

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 and protein quantitation

down 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.

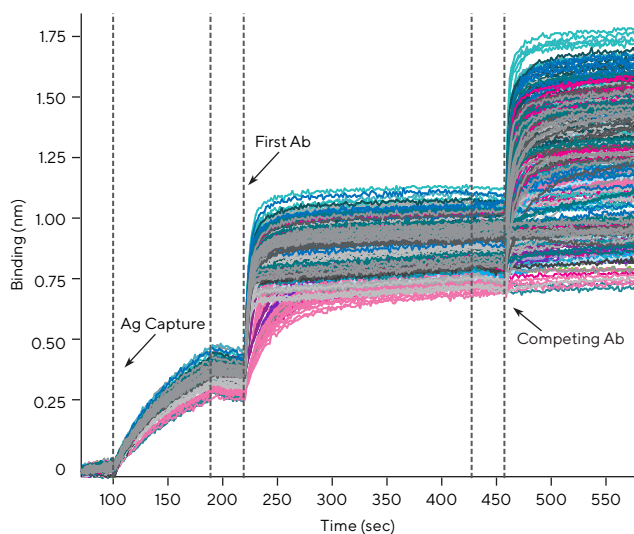


Figure 1: Epitope binning of 32 x 32 purified mAbs using the 32 biosensor mode, performed in 14 hours.

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"> ▪ Kinetic and affinity analysis (k_{obs}, K_a, k_{dr}, K_D) ▪ Active protein concentration determination ▪ Residual protein contamination detection
Data presentation	<ul style="list-style-type: none"> ▪ Sensorgrams displaying kinetic traces or concentration binding rates ▪ Epitope binning and cross-blocking matrices and trace overlays ▪ Tabulated kinetic or concentration data
Automation	Robot compatible, microplate and biosensor tray loading
Sample types	Proteins, antibodies, peptides, serum containing media (up to 25%), DMSO containing buffers, virus-like particles, untreated cell culture supernatants and crude cell lysates
Sample plate	Standard, 96-well and 384-well, black, tilted-bottom microplates
Sample volume	40–80 μ L/well (384-well tilted bottom microplate) and 180–220 μ L/well (96-well microplate), nondestructive testing, easily recovered
Orbital flow capacity	Static or 100–1500 rpm
Analysis temperature	Ambient + 4°C to 40°C, in 1°C increments
Sample refractive index	Not affected by index changes in biological samples
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)
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

Ordering Information

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 5 pM
Molecular weight detection	> 150 Da (8–16 biosensors), > 5000 Da (32–96 biosensors)
Baseline noise (RMS)	< 3 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 $\mu g/mL$ of hIgG at 1000 rpm**; 1.0–700 $\mu g/mL$ at 400 rpm 8–16 biosensors: 0.05–300 $\mu g/mL$ of hIgG at 1000 rpm**; 0.5–2000 $\mu g/mL$ at 400 rpm
Precision range	CV < 10%

*All specifications are subject to change without notice.

**5-minute assay.

Part No.	UOM	Description
Octet® RH96	System	Includes Octet® RH96 instrument, desktop computer, LCD monitor, accessory kit, and one-year warranty.
99-0036	Each	Onsite installation
99-0035	Each	Service agreement

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