SARTORIUS

Simplifying Progress

Developing Monoclonal Antibodies:
Challenges and Solutions

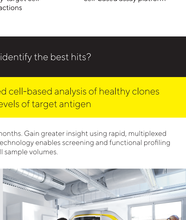
Monoclonal antibodies (mAbs) used for immunotherapy stimulate the immune system to mount a response to target antigens. These powerful therapeutics are being used to target various conditions including cancer and autoimmune diseases, and those with superior target reactivity and optimal function are the best candidates for development. Despite technological and methodological advancements, developing new monoclonal antibodies can be challenging. Here we explore some common challenges and potential solutions.

Challenge How do I determine and validate target selection?

Solution Comprehensive, biologically relevant assays

Monoclonal antibody development requires comprehensive evaluation of both the mAb and target antigen. Choosing a system that enables kinetic, multiplexed results ensures predictive target selection.

The Incucyte® Live-Cell Analysis System Enables Real-Time, Live-Cell Imaging and Analysis Inside Your Incubator



Maintain uncompromised incubation conditions to limit perturbation of the cell micro-environment

Extract biologically relevant information with kinetic, image-based measurements of antibody-target cell interactions

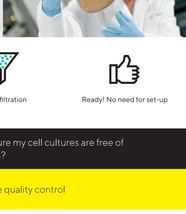
Derive powerful biological insight and increase productivity using a flexible cell-based assay platform

Challenge How do I quickly identify the best hits?

Solution Rapid, multiplexed cell-based analysis of healthy clones expressing high levels of target antigen

Library screening and functional profiling can take months. Gain greater insight using rapid, multiplexed analysis of cells and beads in suspension. The right technology enables screening and functional profiling in just minutes and generates quality data from small sample volumes.

Perform Rapid, Information-Rich, Multiplex Analysis of Cells and Beads in Suspension With the iQue® 3 Advanced Flow Cytometry Platform



Rapid microvolume (≥ 1 µL) sampling enables processing in minutes, preserving precious samples and saving on costly reagents

Supports cell-based assays that maintain the targets' native conformation for more biologically relevant results

Perform information-rich, multiplexed analysis of cells, beads and secreted proteins in suspension

Challenge Isolating supernatant is time-consuming. Is there a faster way?

Solution One-step filtration

Increasing cell density in mammalian cell cultures makes filtration challenging. Centrifugation is necessary prior to sterile filtration to avoid clogging of the membrane. The combination of a filter aid with the sterile filter fully eliminates the centrifugation step and speeds up your filtration process.

The Sartoclear Dynamics® Lab Enables Mammalian Cell Culture Harvest With Rapid One-Step Filtration

No centrifugation required

Rapid filtration

Ready! No need for set-up

Challenge How do I ensure my cell cultures are free of contaminants?

Solution Rapid, reliable quality control

Contamination can be costly. Mycoplasma and bacterial contaminants can destroy a cell culture and result in the loss of a cell line. For confidence moving downstream with cell cultures, it is important to ensure they are free of contaminants.

Microsart® Mycoplasma qPCR Kits Are an Easy-to-Use Solution That Offer Rapid, Reliable Microbial Quality Control in Compliance With International Guidelines

Obtain reliable results—without worrying about false positives—in 3 hours using TaqMan® probes

A ready-to-use master mix DNA-sequence for internal control eliminates tedious pipetting

Lyophilized validation standards are non-infectious and eliminate contamination risks

Challenge How do I select the best performing clones?

Solution Cell health and growth data

The best performing clones grow well and are highly productive. Quantifying other parameters in addition to an IgG titer readout provides valuable information for clone selection. The iQue® 3 with Human IgG Titer & Viability Kit correlates IgG titer-per-cell with cell health and cell growth readouts in a single IgG competition immunoassay that measures cells and secreted protein. It provides pertinent data for clone selection and eliminates the need to analyze and correlate data from multiple assays.

Combining the iQue® 3 With the Human IgG Titer and Viability Kit Provides Valuable Insight for Clone Selection

Clone productivity ranking based on more relevant data including IgG concentration, IgG quantitation per cell, IgG quantitation per viable cell, cell density and viability

Increase productivity with rapid screening of 96- or 384-well plates

Assay with ease using the user-friendly workflow

Challenge How can I select best lead candidates early and quickly?

Solution High throughput screening assays that provide resolution into binding properties and critical quality attributes early in the development process

Early identification of candidates with desired affinity and dissociation kinetics, binding epitopes and critical quality attributes, such as glycosylation profiles, can be vital for avoiding later-phase failures caused by selecting non-ideal leads.

Octet® Systems Are Ideal for Screening-Based Lead Identification Providing Unmatched Ease-of-Use and Throughput Capabilities

Accurately characterize binding affinities, kinetics, and specificity in minutes

Supports epitope binning of large antibody libraries directly from hybridoma supernatants or lysates, together with integrated software tools to evaluate large data sets

Quickly screen high productivity antibody clones while also evaluating glycosylation profiles of leads early in the development process

Discover our solutions at www.sartorius.com/mab-oncology