



# Streptavidin (SA) Biosensors

For kinetic analysis, screening, and quantitation of most proteins

## Key features

Immobilization of biotinylated proteins for:

- Kinetic analysis of biomolecular interaction pairs
- Quantitative analysis of proteins and their target analyte

## Overview

ForteBio Streptavidin (SA) biosensors are designed for immobilization of biotin labeled proteins for use in assaying protein:protein interactions using the Octet® platform. The systems support applications for kinetics characterization and quantitation of analytes binding to the immobilized protein.

## Quick facts

- Baseline Stability: 60 minutes
- Molecular Weight Range: > 1 kDa
- Noise: +/- 0.05 nm
- Recommended Buffer for Kinetic Applications: ForteBio Kinetics Buffer (part no. 18-5032)
- Recommended Buffer for Quantitation Applications: ForteBio Sample Diluent (part no. 18-5028)

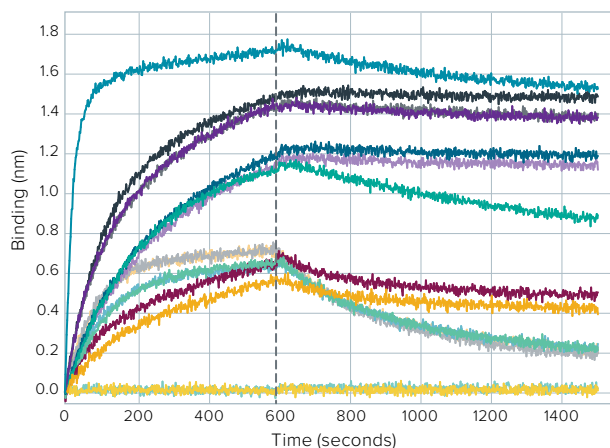


Figure 1: Kinetic screening using Streptavidin (SA) biosensors.

## Kinetics screening assay

Using Streptavidin (SA) biosensors on the Octet system, a biotinylated antigen was immobilized onto the biosensor surface offline. Thirteen hybridoma clones were screened against the antigen for binding and subsequent off-rate analysis. Binding capacity on the SA biosensors, measured by the nm shift of the association phase, is shown in Figure 1.

## Calculation of dissociation rates

Octet Data Analysis software can quickly determine kinetic constants from binding data. Figure 2 shows the resulting dissociation rates of the 13 samples in the experiment described above.

## Screening applications

ForteBio Streptavidin (SA) 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.

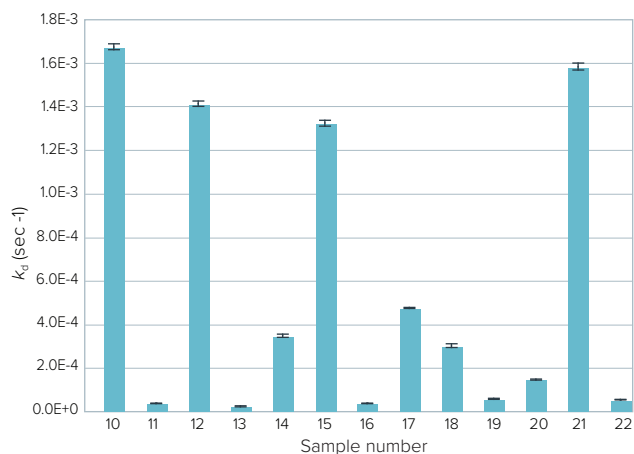


Figure 2: Calculated  $k_d$  from Streptavidin (SA) biosensors.

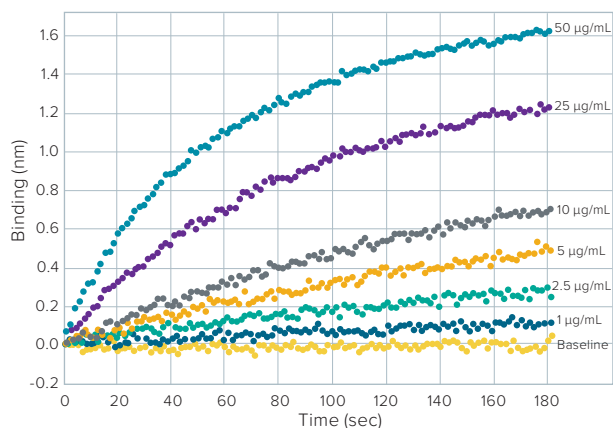


Figure 3: Calibration for endostatin-HIS using Streptavidin (SA) biosensors.

## Kinetic assay parameters

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

## Quantitation assays

A HIS-tagged endostatin standard curve was developed using Streptavidin (SA) biosensors to first immobilize the anti-penta-HIS antibody (Qiagen part no. 34660) followed by capture and quantitation of HIS-endostatin. The data demonstrates good separation between concentrations (Figure 3) and precision (Table 1).

## Sample types

Streptavidin (SA) 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.

µg/mL	Calculated µg/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 (SA) biosensors.

## Ordering information

Part no.	UOM	Description
18-5019	Tray	One tray of 96 Streptavidin (SA) biosensors
18-5020	Pack	Five trays of 96 Streptavidin (SA) biosensors
18-5021	Case	Twenty trays of 96 Streptavidin (SA) biosensors

**Note:** Additional materials are required to run these assays.

Dip and Read™ Streptavidin biosensors are compatible with all Octet instruments. All Octet systems include the latest software and offer optional 21 CFR Part 11 compliance tools.

*For more information about the Octet and BLItz platforms for label-free, real-time detection of biomolecular interactions, applications, and services, visit [www.fortebio.com](http://www.fortebio.com) or contact us directly.*