

Protein A Biosensor

For Determination of Antibody Concentration

KEY FEATURES

- Direct measurement of IgGs
- Assay samples without centrifugation
- Broad dynamic range



OVERVIEW

ForteBio's Protein A Biosensors, in conjunction with the Octet® system, are designed for monitoring antibody concentrations from crude lysates and cell culture supernatants. Using Protein A Biosensors, the Octet system supports applications from cell culture screening to purification monitoring during the process development and production of therapeutics.

QUICK FACTS

- **Dynamic Range:** 1–500 µg/mL for most proteins
(Octet RED system/Oct RED384 system)
- **Throughput:** 8 samples in ~2 minutes
96 samples in ~32 minutes
- **Precision/Accuracy:** <10% CVs
- **Limit of Detection:** typically 1 µg/mL

BIOPROCESSING APPLICATIONS

Accurate antibody quantitation is critical to selecting cell lines for developing and optimizing antibody production. Traditional methods for measuring antibody concentration include HPLC, ELISA

and densitometry — all of which have long analysis times, lack of specificity, and precision.

Using Protein A Biosensors with the Octet system streamlines a variety of bioprocessing applications by providing precise results which require minimal sample handling and give rapid turnaround of results.

- Cell culture screening
- Process development
- Manufacturing
- Protein purification

DYNAMIC RANGE

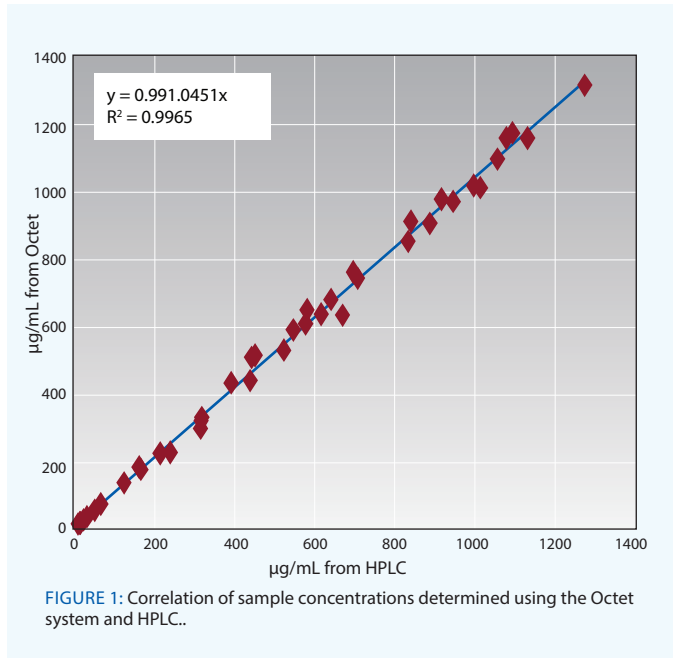
A dynamic range of 2–3 logs is typical. The actual range will be protein-dependent. Protein A Biosensors have been shown to quantitate in the range of 1–500 µg/mL for polyclonal human IgGs.

SAMPLE TYPES

Protein A Biosensors have been tested on the Octet system with human antibodies and Fc fusion proteins.

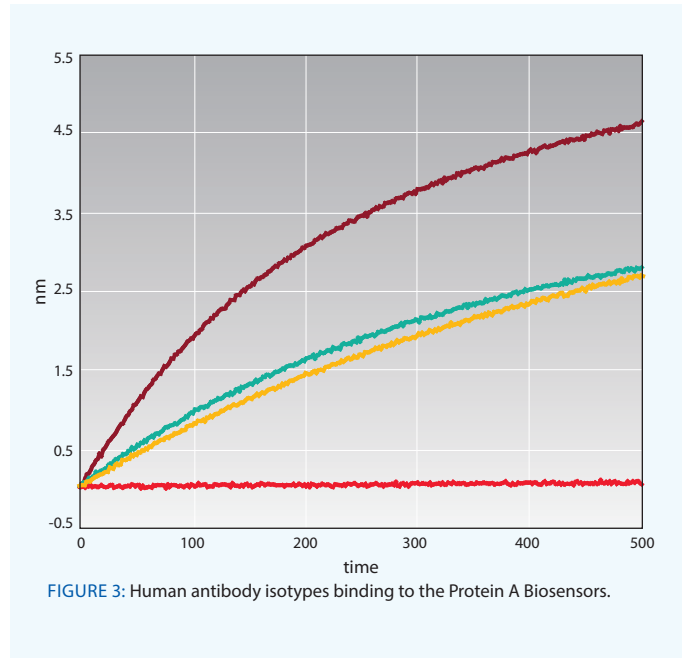
CORRELATION TO HPLC

A series of bioreactor samples were assayed both on the Octet system using Protein A Biosensors and HPLC.



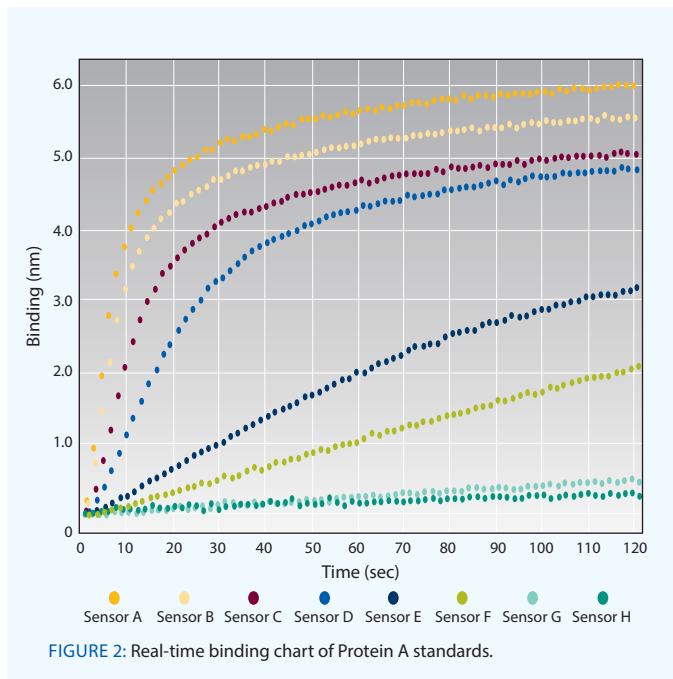
RECOGNITION OF HUMAN IgG ISOTYPES

ForteBio's Protein A Biosensors have been shown to recognize IgG1, IgG2 and IgG4. Little or no binding occurs with IgG3.



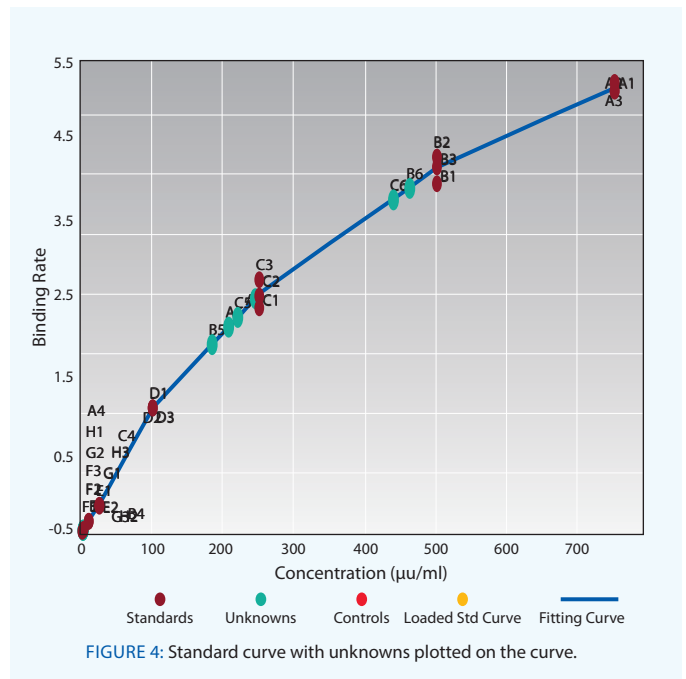
PROTEIN A ASSAY PRINCIPLE

The Protein A assay for determining protein concentration is based on the rate of binding of a protein of interest to the biosensor surface. Different protein concentrations result in different binding rates. The Octet system software calculates the binding rates from standards with known values to generate a standard curve — the binding rate of each standard is proportional to its concentration. Concentrations of experimental samples are calculated based on their binding rate compared to that of the known concentrations that make up the standard curve.



ASSAY PARAMETERS

- Sample volume: 200 µL (after dilution)
- Hydration solution volume: 200 µL
- Data acquisition: 120 seconds/8 biosensors
- Flow rate: 200 mm/seconds
- Precision/accuracy: <10% CVs
- Biosensor hydration and sample plate equilibration: 10 minutes
- Standard curve fit: Linear point-to-point



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.

ORDERING INFORMATION

Part No.	UOM	Description
18-5010	Tray	96 biosensors coated with Protein A
18-5012	Pack	Five trays of 96 biosensors coated with Protein A
18-5013	Case	Twenty trays of 96 biosensors coated with Protein A

Materials Required But Not Provided

Standards: A purified standard that is identical to the experimental samples is required.

Media for sensor hydration: The biosensor hydration solution must match the standard and experimental sample matrix (e.g., blank media or sample diluent).