

Streptavidin High Binding FA Biosensors (Screening Grade)

For Kinetics Screening or Quantitation of Most Proteins

Key Features

- Immobilization of biotinylated proteins for kinetics screening
- Increased binding capacity facilitates custom quantitation assays for any protein
- Triple the binding capacity of standard-capacity Streptavidin FA Biosensors
- Increases signal-to-noise ratios, enabling detection of smaller proteins

ForteBio Streptavidin High Binding FA Biosensors, in conjunction with the Octet System, are designed for immobilization of biotin labeled proteins for use in assaying protein:protein interactions. Using Streptavidin High Binding FA Biosensors, the Octet System supports applications for kinetics screening and custom quantitation.

QUICK FACTS

- **Binding Capacity:** Approximately 3x the capacity of the Streptavidin FA Biosensor
- **Baseline Stability:** 15 minutes
- **Molecular Weight Range:** > 1kD
- **Noise:** +/- 0.05 nm
- **Recommended Buffer:** 1x ForteBio Kinetics Buffer

KINETICS SCREENING ASSAY USING STREPTAVIDIN BIOSENSORS ON THE OCTET SYSTEM

Using both the Streptavidin FA Biosensors and High Binding FA Biosensors on the Octet System, a biotinylated antigen was immobilized onto the biosensor surface offline. Thirteen clones were screened against the antigen for binding and subsequent off-rate analysis. Binding capacity on the High Binding FA Biosensor, as measured by the nm shift of the association phase, was approximately triple that of the FA Biosensor (Figure 1).

CALCULATION OF DISSOCIATION RATES

Analysis using Octet software reveals that the resulting dissociation rates correlated well between the two biosensor types. The resulting dissociation rates of the 13 samples

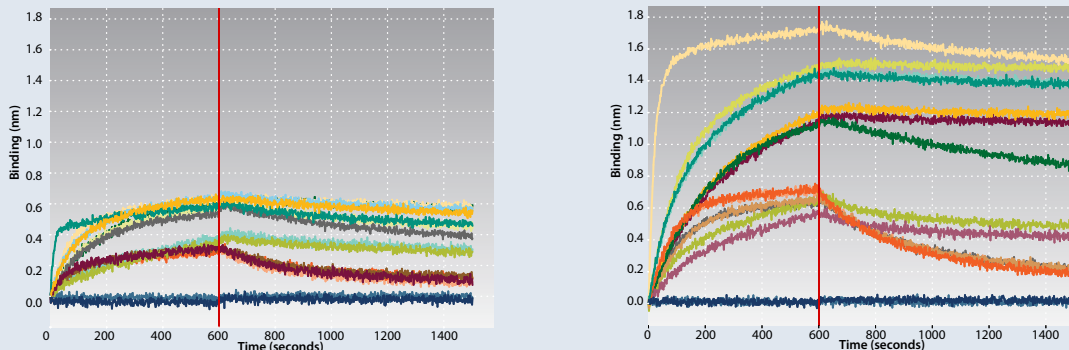


FIGURE 1: Kinetic screening using ForteBio Streptavidin FA Biosensors (left) and ForteBio Streptavidin High Binding FA Biosensors (right).

were plotted (Figure 2). The increased signal to noise ratios achieved with Streptavidin High Binding FA sensors make screening of smaller proteins easier and more reliable.

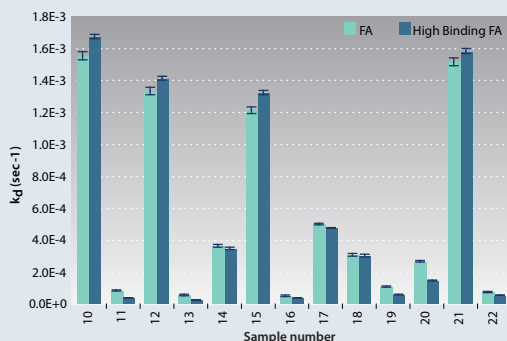


FIGURE 2: Calculated k_d from FA and High Binding FA Biosensors.

CUSTOM QUANTITATION WITH STREPTAVIDIN HIGH BINDING FA BIOSENSORS

A His-tagged endostatin standard curve was developed using Streptavidin High Binding FA Biosensors having good separation between concentrations (Figure 3) and precision (Table 1).

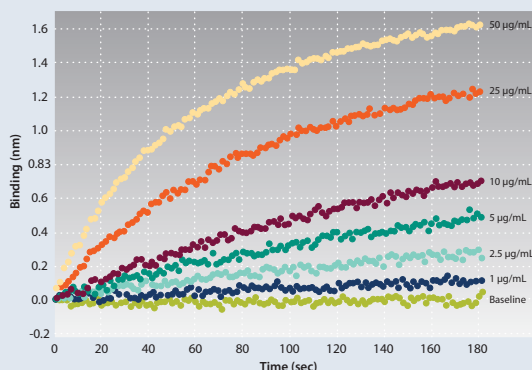


FIGURE 3: Calibration for endostatin-His using Streptavidin High Binding FA Biosensors.

[$\mu\text{g/mL}$]	Calculated [$\mu\text{g/mL}$]	Std Dev	CV
50	50.00	5.10	10.2%
25	25.17	2.53	10.1%
10	9.97	0.39	3.9%
5	5.02	0.35	7.1%
2.5	2.51	0.07	2.8%
1	1.00	0.01	1.4%

TABLE 1: Endostatin-His standard curve precision using Streptavidin High Binding FA Biosensors.

SCREENING APPLICATIONS

ForteBio Streptavidin High Binding FA Biosensors are an effective way of quickly screening collections of proteins against an immobilized biotinylated binding partner. The flexibility of the system enables screening protein:protein interactions using k_a , k_d , or K_D as the screening parameter. The Biosensors are minimally affected by crude samples or matrices, allowing kinetic screening of samples without having to first spin them down or purify them.

SAMPLE TYPES

ForteBio Streptavidin High Binding FA Biosensors work best with biotinylated proteins that contain a long chain linker for increased packing flexibility. They are ideal for screening Fabs and smaller proteins.

KINETIC ASSAY PARAMETERS

- **Sample volume:** 200 μL /well (post-dilution)
- **Hydration solution volume:** 200 μL /well
- **Sample plate temperature:** 2°C over ambient – 40°C
- **Biosensor hydration and sample plate equilibration:** 15 minutes

ORDERING INFORMATION

Part No.	UOM	Description
18-5019	Tray	Tray of 96 biosensors coated with High Binding Streptavidin (plus 1 bottle of 10X Kinetics Buffer)
18-5020	Pack	Five trays of 96 biosensors coated with High Binding Streptavidin (plus 1 bottle of 10X Kinetics Buffer)
18-5021	Case	Twenty trays of 96 biosensors coated with High Binding Streptavidin (plus 4 bottles of 10X Kinetics Buffer)

Materials Required But Not Provided

Microplates: Two (2) 96-well, black, flat bottom, polypropylene microplates (Greiner Bio-one # 655209).

Buffer: PBS buffer to dilute ForteBio Kinetics Buffer.

Biosensor hydration medium: It is crucial to hydrate biosensors in an appropriate solution. ForteBio recommends using 1X ForteBio Kinetics Buffer for biosensor hydration.