SARTORIUS

Product Datasheet

Octet® FAB2G Biosensors

For quantitation and kinetic characterization of human Fab, F(ab')$_2$, and IgG

Key Features

- Rapid quantitation of all subclasses of human Fab, F(ab')$_2$ and IgG
- Easy capture of human Fab, F(ab')$_2$ and IgG for kinetic analysis with antigen
- Capture of IgG for analysis of Fc receptor binding
- No recognition towards human kappa or lambda light chains
- No cross-reactivity towards bovine or mouse IgG

Overview

Human antibodies are the most vital research candidates in drug discovery and development of bio-therapeutics. The detection and characterization of human IgG is of paramount importance for research scientists. The Octet® Anti-Human Fab-CH1 2nd Generation (FAB2G) Biosensor is an improved version of our original FAB biosensor. It comes pre-immobilized with a similar llama antibody fragment (BAC BV) that binds specifically to the CH1 domain of all four human IgG subclasses (Figure 1), and enables an easy and rapid method of quantitation (Figure 2) and kinetic characterization (Figure 3) of human Fab, F(ab')$_2$ and IgG. The high specificity of the sensor towards the CH1 domain of the heavy chain and the lack of recognition towards light chains makes it particularly suitable for quantitation of crude samples from expression.

Flexibility and Versatility

The Octet® FAB2G Biosensor is qualified for both quantitation and kinetic applications. It enables researchers to quickly and easily detect and quantitate human Fab and IgG, or to capture them for kinetics and affinity measurements with other analytes. Combined with the ease of use provided by the Octet® N1 platform or the high-throughput provided by the Octet® systems, the Octet® FAB2G Biosensor greatly accelerates laboratory workflows and reduces time to results. In addition, the Octet® N1 platform's low (4 µL) sample volume enables measuring precious samples with the Anti- Human Fab-CH1 Biosensor. The biosensor can be easily regenerated using a 10 mM glycine solution at pH 1.7.

Table 1: Kinetic results for the interaction between ligand HIgG $F(ab')_2$ (110 kDa) and an analyte using the Octet® FAB2G Biosensors for the data shown in Figure 3.

k_{on}	k_{off}	K_D
1.2E+04	5.0E-04	4.2E-08 M

Range of Applications

The FAB2G Biosensor offers unparalleled ease of use and time-to-result in a wide range of biopharm discovery and development applications, including:

- Rapid quantitation of all subclasses of human Fab, $F(ab')_2$ and IgG
- Affinity characterization of interactions between human Fab, $F(ab')_2$ IgG and various binding partners
- Direct capture of human IgG 1/2/3/4 for easy studies with Fc Receptors including FcRn
- Efficient workflow for epitope binning/mapping of IgG or Fabs
- Cell line screening in process development
- Lot release testing assays for quality control

For technical information on the Octet® FAB2G Biosensor, see Technical Note 44, *Rapid Analysis of Fab Fragments and IgG with Anti-Human Fab-CH1 2nd Generation (FAB2G) Biosensors.*

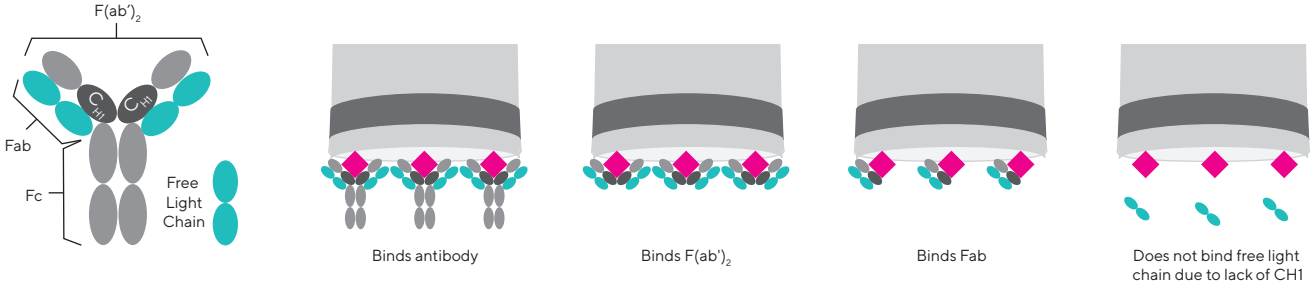

Figure 1: The Octet® FAB2G Biosensor binds only the heavy chain CH1 domain of human Fab, $F(ab')_2$ and IgG antibodies.

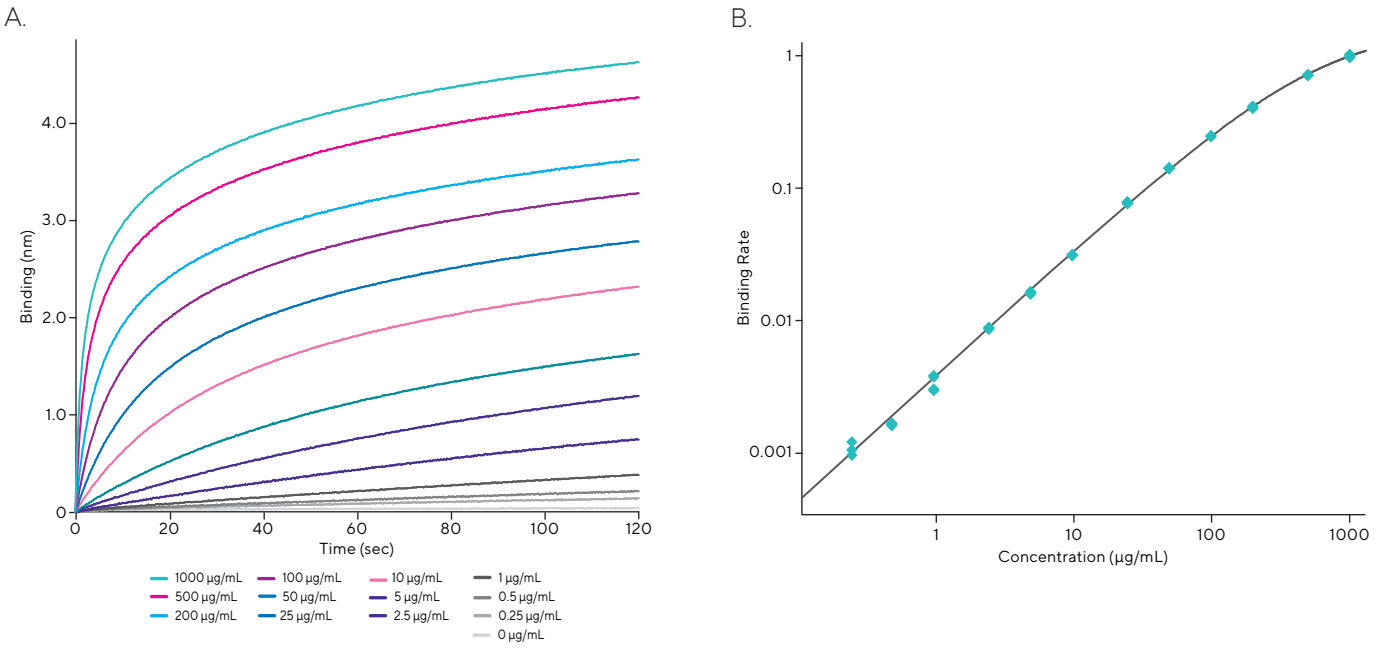

Figure 2: Dose response of Fab and IgG using FAB2G Biosensors on the Octet® RH16 system with assay parameters (1000 rpm, 2 minutes) for a standard dynamic range. A) Fab raw data traces. B) Resulting titration curves using triplicate samples.

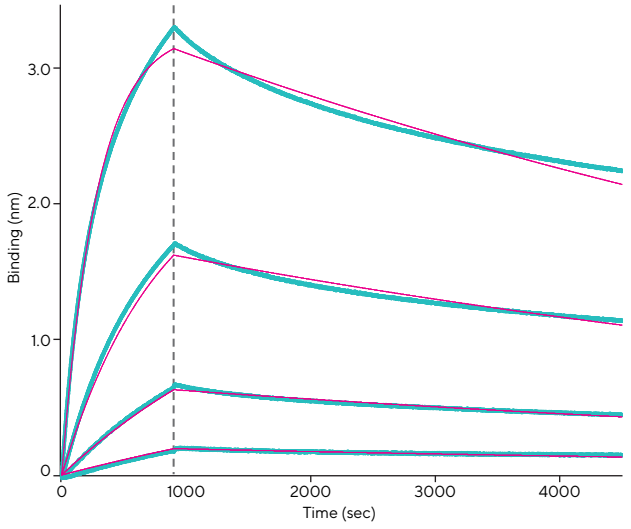

Figure 3: Kinetic analysis of the interaction between Fab ligand HIgG Fab (50 kDa) and interacting analyte, Goat anti-HIgG (H+L) specific (50 kDa) on the Octet® RH16 system. Data were processed and the curve fit using a 1:1 binding model.

Ordering Information

Part No.	UOM	Description
18-5125	Tray	One tray of 96 biosensors coated with anti-human Fab-CH1 affinity ligand for quantitation and kinetic analysis of Fab fragments and full-length IgG.
18-5126	Pack	Five trays of 96 biosensors coated with anti-human Fab-CH1 affinity ligand for quantitation and kinetic analysis of Fab fragments and full-length IgG.
18-5127	Case	Twenty trays of 96 biosensors coated with anti-human Fab-CH1 affinity ligand for quantitation and kinetic analysis of Fab fragments and full-length IgG.

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DS-41-0232-PD Rev D