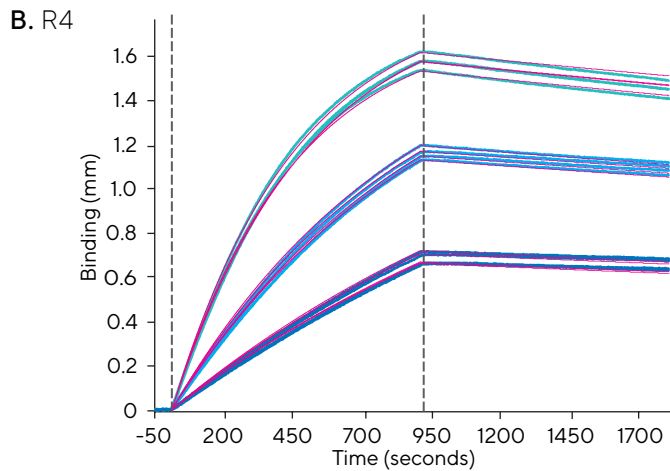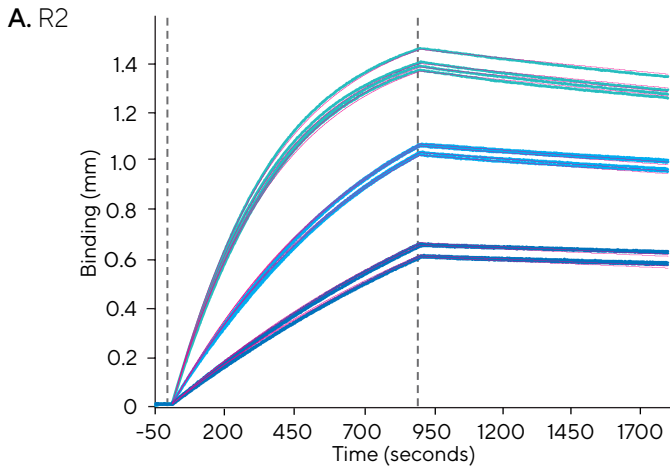
A. R2

B. R4

C. R8

Figure 2: Direct comparison of protein–protein binding. Analyzed data as obtained from the 3 modular Octet® R series; A-C show the overlay of the association and dissociation steps with replicates for the three instruments.

Kinetic Performance of Small Molecules Across Octet® R Series
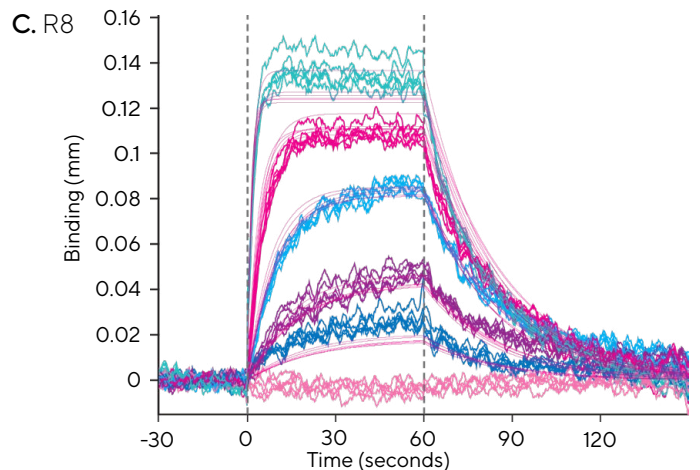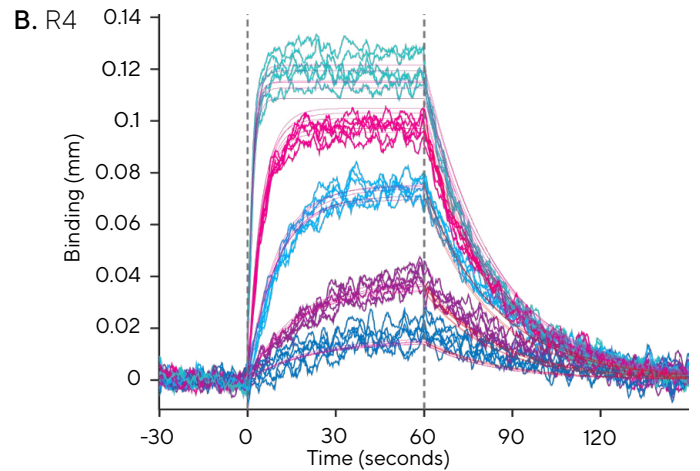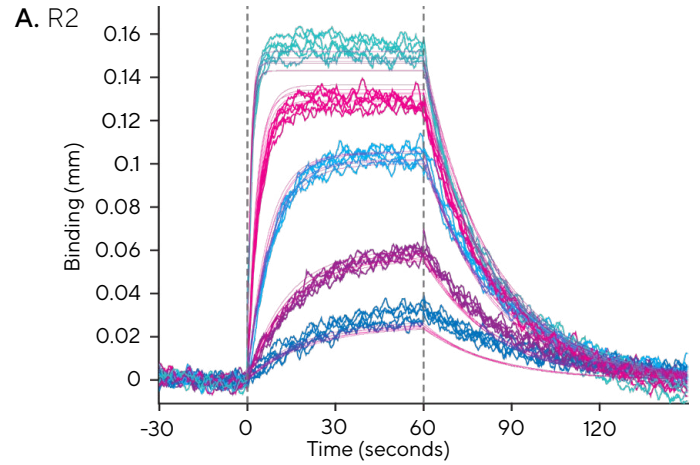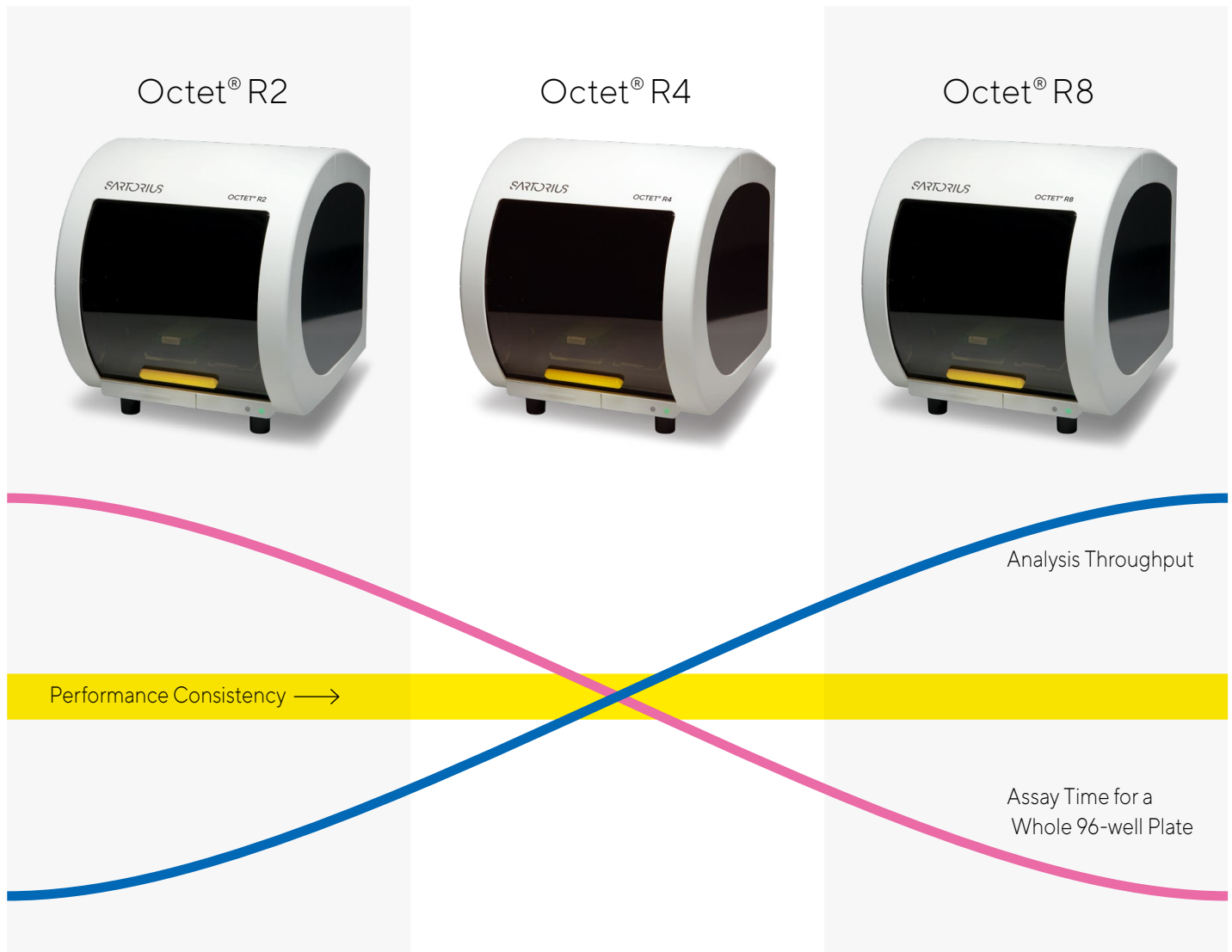
A. R2

B. R4

C. R8

Figure 3: Carbonic anhydrase–furosemide binding characterization comparison data as obtained using the 3 modular Octet® R series instruments. The data represents replicates of a dose response analysis of furosemide dissolved in PBS/0.5 % DMSO buffer.

Select the Right Octet® R System for Your Needs

Although all the three systems show comparable performance, the Octet® R2 system is most suited to the labs and workflow steps which have low throughput requirements.

The Octet® R4 system is suited to labs with moderate throughput needs.

Octet® R8 systems are best suited for labs working on high-throughput biomolecule analysis or within workflow steps requiring parallel processing of a large number of samples.

Octet® R2

Octet® R4

Octet® R8

Analysis Throughput

Performance Consistency ⟶

Assay Time for a Whole 96-well Plate

Ordering Information and Related Products

Part Number	UOM	Description
Octet® R2 / 30-5012	System	Includes Octet® R2 instrument, desktop computer, LCD monitor, accessory kit and one year warranty
41-0327	Kit	Octet® R2 installation and Operational Qualification Kit
Octet® R4 / 30-5014	System	Includes Octet® R4 instrument, desktop computer, LCD monitor, accessory kit and one year warranty
41-0326	Kit	Octet® R4 installation and Operational Qualification Kit
Octet® R8 / 30-5018	System	Includes Octet® R8 instrument, desktop computer, LCD monitor, accessory kit and one year warranty
Octet® R28-GxP Package / 30-5018-GxP	System	Includes Octet® R8 instrument, 21 CFR Part II software, desktop computer, LCD monitor, accessory kit, IQ/OQ/PQ kits and services, and on year warranty
41-0325	Kit	Octet® R8 installation and Operational Qualification Kit
18-5132	Pack	Single-use evaporation covers to extend the experiment up to 12 hours. Three covers per pack.
18-1176	Kit	Octet® R8 Performance Qualification — Quantitation Kit
18-1177	Kit	Octet® R8 Performance Qualification — Kinetics Kit
18-1178	Kits Bundle	Octet® R8 Performance Qualification Kits Bundle
50-0296	Pack	Software Validation Package

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