

Dip and Read™ Anti-Human Fab-CH1 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
- 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 the development of bio-therapeutics. The detection and characterization of human IgG is of paramount importance for research scientists. The Anti-Human Fab-CH1 Biosensor is pre-immobilized with a 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 Anti-Human Fab-CH1 Biosensor is qualified for both quantitation and kinetic applications. It enables scientists to quickly and easily detect and quantitate human Fab, F(ab')₂, and IgG, or to capture them for affinity measurements with other analytes. Combined with the ease of use provided by the BLItz™ platform or the high throughput provided by the Octet® systems, the Anti-Human Fab-CH1 Biosensor greatly accelerates laboratory workflows and reduces time to results. In addition, the BLItz 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.

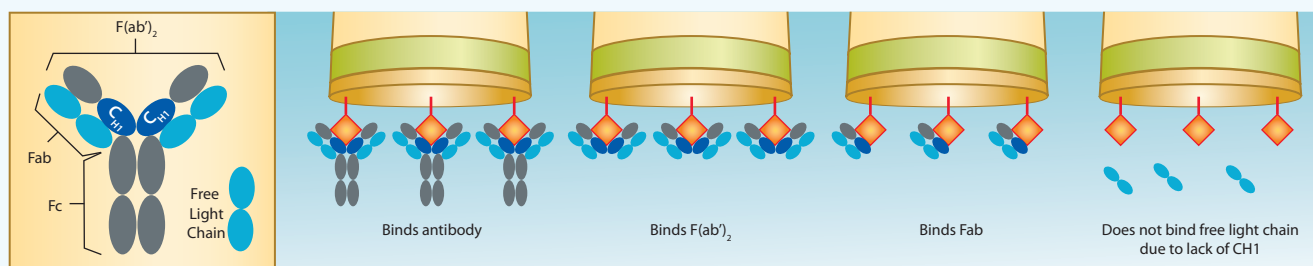


FIGURE 1: The Anti-Human Fab-CH1 Biosensor binds only the heavy chain CH1 domain of human Fab, F(ab')₂, and IgG antibodies.

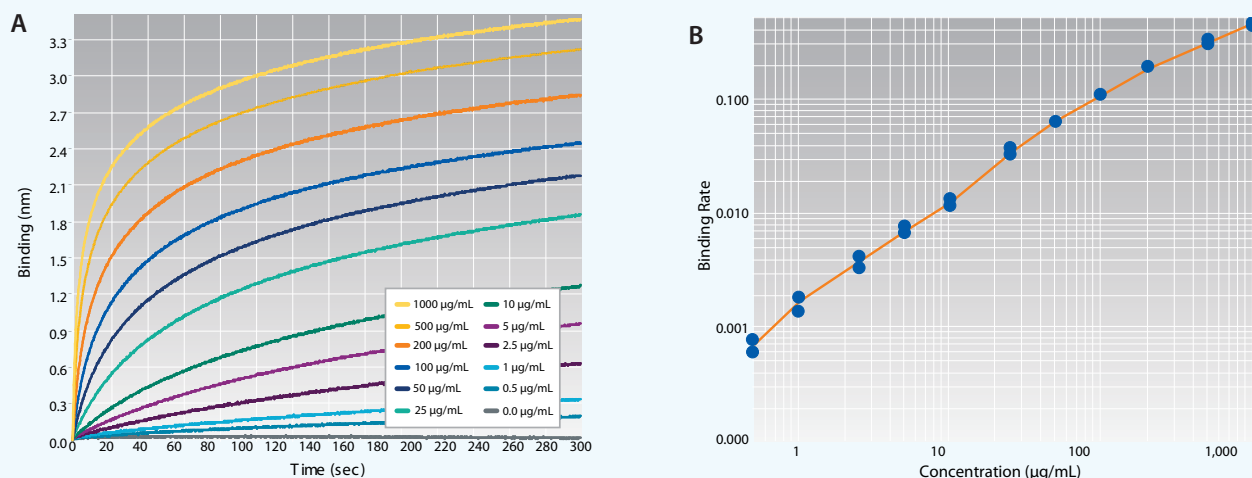
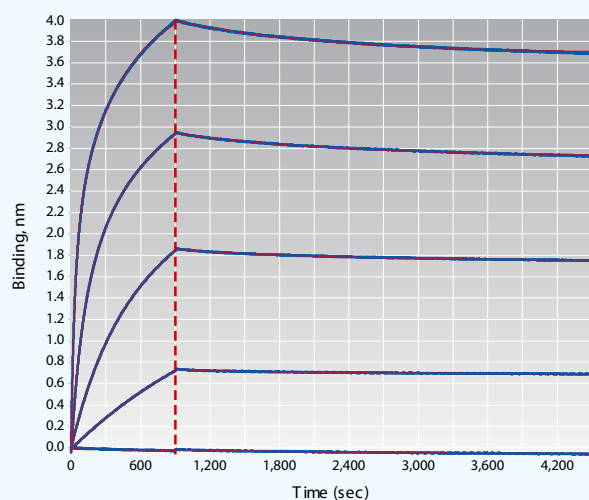


FIGURE 2: Detection of a F(ab)₂ standard using Anti-Human Fab CH1 biosensors on an Octet RED384 system (1000 rpm, 2 minutes) for a standard dynamic range. A) F(ab)₂ dose. B) The resulting calibration curve. Sample diluent was used as a matrix for all samples.



k_{on}	k_{off}	K_D
4.6×10^4 1/M s	1.0×10^{-5} 1/s	2.2×10^{-10} M

TABLE 1: Kinetic results for the interaction between ligand HlgG F(ab)₂ (110 kDa) and an analyte using Anti-Human Fab CH1 biosensors.

FIGURE 3: Kinetic analysis of the interaction between ligand HlgG F(ab)₂ (110 kDa) and an analyte F(ab)₂ fragment, Goat anti-HlgG F(ab)₂ specific (110 kDa). 1X Kinetics Buffer was used as the matrix throughout and the assay temperature was 30°C. Data were processed and the curve fit using a 1:1 binding model. The kinetic results are reported in Table 1.

RANGE OF APPLICATIONS

The Anti-Human Fab-CH1 Biosensor offers researchers unparalleled ease of use and time-to-result in a wide range of laboratory 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
- Efficient workflow for epitope binning/mapping
- Process optimization in development and quality control

For technical information on the Anti-Human Fab-CH1 Biosensor, see Tech Note 33 (*Anti-Human Fab-CH1 Biosensor Quantitation Assays*) and Tech Note 34 (*Anti-Human Fab-CH1 Biosensor Kinetics Assays*).

ORDERING INFORMATION

Part No.	UOM	Description
18-5104	Tray	One tray of 96 Anti-Human Fab-CH1 (FAB) Biosensors
18-5105	Pack	Five trays of 96 Anti-Human Fab-CH1 (FAB) Biosensors
18-5106	Case	Twenty trays of 96 Anti-Human Fab-CH1 (FAB) Biosensors