



# 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

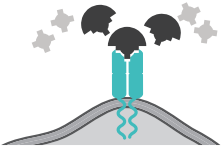
Samples remain intact after use for alternate processing. Get more data from the same samples.

# 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



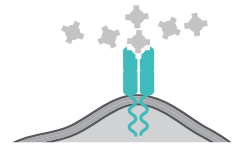
DNA | RNA  
binding proteins



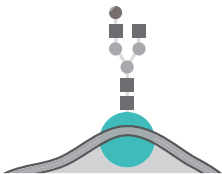
Viruses | vaccines



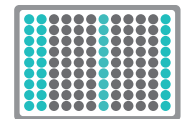
Ligand binding  
assays



Glycans



ELISA  
replacement



Manufacturing control  
bioprocessing QC



Small molecules



Off-rate ranking



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

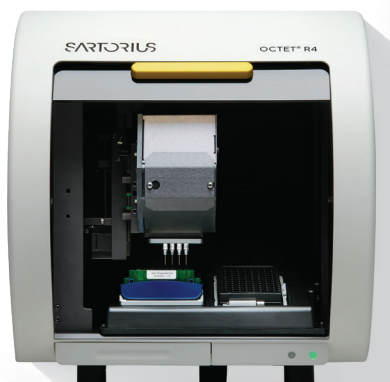
Along with the high sensitivity and performance offered by the Octet® platform, this new series offers field upgradeability for maximum flexibility and future proofing of your investment. Increase your system's throughput when you need it.

Octet® R8 instrument



Unmatched throughput, sensitivity and versatility for biologics development workflows.

Octet® R4 instrument



Perfect balance of cost and throughput for biomolecular interaction analysis

Octet® R2 instrument

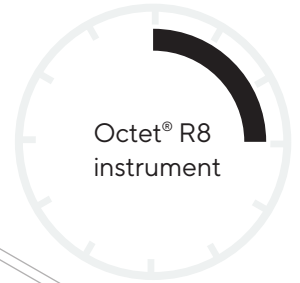
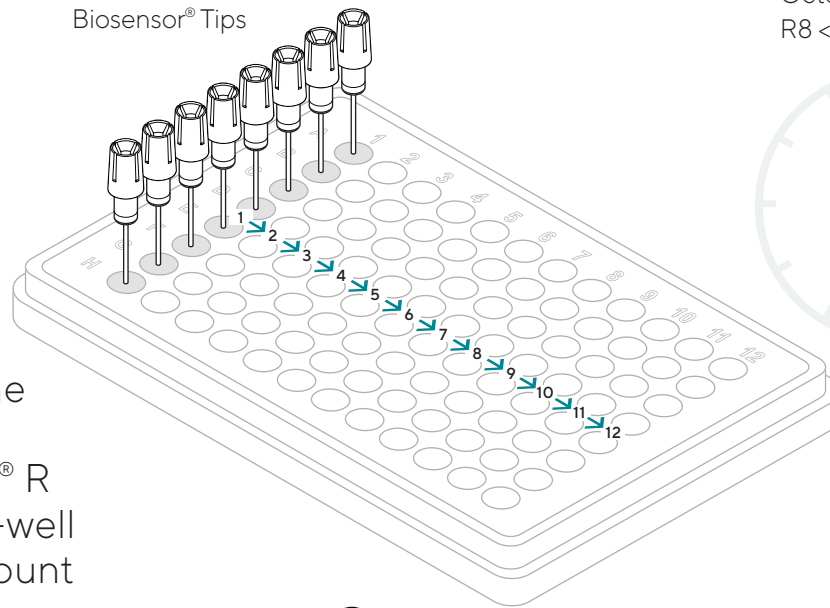


Quality biomolecular interaction analysis at entry level prices

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. The Octet® R2 and R4 systems are single visit field upgradable.

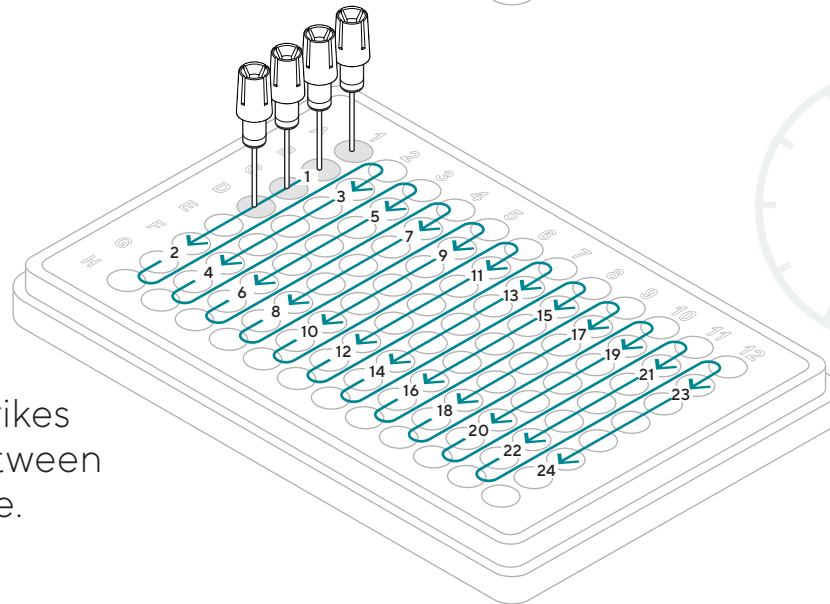
Relative time taken  
for each assay on the  
Octet® R systems:  
 $R8 < R4 < R2$

Biosensor® Tips



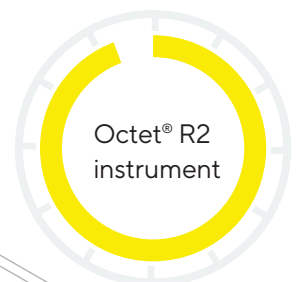
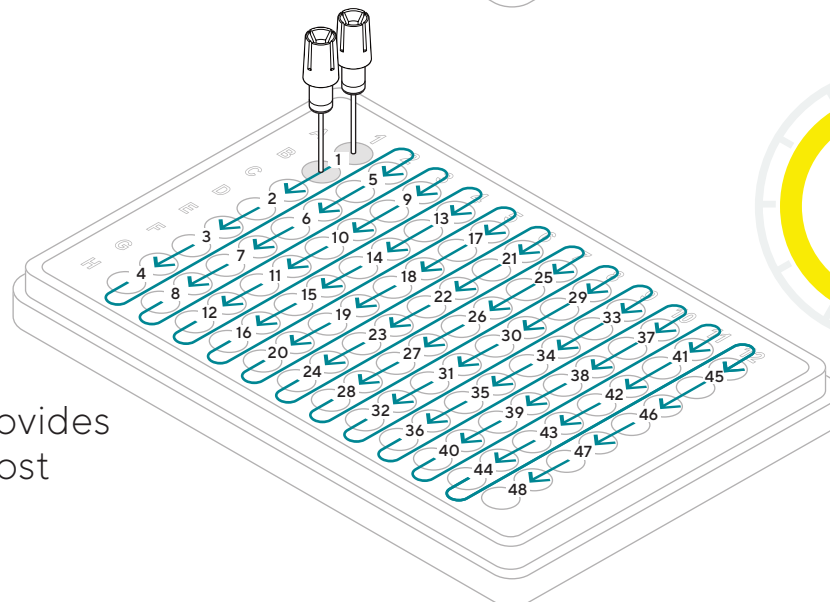
Octet® R8  
instrument

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



Octet® R4  
instrument

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



Octet® R2  
instrument

Octet® R2 system 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® 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

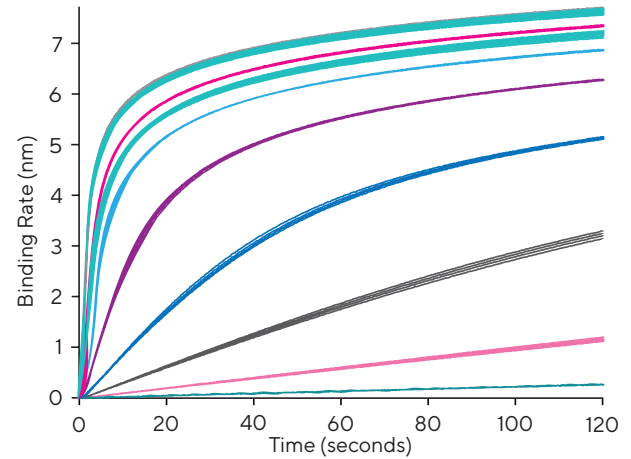
Common Technical Specifications for All Octet® R Systems			
Microplate Compatibility	96-well plate		
Sample Volume	180–220 µL/well, non-destructive testing		
Molecular Weight Detection	>150 Da		
On-rate ( $k_a$ ) Range (M <sup>-1</sup> s <sup>-1</sup> )	10 <sup>1</sup> – 10 <sup>7</sup>		
Off-rate ( $k_d$ ) Range (s <sup>-1</sup> )	10 <sup>-6</sup> – 10 <sup>-1</sup>		
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

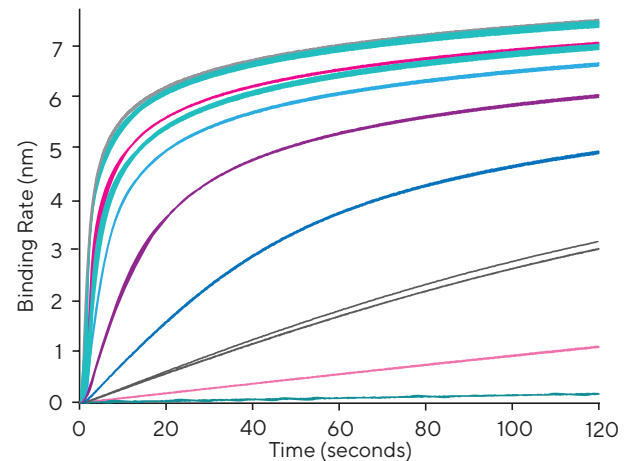
The Octet® R2, R4 and R8 systems show comparable results for quantitation and kinetic analysis of biomolecules. However, there is significant difference in the total time required to assay the complete set of samples and replicates between the three modules. Please refer to the comparison application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

## Quantitation Performance Across Octet® R Series

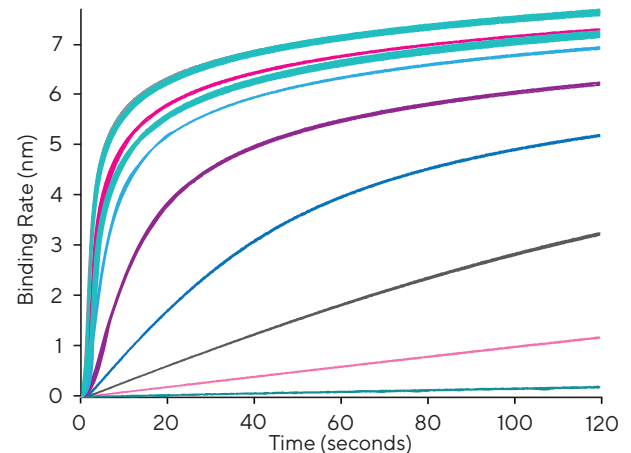
A. Octet® R2 System



B. Octet® R4 System



C. Octet® R8 System

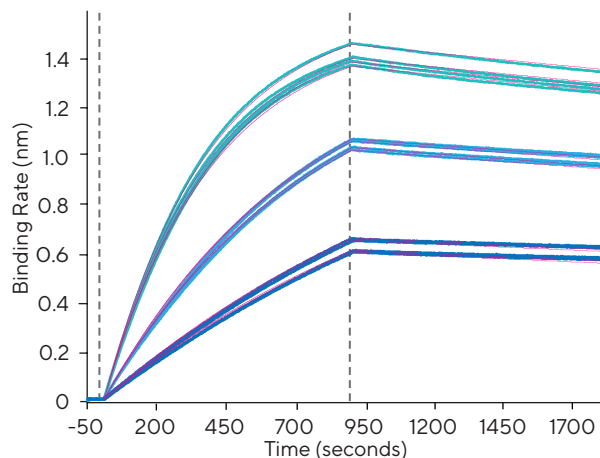


**Figure 1:** Direct comparison of raw data obtained from the 3 modular Octet® R series. A-C show the standards dose response binding curves (0.5 – 2000 µg/ml) as well as 500 and 1500 µg/mL concentration point unknown sample binding curve replicates (in blue color).

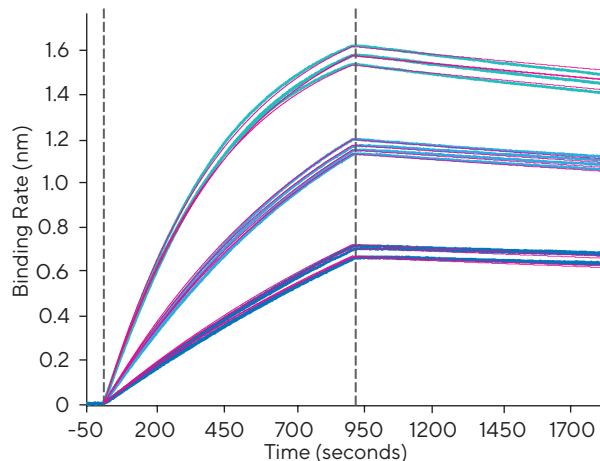


## Kinetic Performance of Large Molecules Across Octet® R Series

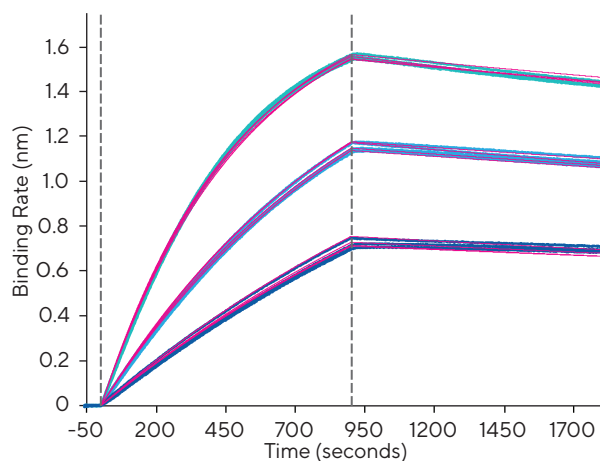
**A. Octet® R2 System**



**B. Octet® R4 System**



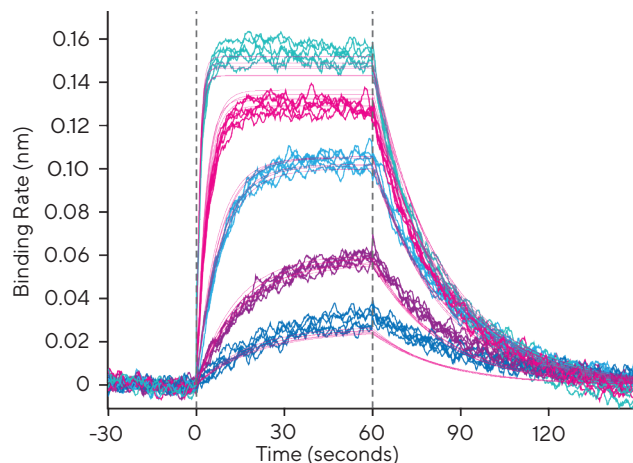
**C. Octet® R8 System**



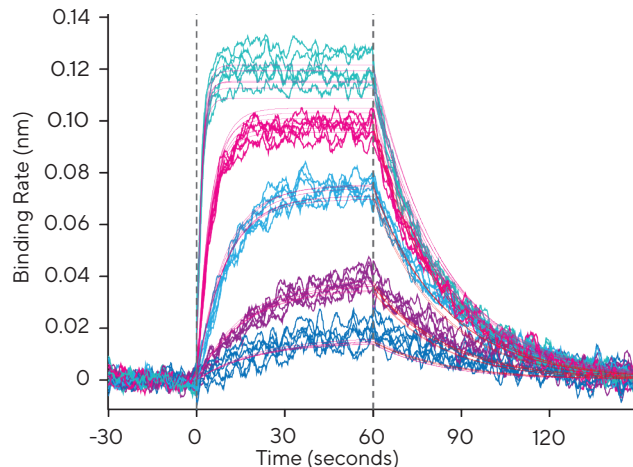
**Figure 2:** Direct comparison of protein–protein binding. Analyzed data as obtained from the 3 modular Octet® R series; A–C show the overlay of the association and dissociation steps with replicates for the three instruments.

## Kinetic Performance of Small Molecules Across Octet® R Series

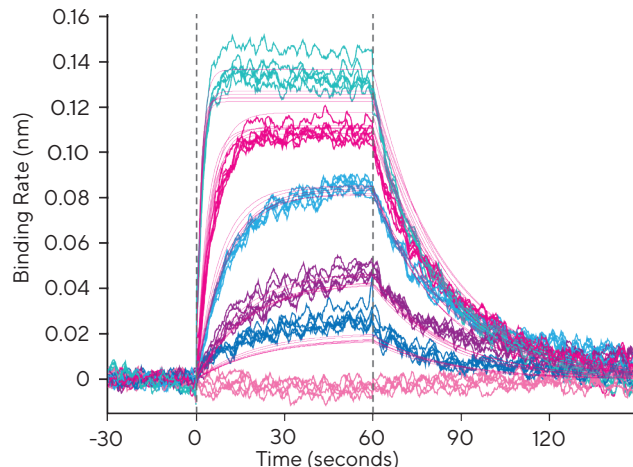
**A. Octet® R2 System**



**B. Octet® R4 System**



**C. Octet® R8 System**



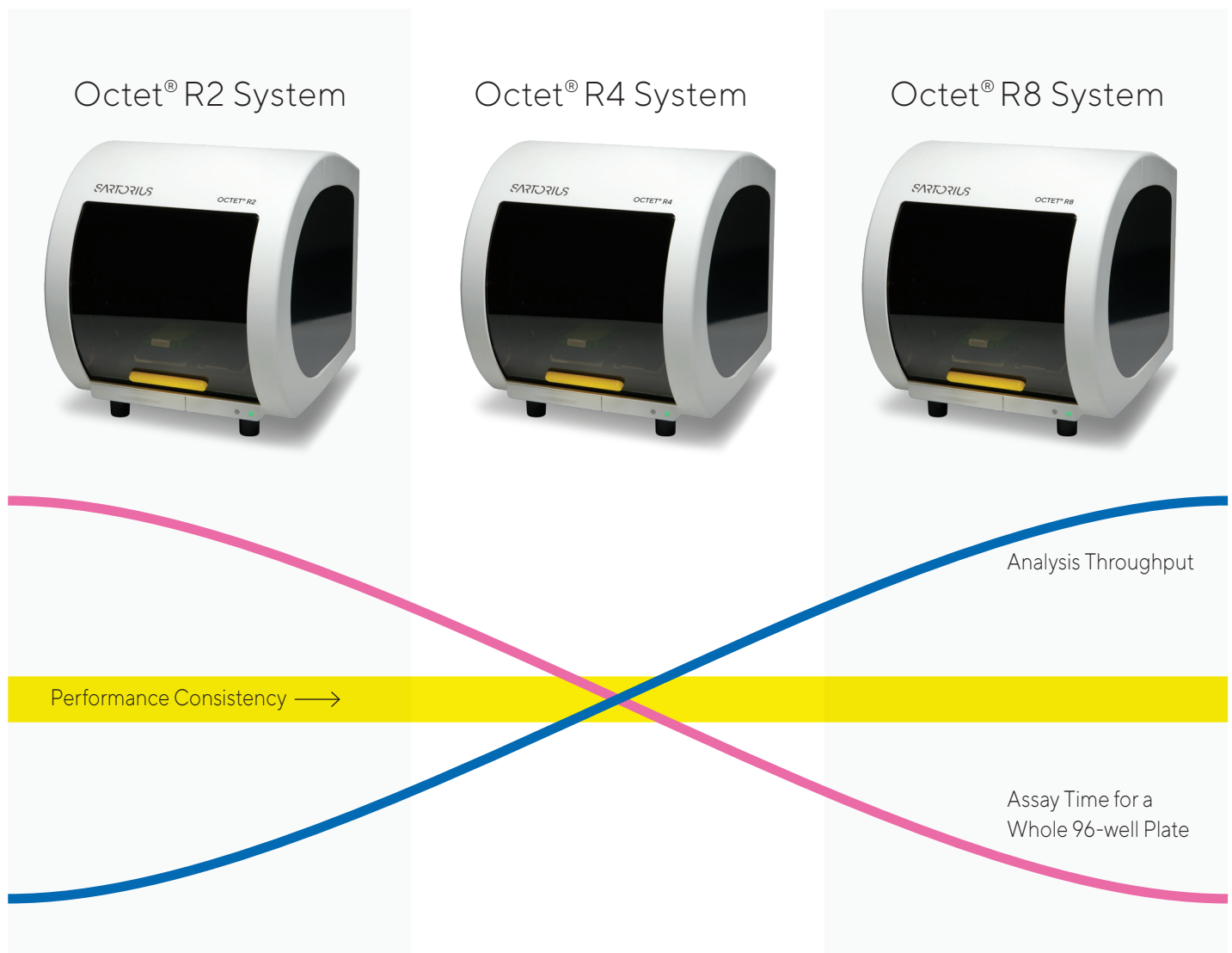
**Figure 3:** Carbonic anhydrase–furoseamide binding characterization comparison data as obtained using the 3 modular Octet® R series instruments. The data represents replicates of a dose response analysis of furoseamide dissolved in PBS/0.5 % DMSO buffer.

# 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.



# Ordering Information and Related Products

Part Number	UOM	Description
Octet® R2 / 30-0512	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 / 30-0514	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 / 30-0518	System	Includes Octet® R8 instrument, desktop computer, LCD monitor, accessory kit and one-year warranty
Octet® R8-GxP Package / 30-0518-GxP	System	Includes Octet® R8 instrument, 21 CFR Part II software, desktop computer, LCD monitor, accessory kit, IQ/OQ/PQ kits and services, and one-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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