

# Octet<sup>®</sup> AMC Biosensors

For Kinetic Characterization  
of Interactions Between  
Analytes and Mouse  
Fc-containing Proteins



## Key Features

- Capture-based immobilization of mouse Fc-containing proteins
- Biosensor can be regenerated and reused
- Designed for use in buffer or complex media

## Overview

The Octet<sup>®</sup> Anti-Mouse IgG Fc Capture (AMC) Biosensors enable kinetic characterization of macromolecular interactions between mouse Fc-containing proteins and target analytes. Immobilization of mouse Fc-containing proteins is achieved through an immobilized anti-mouse Fc-specific antibody whose high-affinity for the mouse Fc domain provides the stable baseline required for demanding kinetics applications. Cost-effective regeneration of the biosensors and the ability to directly immobilize mouse Fc-containing proteins from crude matrices make the the Octet<sup>®</sup> AMC Biosensor extremely useful in high-throughput applications. Subtypes IgG1, IgG2a and IgG2b are recommended for use with AMC Biosensors; IgG3 should be evaluated on a case-by-case basis.

## Principle

The Octet® AMC Biosensors are pre-immobilized with a high-affinity antibody against the Fc portion of mouse IgG. This antibody can capture and immobilize mouse IgG (mIgG) or other Fc-containing ligands to produce a stable surface suitable for interaction analysis. The capture surface is particularly suited for immobilizing mIgG from cell culture supernatants or other complex mixtures where biotinylation is not an option.

## Streamlined Workflow

The traditional workflow for measuring  $k_{on}$  and  $k_{off}$  between a mouse Fc-containing protein and an analyte requires labor intensive steps that are both inconvenient and non-conductive to high-throughput screening: purification of the Fc-containing protein, biotinylation of the purified protein and, finally, immobilization of the ligand on a Streptavidin Biosensor. Off-the-shelf AMC Biosensors streamline this workflow by enabling immobilization of mouse Fc-containing proteins upon the biosensor directly from a crude or purified matrix. No purification or biotinylation steps are required, and thereby high-throughput screening methods are facilitated (Figure 1).

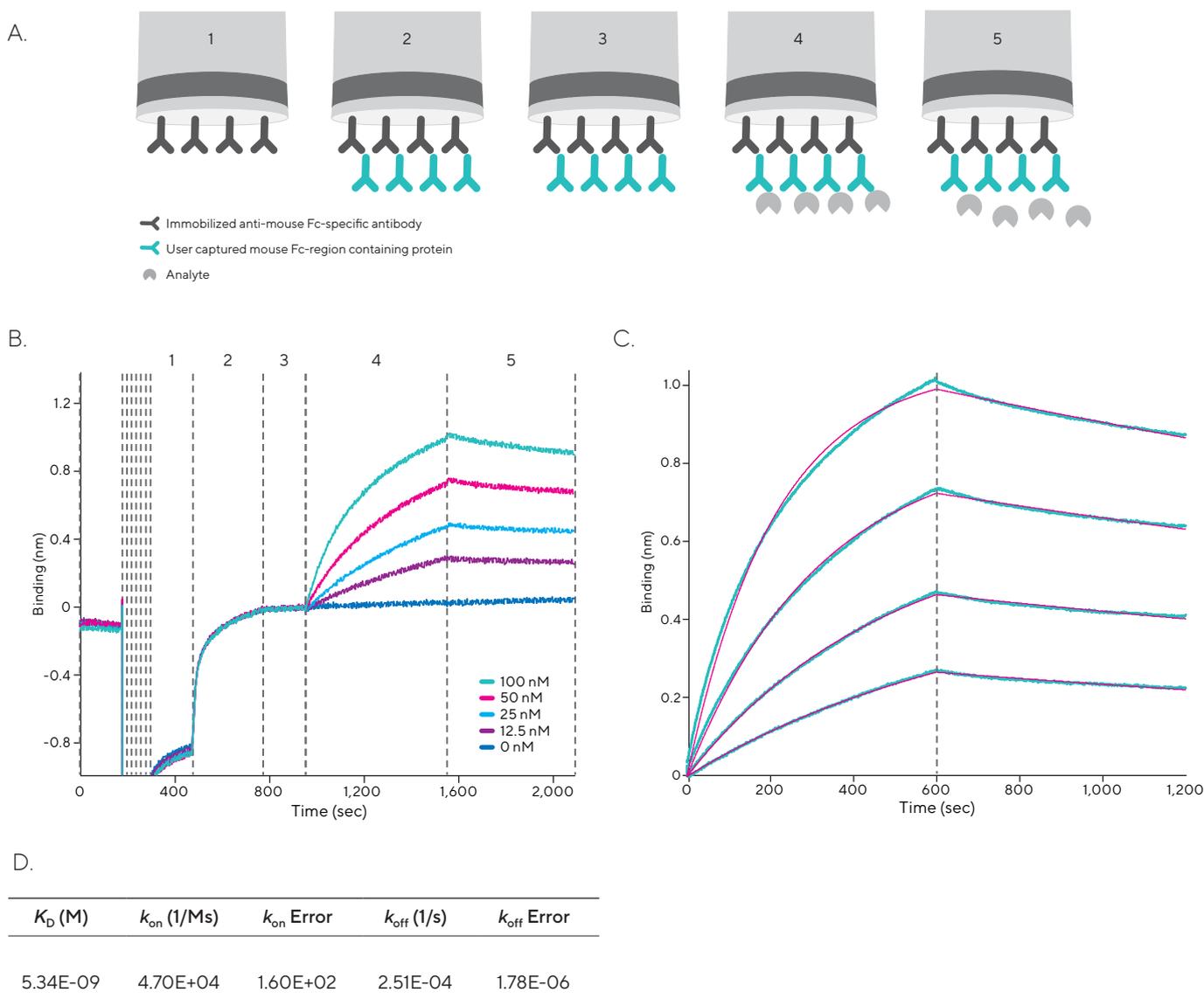


Figure 1: Kinetic characterization of the interaction between a mouse IgG1 antibody and a Fab analyte at 4 different concentrations using AMC Biosensors. After an equilibration step and a preconditioning cycle, the assay consists of 5 assay steps. Step 1: equilibration, Step 2: loading (capture) of mouse IgG1, Step 3: baseline, Step 4: association kinetics, Step 5: dissociation kinetics. The raw data for a full assay is shown in Figure 1B. After data processing (including reference subtraction using the 0 nM trace), the association and dissociation traces were fit to a 1:1 binding model (1C, magenta lines). Values of  $K_D$ ,  $k_{on}$  and  $k_{off}$  were extracted from the curve fitting analysis (1D).

The Octet® AMC Biosensors can be regenerated up to 10 times via a standard low-pH protocol in as little as two minutes for select applications such as acquisition of replicate data (same ligand/analyte pair) and “bucket”-based screening applications. Regeneration dissociates the mouse Fc-containing protein from the immobilized anti-mouse Fc antibody, allowing additional analyses. For best final affinity and kinetic determination results, using a new AMC Biosensor for each unique capture ligand is recommended.

## Flexible Applications

The Octet® AMC Biosensors provide a flexible platform for evaluating the kinetics between mouse Fc-containing proteins and their analytes.

- Complete kinetic analysis ( $k_{on}$ ,  $k_{off}$  and  $K_D$ ) between mouse Fc containing proteins and target analytes
- Off-rate ranking of hybridoma and stable cell-line supernatants
- Epitope binning/mapping (from crude or purified samples)
- Tracking product integrity by measuring  $k_{on}$ ,  $k_{off}$  and  $K_D$  during:
  - Upstream fermentation
  - Downstream harvest and purification
  - Post-derivatization (pegylation)
  - Formulation development

## Ordering Information

Part No.	UOM	Description
18-5088	Tray	One tray of 96 Octet® AMC Biosensors for the immobilization of mouse IgG or other proteins containing the mouse Fc-region for kinetic analysis.
18-5089	Pack	Five trays of 96 Octet® AMC Biosensors for the immobilization of mouse IgG or other proteins containing the mouse Fc-region for kinetic analysis.
18-5090	Case	Twenty trays of 96 Octet® AMC Biosensors for the immobilization of mouse IgG or other proteins containing the mouse Fc-region for kinetic analysis.

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