biocompare® Surveys & Reports

2007 Antibody Report: Current Trends and Future Outlook

Executive Summary

Biocompare Surveys and Reports
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Table of Contents

Report Introduction

The 2007 Antibody Report is composed of a market overview and an introduction to the Antibody Survey, which contains questions about antibodies and related applications and methods that researchers are using. The report also includes a discussion of the survey results and conclusions and recommendations drawn from both an analysis of the antibody market and the survey data. The market overview describes the use of antibodies in a wide array of disciplines, ranging from basic proteomics to diagnostics and disease therapeutics. Antibodies represent the largest segment of biotechnology reagents currently in use today, bringing in over $8.8 billion last year alone.

Antibodies are critical components of certain research methodologies, including protein electrophoresis, protein and antibody microarrays, and cell-based immunoassays. Detection of antibody interactions is also an important market, creating large revenue shares for fluorescent, chemiluminescent, and radioactive probes. Fluorescent probes alone captured the largest market share of $2.5 billion in 2005 and is expected to approach $4 billion by 2010.

Increased antibody specificity was realized with the development of monoclonal antibodies (mAbs) that target a single protein epitope. Such an advance has allowed the rapid determination of molecular structures and the detection of minute amounts of proteins in clinical samples. Such inroads into clinical diagnostics has manifested in revenues that top $6 billion annually and continue to grow by over 6% each year. Presently, about 18 mAbs are approved by the FDA for the treatment of various diseases. With a complicated process required for production, mAbs are an expensive therapeutic option that needs additional optimization and manufacturing facilities to bring prices down.

Market Overview

The role of antibodies has grown far beyond that of the immune system's neutralizing force. Now, these distinct macromolecules serve as one of the most effective tools for both advancing biological understanding as well as revolutionizing the approach to drug therapies. In the hands of life scientists, antibodies act as homing devices to reveal the presence of specific proteins. Antibody-based drugs have already proven to be effective in treating cancer, rheumatoid arthritis, and several other conditions. With such widespread need and utility, antibodies are injecting growth into the research supply, biotechnology and pharmaceutical markets.

These market conditions stem from the shift in research approach from genomics to proteomics, the attempt to catalog every protein and characterize their functions. Modeled after the multiplexed methods of genomics, proteomic investigations involve the "simultaneous measurement of many proteins in experimental samples," wrote Stephen F. Kingsmore, president of the National Center of Genome Resource in a paper published in the March 17, 2006 issue of *Nature Reviews Drug Discovery*[1]. Efficiency is not the sole advantage. "Multiplexed measurement is logical for biological discovery with proteins because they constitutively function within networks, pathways, complexes and families," wrote Kingsmore, a physician who has worked in both academic and industry settings.

The resulting technologies have gone far beyond the microarrays of the genomics era. Instruments, such as mass spectrometers and flow cytometers, have evolved to surmount the technical challenges of studying the diverse nature of proteins. Protein purification, separation protocols and assay designs provide increased efficiency and often the option for automation. These "technological advancements [are] assisting drug discovery researchers by offering added sensitivity, increased throughput and increased resolution from traditional protein research tools," according to "Proteomics", a report published by Global Industry Analysts Inc[2].

However, assessing the presence and level of individual proteins is nothing new. It's a "longstanding and crucial component of progress in life science and clinical practice," Kingsmore wrote[3]. Protein measurements act as:

1. Surrogates – Markers of biological activity in organs, disease processes and/or drug action.
2. Proxies – Estimations of "organ, cell, pathway or protein activity" when direct measurements are not feasible.
3. End Measures – Dynamic factors reflecting the result of physiological processes.

The wide range of methods – both new and old – offers the latitude of several research strategies. Antibodies are the common denominator. "Antibodies are nature's answer to accurate shape recognition," wrote authors from The Plasma Proteome Institute in a paper published in the journal Molecular & Cellular Proteomics[4]. Theoretically, antibodies can be made for nearly any protein. The possibility opens the door to exploring the entire universe of proteins. Early on, polyclonal antibodies were manufactured. They all recognized the same protein, but different parts of it. Increased specificity came with the development of monoclonal antibodies in 1975, which provided

Market Overview (continued)

the ability to target a single part of a protein, also called an epitope. "The antibody thus serves as a ready-made detection reagent for constructing a specific assay, a potential drug (if the epitope is on a therapeutic target), and an immunoadsorbent useful for isolating the protein from plasma," according to the paper[5].

The capability to manufacture monoclonal antibodies (mAbs) in bulk quantities "revolutionized basic research, medicine and commerce," according to the report, "Reagents and Supplies in Biotechnology", published by Global Industry Analysts Inc[6]. "In combination with recombinant DNA technology, mAbs allow rapid dissection of molecular structure and gene mechanism."

Antibodies represent the vast majority of immunoassay reagents, which is the largest of nine segments -- DNA synthesis & sequencing, polymerase chain reaction, protein synthesis and sequencing, electrophoresis, bio/chemiluminescence, chromatography, flow cytometry, cell and tissue – of biotechnology reagents in the world[7]. In 2006, immunoassay reagents brought in an estimated $8.87 billion, according to Global Industry Analysts. With a compounded annual growth rate (CAGR) of 7.55%, revenues should reach $12.03 billion by 2010. The Asia-Pacific region leads the world with a growth rate of 8.33% followed by the United States, Japan, Europe, Latin America and Canada, respectively. Revenues in the Asia-Pacific region should reach $1.8 billion by 2010. At that point, the U.S. will continue to lead as the top consumer, bringing in revenues of $4.3 billion, followed by Europe, Japan, Canada and Latin America, respectively.

Table 1: Immunoassay Reagents: Current and Projected Sales Figures Worldwide in US Dollars (in millions)

	2006	2010	CAGR(%)
USA	3103.27	4297.69	7.70
Canada	323.63	408.64	5.85
Japan	1319.35	1759.87	7.45
Europe	2576.51	3461.34	7.36
Asia-Pacific	1306.75	1798.91	8.33
Latin America	237.94	307.51	6.34

Source: Global Industry Analysts[8]

Leading the pack of players is Abbott Diagnostics, which holds 24.42% of the immunoassay reagent market, according to Global Industry Analysts[9]. Dade Behring holds 11.56%, Roche Diagnostics holds 10.65%, and Beckman Coulter holds 7.48%. The remaining 45.89% share is held by various other companies.

Market Overview (continued)

The high specificity of antibodies used in immunoassays has made them important diagnostic tools in clinical laboratories. Currently, "about 700 million immunodiagnostic tests are carried out in the US annually," according to Global Industry Analysts[10]. Used for diagnosing a great variety of diseases, "the immunoassay market is expected to continue expanding due to identification of new disease states, advent of new therapies, and an increased awareness of healthcare".

Based on sales figures for immunoassays, top-selling antibodies should remain fairly constant through 2010. These include antibodies that screen for infectious diseases, tumor markers, cardiac markers, proteins, autoimmune diseases, thyroid conditions, anemia, therapeutic drugs, fertility and allergies, which represent the top 10 immunoassays, according to the report, "The Worldwide Market for In Vitro Diagnostic Tests, 5th Edition", published by Kalorama Information[11].

Antibodies are also important components of other research methodologies, including protein electrophoresis, protein/antibody microarrays and cell-based assays. Along with immunoassays, these protocols call for labeling agents that provide information on the binding activity of antibodies. Labeling agents also indicate the antibody's position with respective to the cell and on microarrays. Currently, fluorescent probes are most popular, making up the largest share of the market[12]. In 2005, fluorescence generated revenues of $2.5 billion. With an average annual growth rate (AAGR) of 6.2%, revenues should reach $3.9 billion by 2010. Chemiluminescent and radioactive probes make up the second largest shares of the market.

Table 2: Antibody Probes: Current and Projected Sales Figures in US Dollars (in millions)

	2006	2010	AAGR(%)
Radioactive compounds	3103.27	4297.69	7.70
Enzymes	323.63	408.64	5.85
Fluorescent compounds	1319.35	1759.87	7.45
Chemiluminescent compounds	2576.51	3461.34	7.36
Gene probes	1306.75	1798.91	8.33

Source: Kalorama Information[13]

Diagnostics generated the most revenues for these probes[14]. In 2005, *in vitro* diagnostics generated $6.111 billion in revenues, while *in vivo* diagnostics generated $878.4 million. As with applications for dentistry, blood banks, food testing, forensic testing and paternity testing, diagnostics should grow at an AAGR of 6.5% to 6.9%. Applications for research laboratories will grow at a 7.3% AAGR to eventually generate $58.2 million in 2010. Environmental testing, the fastest growing segment with an AAGR of 10.5%, should generate revenues of $19.4 million by 2010.

The Holy Grail of the antibody industry is therapeutic monoclonal antibodies (mAbs). About 18 mAbs have now been approved by the U.S. Food & Drug Administration. Five of these – Synagis

Market Overview (continued)

(palivizumab) by MedImmune, Herceptin (trastuzumab) and Rituxan (rituximab) by Genentech and ReoPro (abciximab) by Centocor – "already have annual revenues of $3 billion apiece,… spurring biotech companies, and increasingly big pharma, to bring numerous mAb candidates through the pipeline, into human trials and onto the market," wrote Christopher Thomas Scott in an article published in the journal Nature Biotechnology[15].

The technology of mAbs is changing rapidly. Once made as part mouse and part human, drug developers are pushing the envelope by generating mAbs that are fully human. This development propelled the recent blossoming of the therapeutic antibodies market. Now, with revenues worth at least $30 billion, the mAb market is growing 20% annually[16]. The figure is due to the "shockingly expensive" price tag of mAbs, wrote Scott, executive director of the Stanford Program on Stem Cells in Society. The cost is reflective of the complicated process required for production. With greater infrastructure, such as the construction of additional manufacturing facilities, and increased experience and know-how in optimization during the decade ahead, prices should begin to fall.

While mAbs have received widespread praise, "adverse side effect and the generation of anti-antibody responses still remain a problem," according to the report, "Antibody Technology Developments", published by Frost & Sullivan[17]. Solving this issue, along with increasing manufacturing capacity, expanding the number of indications and controlling costs, will determine the growth and viability of this new drug class.

1. Kingsmore SF, "Multiplexed Protein Measurement: Technologies and Applications of Protein and Antibody Arrays", Nature Reviews Drug Discovery, 5:310-321, April 2006.
2. Global Industry Analysts, "Proteomics", July 1, 2006.
3. Kingsmore SF.
4. N. Leigh Anderson and Norman G. Anderson, "The Human Plasma Proteome: History, Character, and
5. Diagnostic Prospects", Molecular & Cellular Proteomics 1:845-867, 2002.
6. Ibid.
7. Global Industry Analysts, "Reagents and Supplies in Biotechnology", August 1, 2006.
8. Ibid.
9. Ibid.
10. Ibid.
11. Ibid.
12. Kalorama Information, "The Worldwide Market for In Vitro Diagnostic Tests, 5th Edition", April 1, 2006.
13. Ibid.
14. Ibid.
15. Ibid.
16. Scott CT, "The Problem with Potency", Nature Biotechnology, 23(9):1037-1039, September 2005.
17. Ibid.
18. Frost & Sullivan, "Antibody Technology Developments", September 30, 2005.

Survey Introduction and Methodology

The 2007 Antibody Survey is designed to provide life science vendors of antibodies and related supplies with a better understanding of how their products are used in the research environment and how their company specifically rates among the survey participants. Data were gathered from questions regarding the types and number of antibody-based applications performed per week and whether this number is expected to change, how often antibodies are purchased and whether the purchases are for never-before purchased reagents to new antigens, new conjugates, or new species, whether consumers shop around prior to making an antibody purchase and what the top criteria are when shopping for a new antibody, the top vendors that come to mind when one thinks of antibodies, the specific types of antibodies used and from which companies they are purchased, how these companies rate in terms of products and services, how much money is spent monthly for antibody purchases, how many people work in the laboratory, what types of custom services are used in the laboratory, whether there are specific targets, species, or applications for which antibodies cannot be found commercially and what these desired reagents are, the biggest technical problem with antibody-based methods, how often a vendor is contacted for technical support regarding antibody-related issues, how important specific vendor web site content is and whether such characteristics influence purchasing decisions, which commercially available second antibody conjugates are used, whether bulk antibodies are used, and where one looks for antibodies to purchase. With this information, vendors will be able to structure marketing campaigns to address consumer needs, as well as focus product development in areas of greatest interest to those using antibodies in their research.

The 2007 Antibody Survey consisted of 33 questions. Of these, 11 included "other" as an answer choice and 5 were open-ended. Five questions were used for demographic information. The survey was administered on-line from February 26th-March 8th, 2007, and the data gathered, tabulated, and presented here.

Appendix I: Questionnaire

1. Do you currently use antibodies in your research or work ?
- Yes
- No *(exited from survey)*

2. What types of antibody-based applications do you perform or plan to perform? (Select all that apply)

Application	Currently Use	Plan to Use
Affinity Purification		
Blocking/Neutralize		
ChIP		
Electron Microscopy		
ELISA/EIA		
Flow Cytometry		
Functional Assay		
Gel Shift		
Immunocytochemistry		
Immunodiffusion		
Immunofluorescence		
Immunohistochemistry		
Immunoprecipitation		
IRMA		
Radioimmunoassay		
Western Blot		
Other (Please specify)		
None of the above *(exited from survey)*		

3. Please estimate how many antibody-based applications you perform on a weekly basis. (e.g. western blots, immunoassays, affinity purifications, etc.) *open-ended*

4. How do you expect this number to change over the next 12 months?
- Increase by > 50%
- Increase by 25% - 50%
- Increase by 10 – 25%
- Increase by 1% - 10%
- No change
- Decrease by 1% - 10%

- Decrease by 10% - 25%
- Decrease by 25% - 50%
- Decrease by > 50%

5. How often do you purchase antibodies?
- Daily
- A few times a week
- Weekly
- A few times a month
- Monthly
- A few times a year
- Yearly
- Less than once a year
- Never

6. How often do you purchase the following antibodies you have never purchased before? (separate set of response options for each one)

- A New Antigen
- A New Conjugate
- A New Species

- Daily
- A few times a week
- Weekly
- A few times a month
- Monthly
- A few times a year
- Yearly
- Less than once a year
- Never

7. Which of the following best describes your typical antibody purchase?
- I shop around only when purchasing an antibody not available from my usual supplier
- I shop around every time I purchase an antibody
- I always purchase from the same supplier

8. What are the top three criteria you use when shopping for a new antibody? (Please select exactly three)
- Best price
- Colleague recommendation
- Fastest delivery

- Low cross-reactivity
- Published data
- Specificity
- Sensitivity
- Trusted brand name
- Widest selection (hard-to-find antibodies)
- Other (please specify)

9. What are the top companies that come to mind when you think of antibodies? (Please list as many as you can) *open-ended*

10. Which of the following types of antibodies do you use? (Select all that apply)

- Angiogenesis
- Apoptosis/Tumor Suppressor
- CD and Cell Surface Markers
- Cell Cycle
- Cell Signaling/Signal Transduction
- Cytokines and Growth Factors
- Cytoskeleton
- DNA Damage and Repair
- Epitope-tagged (e.g. anti-His)
- Extracellular Matrix and Cell Adhesion
- Infectious Disease
- Intracellular Compartment
- Membrane Transporter/Protein
- Modification State Specific (phosphor, acetyl, methyl)
- Neurobiology
- Nuclear Function
- Secondary/Immunoglobulin Specific
- Stem Cells
- Transcription Factors/Regulation
- Translational Control
- Other (please specify)

11. From which company(s) do you purchase those antibody type(s)? *(A separate question is given for each antibody type selected)*

- Internal preparation/made in-house
- Abcam
- AbD Serotec
- Abnova
- Acris
- Affinity Bioreagents (ABR)
- Assay Designs/Stressgen Bioreagents
- BACHEM
- Beckman Coulter
- BD Biosciences Pharmingen
- BD Biosciences – Immunocytometry Systems
- Bethyl
- BioDesign
- BioLegend
- BIOTREND
- Calbiochem
- Cayman Chemical
- Cell Signaling Technology
- CHEMICON/Upstate/Linco (now Millipore)
- Covance Research Products
- Dako
- eBioscience
- EMD Biosciences/Calbiochem
- GenWay Biotech
- Invitrogen (Zymed/Caltag/Molecular Probes/BioSource)
- Jackson Immunoresearch
- MBL
- Novus Biologicals
- Orbigen
- PeproTech
- R&D Systems
- Rockland Immunochemicals
- Santa Cruz Biotechnology
- Sigma
- Thermo Fisher Scientific (LabVision/Endogen/Fisher)
- Don't know/can't remember
- Other (please specify)

12. How would you rate the following product and service characteristics of the antibody suppliers you selected? (Only the selected suppliers will appear)
Drop down list:
- Excellent = 1
- Very good = 2
- Average = 3
- Fair = 4
- Poor = 5
- Don't know

Supplier	Antibody Sensitivity	Antibody Specificity	Value	Usefulness of Website	Technical Support
Abcam					
AbD Serotec					
Abnova					
Acris					
Affinity Bioreagents (ABR)					
Assay Designs/Stressgen Bioreagents					
BACHEM					
Beckman Coulter					
BD Biosciences Pharmingen					
BD Biosciences – Immunocytometry Systems					
Bethyl					
BioDesign					
BioLegend					
BIOTREND					
Cayman Chemical					
EMD Biosciences/Calbiochem					
Cell Signaling Technology					
CHEMICON/Upstate/Linco (now Millipore)					
Covance Research Products					
Dako					
eBioscience					
GenWay Biotech					
Invitrogen (Zymed/Caltag/Molecular Probes/BioSource)					

Supplier	Antibody Sensitivity	Antibody Specificity	Value	Usefulness of Website	Technical Support
Jackson ImmunoResearch Laboratories					
MBL					
Novus Biologicals					
Orbigen					
PeproTech					
R&D Systems					
Rockland Immunochemicals					
Santa Cruz Biotechnology					
Thermo Fisher Scientific (LabVision/Endogen/Fisher)					

13. How many people are in your lab?
- 1 to 4
- 5 to 10
- 11 to 20
- More than 20

14. Please estimate how much money your laboratory spends on antibodies per month.
- Less than $500
- $500 to $1,000
- $1,000 to $2,000
- More than $2,000

15. What type of CUSTOM services do you use or plan to use? (Select all that apply)

	Currently Use	Plan to Use
Ascites hybridoma expansion		
Polyclonal antibody development		
Antibody conjugation		
Antibody purification		
Immunohistochemistry		
Assay development		
In vitro hybridoma expansion		
Monoclonal antibody development		
Stable cell line development		

	Currently Use	Plan to Use
Custom plate coating		
Animal housing and care		
Peptide synthesis		
Other (please specify)		

16. Are there antibodies against specific targets for which you have not been able to find a supplier?
- Yes
- No

17. Are there antibodies to certain species for which you have not been able to find a supplier?
- Yes
- No

18. Are there antibodies that work in particular application for which you have not been able to find a supplier?
- Yes
- No

19. Please list 1 to 3 specific targets for which you have not been able to find an antibody. *open-ended (This question will only appear if "Yes" is selected in 16.)*
If no target is a particular protein modification, please specify amino acid and residue number.
- Target 1 ____________________
- Target 2 ____________________
- Target 3 ____________________

20. Please name at least one antibody and species for which you can't find a supplier. *(This question will only appear if "Yes" is selected in 17.)*
- Antibody ____________________ - Species ____________________
- Antibody ____________________ - Species ____________________
- Antibody ____________________ - Species ____________________

21. Please name at least one antibody and application for which you can't find a supplier. *(This question will only appear if "Yes" is selected in 18.)*
- Antibody ____________________ - Application ____________________
- Antibody ____________________ - Application ____________________
- Antibody ____________________ - Application ____________________

22. Which of the following would you identify as the biggest technical problem with your antibody-based methods?

- Lack of sufficient specificity
- Lack of available antibodies which are sufficiently specific
- Non-availability of direct conjugates
- Methods are not sufficiently quantitative
- Antibodies to certain targets are not available
- Other (please specify)

23. How often do you call or email a supplier for technical help with an antibody?

	A few times a week	A few times a month	A few times a year	Less than once a year	Never
Phone call					
Email					

24. Please rate the following characteristics of an antibody supplier's web content.

	Very Important	Somewhat Important	Not Important
Comprehensive reference materials (pathways, protocols, etc)			
Online promotions			
New product listings			
Product validation data			
eCommerce capability			
Relevant search results			
Available pricing information			

25. Assume the quality of an antibody (i.e. specificity, sensitivity) is the same among suppliers. Please rate the following characteristics on how important each is in your decision to purchase from one supplier over another.

	Very Important	Somewhat Important	Not Important
Price			
Online resources (e.g. protocols, application notes)			
Availability of samples			
Published results			
Helpful technical support			

26. Which of the following commercially available secondary antibody conjugates do you prefer to use? (Select all that apply)

- Streptavidin
- Alkaline Phosphatase (AP)
- Horse Radish Peroxidase (HRP)
- Alexa Dye
- PE
- Quantum Dots
- CyDye
- IRDyes
- FITC/fluorescein
- APC
- Biotin
- I do not purchase commercially available secondary antibodies – I perform secondary antibody conjugation myself
- I do not use secondary antibodies
- Other (please specify)

27. Do you currently use or plan to use bulk quantities of antibodies?

- Currently use
- Plan to use – within 6 months
- Plan to use – within 12 months
- Plan to use – in more than 12 months
- Do not use or plan to use – *skip to 29*

28. What is the antigen and species of the bulk antibody you use or plan to use? (e.g. Mouse anti-human CD42a) *open-ended*

29. Where do you look for antibodies? (Select all that apply)

- AfCS Antibody Database
- Antibody Resource Page
- Biocompare
- BioResearchOnline
- BioWizard
- Colleague referral
- Conferences
- Email newsletters
- Google
- Journal advertisements
- Journal references
- Linscott's Directory of Immunological and Biological Reagents
- MSRS

- Sciquest
- SelectScience
- Supplier catalogs
- Supplier websites
- Other (please specify)

Demographic Questions

1. In which type of institution do you work?

- Academic
- Pharmaceutical
- Biotech
- Clinical/Hospital
- Government
- Private Research
- Other (please specify)

2. Which title best applies?

- Professor/Instructor
- Lab Manager/Supervisor
- Business Development Director/Manager
- Department Head
- Account Manager
- Staff Scientist
- President/CEO/Owner/VP
- Postdoctoral Fellow
- Consultant
- Product Manager
- Process Engineer
- Research Associate
- Research Director/VP of Research
- Technician/Research Assistant
- Graduate Student
- Principal Investigator
- Lab Director/Chief Scientist
- Procurement Manager
- Other (please specify)

3. Which of the following are your key areas of research or work?

- Bioinformatics
- Genomics/Genetics
- Drug Discovery
- Marketing/Sales
- Bioengineering
- Biomanufacturing /Process Development
- Microbiology/Virology
- Cell Biology
- Administration
- Pharmacology/Toxicology
- Neuroscience
- Cell Signaling
- Immunology
- Diagnostics/Pathology
- Biochemistry
- Molecular Biology
- Proteomics
- Purchasing
- Other (please specify)

4. Which best describes your purchasing authority?

- Authorize
- Recommend
- Evaluate
- No Purchase Role

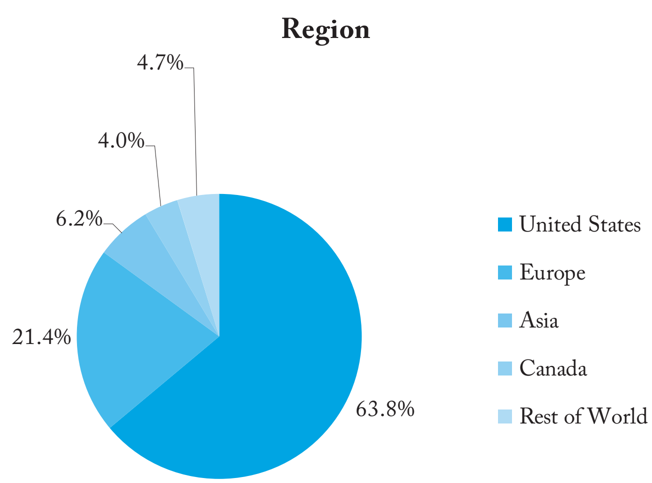
Appendix II:
Presentation of Survey Data

Demographic Survey Data

Region

68% of the survey participants are from the United States and Canada, 21% are from Europoe, 6% are from Asia, and 5% are from the res of the world.
N = 824

Region	Count	%
United States	526	63.8%
Europe	176	21.4%
Asia	51	6.2%
Canada	33	4.0%
Rest of World	39	4.7%

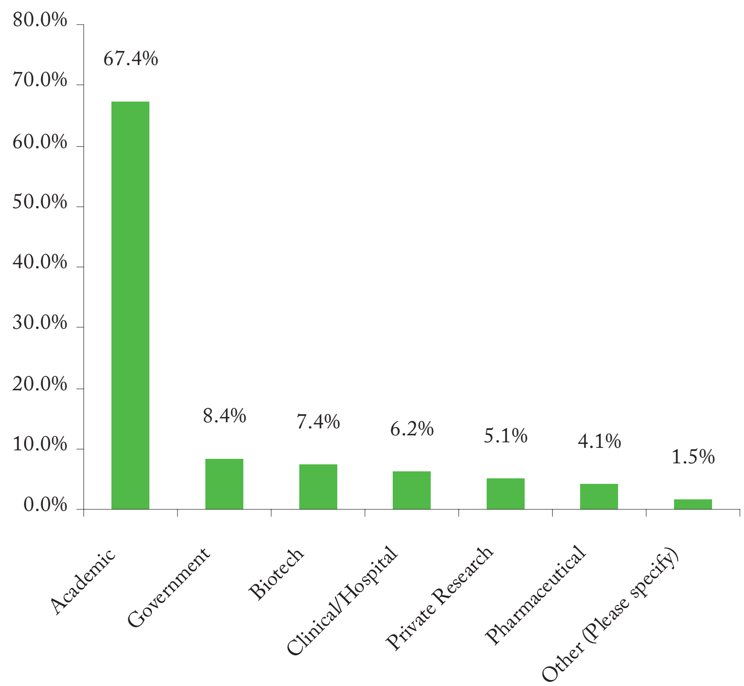


What is your Institution Type?

The majority of survey participants (67%) are from academic institutions and 20% are from either Biotech, Pharma, or government institutions.
N = 729

Institution Type	Count	%
Academic	491	67.4%
Government	61	8.4%
Biotech	54	7.4%
Clinical/Hospital	45	6.2%
Private Research	37	5.1%
Pharmaceutical	30	4.1%
Other (Please specify)	11	1.5%

Institution Type



Which title best applies?

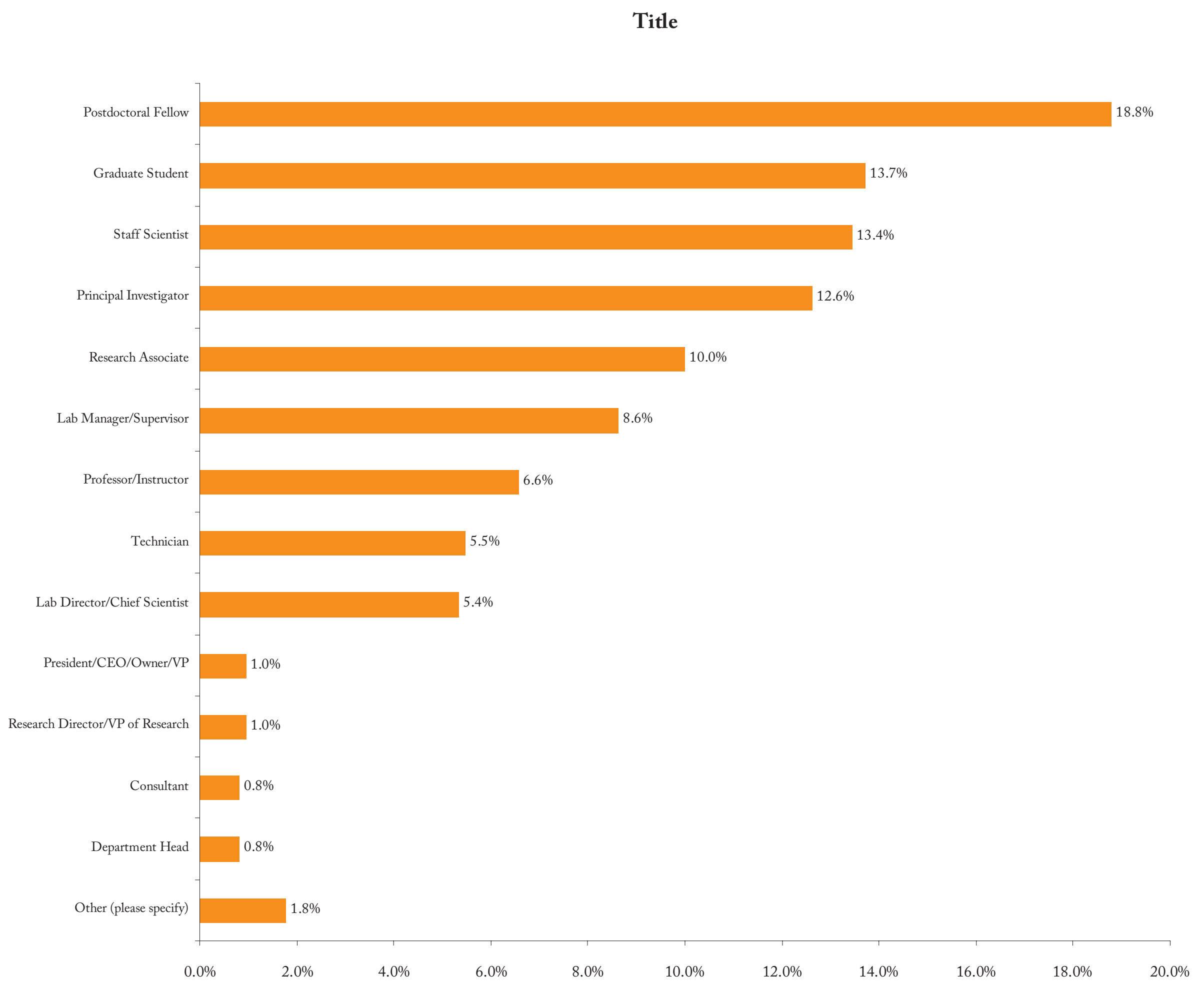
Nearly 75% of the survey audience works at the lab bench.*
N = 729

Institution Type	Count	%
Postdoctoral Fellow	137	18.8%
Graduate Student	100	13.7%
Staff Scientist	98	13.4%
Principal Investigator	92	12.6%
Research Associate	73	10.0%
Lab Manager/Supervisor	63	8.6%
Professor/Instructor	48	6.6%
Technician	40	5.5%
Lab Director/Chief Scientist	39	5.4%
President/CEO/Owner/VP	7	1.0%
Research Director/VP of Research	7	1.0%
Consultant	6	0.8%
Department Head	6	0.8%
Other	8	1.8%

*Includes: Postdoctoral Fellow, Staff Scientist, Graduate Student, Research Associate, Principal Investigator, Technician.

Which title best applies?

Nearly 75% of the survey audience works at the lab bench.
N = 729



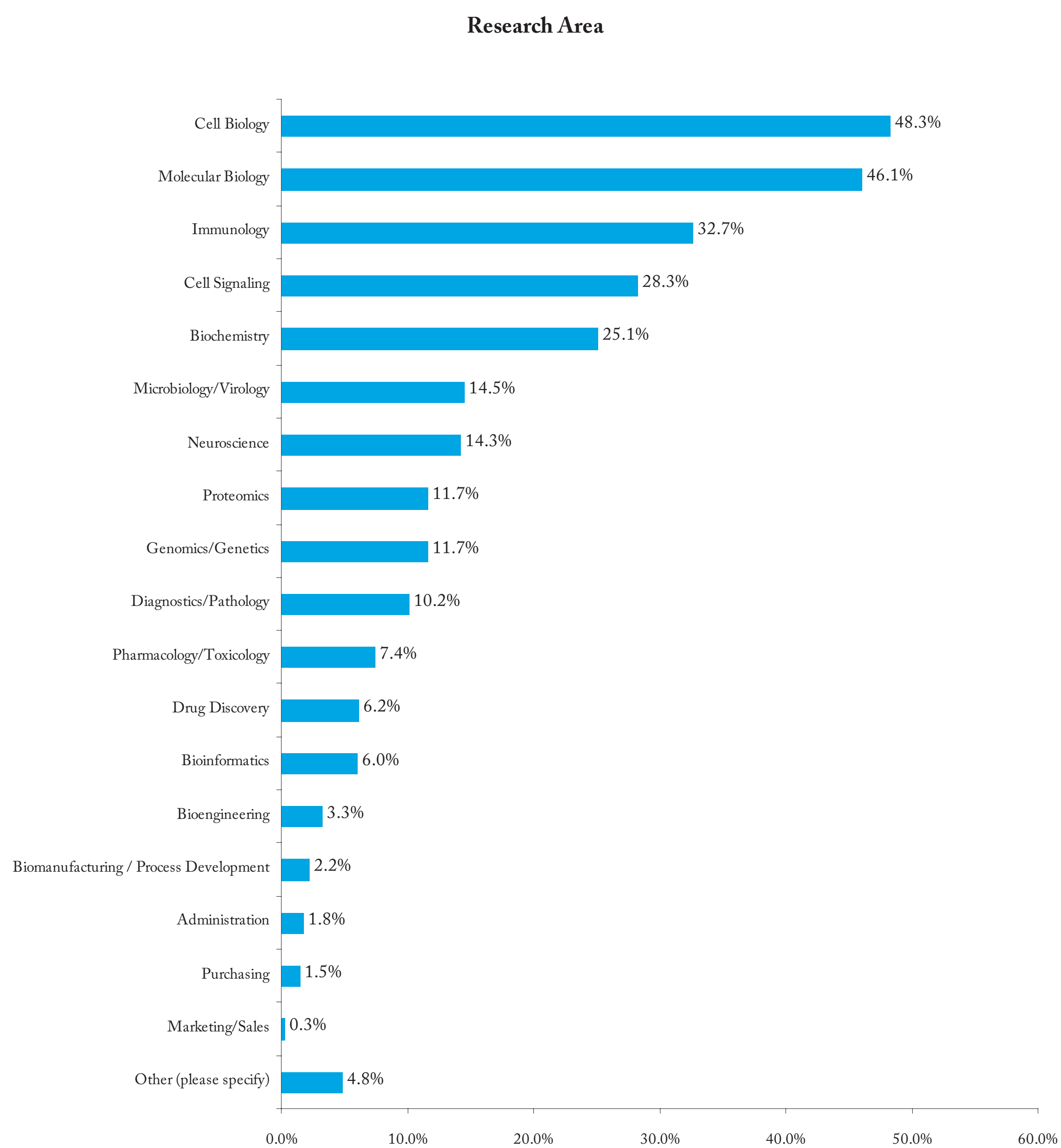
Which of the following are your key areas of research or work? (check all that apply)

Nearly half of the participants, 46% and 48%, indicate Molecular Biology or Cell Biology as their key research area.
N = 729

Research Area or Work	Count	%
Cell Biology	352	48.3%
Molecular Biology	336	46.1%
Immunology	238	32.7%
Cell Signaling	206	28.3%
Biochemsitry	183	25.1%
Microbiology/Virology	106	14.5%
Neuroscience	104	14.3%
Proteomics	85	11.7%
Genomics/Genetics	85	11.7%
Diagnostics/Pathology	74	10.2%
Pharmacology/Toxicology	54	7.4%
Drug Discovery	45	6.2%
Bioinformatics	44	6.0%
Bioengineering	24	3.3%
Biomanufacturing/Process Development	16	2.2%
Administration	13	1.8%
Purchasing	11	1.5%
Marketing/Sales	2	0.3%
Other (Please specify)	35	4.8%

Which of the following are your key areas of research or work? (check all that apply)

Nearly half of the participants, 46% and 48%, indicate Molecular Biology or Cell Biology as their key research area.
N = 729



Which best describes your purchasing authority?

92% of the survey audience either authorizes or recommends purchases.
N = 729

Purchasing Authority	Count	%
Authorize	346	47.5%
Recommend	325	44.6%
Evaluate	41	5.6%
No purchase role	17	2.3%