Easy to use and less time to optimize
For sake of rapidity
For simplicity of use
Gives more reproducible results
It eliminates the possibility that solutions were not made correctly.
It is easier for us to use it in this way because everything we need is included in the kit and everything is together for us.
It is easier for us. It saves time.
It is known to work.
It's easier.
It's much easier and has less variable on the result.
Kits are easier to use and more reliable.
Much more convenient than individual reagents.
Pharmaceutical lab, so my time is worth more than saving a couple of pennies here and there.
Reproducibility
Routine use
Save time and money
Save time in optimization and trouble shooting
Saves time
Simpler
Some of the kits are easier to use.
The kits have been tested and validated to perform according to their protocols.
We find the most consistent results with kits.
We typically use the contents of the kit and need all of the reagents. Therefore we do not buy them separately.

Verbatim Descriptions for Purchasing Reagents Individually and in Kit Format

A combination of cost and effectiveness
A kit is convenient, but sometimes our protocols call for individual reagents.
Because combination give the best flexibility
Best way to utilize the materials
Both price and convenience count.
Certain reagents are easily standardized and prepared in the lab.
Convenience, reliability, and time savings
Convenience and flexibility
Convenience and reproducibility of kit formats, cost savings with individual reagents
Convenience of kit form for most applications; Sometimes we use individual reagents because of price considerations.
Convenient and economic
Cost and convenience
Cost and time efficiency
Cost- if some reagents in the kit can be made easily & more cheaply, we might buy only certain reagents for that protocol.
Cost primarily, convenience and time-saving secondarily
Cost savings
Cost vs. convenience
Cost, protocol already established
Cost-effective
Cost-effectiveness is usually the key.

Dependent on the kits available and familiar with
Depending on individual preferences and flexibility needs
Depending on need
Depending on personal preference and the price of the kit
Depending on the procedure we use kits or make our own solutions, usually depending on price and ease of use
Depending on the technique to be performed
Depending on the type of experiment, we will use reagents or kits. Mostly due to cost is what the final decision is made.
Depending on the type of work we are doing
Depending on time and application
Depending on what we are doing
Depending upon our needs and pricing
Depends on cost, quality, and ease of technique
Depends on experiments
Depends on needs and experimental designs
Depends on project of interest - not all kits address needs
Depends on the application and how easy it is to make the reagent
Depends on the application at that time
Depends on the application; We often use items from a kit in different volumes, so just purchase the necessary items individually.
Depends on the assay requirements.
Depends on the cost and our needs
Depends on the costs
Depends on the experiment
Depends on the experiment and number of uses
Depends on the needs of the study
Depends on the protocol we are using; Some kits work very well and save us time. In other cases, we have customized protocols and find it just as easy to make our own individual reagents.
Depends on the technique we're doing
Depends on time and cost effectiveness, and reproducibility
Depends on what is the best way to do the experiment; use a kit if it is what I need, but don't like to buy kits when they contain lost of extra reagents that I don't need
Depends on what the specific application is
Depends on which is more convenient
Depends upon the procedure and our experience
Depends upon the protocols - some kits are better than other older protocols and conversely some protocols are better and cheaper than kits.
Different applications require different uses.
Different experiments require different approaches.
Ease and cost issues
Ease of use, faster
Existing kits often don't cover all the experiments.
Flexibility
Flexibility
Flexibility - sometimes I need to tweak things
For convenience and saving cost
For different research projects, we need diverse supplies.
For flexibility---we often use components from various suppliers (i.e. Taq, dNTPs, etc

from different sources). For preliminary investigations, absolute purity isn't so efficient. We can use spin columns afterwards for additional cleanup or purification.
For high throughput case, we are using a kit but in general we are using individual reagents in order to save money.
For many applications, individual reagents are a better match for our needs.
For more complex molecular biology such as libraries and cDNA probes for microarrays we use kits...but for simple stuff like PCR and mutagenesis, we put the reagents together individually.
For routine operation, we use individual reagents and kits for less experience operations.
For some applications it is easier and more cost effective to just buy the enzyme and then make up the other components. While for other applications, it is more cost effective or more reliable to use a complete kit.
For some applications, such as cloning PCR products - for instance, it is more convenient to have already standardized reagents. In some other applications, there is no need to have a set of reagents that come together.
For some kits, I feel that buying some individual reagents included in the kit is enough.
For some procedures, it is much cheaper to prepare reagents, for some - it is difficult to get reproducible results with hand made components, especially when deal with sophisticated stuff or multistep procedures- extremely difficult to troubleshoot.
For some procedures, such as RNA purification I use individual reagents instead of kit. I am satisfied with my method of purification so I do not need to try something else.
For some protocols, the ease of use and reliability of kits is superior.
For the individual reagent experiments, there is no cost-effective kit available.
For work that requires sterile components (e.g. diagnostic PCR), I like to have disposable single use reagents. For applications that don't require this detail, individual reagents are often cheaper.
Generally we do what's most cost effective. If there's a kit that saves time includes columns etc. that we cannot make, we're more opt to use the kit. However, for things like cDNA synthesis, l we generally buy separate reagents unless we're making a library etc.
Gives us more flexibility in biochemical assays
High throughput work is with kits; some customization in trouble shooting means we use individual reagents.
I feel I can save some money without using a kit if I don't need the same quality of nucleic acid from an isolation.
I sometimes do my own kit.
If a kit is available, we use it because we assume it has been optimized to have all the components working well together.
If we had a method we liked using individual reagents, we stick with it; otherwise we often use kits.
Individual reagents allow us to customize, but kits are convenient.
Individual reagents are usually cheaper and usually work fine, but sometimes it's better to get a guaranteed result which I expect with a kit.
Individual reagents at time for price considerations
Individual reagents cost less. Kits are used to either reduce the time spent or for hard to do applications.
It allows us to accomplish what we want to.
It allows us flexibility in applications.
It depends on reproducibility and sensitivity of the assays. For example, for RT PCR we use partial kits and partial unique reagents that we make in our lab because our sensitivities and amplifications are best.
It depends on the individual task.

It depends on the protocol. For instance, we use Trizol to purify RNA instead of a kit because we find it works better for some tissues.
It depends on what we have to do.
It gives us greater flexibility.
It is cost-effective to isolate DNA and RNA using kits. However, we use individual reagents for various enzymatic reactions (restriction cuts, ligations, etc.).
It is easier and saves money.
It is easy and quick.
Kit is easy but sometimes is expensive. So, I use both depend on experiments.
Kits are convenient, but sometimes our modifications make purchasing individual reagents more cost effective.
Kits are easier and cost effective. Not all our needs are covered by kits.
Kits are easier and time is precious but some kits are too cost prohibitive.
Kits are easier but don't do everything we want.
Kits are easier but individual reagents are usually more cost effective.
Kits are easier, individual reagents are cheaper.
Kits are expensive so when we can buy individual reagents and make our own kits we do.
Kits are generally used for ease and consistency. Individual components are frequently used to save money and replace parts of kits.
Kits are more convenient for more complex methods, and some students prefer kits vs. individual reagents.
Kits are more expensive, so we use individual reagents when it's easy to make up the other necessary components.
Kits are nice and reagents are optimized, but we can save money by using individual reagents and, when necessary, cannibalize various kit components. I occasionally use home made reagents, too.
Kits are nice to use -- solutions are already made, quality control is usually excellent. But kits can be expensive, so we cut costs by making our own reagents for some processes, including DNA extraction.
Kits are normally more convenient but also more expensive. For standard amounts and routine work, I prefer kits for scaled experiments. Non-routine stuff, I prefer independent enzymes, etc.
Kits are very convenient but individual reagents are more economic.
Kits can be convenient but yield and quality are superior with individual reagents for some uses.
Kits for higher throughput & standard procedures; individual reagents for special cases or troubleshooting
Kits for RNA-free DNA prep; reagents for most everything else; Cost and customization are the reasons.
Kits only do part of what we require.
Kits- since its usually faster and cleaner and individual reagents for protocols we KNOW work well and are cheaper to do.
Less time to optimize, fewer steps involved, shelf live and batch of reagents matching
Limit of grant and funding, convenience
Mainly for economic reasons
Most of the time kits are quite useful. Sometimes we want to test one reagent with different buffers so we would use individual reagent only.
Most use kits for most applications, easier for end user; some simple applications, we just use reagents (ligations, regular PCR etc.)
Mostly rely on kit format, but occasionally need extra of a specific reagent, or run out of one from the kit.

Of convenience and cost
Often times excess reagents are included in the kit, so sometimes buying the entire kit is overkill. We also have several procedures that use only certain portions of the kit.
Our work is such that we need the flexibility of both.
Price
Price vs. convenience
Price, except when setting up a new procedure or doing something rarely
Pricing and convenience
Primarily kits; Kits typically have better quality control and are better to use with the undergraduate student workers in my lab.
Procedures that we do often we will buy kits for. If it's a protocol that is only used once in a while, we'll rough it and do it ourselves.
Provides the most flexibility for different applications
Quality management is far easier with kits. Saves time - and people hours are expensive.
Save money
Scalability of reagents, disposable devices in kits
So kits provide excess of components that can be used with existing lab chemicals/reagents
Some applications require custom functions.
Some components will not be enough for reactions.
Some kits are cost effective, whereas in other cases kits are expensive and unnecessary.
Some kits are easy and some individual reagents are cheaper.
Some kits are expensive because they contain unnecessary components.
Some kits contain all of the reagents we want/need. Others, we want more of one reagent for ease of use or we have a preferred vendor for one of the reagent we need.
Some kits work better than others, sometimes parts of the kits are great, but I may have a way of using them that works better for my particular application. Some kits are expensive and I may be able to buy just the enzyme and use all of my reagents.
Some kits work better while individual components work better in others.
Some kits work well and are reasonable. Some kits are just too expensive and reagents work just fine.
Some molecules we investigate are not available as kits, or the type of experiment is not appropriate for kit assays.
Some of the kits are too expensive and some of the individual reagents require too much effort to assemble together.
Some of the kits available are affordable and save us time.
Some of the protocols we use are not in kit form, e.g. phenol cleanup of DNA after mini-/midi-preps.
Some people prefer kit for quicker handle and some people want to working the known method with certain steps that are important to their study.
Some procedures are customized for us.
Some procedures give better results w/o kits, or are unavailable as kits.
Some protocols are optimized for either kits or individual reagents.
Some reagent is very easy to make while some of them are time consuming.
Some reagents are difficult to produce properly.
Some reagents are simple and inexpensive to make up, and others are as cost effective and are more reliable in a kit.
Some reagents can be easily made in the lab.
Some reagents can be used universally, such as Taq polymerase in PCR reactions. Others are bought as kits.
Some reagents for an assay I have to use in kit form provided by the company and others

I piece-meal.
Some things are easier as a kit and some things are more cost effective making them for ourselves.
Some things work better or cost less.
Sometimes the kits are more comprehensive, although sometimes we only need individual reagents if we make our buffers as well.
Sometimes individual works better; Kit-sometimes cheaper and faster
Sometimes it is important to optimize conditions for an exp't or assay and if kits are not flexible, individual reagents are needed.
Sometimes it is more convenient to use a kit, other times the expense of the kit is not worth it, since it takes minimal effort to prepare our own reagents.
Sometimes it is more cost effective to make our own competent cells, or reaction buffers, than to buy an entire kit.
Sometimes it is more cost effective to use individual reagents.
Sometimes it's cheaper to buy reagents in bulk than to order a kit every time.
Sometimes kits are too expensive
Sometimes kits are too expensive. Therefore we use our own methods too.
Sometimes kits are too pricey.
Sometimes kits save enough time to be worth paying a little more.
Sometimes kits save time and sometimes age old recipes work better.
Sometimes the kit is simply tried, tested, and more convenient. Other times no kit exists for what we do.
Sometimes we are developing kits.
Sometimes we modify things and like the flexibility of using our own reagents in addition to kits.
Sometimes we need to use a modified kit protocol for best results and therefore need individual reagents for modification purposes.
Sometimes we run out of individual kit components and don't want to buy a whole kit due to the expense.
Sometimes we use custom protocols to perform research for which kits are not available or are cost prohibitive on the scale that we use.
That is what our needs and skill sets dictate.
The enzyme is not part of the kit.
The kits are optimized and almost always work. They are easy, require no supervision for new students, and generally save time and money. Some kits are quite expensive. While these may be the most desirable, the procedures can often be done less expensively with individual reagents. Thus, we are forced to balance our time and budget when purchasing kits.
There are no kits for all of our applications.
There are not kits available for all tests performed.
There are some applications for which kits don't exist. Most of our work though now uses kits.
There are times that the kit has too many reagents that we don't need, or sometimes we run out of something and only need the one (or so) reagents.
Thinking balance between price and ease of use
To keep our expenses down
Usage of kits and individual reagents depends on the method applied and the tailoring of our experiments
Use kits for some components and individual reagents for lab specific protocols
Use whatever is most convenient
Various needs

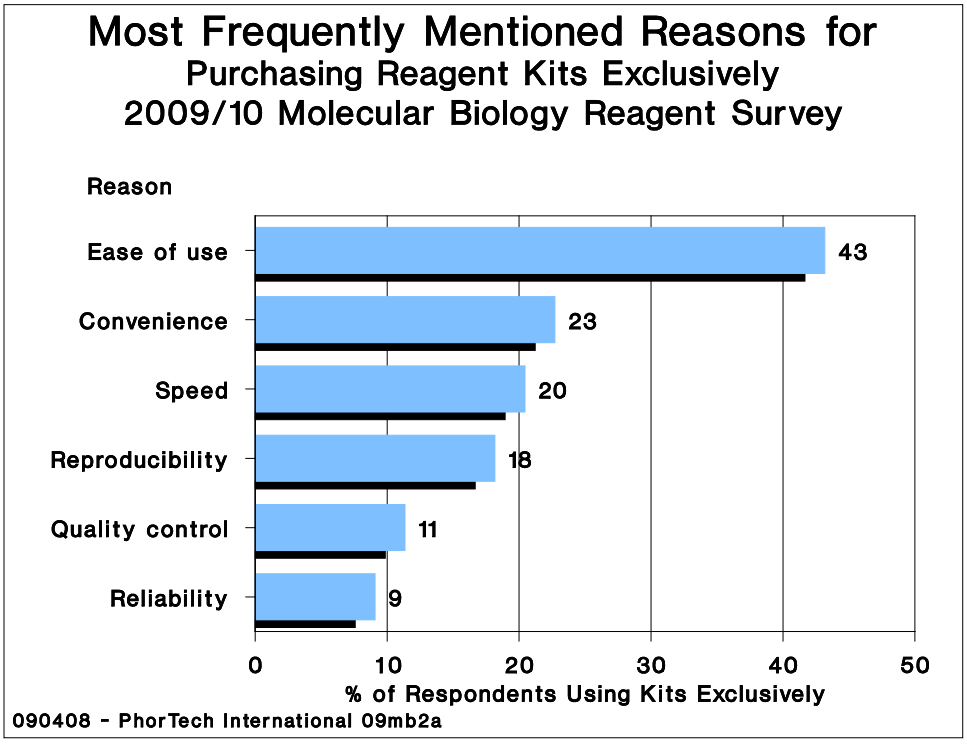
Various protocols, various format based on performance and experience
We are testing options to reduce the time and improve the quality of our results.
We can customize reagents for our work.
We can. Some reagents come in a specialized kit, so why not use them. But it is cheaper to make so much of what we utilize, and we need to be financially responsible to the tax payer, so we use homemade when appropriate.
We don't change things that are already working, so new things tend to be in kits and older methods tend to have individual reagents.
We feel some kits really aren't worth the expense for what you get out of them.
We generally use individual reagents for reasons of cost. However, we will use kits when the convenience outweighs the potential cost savings.
We have extensive experience in the field and often find kits are a good way to learn a new technique, but once you have a handle on the procedure, optimizing conditions requires tweaking with individual reagents.
We have tests based off of kits and home brew tests.
We manufacture both!
We mix and match for better performance and reagent depletion.
We need to modify protocols for different tissue and cell types.
We often find that kits don't cover the complete spectrum of our needs.
We often need to use both.
We order kits but sometimes find we need additional reagents.
We sometimes need to create RNAs with modified nucleotides, and then we would assemble our own kit, but for quick things we find kits easy and reliable.
We tend to use some reagents faster then others so sometimes we have to order one item by itself, or sometimes we make our own basic reagents and only buy the ones we can't make.
We try to save money so where when can make our own reagents, we will use only part of a kit.
We use a majority as a whole kit, but sometimes purchase individual reagents or prepare them ourselves for more dirty preps.
We use both kits and reagents depending on the procedure that we are doing. Sometimes kits provide better and faster results, for some procedures it is just as easy to use individual reagents.
We use individual reagents to save money and to customize protocols to our needs. We use kits when convenient, cost effective, or when they provide better and more consistent results.
We use kits for common technologies such as PCR and in vitro transcription/translation and individual reagents for special applications such as cloning, immunoprecipitations, kinase assays.
We use kits for convenience, and most of what we do is available in a kit format. This streamlines methods, usually eliminates QC issues and accelerates work, while more costly. Some things we do with reagents, because of tradition or because no kit exists, or because we are very familiar with it.
We use kits for specific protocols, such as RNA isolation or cDNA synthesis. Reagents such as wash buffers, etc are made in house in large quantities.
We use kits for the ease (i.e. buffers already made) but we also use individual reagents because some kits just don't perform as well as I would like by themselves.
We use kits if they are more convenient and do not cost too much more than individual reagents cost. Also, it depends on how complicated the assay is and how much we use it.
We use kits when they yield savings in terms of cost, time, effort; otherwise, we use individual reagents.
We use kits when we feel that it is more convenient and the cost is not too much more

than using individual reagents.
We usually use kits because of the ease of use, however for adapted protocols it sometimes makes sense to buy reagents separately to not waste the parts we use less.
We work in an R&D lab where kits are useful, but we often work beyond the scope of the routine.
When trying to cut costs, we use individual reagents.
Which ever is most convenient and cheapest
Whichever makes the most scientific or fiscal sense
You can run out of certain kit reagents so you need extra to compensate.

Analysis:

It is interesting to note that, compared to our study in 2003, those using kit format exclusively has tripled from 5.2% published in our 2003/2004 report, to the near 17% in this current study. This implies that the proportion of respondents purchasing both individual reagents and kits has decreased somewhat over the past 4 years, or those using kits alone has risen. However, it is clear that those purchasing molecular biology reagents in kit format only continue to represent a minority of users.

From their comments, the most frequently mentioned reasons for purchasing molecular biology reagents in kits according to the 44 respondents using this format exclusively are presented in the following horizontal bar graph.



The main reasons cited by these researchers are ease of use, convenience (having all reagents plus a tested protocol which is quickly optimized), and better QC (quality control) which results in more reproducible and reliable

results, particularly for procedures being run by multiple users. Fewer respondents mention the speed of the procedure as a factor in their decision to purchase reagents in a kit format, while only a few researchers describe other themes such as cost, product support or a low throughput to be important factors.

Although based on a relatively small number of responses, the narrow range of reasons and frequent repetition of these themes (despite being based on unaided recall), leads us to believe that these are the primary reasons that current users purchase molecular biology reagents in kit format.

With this in mind, it is interesting to see the role these perceived benefits of purchasing kits play in decisions made by respondents purchasing reagents both individually and in kit format. The reader should be aware that this includes researchers using kits primarily and supplementing these with a few separate purchases, as well as those at the other end of the spectrum who purchase individual reagents primarily. From these comments, we see evidence that there are also respondents who are closer to the middle of these two extremes, using the two formats in more equal proportions.

Looking at the comments from respondents using both formats, it is perhaps not surprising to see that these researchers also consider the major factors shown in the previous graph (most frequently ease of use, convenience, cost and the reliability or reproducibility of results) in making this decision. However, reading through these comments very carefully reveals that many more factors are taken into account, and that the decision whether to purchase molecular biology reagents individually or in kit format appears to depend on the balance between these factors.

One very important criteria is whether an appropriate kit is even offered for the application of interest. If offered, the commercial kits are further evaluated to see how well they fit the respondents' needs and if the contents consist of only the required reagents. We definitely detect a resistance amongst respondents with regards to paying for kits which include extra reagents that are never used.

Secondly, these comments suggest that the increased cost of kits (versus purchasing reagents separately) can be outweighed by the complexity or difficulty of the technique. If the application is problematic, complex or less common, some researchers tend to select kits because they are convenient, easier to use and provide reagents with a consistent quality and therefore more reliable results, despite being more expensive. These researchers then tend to purchase individual reagents for their routine reagent needs for procedures which are easily performed.

Conversely, other respondents choose to purchase reagents in kit format for their high throughput applications and use individual reagents for their custom low volume work. In addition to the lower price of individual reagents, these researchers find that molecular biology reagents purchased separately permit a greater degree of flexibility or customization of procedures, which is ideal for custom work.

Despite the general theme echoed by many that kits are more expensive, we couldn't help but notice that a number of respondents believe that, due to the benefits, some (but not all) kits are cost-effective. One researcher described this as follows: 'Some kits are cost effective, whereas in other cases, kits are expensive and unnecessary'. Another respondent's comment along the same line is 'Some reagents are simple and inexpensive to make up, and others are as cost effective and are more reliable in a kit.' Further indication that the benefits of kits outweigh the increased cost is reflected in the following comment: 'Quality management is far easier with kits. Saves time - and people hours are expensive'.

Finally, the following five comments from seem to be worth repeating for their description of the variety of factors taken into account when deciding whether to purchase molecular biology reagents individually or in a kit format. These also reflect the range of attitudes towards kits.

'The kits are optimized and almost always work. They are easy, require no supervision for new students, and generally save time and money. Some kits are quite expensive. While these may be the most desirable, the procedures can often be done less expensively with individual reagents. Thus, we are forced to balance our time and budget when purchasing kits.'

'We don't change things that are already working, so new things tend to be in kits and older methods tend to have individual reagents.'

'We feel some kits really aren't worth the expense for what you get out of them.'

'We use kits for convenience, and most of what we do is available in a kit format. This streamlines methods, usually eliminates QC issues and accelerates work, while more costly. Some things we do with reagents, because of tradition or because no kit exists, or because we are very familiar with it.'

'We use kits when they yield savings in terms of cost, time, effort; otherwise, we use individual reagents.'

QUESTION 91.

Question:

Finally, please answer a few questions about your self.
How would you best describe your organization?: Academia, Hospital/medical school, Biotech/pharma industry, Other industry, Government agency, Private research foundation

Rationale:

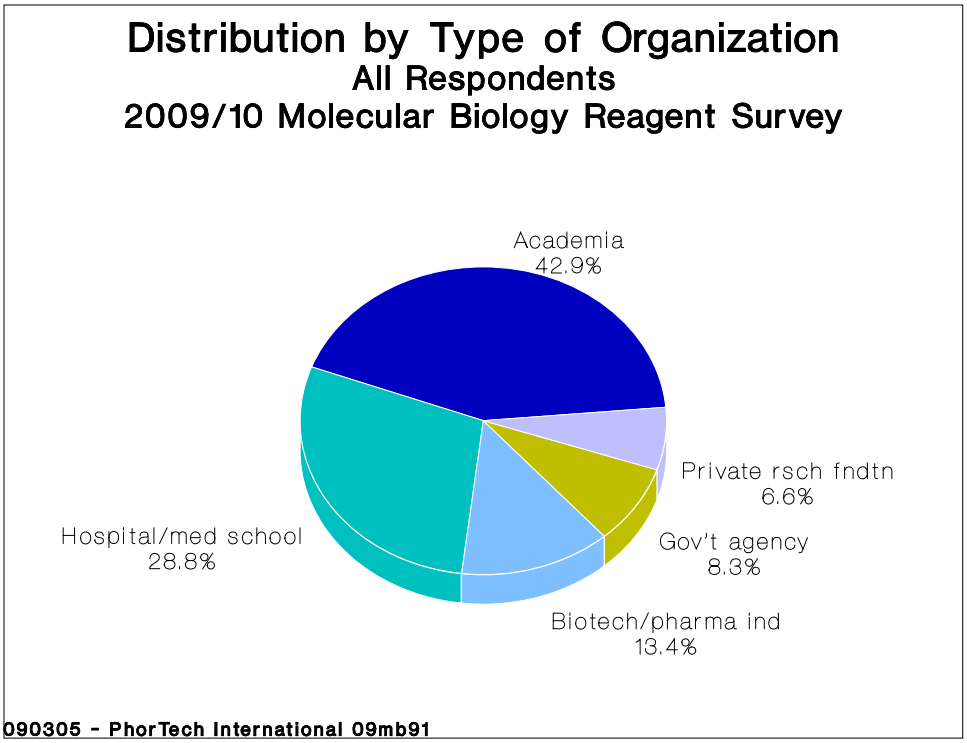
The responses to this question reveal the distribution of these respondents over the six organization classifications, identifying where respondents are located and, indirectly, primary sources of funding for researchers currently working with molecular biology reagents. Since this, and the following demographic questions appear at the end of the survey, these results will be based on the responses from the 396 researchers who completed the questionnaire.

Results:

Before analyzing, the data required some editing so that responses are consistently classified. In order to reflect the source of funding, those working in either a hospital, medical school or health science center have all been categorized as a hospital or medical school. Researchers working in private research foundations, many of which have an email ending in .org, and those receiving private funding from organizations such as HHMI, have been classified as research foundations. VA Medical Centers and military organizations are considered to be government agencies.

The distribution of responses from all 396 respondents who completed the survey is depicted in the pie chart located at the top of the next page.

Nearly 43% of these respondents are working in an academic setting while a further 29% are located in a hospital or medical school. Considerably fewer, totaling 13.9% are working in biotechnology or pharmaceutical industry, while the remaining 15% are fairly equally divided between those in government agencies and private research organizations, although the former has a slight edge. Other industries are not represented in these results.



Analysis:

It is perhaps important to realize that this distribution is markedly different from the respondents to our previous survey of this market. In that 2003/2004 study, approximately one third of respondents were from a hospital or medical school, nearly as many were located in academia and fully 22% worked in industry. The proportions from government agencies or private research foundations were very similar to the current study

Turning our attention back to the current study, the following table compares the distribution of all 396 respondents with the location of the 66 respondents using kits exclusively and the 329 utilizing both kit and individual reagents according to the responses to Question #2. We have no response recorded for the single remaining respondent.

Distribution by Type of Organization, Resps Using Kits Exclusively vs. Kits & Individual Reagents

Type of Organization	% of All Resps	% of Kit Users Only	% of Users of Kits & Reagents
Academia	42.9%	30.3%	45.3%
Hospital/medical school	28.8%	24.2%	29.8%
Biotech/pharma industry	13.4%	25.8%	10.9%
Government agency	8.3%	12.1%	7.6%
Private research fndtn	6.6%	7.6%	6.4%
# Resps	396	66	329

Consistent with the results to previous surveys covering molecular biology reagent kit usage, a lower proportion of academic researchers (30.3%) use kits exclusively compared to their 42.9% share of all respondents. Despite this, academics still account for the largest share of researchers using kits only. Industrial researchers, on the other hand, are more likely to be using kits exclusively. The result is that these 66 respondents using kits only are relatively evenly divided between academia, hospitals and medical schools and biotechnology or pharmaceutical industry. In contrast, the distribution of respondents using both kits and individual reagents (which includes the vast majority of these researchers), is virtually identical to that for all respondents.

Lastly, for completeness, we present a list of the organizations represented by the 396 users of molecular biology reagent kits completing this survey. These are grouped by type of organization which are presented in descending order according to the share of respondents that each represents. This then begins by listing North American organizations in the academic sector which are represented in this study.

Organizations Represented by Respondents Currently Using Molecular Biology Reagent Kits, by Type of Organization

Academia
Boston University
Boyce Thompson Institute
BRITE-NCCU
Caltech
Case Western Reserve University
Center for Aquatic Conservation
Colorado State University
Columbia University
Cornell University
CSUN
D'Youville College
DePauw University
Drexel University
Emory University
Facultad de Medicina Veterinaria y Zootecnia, UV (MEXICO)
Florida Gulf Coast University
Florida State University
Florida University
Harvard University
Indiana University
Kansas State University
Lamarr University
Lebanon Valley College
Louisiana State University (LSU)
Loyola University
Marian University
Marine Biological Laboratory
Marshall University

McGill University (CANADA)
Michigan State University
Michigan State University, College of Veterinary Medicine
Mitchell Cancer Institute
Montana State University
North Carolina State University
Northeastern University
Northeastern University Center for Drug Discovery (NEU CDD)
Ohio State University
Oregon State University
Penn State University
Pennington Biomedical Research Center
Princeton University
Purdue University
Queens College of CUNY
Rutgers University
Southern Illinois University
Stanford Center for Biomedical Informatics Research
Stanford University
Stony Brook University
Temple University
Texas A&M University College of Veterinary Medicine
Texas A&M University, Flagstaff
Tulane University
Union University
Universidad de Sonora (MEXICO)
Universidad Michoacana de San Nicolas de Hidalgo (UMSNH) (MEXICO)
University at Buffalo
University of Alabama, Birmingham
University of Alabama, Tuscaloosa
University of Alberta (CANADA)
University of Arizona
University of California, Berkeley
University of California, Davis
University of California, Irvime
University of California, Los Angeles
University of California, San Diego
University of California, San Francisco
University of Chicago
University of Cincinnati
University of Colorado Denver School of Medicine
University of Colorado Denver, AMC Campus
University of Colorado, Boulder
University of Delaware
University of Denver
University of Florida
University of Georgia
University of Hawaii
University of Houston
University of Idaho

University of Illinois at Chicago
University of Illinois, Urbana-Champaign (UIUC)
University of Iowa
University of Kansas, Higuchi Biosciences Center
University of Kentucky
University of Kentucky College of Dentistry
University of Kentucky, Microarray Core Facility
University of Maryland, College Park
University of Maryland, School of Pharmacy
University of Michigan
University of Michigan Molecular & Behavioral Neuroscience Institute
University of Minnesota Institute of Human Genetics
University of Minnesota, Minneapolis
University of Minnesota, St Paul
University of Missouri
University of North Carolina at Chapel Hill
University of North Carolina at Chapel Hill School of Pharmacy
University of North Carolina at Chapel Hill, Center for Environmental Medicine, Asthma and Lung Biology (CEMALB)
University of Pennsylvania School of Dentistry
University of Pittsburgh
University of Rochester
University of Sherbrooke (CANADA)
University of South Carolina
University of Southern California
University of Southern Indiana
University of Tennessee
University of Vermont
University of Virginia
University of Washington
University of Wisconsin Biotechnology Center
University of Wisconsin School of Veterinary Medicine
University of Wisconsin Waisman Center
University of Wisconsin, Madison
University of Wyoming
Vanderbilt University
Virginia Commonwealth University
Virginia State University
Virginia Tech
Washington University in St Louis
Wayne State University
Western Illinois University
Wright State University
Yale University
York University (CANADA)

Hospital/Medical School

Abbott Northwestern Hospital
Albert Einstein College of Medicine
Arkansas Children' s Hospital Research Institute

Baylor College of Medicine
Baylor University Medical Center
Beth Israel Deaconess Medical Center
Boston University Alzheimer's Disease Center (BUADC)
Boston University School of Medicine
Boy's Town National Research Hospital
Children's Hospital of Philadelphia
Children's National Medical Center
Dartmouth Medical School
Doheny Eye Institute
Duke University Medical Center (DUMC)
Duke University Medical School
Eastern Virginia Medical School
Harvard Medical School
Indiana University School of Medicine
Johns Hopkins University
Legacy Health System
London Regional Cancer Program (CANADA)
Long Island Jewish Health Systems
Loyola University Medical Center
LSU Neuroscience Center
Massachusetts General Hospital
Massachusetts General Hospital Cancer Center-Harvard Medical School
Medical Center of University of Florida
Medical College of Georgia
Medical College of Wisconsin
New York Medical College
New York University Medical Center
New York University School of Medicine
Oregon Health & Science University (OHSU) Transgenic Core Lab, Clackamas
Oregon Health & Science University (OHSU), Portland
Research Institute at Nationwide Children's Hospital
Stony Brook University Medical Center
SUNY Upstate Medical University
Temple University School of Medicine
Texas A&M University, Temple
Thomas Jefferson University
Tufts University School of Medicine
UMDNJ/New Jersey Medical School
UMDNJ-School of Public Health and the Environmental and Occupational Health Sciences Institute (EOHSI)
University at Buffalo-SUNY
University Hospital
University of Alabama Birmingham School of Medicine
University of California, Davis
University of California, Los Angeles School of Medicine
University of California, San Francisco Cancer Center
University of California, San Francisco School of Medicine
University of Colorado, Denver
University of Connecticut

University of Connecticut Health Center
University of Kentucky
University of Kentucky College of Medicine
University of Louisville School of Medicine
University of Maryland at Baltimore
University of Medicine and Dentistry, New Jersey (UMDNJ)
University of Minnesota Medical School
University of Minnesota, Minneapolis
University of Mississippi Medical Center
University of Nebraska Medical Center (UNMC)
University of North Texas Health Science Center
University of North Texas Health Science Center, Ft Worth (UNTHSC)
University of Pennsylvania
University of Pittsburgh
University of Rochester Medical Center
University of South Carolina School of Medicine, Columbia
University of South Carolina School of Medicine, Irmo
University of Texas Health Sciences Center at Houston
University of Texas Health Sciences Center, San Antonio (UTHSCSA)
University of Texas Southwestern Medical Center at Dallas
University of Texas Southwestern Medical Center at Dallas, McDermott Center for Human Growth and Development
University of Utah School of Medicine
University of Virginia
USC/Rancho Los Amigos National Rehabilitation Center (RLANRC), Downey
Wake Forest University School of Medicine
Washington Hospital Center
Washington University Medical Center
Washington University School of Medicine
Wayne State University School of Medicine

Biotechnology/Pharmaceutical Industry

Abbott Molecular
Agilent Technologies
Arena Pharmaceuticals
Baxter Healthcare Corp
Becton Dickinson Technologies
Boehringer Ingelheim
CBR Pharma
Centocor R&D Inc
CSCO
DuPont/Pioneer Crop Genetics
Eli Lilly & Company
ENZO Life Sciences
Epicentre Biotechnologies
Evolutionary Genomics
Exelixis Inc
Facet biotech
Gen-Probe
Genentech, Inc.

Genzyme
Integrated DNA Technologies
Intermune
Invitrogen
ISIS Pharmaceuticals
KCI
LI-COR Biosciences
Merck & Co Inc
MetaMorphix, Inc.
Millennium Pharmaceuticals
Mouse Genotype
Norgen Biotek Corp
Pfizer
Precision Inc.
Sangamo BioSciences, Inc.
Sanofi-Aventis
Sigma-Aldrich
SuperGen Inc
Syntonix Pharmaceuticals
Vaccinex

Government Agency

Agriculture and Agri-Food Canada (CANADA)
CDC/Centers for Disease Control
CDC/Nat'l Institute for Occupational Safety & Health (NIOSH) Toxicology and Molecular Biology Branch (TMBB), Morgantown
Idaho National Laboratory
Lawrence Berkeley National Lab
Nat'l Animal Disease Center
Nat'l Marine Fisheries Service (NMFS)
NIH/Nat'l Cancer Institute (NCI), Bethesda
NIH/Nat'l Cancer Institute (NCI), Frederick
NIH/Nat'l Institute of Allergy and Infectious Diseases (NIAID), Bethesda
NIH/Nat'l Institute of Child Health & Human Development (NICHD), Bethesda
NIH/Nat'l Institute of Environmental Health Sciences (NIEHS), Chapel Hill
NIH/Nat'l Institute of Environmental Health Sciences (NIEHS), Research Triangle Park
NIH/Nat'l Institute on Alcohol Abuse and Alcoholism (NIAAA), Rockville
NIH/National Institute on Aging (NIA)
Tennessee Wildlife Resources Agency (TWRA)
US Environmental Protection Agency (USEPA), Research Triangle Park
USDA-ARS Animal and Natural Resources Institute/Bovine Functional Genomics Lab, Beltsville
USDA-ARS Grain Marketing and Production Research Center (GMPRC), Manhattan
USDA-ARS, Ames
USDA-ARS-SRRC CFB, New Orleans
VA Medical Center, Long Beach
VA Medical Center, Memphis
Veterans Health Administration (VHA), Bethesda
Wayne State University/VA Medical Center

Private Research Foundation
Aeras
Battelle
Beckman Institute at the City of Hope
Benaroya Research Institute
Burnham Institute for Medical Research
Cedars-Sinai Medical Center
City of Hope
Cleveland Clinic Foundation
HHMI/Howard Hughes Medical Institute, Herndon
Lahey Clinic
Mayo Clinic, Rochester
Mayo Clinic, Scottsdale
MD Anderson Cancer Center, Houston
Memorial Sloan-Kettering Cancer Center (MSKCC)
Milton Hershey School
Nationwide Children's Hospital Research Institute
Roswell Park Cancer Institute
Sidney Kimmel Cancer Center
The Jackson Laboratory
The Scripps Research Institute
University of Texas MD Anderson Cancer Center

QUESTION 92.

Question:

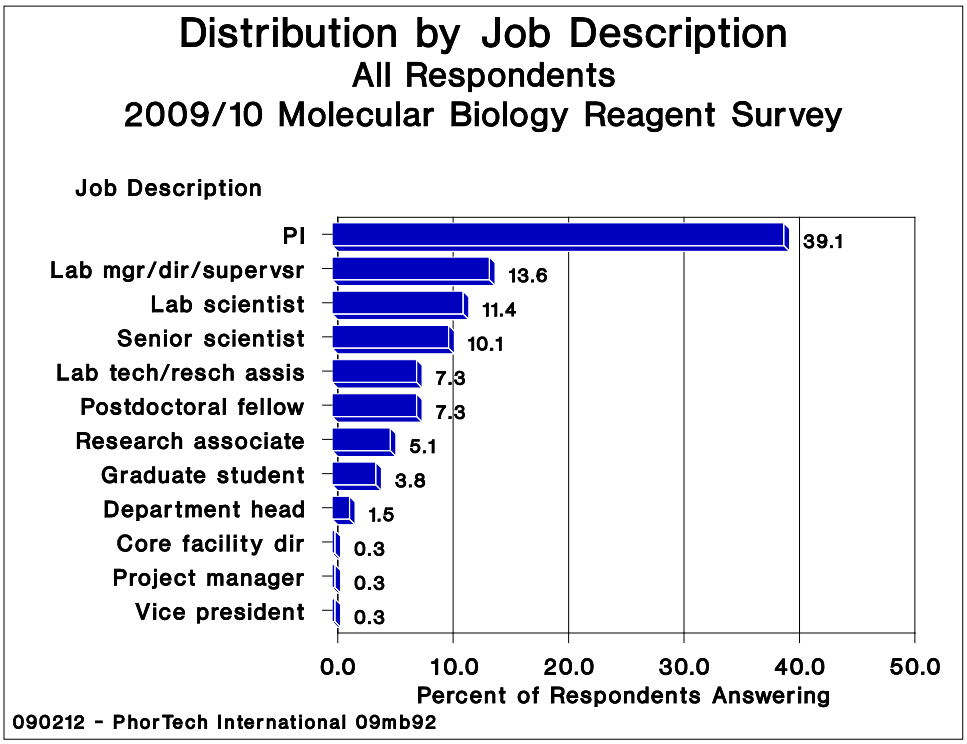
What most closely fits your job description?: laboratory technician/research assistant, laboratory manager/director/supervisor, research associate, graduate student, postdoctoral fellow, laboratory scientist, principal investigator, project manager, senior scientist, department head, vice president, core facility director, purchasing agent/buyer, scientific writer or journalist, sales or marketing specialist.

Rationale:

These responses will show the distribution of respondents' positions in the lab. We would hope for a good cross-section to obtain feedback from those performing the hands-on lab work, such as laboratory technicians, research assistants, postdoctoral fellows and graduate students, as well as the principal investigators and senior scientists, who in general, have greater control over purchasing decisions.

Results:

The following horizontal bar graph depicts the distribution of the 396 respondents who completed the survey and therefore answered this question.



Of the 15 job descriptions listed here, only three (purchasing agent/buyer, scientific writer or journalist, and sales or marketing specialist) are not

represented by respondents to this survey. And, in fact, the focus of this series on laboratory usage means that people in these positions are of little interest.

Perhaps it is not surprising to see that the three remaining positions which are least likely to be directly involved with bioresearch in general, and therefore also in molecular biology techniques, are found at the bottom of this graph. These include core facility directors, project managers and vice presidents which, combined, represent less than 1% of these respondents.

On the other hand, close to 40% of these respondents are principal investigators, the most common job description, with a further 34% nearly evenly distributed between laboratory managers or directors or supervisors, laboratory scientists and senior scientists.

Analysis:

Adding the percentage of laboratory managers and senior scientists to the share of PIs, fully we conclude that 62.9% of these 396 respondents, all of which currently work with molecular biology reagent systems kits, are considered to be upper level researchers. Adding the six department heads along with the two respondents describing themselves as a core facility director or vice president increases this to a 64.9% share.

Despite the heavy concentration of principal investigators, we did receive responses from low and mid-level scientists as well who are more likely to be working at the bench. Lower level scientists including graduate students, research assistants, and laboratory technicians, comprise 11.1% of these respondents. We can say with confidence, that this group does not dominate the survey responses.

We group the remaining categories (project managers, post-doctoral fellows, research associates and laboratory scientists) together and classify these as mid-level scientists. These comprise nearly one quarter of all the scientists, or 24.0%.

In conclusion, we believe that we have obtained an excellent cross-section of professional positions with plenty of upper-level qualified respondents.

QUESTION 94.

Question:

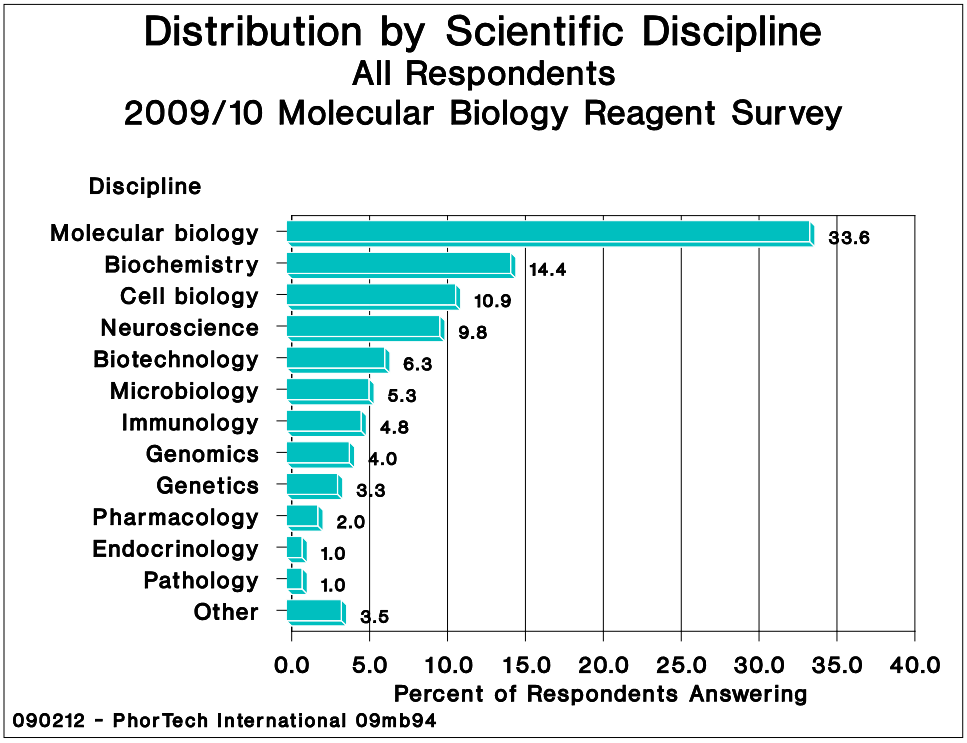
Please indicate below your primary scientific discipline. *(Best SINGLE answer, please).*: biochemistry, biotechnology, cell biology, endocrinology, genetics, genomics, immunology, microbiology, molecular biology, neuroscience, pharmacology, pathology, other.

Rationale:

Examination of the responses to this query should reflect the primary discipline of researchers currently using molecular biology reagent kits.

Results:

The percent of the 396 respondents working in each of these 12 disciplines (plus 'other' category) are shown below.



Analysis:

As might be expected, molecular biology dominates here as the most common response, the primary scientific discipline for one third of the respondents to this survey. Despite this, all 12 disciplines are represented. In fact, a further one third of these researchers are working in the fields of biochemistry, cell biology or neuroscience while the remaining third are distributed amongst the remaining eight disciplines plus the 'other' category.

This shows the breadth of scientific disciplines of researchers working with molecular biology reagent kits. Clearly, current users extend far beyond the bounds of molecular biologists.

XI. The Questionnaire

Molecular Biology Reagent Survey Part 2

Start

To begin, please enter the UserID and password from your survey invitation here:

User ID

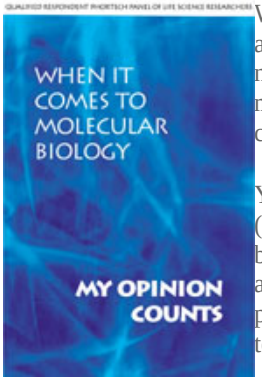
Password

Next

Molecular Biology Reagent Survey Part 2

intro

Thank you for taking time to answer our survey questionnaire. This survey is for researchers currently using molecular biology reagent systems in their work. We estimate that completing this survey will take you 14 minutes or less.



We will be pleased to send your choice of a nice selection of free gifts as a thank you for taking part in the survey. You can choose between a new limited edition tee shirt with the message "When it comes to molecular biology, my opinion counts" (in M, L or XL). The specially commissioned graphic is shown at left.

You can also select a gift card good for a full pound of Starbucks coffee (House Blend), our quality laser pointer (a great gift item), an Inova brilliant LED keychain microlight, a stainless steel executive pocket knife, a crisp new 5 Euro banknote, a $7 gift certificate good for on-line purchases at Amazon.com, or a $7 gift card to Barnes & Noble, good towards a book, CD, or cup of coffee on us.

Alternatively, we are also offering the option to donate $7 in your name to Habitat for Humanity instead of receiving a personal gift.

Please be sure to select your choice of free gift at the end of the survey. Thank you for participating.

Q1

Do you currently use molecular biology reagents in your work?

- Yes
- No

Next

0% 100%

Molecular Biology Reagent Survey Part 2

Q3

You can answer the following questions based upon your own personal use of molecular biology reagents or based upon the combined usage for your entire laboratory.

Will you be answering questions based upon your individual usage or based upon the combined usage for your laboratory?

- individual
- laboratory

Next

0% 100%

Molecular Biology Reagent Survey Part 2

Q4

You indicated that you will be describing molecular biology reagent usage based upon the combined usage of your laboratory.

Please let us know how many people in your laboratory are currently using molecular biology reagents and are covered by your laboratory's budget.

_____ people currently using molecular biology reagents and covered by the lab's budget

Next

0% 100%

Molecular Biology Reagent Survey Part 2

Q2

Do you use molecular biology reagents in a kit format or individual reagents? Please explain.

- We use reagents in a kit format only.
- We use individual reagents only.
- We use both kit formats and individual reagents.

Q2a

Because:

Next

0% 100%

Molecular Biology Reagent Survey Part 2

Q5

Considering your [SCRIPT] usage, how much do you spend on molecular biology kits in a typical year? *(Please specify both the amount and the currency.)*

per year on average in Select currency:

Q6

What percent change do you foresee in your consumption of molecular biology kits over the coming 12 months? *(Please enter an estimate and indicate if positive or negative.)*

% Increase Decrease No change

Next

0% 100%

Molecular Biology Reagent Survey Part 2

Q19

For which of the following application areas do you currently utilize reagents purchased in a kit format? *(Please select ALL that apply)*

- cDNA synthesis & cloning
- DNA sequencing
- Expression
- Microarrays
- Nucleic acid isolation & purification
- Nucleic acid labeling
- PCR/Real-time PCR
- Ribonuclease protection assays
- Other areas (including Differential display, Genotyping/fingerprinting, in vitro transcription (RNA), in vitro translation, RACE, site-drrected mutagenesis or transfection)
- Other: *(Please specify)*

Next

0% 100%

Molecular Biology Reagent Survey Part 2

Q23

What percent of your annual molecular biology kit budget do you spend for kits in each of these areas?

- [ ] cDNA synthesis & cloning
- [ ] DNA sequencing
- [ ] Expression
- [ ] Microarrays
- [ ] Nucleic acid isolation & purification
- [ ] Nucleic acid labeling
- [ ] PCR/Real-time PCR
- [ ] Ribonuclease protection assays
- [ ] Other areas (including Differential display, Genotyping/fingerprinting, in vitro transcription (RNA), in vitro translation, RACE, site-drrected mutagenesis or transfection)
- [ ] Other: *(Please specify)*
- [ ] Total

Next

0% 100%

Molecular Biology Reagent Survey Part 2

Q29

The next section examines your usage of commercial kits for ribonuclease protection assays.

You earlier indicated that you spend **[SCRIPT]** **of your budget** for ribonuclease protection assay kits. What percent change do you foresee in your consumption of these kits over the coming 12 months? *(Please enter an estimate and indicate if positive or negative.)*

_____ % ○ Increase ○ Decrease ○ No change

Next

0% 100%

Molecular Biology Reagent Survey Part 2

Q30

Considering your [SCRIPT] usage, what brands of ribonuclease protection assays do you purchase and what percent of your annual budget for these kits is spent with each supplier?

Ribonuclease Protection Assays

	Supplier	% of Total RPA Kit Budget
a.		
b.		
c.		
d.		

Next

0% 100%

Molecular Biology Reagent Survey Part 2

Q38

The next section examines your usage of commercial nucleic acid labeling kits.

You earlier indicated that you spend [SCRIPT] **of your budget** for nucleic acid labeling kits. What percent change do you foresee in your consumption of these kits over the coming 12 months? *(Please enter an estimate and indicate if positive or negative.)*

_____ % ○ Increase ○ Decrease ○ No change

Q39

Which of the following types of labeling kits do you currently use? *(Please check ALL that apply.)*

- ☐ 5 prime end labeling
- ☐ Direct enzyme labeling of oligos
- ☐ In vitro transcription (labeling only)
- ☐ miRNA (microRNA)
- ☐ Nick translation
- ☐ Random primer
- ☐ siRNA
- ☐ Other: *(Please specify)* _____

Next

0% 100%

Molecular Biology Reagent Survey Part 2

Q41

For every type you use, please identify your primary supplier(s), and indicate the percent of your budget for nucleic acid labeling kits spent with that supplier for that type of kit. *(Please begin with your major suppliers and spends).*

Nucleic Acid Labeling Kits

	Kit Type	Supplier	% of Total NA Labelling Budget
a.	Select:		
b.	Select:		
c.	Select:		
d.	Select:		

Next

0% 100%

Molecular Biology Reagent Survey Part 2

Q48

The next section examines your usage of commercial cDNA synthesis and cloning kits.

You earlier indicated that you spend **[SCRIPT]** **of your budget** for cDNA synthesis and cloning kits. What percent change do you foresee in your consumption of these kits over the coming 12 months? *(Please enter an estimate and indicate if positive or negative.)*

_____ % ○ Increase ○ Decrease ○ No change

Next

0% 100%

Molecular Biology Reagent Survey Part 2

Q49

Which of the following types of cDNA synthesis and cloning kits do you currently use? *(Please check ALL that apply.)*

- BAC cloning
- Blunt end cloning
- cDNA synthesis/cloning
- End specific
- Gene specific
- Library construction
- mRNA (microRNA)
- PCR
- Phage display
- Recombinase-mediated
- Shotgun subcloning

Next

0% 100%

Molecular Biology Reagent Survey Part 2

Q51

Considering your [SCRIPT] usage, please identify your primary supplier(s), and indicate the percent of your budget for cDNA synthesis or cloning kits spent with that supplier for that type of kit. *(Please begin with your major suppliers and spends).*

cDNA Synthesis and Cloning Kits

	Kit Type	Supplier	% of Total cDNA Synthesis/Cloning Kit Budget
a.	Select:		
b.	Select:		
c.	Select:		
d.	Select:		

Next

0% 100%

Molecular Biology Reagent Survey Part 2

Q52

What reverse transcriptase do you use for cDNA synthesis?

- AMB-RT
- MMLV-RT
- MMLV-RT Rnase H-
- Tth
- Other: *(Please specify)*

Q53

What are your cloning fragments? *(Please check ALL that apply.)*

- cDNA
- Genomic DNA
- PCR products
- Other: *(Please specify)*

Q54

What downstream applications do you perform? *(Please check ALL that apply.)*

- in vitro transcription
- protein expression (bacterial)
- protein expression (insect)
- protein expression (mammalian)
- protein expression (yeast)
- protein expression (other)
- sequencing
- transfection
- Other: *(Please specify)*

Next

0% 100%

Molecular Biology Reagent Survey Part 2

Q8

Which of the following other types of commercial kits do you currently use? *(Please check ALL that apply.)*

- Differential display
- DNA sequencing (automated)
- DNA sequencing (manual)
- Genotyping/fingerprinting
- In vitro transcription (RNA products)
- In vitro translation
- RACE
- Site-directed mutagenesis
- Transfection

Next

0% 100%

Molecular Biology Reagent Survey Part 2

Q58

The next section examines your usage of other commercial kits.

You earlier indicated that you spend [SCRIPT] **of your budget** for other commercial kits covered here. What percent change do you foresee in your consumption of these kits over the coming 12 months? *(Please enter an estimate and indicate if positive or negative.)*

% Increase Decrease No change

Q60

Considering your [SCRIPT] usage, please identify your primary supplier(s), and indicate the percent of your budget for these other commercial kits spent with that supplier for that type of kit. *(Please begin with your major suppliers and spends).*

Other Commercial Kits

	Kit Type	Supplier	% of Total Budget for Other Comm'l Kits
a.	Select:		
b.	Select:		
c.	Select:		
d.	Select:		

Next

0% 100%

Molecular Biology Reagent Survey Part 2

Q20

Do you work with siRNA or miRNA (microRNA)?

- Yes
- No

Next

0% 100%

Molecular Biology Reagent Survey Part 2

Q20a

This section examines your use of kits for siRNA work only.

Which of the following types of siRNA kits do you currently use? *(Please check ALL that apply.)*

- construction
- starter
- vector
- electroporation
- labeling
- production
- transcription
- transfection

Next

0% 100%

Molecular Biology Reagent Survey Part 2

Q21

For every type you use, please identify your primary supplier(s), and indicate the percent of your budget for siRNA kits spent with that supplier for that type of kit. *(Please begin with your major suppliers and spends).*

siRNA Kits

	Kit Type	Supplier	% of siRNA Kit Budget
a.	Select:		
b.	Select:		
c.	Select:		
d.	Select:		

Next

0% 100%

Molecular Biology Reagent Survey Part 2

Q70

Considering all the kits you have described, how does the stated number of reactions per kit compare with the number you routinely obtain in practice? Please explain.

Q71

What other applications would you like to see as commercial molecular biology reagent kits?.

Q7b

Are there suppliers of molecular biology kits from whom you wouldn't buy?

- Yes, the following:
- No

If yes, please explain
because:

Next

0% 100%

Molecular Biology Reagent Survey Part 2

Q72

What improvements would you like to see in molecular biology kits? *(Please be specific)*

Kit:

Improvement:

Next

0% 100%

Molecular Biology Reagent Survey Part 2

Q91

Finally, please answer a few questions about your self.

How would you best describe your organization?

Select one:

Q92

What most closely fits your job description?

Select one:

Q93

How many years of experience have you had with molecular biology techniques?

years

Next

0% 100%

Molecular Biology Reagent Survey Part 2

Q94

Please indicate below your primary scientific discipline.

Select one:

Q96

How are you involved (either personally or as a member of a group) in the purchase of electrophoresis products for your organization?

- initiate/determine need
- specify/set standards
- evaluate/select suppliers
- approve/authorize purchase
- Other:
- no involvement

Q95

Do you work in a core facility or centralized lab that analyzes samples for others to interpret?

- Yes
- No, I don't work in a core facility.

Next

0% 100%

Molecular Biology Reagent Survey Part 2

prize

OK. now please choose your free gift from the following list:

Select one:

who

Please make sure we have your current contact information by completing the fields below:

First Name, Last Name:	
Organization:	
Department:	
Address:	
City, State, Zip:	
Country:	USA
Telephone:	*(Not required, but helpful in case of problem delivering gift).*
E-mail:	

Next

0% 100%