



Octet RED384 System

Label-free quantitation and kinetics with enhanced throughput and extended dynamic range

Key features

- 384- and 96-well assay formats
- 16-well simultaneous detection
- Two plate positions on deck
- Automation compatibility
- Re-rack and reuse biosensors
- Dip and Read™ simplicity

FortéBio's Octet® RED384 system is designed for increased throughput for label-free protein quantitation and kinetic characterization. Get accurate concentration, kinetic constants, and affinity data for protein-protein, small molecule-protein and other fast-binding interactions – all with Dip and Read simplicity.

The Octet RED384 system is easy to set up and offer the versatility to run assays throughout your experimental workflow, with a large dynamic range for titer determination or fine signal resolution for reliable affinity data. This system analyze 8 or 16 wells simultaneously and take advantage of our large menu of biosensor chemistries.

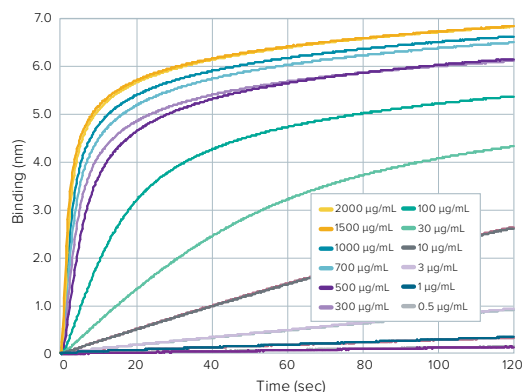


Figure 1: Concentration curves obtained on the Octet RED384 system for human IgG at 0.5 µg/mL to 2000 µg/mL using Protein A biosensors and two-minute incubation per well.

Increasing throughput

Two plate positions support either 96- or 384-well microplates for samples and reagents, and biosensor regeneration/reuse capabilities keep your workflow speeding along. Compatibility with crude samples and high tolerance to DMSO facilitates analysis without laborious sample preparation.

Making quality analysis affordable

The Octet RED384 system costs a fraction of an equivalent SPR system, yet provides fully comparable data. Reduced sample consumption (40–130 µL/well in 384-well tilted microplates) and preparation time combined with robust instrumentation reduce significant equipment and reagent costs. Optional biosensor regeneration further lowers assay cost per well.

Simplifying your workflow

The Octet RED384 system provides increased throughput for rapid optimization of assay conditions. Automation compatibility for plate loading enables walkaway freedom for longer experiments and high number of samples. Advanced software offers rapid processing of kinetic data, protein quantitation determinations, and epitope binning experiments.

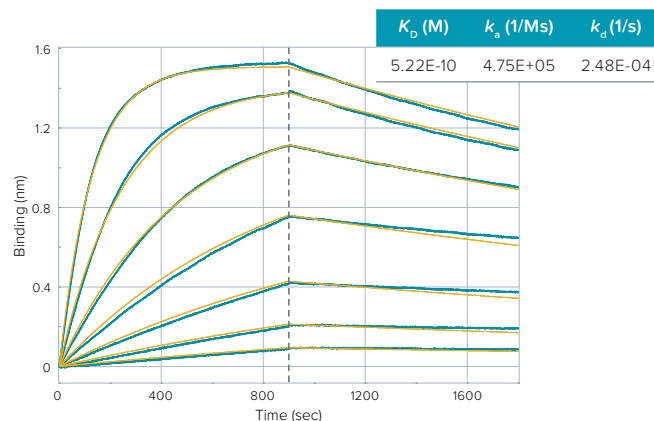


Figure 2: Large molecule characterization. Example data from Cluster of Differentiation 64 (CD64) binding to Human IgG1k monoclonal antibody on High Precision Streptavidin (SAX) biosensors using the Octet RED384 system. Binding was performed at 30° C, with a shake speed of 1000 RPM. Two-fold dilution series starting at 16 nM of the antibody was prepared to obtain the 7 concentrations run.

Octet RED384 system specifications*

Technical information and specifications	
Detection technology	Bio-Layer Interferometry (BLI)
Biosensor type	Disposable, single-use fiber optic biosensors with optional reuse by regeneration and/or re-racking in the sensor tray
Information provided	<ul style="list-style-type: none"> • Yes/No binding • Kinetic and affinity analysis (k_{obs}, k_a, k_d, K_D) • Specific and selective detection of molecules, even in crude samples • Relative and absolute quantitation of specific proteins in crude matrices or purified samples
Data presentation	<ul style="list-style-type: none"> • Plots displaying real-time kinetic binding sensorgrams, fitted result plots, and residuals of fits • 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
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 lysates
Number of spectrometers	16
Maximum simultaneous reads	Up to 16
Data collection rate	2, 5, or 10 Hz
Sample position and format	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 range	(Ambient + 4° C)–40° C, 1° C increments

Kinetics

Workflow	Up to 16 assays in parallel; up to 96 assays per 96-well microplate and 384 assays per 384-well microplate
Molecular weight detection	≥ 150 Da

Kinetics (continued)

Analysis time per sample	Real-time kinetic binding experiments from 5 minutes to 6 hours
Association rate constant (k_a)	10^1 – 10^7 M ⁻¹ s ⁻¹
Dissociation rate constant (k_d)	10^{-6} – 0.1 s ⁻¹
Affinity (K_D) constant	1 mM–10 pM
Baseline noise	≤ 4 pm (RMS)
Baseline drift	≤ 0.1 nm/hour

Quantitation

Workflow	Up to 16 assays in parallel; up to 96 assays per 96-well microplate and 384 assays per 384-well microplate
Analysis time per sample	Human IgG quantitation in 2 minutes for 16 samples, ≤ 20 minutes for 96 samples and ≤ 75 minutes for 384 samples
Direct quantitation range for human IgG with Protein A Biosensor	0.05–2000 μ g/mL

Instrument

Dimensions (H x W x D)	30.1 in x 31.5 in x 31.5 in (H x W x D) (77 cm x 80 cm x 80 cm)
Weight	150 lb (68.2 kg)
Electrical requirements	Mains: AC 100–240 V AC, 5.0–2.0 A, 50/60 Hz, single phase
Power consumption	200 W (300 W peak)

Data handling and storage

PC operating systems	<ul style="list-style-type: none"> • Windows® 10 Professional, 64-bit • Windows 7 Professional, 64-bit • Windows 7 Professional, 32-bit
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Compliance

Safety standards	CE, Nemko
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*All specifications are subject to change without notice.

Ordering information

Part No.	UOM	Description
OCTET RED384	System	Includes Octet RED384 instrument, Octet software, desktop computer, LCD monitor, accessory kit and one-year warranty



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