

Sidekick Offline Biosensor Immobilization Station

Superior quantitation and kinetics performance with increased cost efficiency

Key features

- Offline loading of reagents on biosensors
- Simultaneous loading on up to 96 biosensors
- Automation compatibility
- Small and portable
- Ideal for creating large batches of custom biosensors
- Decreases incubation times
- Increases assay precision and sensitivity

The Sidekick™ station is an accessory to ForteBio's Octet® family of label-free biomolecular interaction analysis instruments. The instrument enables simultaneous and uniform loading of reagents onto all 96 biosensors in a biosensor tray. Target analyte and other reagents that do not require online signal monitoring can be loaded onto biosensors on the Sidekick station, freeing the Octet system for other users. The Sidekick station can be installed beside an Octet system and used in collaboration with it, or it can be used independently.

Rapidly create custom biosensor batches

The Sidekick station can be utilized as an integral part of your Octet assay workflow, significantly decreasing custom biosensor preparation time and assay incubation time while improving assay performance. When preparing custom biosensors, shaking the biosensors with your samples on the Sidekick station decreases the required incubation time by one half, doubling biosensor preparation productivity, as shown in Figure 1. Further efficiency can be obtained by using the Sidekick station in conjunction with a liquid-handling robotic workstation to automate custom biosensor preparation.

Unattended operation

The Sidekick station's automation interface can be run using either a COM port (RS232) or a TCP-IP socket/port. The biosensor tray and sample microplate can both be moved on and off the Sidekick station by a robot, and experimental parameters such as incubation time, temperature and shaking speed can be controlled by the robot software.

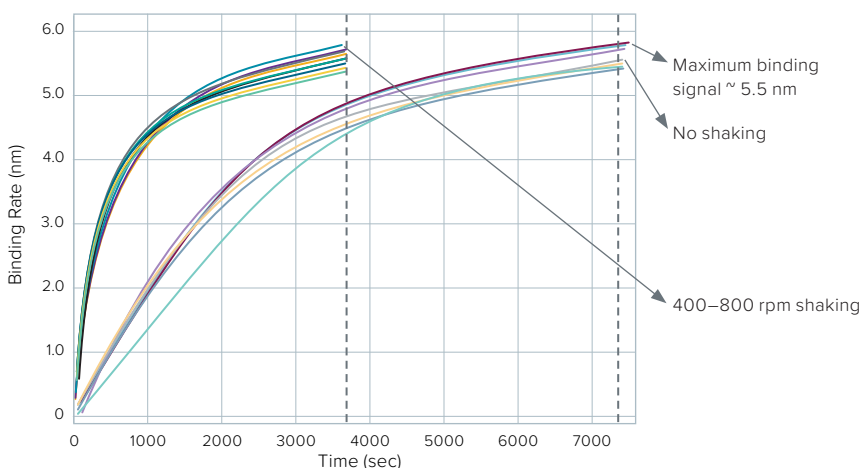


Figure 1: Rate of binding of biotinylated protein to Streptavidin biosensors increases with shaking.

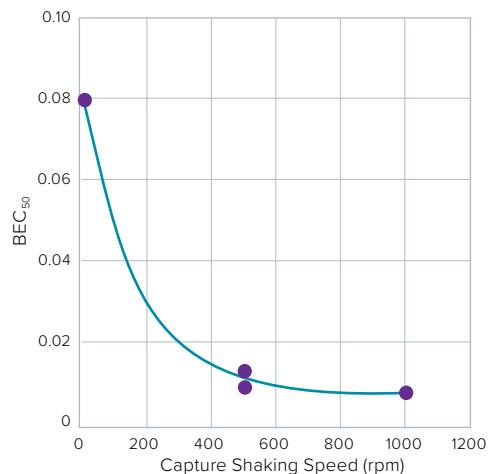


Figure 2: Effect of shaking on the calibration curve EC_{50} parameter for a sandwich-format assay. The offline shaker increases sensitivity at a capture time of 30 minutes.

Simplify workflows for sandwich Octet assays

The Sidekick station can be used to perform multi-step sandwich Octet assays in advanced quantitation mode to decrease incubation times during sample capture and drive down assay variability. The sandwich format has a “capture” step during which the target analyte is bound to the biosensor, followed by a “rinse” step in which the biosensor is placed in buffer to soak. These steps are performed offline on the Sidekick station (outside the Octet instrument). Biosensors with captured analyte are then transferred to the Octet instrument, and the analyte is quantified by forming a sandwich with a detection antibody.

Sidekick station specifications*

Technical information and specifications	
Biosensor type	Disposable, single-use fiber optic biosensors with optional reuse by regeneration and/or re-racking
Biosensor tray type	8 x 12 format 96-biosensor tip tray, green color
Sample plate	Standard, 96-well, flat-bottom microplates
Sample volume	180–220 μ L/well in 96-well microplate; nondestructive testing, easily recovered
Sample plate	Standard, 96-well and 384-well, black, flat bottom microplates
Orbital flow capacity	Static or 100–1500 rpm
Temperature range	(Ambient + 4 °C) – 40 °C, 1 °C increments
Automation	Controlled by software through an automation interface via TCP/IP or serial port; multiple microplates and biosensor trays; unattended operation
Throughput	One 96-well microplate and one biosensor tray simultaneously

For more information about ForteBio's Octet platform for label-free, real-time detection of biomolecular interactions, applications, and services, visit www.fortebio.com or contact us directly.

Enhanced reproducibility

The effect of the shaking speed during the capture step is shown in Figure 2 for a sandwich Octet assay. With shaking, assay sensitivity is increased as indicated by the decrease in the midpoint (EC_{50}) of the calibration curve (four-parameter logistic fit). In addition, the variability of the measurement decreases significantly with shaking, as shown in Table 1.

Sample	No shaking CV	With shaking CV
A	46 % (n=4)	6% (n=12)
B	26% (n=6)	3% (n=12)
C	27% (n=6)	4% (n=12)

Table 1: Assay variability (advanced quantitation assay) with and without shaking (400 rpm) during the capture step (incubation time = 5 minutes).

Physical specifications	
Dimensions	7 in x 7 in x 9 in (18 cm x 18 cm x 23 cm)
Weight	9.7 lbs (4.4 kg)
Electrical requirements	AC 100–240 V, 5.0–2.0 A, 50/60 Hz Single phase/45 W (60 W peak)
Power switch	On front panel of Sidekick station for easy access
Sample spill tray	Protects instrument electronics in lower compartment from sample spills
Safety standards	CE, CSA
Connection to CPU	USB 2.0
Sample plates lock	LOCK and UNLOCK buttons easily accessible; biosensor tray will not seat properly unless LOCK button is pressed
Instrument operation	Controlled by Sidekick software; temperature, shaking speed and duration of operation set via software; at end of incubation instrument stops shaking

* All specifications are subject to change without notice.

Ordering information

Part No.	UOM	Description
30-5011	System	Sidekick instrument for offline immobilization of biosensors. Includes instrument, software, accessory kit, and one-year warranty.



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