

Octet® RH96 System

Accelerate Your
Label-free Workflow



Key Features

- 96-well plate quantitation in 2 minutes
- 32 x 32 epitope binning in less than 8 hours
- Full plate off-rate ranking in minutes, not hours
- Simultaneously reads 8, 16, 32, 48 or 96 wells

Overview

The Octet® RH96 instrument monitors up to 96 biosensors simultaneously, enabling label-free detection for protein quantitation and kinetic characterization at unmatched speed. The system's ability to read 8, 16, 32, 48 or 96 wells in parallel lets you tailor your assay design to maximize analytical throughput or sensitivity. Rapid whole-plate detection is accomplished using the 96 biosensor mode, providing either quantitation data for 96 samples in as little as 2 minutes or full plate kinetic screening in minutes instead of hours. The 8 and 16 biosensor modes provide high sensitivity for measuring small molecule binding interactions or protein quantitation

down in a simple one-step assay to 50 ng/mL. The 32 or 48 biosensor modes enable larger complex assays such as epitope binning or multi-step quantitation to be analyzed in the shortest amount of time. Key applications that leverage the unique strengths of the Octet® RH96 system include epitope binning experiments, off-rate ranking, and titer determination.

Epitope Binning

Analysis of epitope binning matrices can be completed in record time, with 32 x 32 in less than 8 hours and larger studies over a day. Powerful epitope binning analysis software enables easy visualization of data sets and provides a flexible data matrix that can accommodate a variety of cross-blocking formats (Figure 1).

Protein Concentration Determination

Use of the 32, 48, or 96 biosensor modes enable fast, whole-plate titer determinations, and provides design flexibility for multi-step quantitation assays, including host cell proteins (HCP) and residual protein A contaminant testing.

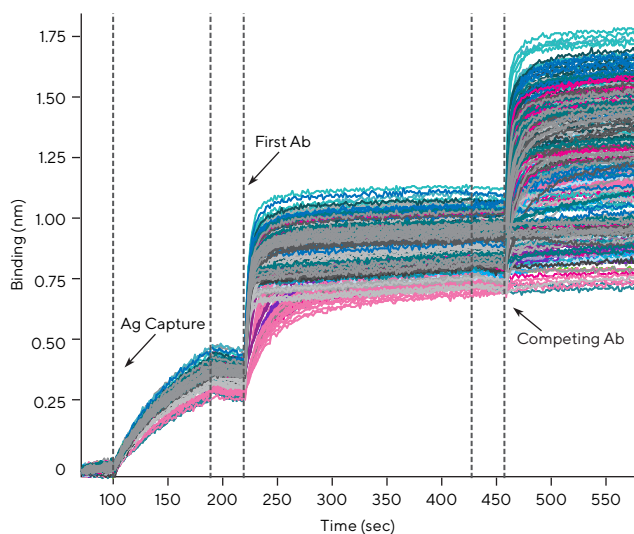


Figure 1: Epitope binning of 32 x 32 purified mAbs using the 32 biosensor mode, performed in 14 hours.

Octet® RH96 System Specifications*

Technical Information and Specifications

Detection technology	Bio-Layer Interferometry (BLI) based on fiber optic biosensors
Information provided	<ul style="list-style-type: none"> ▪ Yes/No binding ▪ Kinetic and affinity analysis (k_{obs}, K_{ar}, k_{dr}, K_D) ▪ Specific and selective detection of molecules, even in crude samples ▪ Relative and absolute quantitation (using a standard curve) of specific proteins in crude matrices or purified samples
Data presentation	<ul style="list-style-type: none"> ▪ In the form of real-time kinetic binding and fitted results plots/graphs ▪ Concentration data analysis including calibration curves and output of tabulated concentration data ▪ Tabulated kinetic data ▪ Epitope binning and cross-blocking matrices and trace overlays ▪ Customized reports in PDF format
Automation	Robot compatible, microplate and biosensor tray loading
Sample types	Proteins, antibodies, peptides, DNA, RNA, liposomes, bacterial cells, viruses, mammalian cells, small molecules in various media including serum, buffers containing DMSO, periplasmic fractions, untreated cell culture supernatants, and crude cell lysate
Sample plate	2 positions; standard, 96-well and 384-well black, flat bottom microplates and 384 tilted-well microplate
Sample volume	40–100 μ L/well (384TW microplate); 80–130 μ L/well (384-well microplate); 180–220 μ L/well (96-well microplate) Nondestructive testing, easily recoverable
Orbital flow capacity	Static or 100–1500 rpm
Analysis temperature	Ambient + 4°C to 40°C, in 1°C increments
Sample refractive index	Minimally affected by refractive index changes
Instrument	
Dimensions (H x W x D)	30.1 in x 31.5 in x 31.5 in (77 cm x 80 cm x 80 cm)
Weight	200 lbs (90.7 kg)
Power	100–240 V AC, 5.0–2.0 A, 50/60 Hz, single phase/195 W (240 W peak)

Ordering Information

Data Handling and Storage	
PC operating system	<ul style="list-style-type: none"> ▪ Windows® 10 Professional, 64-bit ▪ Windows 7 Professional, 64-bit ▪ Windows 7 Professional, 32-bit
Interfaces	RS232, USB
Compliance	
Safety standards	CE, Nemko
Kinetics	
Workflow	Up to 96 assays in parallel, up to 96 assays in two 96-well microplates and 384 assays in two 384-well microplates
Analysis time per sample	Real-time kinetic binding experiments from five minutes to 4 hours
Association rate constant (k_a)	10^1 to 10^7 M ⁻¹ s ⁻¹
Dissociation rate constant (k_d)	10^{-6} to 10^{-1} s ⁻¹
Affinity constant (K_D)	1 mM to 10 pM
Molecular weight detection	> 150 Da (8–16 biosensors), > 5000 Da (32–96 biosensors)
Baseline noise (RMS)***	< 4 pm (8–16 biosensors); < 8 pm (32–96 biosensors)
Baseline drift***	< 0.1 nm/hour
Quantitation	
Workflow	Up to 96 assays in parallel, up to 96 assays per 96-well microplate and 384 assays per 384-well microplate
Analysis time per sample	hIgG quantitation 2 minutes for 96 samples in a 96-well microplate, 9 minutes for 384 samples in a 384-well microplate
Quantitation range	32–96 biosensors: 0.1–100 µg/mL of hIgG at 1000 rpm**; 1.0–700 µg/mL at 400 rpm 8–16 biosensors: 0.05–300 µg/mL of hIgG at 1000 rpm**; 0.5–2000 µg/mL at 400 rpm
Precision range	CV < 10%

*All specifications are subject to change without notice.

**5-minute assay.

***Baseline drift and noise is measured at 30 °C in 384 TW microplates

Part No.	UOM	Description
OCTER-RH96	System	Includes Octet® RH96 instrument, desktop computer, LCD monitor, accessory kit, and one-year warranty.
OCTET-RH96-GXP	System	Includes Octet® RH96 instrument, Latest Octet CFR Part 11 Software, Software Validation Package, IQOQ Kit/Manual, IQOQ Service and 2 PMOQ Services.

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