What type of therapeutics do

Protein therapeutics 40%

Monoclonal antibodies 42%

Bispecific antibodies 15%

Trispecific antibodies 3%

CAR-T/cell therapies 21%

Primary B-cell cultures

Candidate selection

(1-10 stage)

48%

33%

Antibody-drug conjugates 27%

I don't develop therapeutics 24%

you develop?

## Key trends in antibody discovery

For our Spotlight on antibody discovery, we surveyed our audience to find out the latest trends, opinions and behaviors in the field.

Your work

Over half the people surveyed worked in cancer research.

What therapeutic area(s) do you work in?

Cancer 58%

Immunotherapy 45%

Autoimmune diseases 21%

Inflammation 24% Infectious diseases (inc. COVID-19) 36%

Neurodegenerative 18%

Cardiovascular 9% Rare diseases 18%

Metabolic **12%** 

Ocular 6%

Regenerative medicine **12%** 

Drug-resistant bacteria 3%

I don't work in a therapeutic area **6%** 

What type of cells do you generally use as a source? Primary human immune cells 52%

Other species immune cells 30%

Non-adhered cell lines 15%

Adhered cell lines 27%

iPSC or iPSC-derived cells 15%

Bacterial or fungal cells 27%

**Discovery technologies** 

What technique(s) do you use for antibody discovery?

Hybridoma and surface display technologies were the most popular.

Hybridoma technology 48%

of your antibodies?

Hit generation

26%

78%

(100-1000 samples)

Direct screening

27%

How early in your discovery pathway do you assess functional activity Lead characterization

(10-50 stage)

26%

18%

Surface display

Transgenic technology

42%

What functional activities of your test antibody are of most interest to you?

Antibody-dependent cellular cytotoxicity 50%

Internalization

28%

What bioassay(s) do you use to quantify antibody activity?

Antibody-dependent cellular phagocytosis 28%

Binding affinity/potency

ELISA 72%

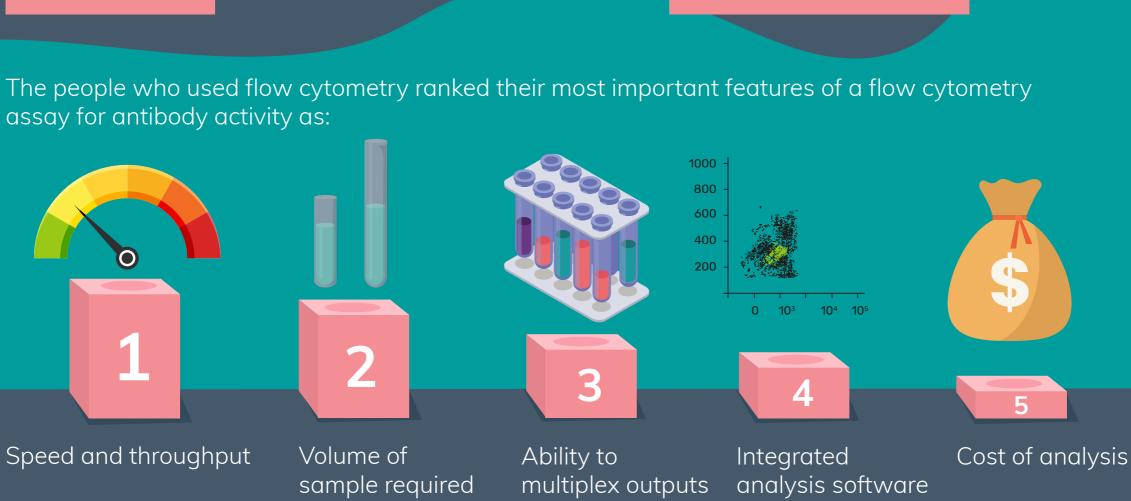
36%

assay for antibody activity as:

Reporter – fluorescence or luminescence

Kinetic protein-protein interactions

Flow cytometry 55%



Do you incorporate artificial intelligence/machine learning into your antibody discovery efforts?

YES

25%

What are the main barriers to this?

Not relevant to me

16%

Do you think reproducibility is an issue in the field?

Training – I don't know

where to start or how it

could help me

40%

Challenges

Access to suitable tools

Time-consuming processes

Tools for

characterization and

target identification

Only 25% of people incorporate AI/ML into their discovery efforts, with the main barrier being training.

**75%** 

Hardware - I can't

manage this on my

machine

12%

**Software** – I can't find any

software that performs the

type of analysis I need

32%

Yes **84%** No **16%** The majority of respondents thought reproducibility was an issue in antibody discovery. What is the main challenge faced in antibody discovery?

34%

34%

What is the biggest technology gap or need in antibody discovery?

32%

Lack of available antibodies

for research needs

Reliable reagents Tools for efficacy testing and prediction

What excites you most about the future of antibody therapeutics?

Antibody versus target

sequence/modeling

The potential for using Ability to target machine learning in rare disorders immunotherapy Their use in infectious diseases Targeted therapies Their efficiency and positive effects on patient survival **About the respondents** 

Job role

Lab Director | Chief Scientist 9%

President | CEO | VP | Owner 3%

Postdoctoral Fellow 6%

Department Head 6%

Principal Investigator 32%

Professor | Instructor 9%

**Bio**Techniques<sup>1</sup>

Spotlight

Medical Profession | Physician 6%

Staff Scientist 14%

Location

Graduate Student 3% **PhD 3%** 

Diagnostics 10% CRO | CDMO 7% Charity | Not-for-profit 3%

SARTURIUS

39% Europe

48% North America

3% South America

10% Asia

**Sector:** 

Academic 45%

Hospital | Clinic 13%

Government | NGO 3%

Pharma | Biotech 16%

Private research Foundation 3%