



single cell
TECHNOLOGY

AND CASE STUDY CINEMAS PRESENT

ABTHENEUM BEGINS

MULTI-
LAYERED
SCREENS

HUGE
DATA
OUTPUT

EVERY DISCOVERY HAS AN ORIGIN STORY

A REVOLUTIONARY PLATFORM RISES FROM THE SHADOWS,
BRINGING THE HERO ANTIBODY DISCOVERY DESERVES

WWW.SINGLECELLTECHNOLOGY.COM

The Problem

Antibody discovery is a pivotal early step in drug development, but traditional methods can be inadequate to deliver differentiated antibodies. A thorough and multi-dimensional approach is necessary to ensure no stone is left unturned.

A Unique Single B Cell Solution - AbTheneum

AbTheneum is our innovative platform for single B cell antibody discovery. Unlike traditional methods, AbTheneum screens antibodies secreted by cells within hours, without fusion or long-term culture.

How it works

- Isolate antibody-secreting cells from millions of immune cells
- 20,000+ cells are deposited into tiny picowells (<200pL each) for rapid screening
- Antibodies are captured on slides (Fig. 1) within hours for immediate analysis, separated from cells
- Our assays operate separately from cells, which allows assays without time and assay condition constraints
- Sequences of all antibodies are captured & sequenced using multiple DNA barcodes per cell in a one-of-a-kind NGS workflow

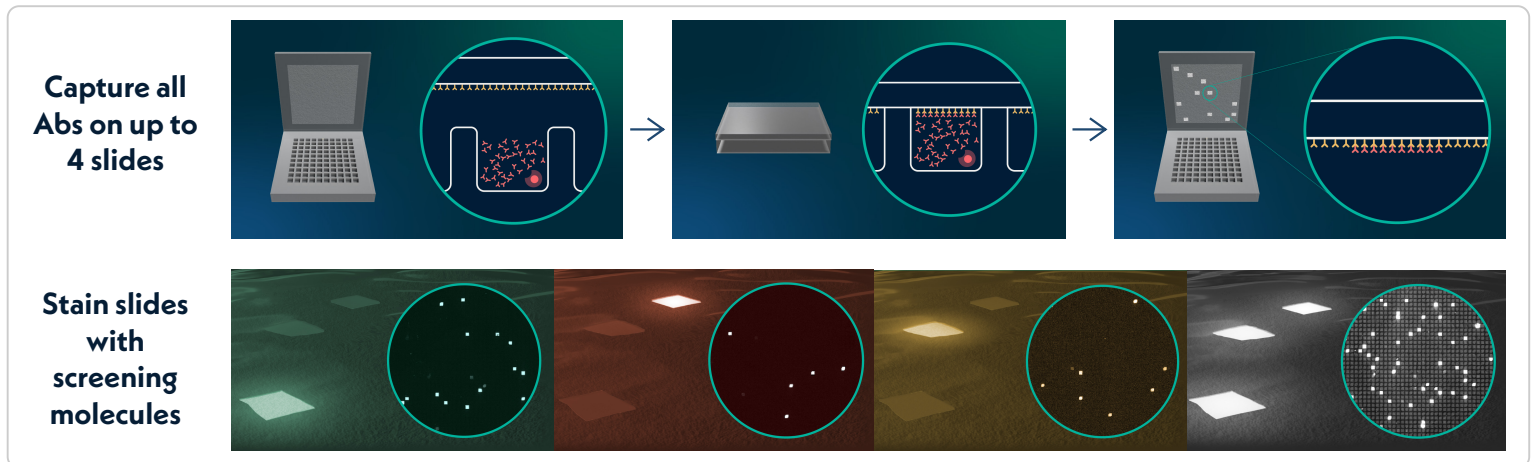


Figure 1. AbTheneum process to make antibody arrays by making a leakproof seal with Single Cell's picoliter device with one or up to four slides. Each slide can be stained with one or more fluorescent screening molecules to profile the captured antibodies. All stained slides are imaged with a fluorescent slide scanner and image analysis is incorporated into each antibody's binding profile.

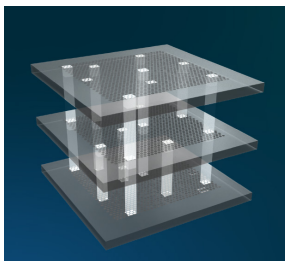


Figure 2. All antibody scanned images from all slides are aligned.

Key Advantages

Multi-layered Screening

Comprehensive antibody profiling by aligning via multiple assays (Fig. 2)

- Antigen binding
- Epitope specificity
- Cross-reactivity
- Receptor or ligand blocking
- Benchmark competition
- Additional custom assays available

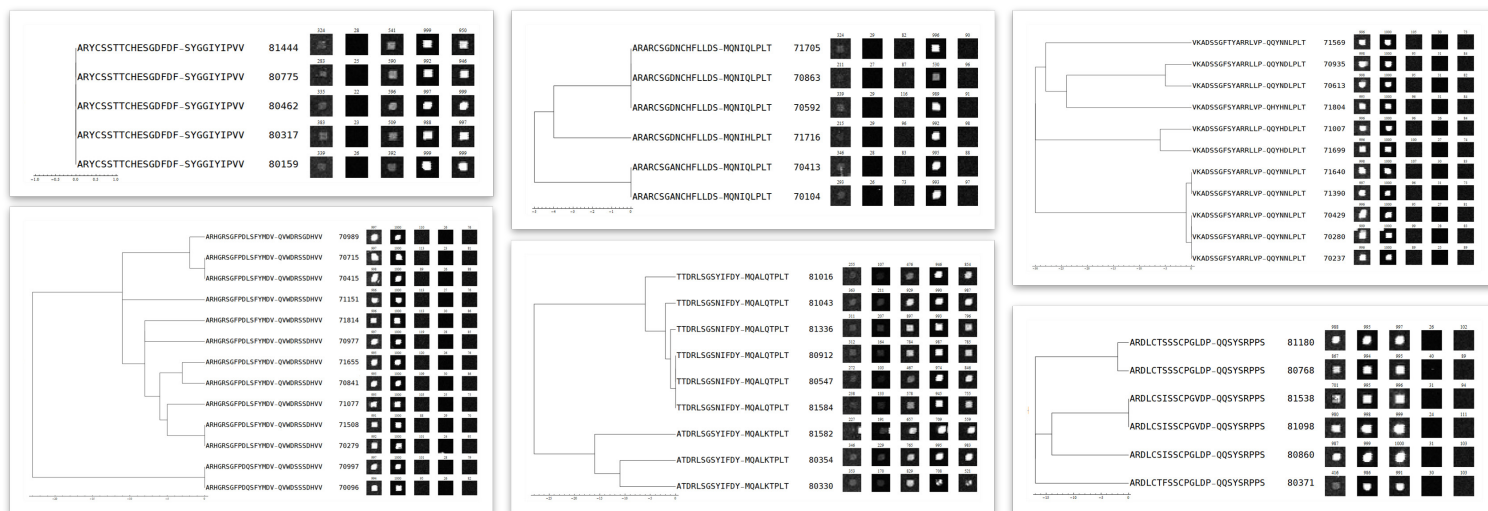
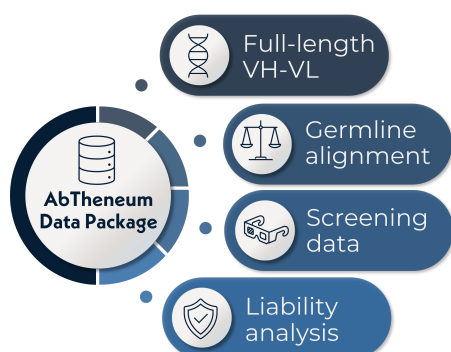


Figure 3. Full-length antibody sequences were clustered by clonotype, 6 diverse clonotype clusters are shown with HCDR3-LCDR3 and data from 5 screening conditions captured across 3 slides. Antibodies within sequence clonotypes show similar phenotype.

High Fidelity Sequencing

Industry's first parallel sequencing of thousands of antibodies via a custom DNA microarray, incorporating multiple DNA barcodes at mapped locations.

Feature	Advantage
Multiple DNA barcodes/cell	Increase confidence with redundancy
Unique Molecule Identifiers	UMIs reduce error propagation
Paired phenotype & genotype	Clonotypes show similar phenotype (Fig. 3), increasing confidence



Data-Rich Output

- Full-length antibody sequences from single cells
- Cross-referenced screening data for each sequence
- Sequence liability assessments
- Germline comparisons
- Clonotype clustering

Never Miss a Clone

>98% success rate on binding antigen after expression

Fast Turnaround

AbTheneum Data Package delivered **3 weeks** after harvest

Flexible & Scalable

- ✓ Fresh or frozen cells
- ✓ Wild-type & transgenic mice (other hosts available)
- ✓ Optional antigen-specific cell isolation to increase hits

Learn more at



singlecelltechnology.com



single cell
TECHNOLOGY

Capture
The Future

Single Cell Technology kicked off in 2008 and has been providing antibody discovery services since 2016.

Our discoveries include therapeutic antibodies for immuno-oncology, CNS diseases, infectious disease, autoimmune conditions, and more disease areas used as monotherapies, CAR-T, and multispecific approaches.

We've partnered with top 10 pharma companies and small virtual biotechs and many inbetween.

**Start Your Discovery Journey
Contact Us!**

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