2009/2010 MSPPSA SERIES

REAL-TIME/QPCR INSTRUMENTATION & REAGENT STUDY

AN ANALYSIS OF MARKET SIZE & GROWTH PURCHASE PLANS & SUPPLIER ASSESSMENT FOR THE NORTH AMERICAN LIFE SCIENCE RESEARCH MARKET

A Multi-Client Report

by
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TABLE OF CONTENTS

I. BACKGROUND 9
A. Survey Objectives 10
B. Survey Methodology 17

II. DEMOGRAPHIC SEGMENTATION 19
#0. Segmentation by Geographic Region 20
#1. Current Usage of Real-Time PCR 21
#0+. Computer Operating Systems & Browser Used 23
#2A. Segmentation by Organizational Setting 25
#37. Resps Working in Core Facilities/Services 33
#37A. Location Where Real-Time PCR Experiments are Run ... 35
#30. Segmentation by Scientific Discipline 37
#33. Segmentation by Job Description 39
#35. Years of Experience with Real-Time Quantitative PCR ... 41
#2. Involvement in Instrument Purchasing Process 43
#A. Currency Used in Survey Responses 45
#4. Basis for Response: Individual vs Entire Laboratory 46
#6. Number of Researchers Covered by Lab's Budget 48

III. MARKET SIZE & GROWTH 51
#1+. Use of Real-Time/qPCR in N America, Market Size 52
#13. Annual Placements of Real-Time PCR Platforms 55
#18. Basis Used to Report qPCR Budget: Per Year or Rxn 61
#18A. Annual Spend for Real-Time/qPCR Reagents 63
#18B. Real-Time/qPCR Reagent Cost per Reaction 66
#8. Anticipated Change in Real-Time PCR Usage, in 1 Yr 69

IV. MARKET SHARE 73
#13+. Manufacturers' Mkt Shares, Real-Time PCR Platforms ... 74
#17. Suppliers' Market Share, Real-Time PCR Rgts 82

V. PURCHASE PLANS 95
#20. Near Future Real-Time/qPCR Platform Purchase Plans .. 96
#17+. Future Spend on Real-Time PCR Reagents 99

VI. CURRENT & FUTURE METHODOLOGY 105
#10. Reason for Using Real-Time PCR 106
#11. Segmentation by Area of Research 109
#12. Current Applications Utilizing Real-Time PCR 111
#12A. Chemistries Currently Used for Real-Time PCR Work ... 113
#12B. Multiplexed Real-Time PCR Reactions 115
#12C. Types of Analysis Performed on Real-Time PCR Results. 119
#22. Awareness of High Resolution Melt, By Non-Users 121

#23. Biological & Technical Replicates Typically Used 124
#24. Anticipated Change in Usage of Biological Replicates..... 127
#25. Anticipated Change in Usage of Technical Replicates..... 131
#15+. Throughput of Runs/Week, Rxns/Run & Rxn Volume... 135
#7. Source & Origin of Real-Time PCR Samples 141

VII. REAL-TIME PCR REAGENT USAGE & SUPPLIERS..... 153

#9. Preferred Reagent Format 154
#16. Current Suppliers of Thermostable Enzymes 156

VIII. SUPPLIER ASSESSMENT 159

#3. Gen'l Satisfaction with Current Real-Time PCR Systems 160
#14. Reason for Selecting Most Recently Purchased Platform.. 162
#19. Rejected Platform Manufacturers & Reasons..... 174
#32. Familiar Real-Time/qPCR Platform Manufacturers..... 182
#34. Importance of Various Criteria when Selecting Platform . 185
#44. Ranked Platform Manufacturers for Important Criteria... 188
#51. Suggested Improvements to Real-Time/qPCR Platforms. 198

IX. INTEREST IN NEW APPROACHES & FINAL COMMENTS..... 203

#36. Willingness to Adopt New Approaches..... 204
#. Final Comments..... 207

X. THE QUESTIONNAIRE 211

List of Tables & Figures

I. Background 9

Survey Objectives 10
Survey Methodology 17
Survey Response Rates 17

II. Demographic Segmentation 19

Distribution by Country, Respondents Completing the Survey 20
Respondents' Current & Future Usage of Real-Time/Quantitative PCR 22
Computer Operating Systems Used to Answer Survey Questionnaire 23
Browser Used to Answer Survey Questionnaire 24
Distribution by Type of Organization, All Respondents 26
Verbatim Description of 'Other' Types of Organizations 26
Organizations Represented by Respondents to this Survey 27
% of Resps Working in a Core Facility, Providing/Not Providing Service 33
Location Where Real-Time PCR Experiments are Run 35
Distribution by Scientific Discipline, All Respondents 37
Distribution by Job Description, All Respondents 39
Mean, Median & Mode Years of Experience with Real-Time PCR 41
Years Experience with Real-Time/Quantitative PCR 41
Involvement in Purchasing of Real-Time/Quantitative PCR Instruments 43
Currency Used in Responding to Survey Questionnaire 45
Basis for Survey Response 46
Number of Researchers/Lab Using Real-Time/Quantitative PCR 48

III. Market Size & Growth 51

Pop'n Estimate of NA Life Science Rsrchrs Using Real-Time PCR 53
Mean # of Real-Time PCR Platforms & Spend per Resp, Installed Base 55
Number of Real-Time PCR Platforms per Respondent, Installed Base 56
Degree of Sharing, Real Time PCR Platform Installed Base 56
Estimated Size of Installed Base, Real Time PCR Platforms in NA 57
Weighted Mean Price per Real Time PCR Platform, Installed Base 57
Estimated $ Spend for Installed Base of Real Time PCR Platforms in NA 57
Unit Placements per Year, Installed Base of Real Time PCR Platforms 58
Dollar Placements per Year, Installed Base of Real Time PCR Platforms 59
N American Real Time PCR Platform Sales Estimates, by Year 59
Combined NA Real Time PCR Platform Sales Estimates, by Year 60
Basis Used to Report Spend for qPCR Reagents 61
Mean & Median Annual Spend for Real-Time PCR Reagents 63
Distribution of Resps' Annual Spend for Real-Time PCR Reagents 64
Resps' Annual Spend for Real-Time PCR Reagents, By Basis 64
Statistical Annual Spend for Real-Time PCR Reagents, By Basis 65
Mean & Median Spend per Reaction for Real-Time PCR Reagents 66
Distribution of Resps' Spend per Reaction for Real-Time PCR Reagents 67
Extrapolated Annual NA $ Market for Real-Time PCR Reagents 67
Forecast Change in Reaction Throughput, Over Next 12 Months 68

Weighted Average Growth Rate in Real-Time PCR Rxn Throughput 70
Revised Weighted Avg Growth Rate in Real-Time PCR Rxn Throughput 70
Extrapolated Annual NA $ Market for Real-Time PCR Rgts, in One Yr... 71

IV. MARKET SHARE 73

Real Time PCR Platforms & Spend per Resp 75
Mean, Median & Mode Price per Real Time PCR Platform 75
Real -Time PCR Tube/Plate Format, Real-Time PCR Platform Audit..... 76
Real -Time PCR Platform Dollar Shares, by Format of Instrument..... 77
Manufacturers' Unit Market Shares, Real-Time PCR Platforms..... 78
Manufacturers' $ Market Shares, Real-Time PCR Platforms 79
Total Spend & Mean Price for Real-Time PCR Platfms, Major Manuf 79
Total Spend & Mean Price for Real-Time PCR Platfms, Other Manuf..... 80
Most Frequently Mentioned Models of Real Time PCR Platforms 80
% Resps with Access to Real-Time PCR Platforms, by Manufacturer..... 81
Percent of Real-Time PCR Reagent Budget Spent, by Format of Reagent. 83
Distribution of Entries & Mean % of Budget by Supplier & Rgt Format . 84
Mean & Median Spend per Entry, Audit of Real-Time PCR Reagents 85
Dollar Spend per Entry, Real-Time PCR Reagent Audit 85
Dollar Spend by Format of Reagent, Real-Time PCR Reagent Audit 86
Annual & Mean Spend by Real-Time PCR Reagent Format..... 86
Dollar Spend for Major Reagent Suppliers, Real-Time PCR Rgt Audit..... 87
Annual & Mean Spend for Real-Time PCR Reagents by Supplier 87
Mean Spend per Respondent for Master Mixes 88
$ Spend for Major Master Mix Suppliers, Real-Time PCR Rgt Audit 89
Annual & Mean Spend for Master Mixes by Supplier 89
Mean Spend per Respondent for Reagents Purchased in Kit Format 90
$ Spend for Major Kit Suppliers, Real-Time PCR Rgt Audit 90
Annual & Mean Spend for Kits by Supplier..... 91
Mean Spend per Respondent for Individual Reagents 91
Annual & Mean Spend for Individual Reagents, by Supplier 91
$ Spend for Major Individual Rgt Suppliers, Real-Time PCR Rgt Audit... 92

V. PURCHASE PLANS 95

Purchase Plans for Real-Time PCR Systems, Within the Next 12 Months 96
Verbatim Description of Price Range for New Systems, Future Purchasers 97
Verbatim Description of Price Range for New Systems, Non-Purchasers .. 97
Forecast Change in Spend for Reagents Over the Next 12 Months 100
Statistical % Change in Budget Spend in Next Year, by Reagent Format .. 100
Forecast Change in Spend for Reagents in Next 12 Months, by Format.... 101
Weighted Average Growth Rate in Rgt Spend in Next Yr, by Format 101
Weighted Avg Growth Rate in Rgt Spend in Nxt Yr, Supplier & Format . 102

VI. CURRENT METHODOLOGY: REAL TIME/QUANT PCR..... 105

Reason for Using Real-Time/Quantitative PCR in Research 107
Verbatim Description of 'Other' Reasons for Using Real-Time PCR 107
Respondents' Area of Research, Distribution of Responses..... 109
Respondents' Use of Various Real-Time PCR Applications..... 112

Verbatim Descriptions of 'Other' Real Time PCR Applications 112
Chemistries Currently Used for Real-Time PCR Using Fluor Detection ... 113
% of Real-Time Quantitative PCR Reactions Multiplexed 116
Description of # of Difft PCR Prodts Detected/Well When Multiplexing. 116
Dist of # of Different PCR Products Detected/Well When Multiplexing .. 117
% of Total Reaction Throughput Multiplexed, Resps Using Multiplexing 118
Types of Analysis Performed on Real-Time/Quantitative PCR Results 119
High Resolution Melt Analysis, Resps' Awareness & Plans to Adopt 121
High Resolution Melt Analysis, Awareness & Usage, All Respondents 122
Extrapolated NA Bioresearcher Pop'n Using High Resolution Melt Anal .. 123
NA Bioresearcher Pop'n Planning to Use High Resolution Melt Analysis . 123
Biological & Technical Replicate Usage for Real-Time PCR Expts 124
# of Biological & Technical Replicates Used per Real-Time PCR Expt 125
Verbatim Descript'n of Expected Change in Biological Replicate Usage ... 127
Verbatim Descript'n of Expected Change in Technical Replicate Usage ... 131
Summary of Resps' Expected Change in Biol/Technical Replicate Usage .. 134
Number of Real Time PCR Runs per Week, by Basis of Response 136
Statistical Weekly # of Real-Time PCR Runs, Basis of Response 136
Real-Time PCR Runs per Week/Researcher, by Basis of Response 137
Typical Number of Real-Time PCR Reactions per Run 137
Mean, Median & Mode Real Time PCR Reactions per Run 138
Throughput of Real Time PCR Reactions per Week 138
Summary of Real-Time PCR Reactions per Week, by Basis of Response ... 138
Weekly Throughput of Reactions/Researcher 139
Mean, Median & Mode Real-Time PCR Reactions/Researcher 139
Typical Real-Time PCR Rxn Volume 140
Summary of Real-Time/Quantitative PCR Throughput/Week 140
Sources of Real-Time PCR Samples, Share of Mentions 142
Origins of Real-Time PCR Samples, Share of Mentions 142
Most Frequently Mentioned Combinations: Source & Origin of Samples. 143
Throughput of Real-Time PCR Runs/Wk for a Single Source & Origin ... 144
Statistical # of Real-Time PCR Runs/Wk, by Source of Sample 145
Statistical # of Real-Time PCR Runs/Wk, by Origin of Sample 145
Throughput of Real-Time PCR Rxns/Run for a Single Source & Origin .. 146
Statistical # of Real-Time PCR Rxns/Run, by Source of Sample 146
Statistical # of Real-Time PCR Rxns/Run, by Origin of Sample 147
Total & Mean Number of Real-Time PCR Reactions/Week 147
Real-Time PCR Reactions/Week for a Single Source & Origin 148
% of Reaction/Week Throughput, by Source of Sample 149
Summary of Weekly Real-Time PCR Throughput by Source of Sample .. 149
% of Reaction/Week Throughput, by Source of Origin 150
Summary of Weekly Real-Time PCR Throughput by Origin of Sample .. 150
% of Reaction/Week Throughput, Common Sources & Origins 151
Summary of Weekly Throughput, All Source & Origin Combinations 151

VII. REAL-TIME PCR REAGENT USAGE & SUPPLIERS 153

Preferred Formats of Real-Time PCR Reagents 154
Thermostable Enzyme Suppliers Used in the Past 12 Months 157
Verbatim Description of 'Other' Thermostable Enzyme Suppliers 157

VIII. SUPPLIER ASSESSMENT 159

Level of Satisfaction with Current Real-Time PCR System 160
Mean, Median & Mode Level of Satisfaction with Current System 160
Reasons for Choosing Recently Purchased Platform, by Brand & Model .. 162
Reasons for Selecting Platform, Most Frequently Mentioned Themes 172
% Resps Citing Frequently Mentioned Themes for Major Manufs 173
Would Resps Make the Same Decision Today 174
Satisfaction Rates for Major Manufacturers of Real-Time PCR Platforms . 175
Satisfaction Rates and Confidence Levels for Major Manufacturers 176
Reason for Dissatisfaction with Brand & Model. Sorted by Brand 177
Reason for Dissatisfaction with Model. Sorted by Brand & Model..... 179
Alternate Models Which Would be Purchased Today 181
Resps' Familiarity with Real-Time/qPCR Platform Manufacturers..... 183
Verbatim Descriptn of Other Familiar Real-Time/qPCR Platfm Manufs .. 183
Number of Appearances on Constructed Lists of Platform Manufacturers. 184
Importance of Factors in Manuf Selection, 7-10 Rating on 10-Pt Scale..... 186
Mean, Median & Mode Importance of Factors in Manuf Selection 187
Ranked Manufacturers' Performance: Reliable Performance 189
Ranked Manufacturers' Performance: Consistent Quality 190
Ranked Manufacturers' Performance: Ease of Use..... 190
Ranked Manufacturers' Performance: Value for Money 191
Ranked Manufacturers' Performance: Best Technical/Applicatn Support .. 192
Ranked Manufacturers' Performance: Reputation of Supplier 192
Ranked Manufacturers' Performance: Previous Experience..... 193
Ranked Manufacturers' Performance: Colleague's Recommendation..... 194
Ranked Manufacturers' Performance: Multiplexing Capability 195
Percent of Respondents Ranking 'Familiar' Manufacturers Highest 195
Computed Total Points for Criteria Derived from Mean Importance 196
Weighted Score for Real-Time PCR Platform Manufacturers 197
Suggested Improvements to Real-Time/Quantitative PCR Systems..... 198

IX. INTEREST IN NEW APPROACHES & FINAL COMMENTS..... 203

Mean & Median Willingness to Adopt New Approach on 10-Pt Scale..... 204
Willingness to Adopt New Approach to Real-Time PCR Work 204
Willingness to Adopt New Approach by Type of Organization 205
Resps Most Willing to Adopt New Approach by Type of Organization 206
Willingness to Adopt New Approach by Type of Lab 206
Final Verbatim Comments in Alphabetical Order 207

X. THE QUESTIONNAIRE 211

I. Background

A. Survey Objectives

This purpose of this survey was to provide the management of our clients with feedback regarding the current usage of for real-time/quantitative PCR in North America. This survey will focus on the attitudes of a selection of bioresearchers who currently utilize real-time PCR, or qPCR, in their work. The survey responses will be the basis for examining the types of samples analyzed, typical reaction throughput and current and anticipated future methodologies, as well as the current instrument and future purchase plans. In addition, future purchase plans are explored along with researchers' satisfaction with their current system will also be measured and willingness to adopt a new approach.

The survey was web-based, at a location on our web site made known to respondents through an e-mail invitation. The surveying was blind, with no reference made to our client.

To encourage respondents to express themselves freely, the survey was anonymous, and made frequent use of open-ended questions. We did not observe any survey fatigue in this questionnaire, and felt that respondents spent considerable time explaining their positions on the open-ended questions.

Eight demographic screens were used to characterize respondents, namely their geographic location, type of organization, primary scientific discipline, job description, level of experience with real-time PCR, type of laboratory (core facility or not) and location where real-time PCR is performed, and involvement in the purchase of real-time PCR instrumentation.

To begin the survey, we asked respondents whether they currently use real-time PCR in their work, or plan to start working in this area. Respondents not currently using this technique were automatically screened out of the survey and their unique user ID was invalidated to prohibit restarting the survey, as they were not qualified to continue.

Positioned early in the survey, respondents currently using this technique were then directed to indicate the currency which they will use to answer survey questions describing costs. They are then asked to rate their level of satisfaction with their current real-time PCR system on a ten-point scale.

The next two questions concern the basis for responses. Respondents were first asked to indicate whether they will answer questions based on their individual usage or the combined usage of their laboratory. Those answering on behalf of their lab were asked to provide the number of researchers in the lab currently working with real-time PCR and covered by the lab's budget.

The next series of questions characterizes current real-time PCR usage. The first of these identifies the reason for using real-time PCR from a list of 14 options. These include analysis of disease genes, biomarker discovery, validation and/or screening, clinical trials, confirmation of DNA microarray hits, confirmation of RNAi results, disease association studies, expression profiling, pharmacogenomics, secondary screening (e.g. lead optimization), SNP discovery, validation or screening, target identification, target validation, toxicogenomics or an optional 'other' open-ended response for any reasons not included here. Once the reason for using this technique has been identified, respondents are asked to provide the area of research in which they work (basic research, clinical research or translational research, drug discovery/drug development, agriculture, clinical testing, forensic/human/identity testing or food/beverage).

Researchers were then asked to indicate which of the following five applications are currently performed utilizing real-time PCR and fluorescent detection: basic quantification studies (e.g. copy number), gene expression, genotyping, pathogen detection/quantification, or a final option in which respondents could describe an 'other' unlisted application in their own words. They then further characterize their work by indicating which chemistries (Molecular Beacons, Scorpions, SYBR Green or TaqMan probes) are currently used in their work.

Multiplexing, or the analysis of multiple PCR products in a single tube or well, is the topic of the next questions. In particular, respondents are asked what percent of their real-time quantitative PCR reactions are multiplexed, and, if greater than zero, to describe how many different PCR products per well are typically detected. The next query measures the usage of four types of analysis performed on real-time PCR results (including standard curve, relative quantitation, allelic discrimination with probe, high resolution melt (HRM) or an open-ended other option for adding an unlisted type of analysis). Respondents not currently using high resolution melt are asked about their awareness of this method and anticipated near future usage. All researchers are then asked about the typical number of biological replicates and technical replicates used per real-time PCR experiment and if either of these are likely to change in the near future

Respondents are then shown the real-time PCR instrument audit question which directs users to identify the brand, model, the format (from a pull-down menu including individual tubes, tube strip, 48 well plate, 96 well plate, 384 well plate, 384 array, or 1536 well plate), the number of instruments, the year of acquisition, the approximate cost per system and number of users for all real-time PCR platforms which the respondent owns or has access to. A single researcher could provide up to three different brands and models of platforms.

Considering the most recently purchased instrument from the audit, the next query asks respondents to describe the reason for selecting that brand and model and then to indicate if they would make the same decision again if they purchased a system today. If not, respondents are asked to provide the model, or brand and model, of system they would purchase instead and to explain the reasons behind this decision. A yes/no question regarding near future plans to acquire a new instrument comes next. For respondents answering affirmatively, there is an open-ended follow-up question regarding the price range the PI is willing to pay for this system. The final question related to real-time PCR instrumentation gives respondents an opportunity to describe any improvements they would like to see in real-time/quantitative systems in their own words.

The throughput of real-time PCR is examined next beginning with an audit of the number of real-time PCR runs performed per week, an estimate of the reactions per run, and the typical reaction volume measured in microliters. The subsequent query requests more detailed information including the reactions per run and runs per week for up to three different sources and origins of sample. Respondents are then asked to indicate the percent change they foresee in the overall number of real-time PCR reactions over the next 12 months.

The next series of questions assesses the performance of current real-time/quantitative platform manufacturers. Respondents are first asked to indicate all of the companies they recognize (either because they use their products or are familiar with their offerings) from a list of 8 different suppliers. These include Applied Biosystems, Bio-Rad Laboratories/MJ Research, Cepheid, Corbett Research, Eppendorf, PerkinElmer/PE Biosystems, Roche, Stratagene (Agilent) or an optional ninth open-ended option for respondents to write in an unlisted manufacturer.

Using a ten point scale, respondents were then asked to rate the importance of 9 different factors when selecting a real-time/quantitative platform. Presented in a random order, these include value for money, multiplexing capability, a colleague's recommendation, previous experience, ease of use, best technical/application support, reliable performance, consistent quality and the reputation of the supplier.

For up to five 'important' factors (identified as those rated five or above on the ten point scale), respondents then indicated which of the manufacturers they are familiar with (according to their earlier response) ranked the highest regarding each factor. Using this method, researchers rank only familiar suppliers for a random selection of those criteria which are most important to them.

The next question is the start of a subsequent series of questions examining real-time/quantitative PCR reagent usage. Respondents are first given the

option of providing responses based on the cost of qPCR reagents per year or the price per qPCR reaction. Using the appropriate basis, respondents are asked to provide their typical spend for real-time/quantitative PCR reagents. This is followed up with a number of questions, the first of which concerns the preferred reagent format (either individual reagents, kits or master mixes). In response to the next query, respondents identify all thermostable enzyme suppliers they have used in the past 12 months from a list of 36 suppliers plus an 'other' open-ended response for adding an unlisted source. Respondents were also given the option of indicating none of the above.

They were then directed to complete an audit of real-time/quantitative PCR reagents by providing the percent of their PCR budget spent and anticipated percent change in the next year for each supplier and format of reagents purchased. Beginning with the largest budget spend, a researcher could provide data for up to five different suppliers and/or formats.

The final question offers respondents the opportunity to add any additional comments they would like about their real-time PCR usage or the survey questionnaire.

Major objectives of this survey were to determine the present market size and share for leading real-time/quantitative PCR system manufacturers and reagent suppliers in North America. The audits should permit the evaluation of our clients' present market positions, identify marketing strengths and weaknesses.

We will also examine the format of these instruments (individual tubes, tube strip, 48 well plate, 96 well plate, 384 well plate, 384 array, or 1536 well plates) as well as the form of reagents purchased (individual reagents, kits or master mixes) and the throughput of reactions for each source and origin of sample. Based on these responses, we will estimate the population of bioresearchers running each type of samples with real-time/quantitative PCR, determine the typical throughput in number of reactions and from this, extrapolate the number of reactions for each sample type. The near future change in throughput as well as purchase plans for qPCR systems are also presented here, along with a measure of customer satisfaction and a brief look at the highest ranked manufacturers when it comes to nine factors considered to be important when selecting a system.

To better accomplish the survey objectives, a number of programmed features were employed. To speed respondents through this lengthy survey, skip patterns were programmed into the questionnaire. For example, respondents were asked the size of their labs only if they indicated that they were answering the survey for their entire laboratory. Also, researchers who were not qualified to respond to this survey because they don't currently use real-time PCR were directed out of the survey.

Tailored questions were used to imprint the basis respondents used to answer the survey. In Question #4, respondents were asked whether they would answer the survey based upon their own personal usage or based on the combined usage of their laboratory. Depending upon their answer, subsequent questions were worded either 'your individual usage' or 'your laboratory usage'. Similarly, the currency identified in Question #A as the basis for describing costs was repeated in questions asking for prices or budget values.

Constructed lists were also employed for several questions to simplify and personalize the survey based upon responses to earlier questions. For example, in Question #32, respondents were asked to indicate which real-time/qPCR platform manufacturers they are familiar with and, in Question #34, identify the importance of a variety of criteria when selecting a real-time/quantitative PCR platform. In the subsequent question, #44, only criteria considered to be important (earning a rating greater than 5) were shown and the pull-down menu of suppliers showed only companies familiar to the respondent.

This report is the third and final 2009/2010 study in a growing series of market research analyses that began in 1993. We plan to continue the series, adding titles and alternating between North American and international markets, depending upon our clients' suggestions and support.

The two reports already published in the current series are entitled:

Molecular Biology Reagent Systems, Volume 2 and
Multiplexed Protein Assay Systems.

The four 2008/2009 studies released cover:

Microplate Readers & Equipment
Protein Electrophoresis Equipment
Protein Electrophoresis Gels, Stains & Standards
Protein Expression and Purification Systems.

The series of three reports in the 2007/2008 series covering segments of the North American life science research market are entitled:

Molecular Biology Reagent Systems, Volume 1
Proteomics Research, Volume 1 and
Proteomics Research, Volume 2.

The two reports in the 2006/2007 series which have been released cover the North American market for

DNA Amplification Instrumentation
DNA Amplification Reagents & Methodology

The three reports published in the 2004/2005 series cover the U.S. market for:

DNA Sequencing & Sequencing Services
Electrophoretic Equipment & Reagents and
HPLC Columns in the Life Sciences.

In addition, a single report examining the European market covers the:

Microarray Market Analysis (including Arrayers, Scanners and Microarrays).

Reports published in the 2003/2004 series cover the following U.S. topics:

Molecular Biology Reagent Systems, Vol. 1
Molecular Biology Reagent Systems, Vol. 2
Protein Expression Systems
Proteomics Research, Volume 1 (Sample Prep & 2-D)
Proteomics Research, Volume 2 (Mass Spec & Protein Microarrays).

Reports released in the 2002/2003 series include the following U.S. topics:

DNA Amplification Instrumentation
DNA Amplification Reagents & Methodology
Microplate Reader & Equipment Market

Topics in the U.S. series published in 2001/2002 include:

Electrophoretic Instrumentation & Reagents
Molecular Biology Reagent Systems, Vol. 2

This series also includes the following reports covering international markets:

Densitometers & Image Analysis in Europe
DNA Sequencing in the Far East.

The 2000/2001 series covered the following three reports:

U.S. DNA Amplification
U.S. Molecular Biology Reagent Systems, Vol. 1
Molecular Biology Reagent Systems, Vol. 1 in the Far East.

In the 1999/2000 series, we have released three reports examining the following markets. These are:

Microplate Equipment in Europe
DNA Sequencing in the U.S.
Monoclonal Antibodies in the U.S.

The following nine titles have been released in the series for 1998/1999:

Cell & Tissue Culture in the U.S.
Cytokines & Growth Factors in the U.S.
DNA Amplification in the Far East
DNA Sequencing in Europe
Electrophoretic Gel Media in Europe
HPLC in the Life Sciences in the U.S.
Molecular Biology Reagent Systems, Vol. 1
Molecular Biology Reagent Systems, Vol. 2 in the Far East
Protein Expression Systems in the U.S.

The following titles have been released in the U.S. series for 1997/8:

DNA Sequencing
Molecular Biology Reagent Systems, Vol. 1
Molecular Biology Reagent Systems, Vol. 2
Molecular Diagnostics.

Clients are reminded that additional copies of any of these reports that have been purchased in the past are available at a modest cost. Please contact us for further details. Those wishing to know publication dates for any of these reports, or wanting to read summaries of the 84+ reports in this series are invited to visit our Web site at: www.phortech.com.

B. Survey Methodology

Personalized e-mail invitations to take part in the survey were sent to a cross-section of North American life science researchers from our panel of over 50,000 life science researchers worldwide. Invitations were successfully sent to a random selection of 14,280 North American members of the panel from September 8th to September 18th, 2009.

Each participant received an e-mail invitation including the web address of the survey and a unique validation code.

The questionnaires were anonymous, using a combination of tabular entry, check-offs, and open-ended probes. However, all respondents who completed the survey did identify themselves by filling in the prize entry form. This makes it possible for us to double-check the responses to any questions by telephoning or emailing respondents, improving the overall confidence in the data. We did not observe any survey fatigue in this questionnaire, and felt that respondents spent considerable time explaining their positions on the open-ended questions.

The survey was closed on September 25th since we had exceeded our target of 350 completed survey questionnaires.

A total of 562 respondents (out of the 14,280 receiving invitations) began the survey which represents 3.94%. Of these, 33 respondents clicked the link to the first page of the survey and then closed it immediately leaving an elapsed time of 0 minutes. A further 80 researchers were disqualified from taking part. This includes 79 bioresearchers who are planning to start using real-time PCR in the near future, and a single researcher who is neither currently using nor planning to start using real-time PCR in the near future.

Of the 449 researchers eligible to take part in this study, 368 completed the questionnaire. We examined the 84 entries by respondents who only answered some of the questions. A total of 34 of these respondents, did not answer any questions beyond the initial demographic questions, up to Question #6, and were therefore excluded. However, we were interested in preserving as much data as possible to maximize the number of data points for questions regarding aspects of real-time PCR work, such as numbers 10 and 11, which examine the reasons for using real-time PCR and respondents' areas of research. Therefore the remaining 47 respondent answering these questions or beyond have been maintained as partial entries and will be included in the analysis. The final database then contains 415 responses from current and future users of real-time PCR.

With a current total of 415, the overall statistical results that will be presented in the final report for all respondents will be accurate to within ± 4.8

percentage points at the 95% confidence level. The accuracy of values based on the 368 respondents who completed the survey questionnaire is calculated to be within ± 5.1 percentage points at the 95% confidence level.

In our experience, 95% confidence levels are appropriate primarily for scientific experiments. Most business people making decisions are content to be right more often than they are wrong. In this case, a 65% confidence level, (in which you would be right twice as often as you would be wrong) is more appropriate. Conveniently, 65% confidence levels are nearly exactly one half the size of the 95% level, thus our 65% levels would be ± 2.4% for all 415 respondents and ± 2.6% for results based on the 368 completed responses.

According to the binomial distribution theory, these values are valid when the measured event has about a 50% probability. When the measured event is considerably more rare than this, the corresponding confidence intervals get smaller. On the other hand, these confidence intervals are valid for answers based upon the complete pool of respondents. When analyzing data for a group that includes only a small segment of respondents, the answers are less certain and confidence intervals are correspondingly larger.

In this report, we will calculate more exact individual confidence intervals when appropriate. In our comments, we will note whether given differences are significant at either the 65% or 95% level. To aid our client in determining the appropriate confidence interval for various combinations of sample size and measurements, we have created the following table. Just read the closest percentage on the left and find the closest sample size column. The intersection will show the confidence interval for that combination. For example, a measured 35% value with a sample size of 500 has a 95% confidence interval of ± 4.2%.

95% Confidence Intervals for Various Percentages & Sample Sizes

Percent	n=10	n=20	n=50	n=100	n=200	n=500	n=1000
5%	±13.5%	±9.6%	±6.0%	±4.3%	±3.0%	±1.9%	±1.4%
10%	±18.6%	±13.1%	±8.3%	±5.9%	±4.2%	±2.6%	±1.9%
20%	±24.8%	±17.5%	±11.1%	±7.8%	±5.5%	±3.5%	±2.5%
35%	±29.6%	±20.9%	±13.2%	±9.3%	±6.6%	±4.2%	±3.0%
50%	±31.0%	±21.9%	±13.9%	±9.8%	±6.9%	±4.4%	±3.1%
65%	±29.6%	±20.9%	±13.2%	±9.3%	±6.6%	±4.2%	±3.0%
80%	±24.8%	±17.5%	±11.1%	±7.8%	±5.5%	±3.5%	±2.5%
90%	±18.6%	±13.1%	±8.3%	±5.9%	±4.2%	±2.6%	±1.9%
95%	±13.5%	±9.6%	±6.0%	±4.3%	±3.0%	±1.9%	±1.4%

II. Demographic Segmentation

QUESTION 0.

Question:

In which of the following geographic regions of the world are you currently living and working?: USA/North America, Europe, Japan, Asia/Oceania, Other.

Rationale:

This serves as a primary screening question identifying whether a researcher is currently working in North America. Respondents located in other geographic regions are directed out of the questionnaire by the survey engine, as this is limited to North American researchers only.

Results:

Since invitations were only sent to North American researchers, this query serves to confirm previous geographic data provided, ensuring that only researchers currently working in North America answer this questionnaire.

Of the 368 respondents who completed the survey, the 365 who also provided their address, we present the distribution by country in the table below.

Distribution by Country, Respondents Completing the Survey

Country	# Resps	% Resps
United States	354	97.0%
Canada	9	2.5%
Mexico	2	0.5%
Total	365	

QUESTION 1.

Question:

Do you currently use real-time PCR in your work, or are you planning to start such work? *(Best SINGLE answer, please).*

Yes, I currently real-time PCR in my work.
No, I do not currently use real-time PCR, but I plan to start work in this area.
No, I do not currently use real-time PCR and I have no plans to do so in the future.

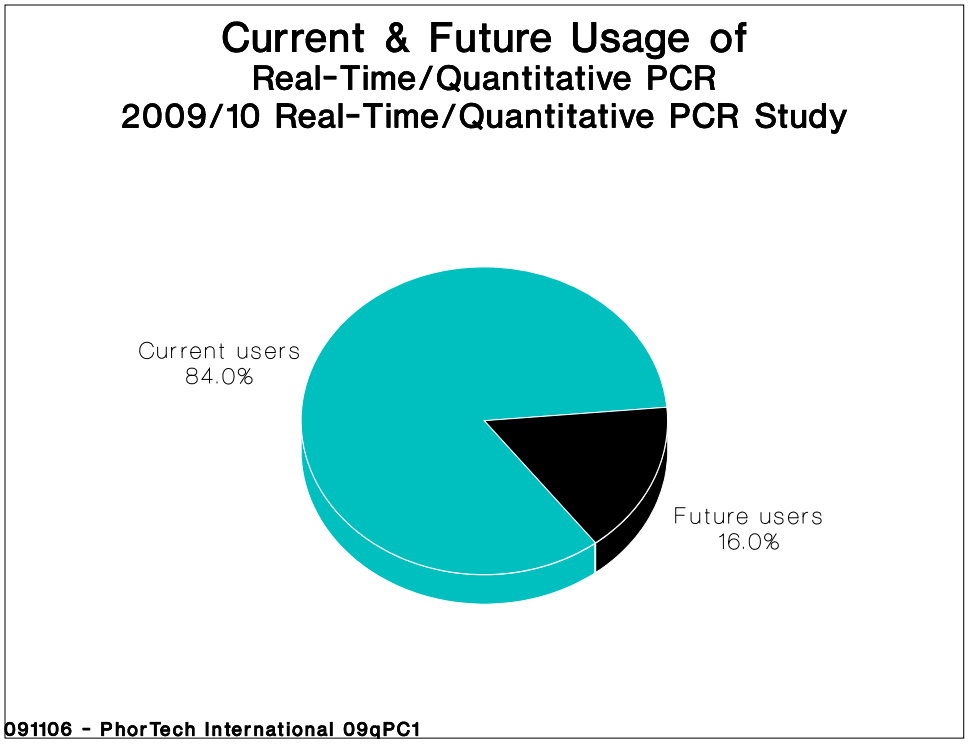
Rationale:

These responses identify current users of real-time PCR from those planning to start. Based on this, the survey engine directs current users to the next query while future users answer only a few questions designated by pre-programmed skip patterns incorporated into the study. Researchers not working nor planning to start work in this area are disqualified from answering this survey. These respondents are automatically directed out of the survey and not permitted to reenter.

Results:

To be qualified to complete this survey, respondents had to be currently using real-time PCR. Therefore, all 415 respondents included in this analysis are using qPCR in their lab.

Although disqualified from completing the survey, it is interesting to briefly include the respondents planning to start work in this area. Adding the 79 respondents planning to start using real-time/quantitative PCR in the near future to the 415 current users, we estimate that, as shown in the following pie chart, 16.0%% of these 494 respondents are planning to start working with this technique.



Analysis:

By including the 79 respondents who plan to start using real-time or quantitative PCR with the 415 current users, we can estimate that the population of North American bioresearchers using qPCR will increase by approximately 16% in the near future.

QUESTION 0+.

Question:

Our latest software program permits us to identify two primary characteristics of the computers respondents are using, the operating system and browser.

Rationale:

We provide a brief summary of this information giving clients a general idea of the type of computer and browser to which these researchers have access.

Results:

First, we present the distribution of the operating system run on the computers of 413 out of the 415 respondents who provided partial or complete survey data. These are sorted in descending order.

Operating System of Computers Used to Answer Survey Questionnaire

Operating System	# Resps	% Resps
Windows XP	253	61.3%
Macintosh	101	24.5%
Windows Vista	43	10.4%
Windows NT 5.0	8	1.9%
Linux i686	2	0.5%
Windows NT 5.2	2	0.5%
Linux x86_64	1	0.2%
Windows 98	1	0.2%
Windows NT 6.1	1	0.2%
WinNT-PAI 22.08.2009	1	0.2%
Total # Resps	413	

Consistent with previous surveys, just more than three out of every five respondents are using Windows XP while close to one out of every four responded on a computer utilizing a Macintosh operating system.

Turning our attention to the browser, Microsoft's Internet Explorer continues to be the most common, used by 221 of these 415 respondents, equivalent to 53.3%. Just less than half as many respondents (21.9%) use a version of Firefox. A further 56 respondents (13.5%) utilize Safari with Netscape comes in a very close fourth, used by 45 respondents, equivalent to 10.8% of these researchers to access the survey questionnaire. In comparison, Mozilla and Navigator are comparatively rarely used. More detailed information, including versions, is presented in the table located on the next page.

Browser Used to Answer Survey Questionnaire

Browser	# Resps	% Resps
MSIE 7.0	109	26.3%
MSIE 8.0	56	13.5%
MSIE 6.0	55	13.3%
Netscape 5.0	44	10.6%
Firefox 3.5.3	39	9.4%
Safari 531.9	33	8.0%
Firefox 3.5.2	17	4.1%
Firefox 3.0.14	13	3.1%
Firefox 3.0.13	6	1.4%
Safari 530.5	6	1.4%
Firefox 2.0.0.20	3	0.7%
Safari 525.27.1	3	0.7%
Firefox 2.0.0.12	2	0.5%
Firefox 2.0.0.15	2	0.5%
Firefox 2.0.0.4	2	0.5%
Firefox 3.0.1	2	0.5%
Safari 525.22	2	0.5%
Safari 532.0	2	0.5%
Firefox 1.5.0.8	1	0.2%
Firefox 2.0.0.2	1	0.2%
Firefox 2.0.0.6	1	0.2%
Firefox 3.0.11	1	0.2%
Firefox 3.5	1	0.2%
Mozilla 20060414	1	0.2%
MSIE 999.1	1	0.2%
Navigator 9.0.0.6	1	0.2%
Netscape 7.0	1	0.2%
Safari 523.10	1	0.2%
Safari 523.12	1	0.2%
Safari 523.12.2	1	0.2%
Safari 525.20.1	1	0.2%
Safari 525.28.3	1	0.2%
Safari 525.29	1	0.2%
Safari 528.16	1	0.2%
Safari 530.17	1	0.2%
Safari 530.18	1	0.2%
Safari 530.19	1	0.2%
Total # Resps	415	

QUESTION 2A.

Question:

How would you best describe your organization?: *(Best SINGLE answer, please)* academia, hospital/medical center, biotechnology/pharmaceutical industry, clinical diagnostic laboratory, government agency, private non-profit research foundation, or other: _____.

Rationale:

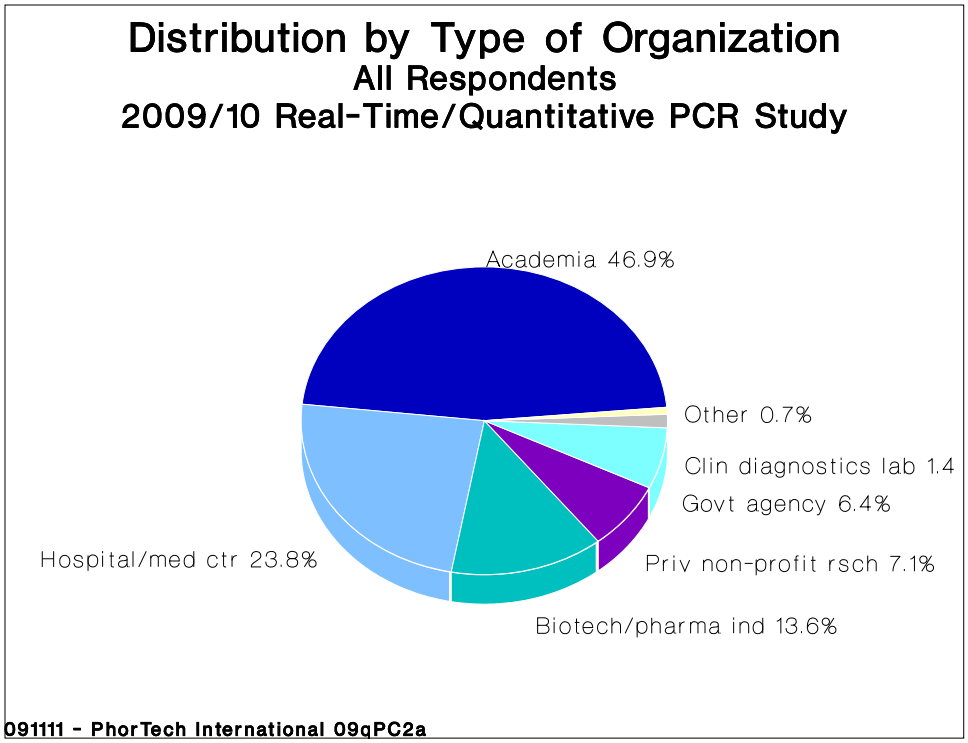
This demographic screening question identifies the location of these respondents, all of which currently use or plan to start using real-time/quantitative PCR in their work. We will examine the distribution of all respondents across these types of organizations followed by separate examination of respondents segmented by their current or future usage of real-time PCR.

Results:

Before presenting the results, we examine the locations and type of organizations identified by respondents who completed the survey, and then edited the data for consistency as respondents from the same institution sometimes classify the organization differently. A large proportion of these consist of respondents in medical centers or hospitals listing themselves as 'academia'. These have all been edited to 'hospital/medical center' which also includes medical schools.

Researchers working in private non-profit research foundations, many of which have an email ending in .org, and those primarily receiving private funding (such as the Roswell Park Cancer Institute and MD Anderson Cancer Centers) have been classified as private research foundations. In addition, those receiving funding from government sources, such as the public health laboratories or those associated with the NIH or CDC, as well as others such as VA hospitals, are identified in this survey as a government agency. Companies involved in biotechnology or pharmaceuticals are also grouped together.

Adding the original responses from the 50 respondents who did not complete the survey to the edited data, the distribution of all 415 responses over these 7 categories is shown in the pie chart found at the top of the next page.



Nearly half of these researchers are working in an academic lab with an additional close to 25% from hospitals or medical schools. The final near 30% of current users are located in one of the remaining four types of organizations plus the small group of 'other' types of labs. This includes the almost 14% of current users in industrial labs, which is on par with their share in previous studies covering a variety of other areas of the life science research market.

The three verbatim descriptions of 'other' types of organizations are presented in the following table.

Verbatim Description of 'Other' Types of Organizations

Agricultural research - seed company
Nutraceutical company
Public research center

Analysis:

To provide clients with an idea of the breadth of coverage represented in the survey, we include the following list of organizations represented by current real-time/quantitative PCR users.

Each organization is listed once regardless of the number of responses we received from that organization and, since, this is based on information given at the end of the survey, represents only those 365 respondents who completed the entire questionnaire and provided their contact information.

The most common type of organization, academia, is listed first followed by the other types in descending order.

Organizations Represented by Respondents to this Survey

Academia
Auburn University
Caltech
Campbell University School of Pharmacy
Case Western Reserve University
Colgate University
College of Staten Island
Colorado State University
Columbia University
Cornell University
Ctro de Investigcn Cientifica de Yucatan (MEXICO)
Dartmouth College
Douglas Hospital Research Centre (CANADA)
Duke Institute for Genome Sciences & Policy
Hamilton College
Harvard University
IIT Research Institute
Indiana University
Iowa State University
Kansas State University
Kenyon College
Louisiana State University
LSU Eye Center
McGill University (CANADA)
Michigan State University
Montana State University, Plant Science & Pathology
New York University
North Carolina State University College of Veterinary Medicine
North Dakota State University
Ohio State University
Ohio State University College of Pharmacy
Ohio State University/PMGF
Old Dominion University
Oregon State University
Penn State University
Pennington Biomedical Research Center (PBRC)
Physiologic Communications
Queen's University (CANADA)
South Dakota State University
St. Louis University
Temple University
Texas A&M University College of Veterinary Medicine
Texas AgriLife Research at Weslaco
Thomas Jefferson University/Kimmel Cancer Center
TransWorld Development Initiatives
University at Buffalo-SUNY

University of Alabama, Birmingham
University of British Columbia James Hogg Research Centre (CANADA)
University of California, Berkeley
University of California, Davis
University of California, Irvine
University of California, Los Angeles
University of California, San Diego
University of California, San Francisco
University of Chicago
University of Chicago Ludwig Center for Metastasis Research
University of Cincinnati
University of Colorado Denver
University of Florida
University of Florida/Interdisciplinary Center for Biotechnology Research (ICBR)
University of Illinois at Chicago
University of Illinois at Urbana-Champaign
University of Illinois College of Veterinary Medicine, Urbana-Champaign
University of Iowa
University of Louisville
University of Massachusetts
University of Miami
University of Michigan
University of Michigan School of Public Health
University of Minnesota
University of Minnesota Center for Immunology
University of Missouri-Columbia
University of Missouri-Kansas City (UMKC) Ophthalmology Vision Research Center
University of Montana
University of Nevada, Reno
University of North Carolina at Chapel Hill Cystic Fibrosis Center
University of North Florida, Brooks College of Health
University of Pennsylvania
University of Rochester
University of Saskatchewan (CANADA)
University of South Alabama Mitchell Cancer Institute
University of South Dakota
University of South Florida
University of Southern California
University of Southern Mississippi
University of Tennessee
University of Toledo
University of Toronto (CANADA)
University of Vermont
University of Virginia, Charlottesville
University of Virginia, Midlothian
University of Washington
University of Wisconsin, Paul F Carbone Cancer Center
University of Wisconsin-Eau Claire
University of Wisconsin-Madison
University of Wyoming

Utah State University
Virginia Commonwealth University
Virginia Tech School of Biomedical Engineering & Sciences
Washington State University
Washington State University School of Molecular Biosciences
Washington University at St Louis
Western Illinois University

Hospital/Medical Center

Baylor College of Medicine
Beth Israel Deaconess Medical Center
Boston University Medical School Cancer Research Center
Brigham and Women's Hospital
Brown Medical School
Children's Mercy Hospital
Dartmouth Medical School
Duke University Medical Center
Duke University Medical School
Eastern Virginia Medical School
Indiana University-Purdue University Indianapolis (IUPUI)
LSU Health Sciences Center (LSUHSC)-New Orleans
LSU Health Sciences Center (LSUHSC)-Shreveport
Massachusetts General Hospital
Mayo Clinic, Rochester
Medical College of Georgia
Medical College of Wisconsin
Medical University of South Carolina
Miami Children's Hospital
Mount Sinai School Medicine
NYU Hospital for Joint Diseases (NYUHJD)
NYU School of Medicine
Southern Illinois University School of Medicine
Stanford School of Medicine
Stanford University Center for Molecular and Genetic Medicine
Stony Brook University School of Medicine
Texas A&M Health Sciences Center (TAMHSC)
Tulane University Health Science Center
University Health Network (UHN) (CANADA)
University of Arkansas for Medical Sciences
University of California, Los Angeles
University of California, San Francisco
University of Chicago
University of Colorado Denver School of Medicine
University of Colorado Health Science Center (UCHSC)
University of Florida
University of Kentucky
University of Kentucky College of Medicine
University of Kentucky Medical Center/Center for Oral Health Research
University of Louisville Health Sciences Center
University of Louisville School of Medicine

University of Maryland School of Medicine
University of Massachusetts Medical School
University of Medicine and Dentistry, New Jersey (UMDNJ)
University of Medicine and Dentistry, New Jersey (UMDNJ) New Jersey Medical School
University of Michigan
University of Michigan Medical School
University of Mississippi Medical Center
University of Nebraska Medical Center
University of Pennsylvania School of Medicine
University of Pittsburgh Medical Center
University of Tennessee Health Science Center (UTHSC), Germantown
University of Tennessee Health Science Center (UTHSC), Memphis
University of Texas Health Science Center at Houston
University of Texas Health Science Center at San Antonio
University of Texas Medical Branch
University of Vermont College of Medicine, Colchester
University of Vermont, Vermont Cancer Center
UT Southwestern Medical Center
Vanderbilt Medical Center
Washington University Medical School at St Louis
Wayne State University
Weill Medical College of Cornell University
Wells Center for Pediatric Research

Biotechnology/Pharmaceutical Industry

Advanced BioNutrition Corp.
Alnylam Pharmaceuticals
Amgen
AstraZeneca
Baxter Biotech
Bio-Rad Laboratories
Brinkmann Biosystems
Centocor R&D Inc
CM Biologics
Creatv MicroTech, Inc.
Eli Lilly & Company
ENZO Life Sciences
Evolutionary Genomics
Genentech
Gen-Probe Inc.
GenVec, Inc
Genzyme Corp
MPI/Takeda (LD)
Myriad Genetics
Novozymes, Inc.
Pfizer, Inc, Kalamazoo
Pfizer, Inc. Global Research & Development, Chesterfield
Precision Incorporated
Predictive Biology

Prometheus Labs
Schering-Plough CV/MD
Sensor Technologies
Sigma-Aldrich Custom Cell Engineering Services
Sigma-Aldrich Inc.
Wyeth Research, Monmouth Junction
Wyeth Vaccines, Pearl River
ZenBio, Inc

Private Non-Profit Research Foundation

Aeras
Albany Medical College Center for Immunology & Microbial Disease
Cleveland Clinic
Dana Farber Cancer Institute, Harvard Medical School
Doheny Eye Institute
Fox Chase Cancer Center
Fred Hutchinson Cancer Research Center (FHCRC), Seattle
J Craig Venter Institute
La Jolla Bioengineering Institute
Lahey Clinic
Population Council
Research Institute at Nationwide Children's Hospital, Ctr for Microbial Pathogenesis
Research Institute at Nationwide Children's Hospital, Gene Therapy Center
Roswell Park Cancer Institute
Scripps Research Institute
Shriners Burn Hospital, Cincinnati
Shriners Hospital, Sacramento
St. Jude Children's Research Hospital
UT M.D. Anderson Cancer Center, Houston

Government Agency

CDC/Division of Viral & Rickettsial Diseases
CDC/Laboratory Systems
CDC/Nat'l Institute for Occupational Safety and Health (NIOSH)/Health Effects Laboratory Division
Food & Drug Administration (FDA). Kensington
Fish & Wildlife Research Institute
Microbial Diseases Laboratory
National Oceanic and Atmospheric Administration (NOAA)/National Marine Fisheries Service (NMFS)
New England Primate Research Center (NEPRC)
NIH/National Human Genome Research Institute (NHGRI)
NIH/National Institute of Allergy and Infectious Diseases (NIAID)
NIH/National Institute of Child Health and Human Development (NICHD)
US Army Research Inst of Environmental Medicine
US Centers for Disease Control and Prevention
US Department of Health and Human Services
US Fish & Wildlife Service (USFWS)
USDA-ARS Western Regional Resource Center
USDA-ARS, Kerrville

VA Medical Center, Memphis
VA Medical Center, San Francisco
Vermont Forensic Lab
Wadsworth Center-NYS Department of Health (NYSDOH)
Walter Reed Army Institute of Research (WRAIR)
Clinical Diagnostic Lab
Labcorp
Laboratory Corp of America
University of Kentucky Livestock Disease Diagnostic Center (LDDC)
Other
CIATEJ (MEXICO)
Nutramax Laboratories, Inc.
Sakata Seed America, Inc.

QUESTION 37.

Question:

Let's finish up with a few questions about yourself and your work.

Do you work in a core facility that provides real-time PCR services? *(Best SINGLE answer, please).*

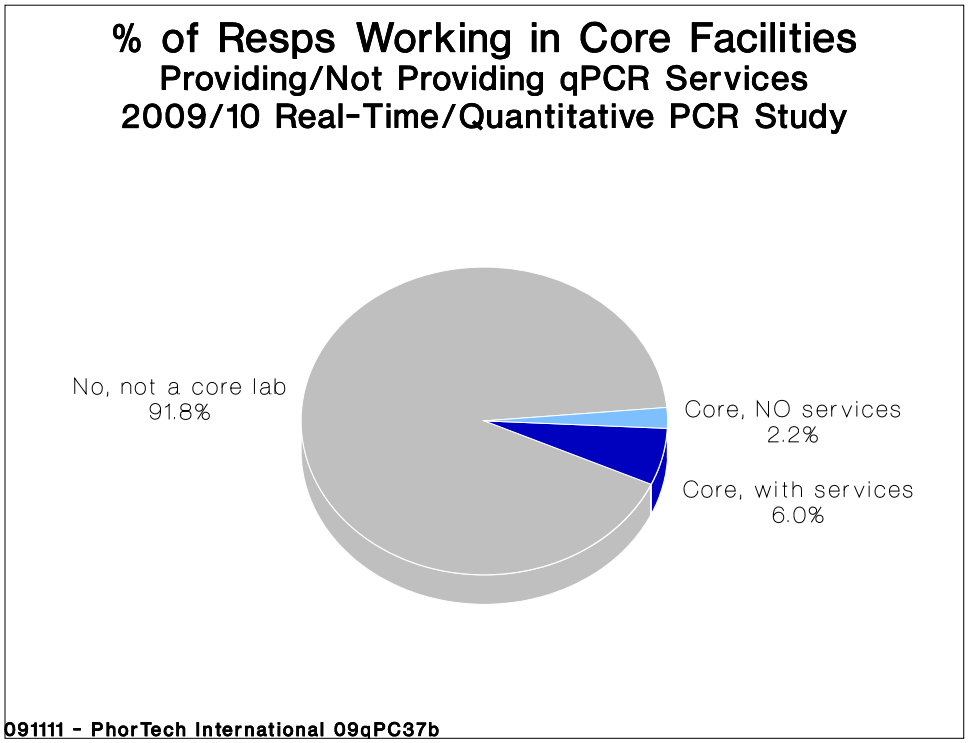
Yes, I work in a core facility that provides these services.
Yes, but I work in a core facility that does NOT provide these services.
No, I don't work in a core facility.

Rationale:

Here, we measure the proportion of respondents using real-time PCR who are located in a core facility, and whether these labs provide real-time PCR services. Since this is the first in a series of demographic questions which appears at the end of the questionnaire, only respondents completing the survey are represented here.

Results:

As shown in the following pie chart, just 8.2% of the 368 respondents answering this question are located in a core facility and nearly three out of every four of these core facilities provide real-time PCR services to other laboratories.



Analysis:

This is a fairly similar to the 7.0% of respondents to the 2006 amplification survey although that referred to amplification services in general, which including both PCR and real-time PCR services. Taking this into consideration, there does not appear to be any significant shift in the recent past towards core facility usage. The usage of core labs versus running real-time/quantitative PCR in their own or a colleague's lab is covered in even greater detail in the next question.

QUESTION 37A.

Question:

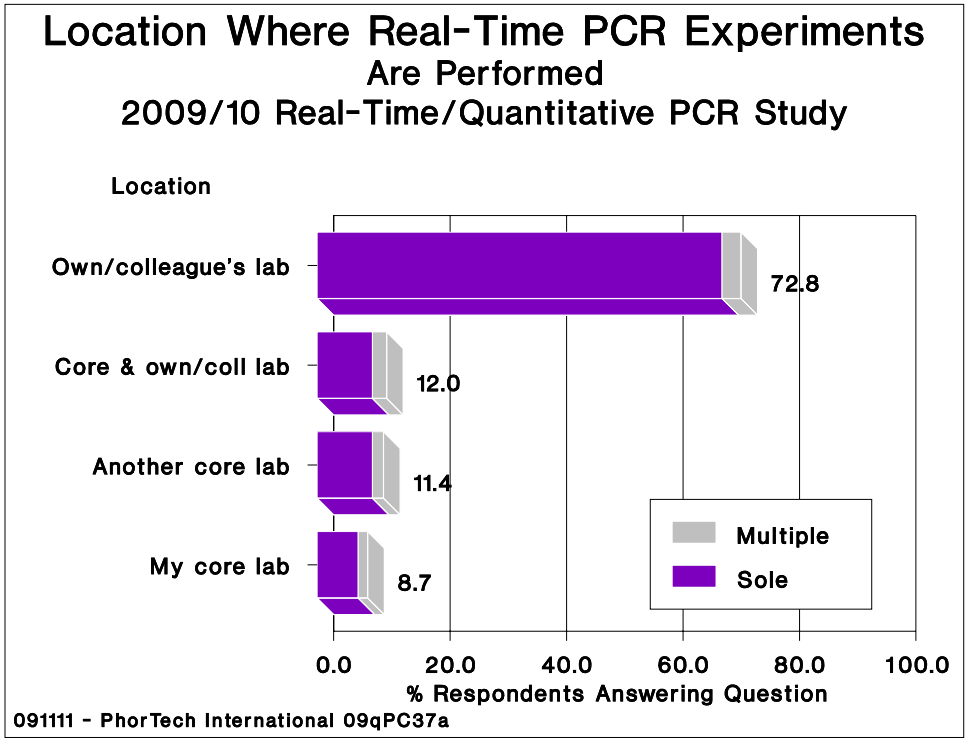
Where are your real-time PCR experiments run? *(Please check ALL that apply.)* : In my lab, a core facility that provides these services; In another core facility that provides these services; In our own laboratory or a colleague's laboratory; In both, a core facility and in our own/colleague's laboratory.

Rationale:

With the responses to this question, we determine where real-time PCR experiments are actually performed. Although the low percentage of core labs represented in this survey suggests that real-time PCR continues to be largely run in researchers' labs, these responses will provides a more accurate measure of the type of lab performing the real-time PCR work. This also reflects respondents' level of involvement in the day-to-day running of these experiments.

Results:

Since respondents could provide multiple responses to this question, we begin by presenting the 386 responses from the 368 respondents answering this question in the following horizontal bar graph. Sole responses are depicted in a darker shade than multiple responses.



Nearly three out of every four respondents report that some or all of their real-time PCR experiments are performed in their lab or a colleague's lab. In comparison, a total of 112 respondents, equivalent to 30.4%, depend on a core facility, either their own lab or another core, for some or all of their real-time PCR work.

Analysis:

Consistent with conclusions based on the responses to Question #37, our initial deduction that real-time PCR experiments are not primarily performed in core facilities is supported by this data. The percent of respondents utilizing a core facility is only marginally higher than previous studies. Taking into consideration that near 73% of respondents run some real-time PCR experiments in their own lab and that fully 69.6% run all their own experiments, this does appear to be a method which continues to largely be performed in researcher's individual labs. This also suggests that these respondents are relatively familiar with the day-to-day running of these experiments. Only 9.5% indicate that all of their experiments are run by another core facility providing services.

QUESTION 30.

Question:

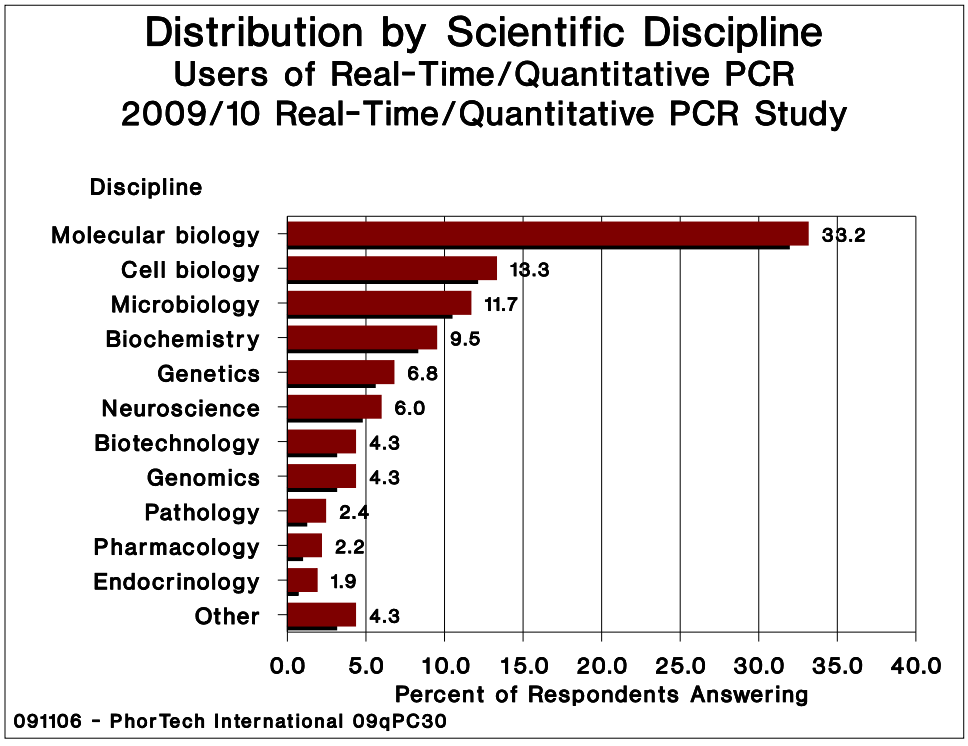
Please indicate below your primary scientific discipline *(Best SINGLE answer, please)*: biochemistry, biotechnology, cell biology, endocrinology, genetics, genomics, microbiology, molecular biology, neuroscience, pharmacology, pathology, or other?

Rationale:

This, the third of a series of demographic questions shown at the conclusion of the survey, provides a description of our respondents' primary scientific discipline. We would hope to obtain a broad distribution including most or all of the disciplines itemized here.

Results:

The horizontal bar graph below shows the responses from 368 respondents who completed the survey questionnaire, and therefore answered this question.



These results are fairly typical for other studies we have done in this area, such as our 2006/7 MSPPSA report on DNA Amplification, which covered real-time PCR platforms as well as traditional thermal cyclers

Analysis:

The primary discipline for just over thirty percent of these researchers is molecular biology, followed at a distance by cell biology and microbiology, the only two other disciplines represented by at least 10% of these respondents. The remaining earn steadily decreasing shares with biochemistry at the upper end of the scale with 9.5% and pathology, pharmacology and endocrinology at the lower end accounting for close to 2% share.

QUESTION 33.

Question:

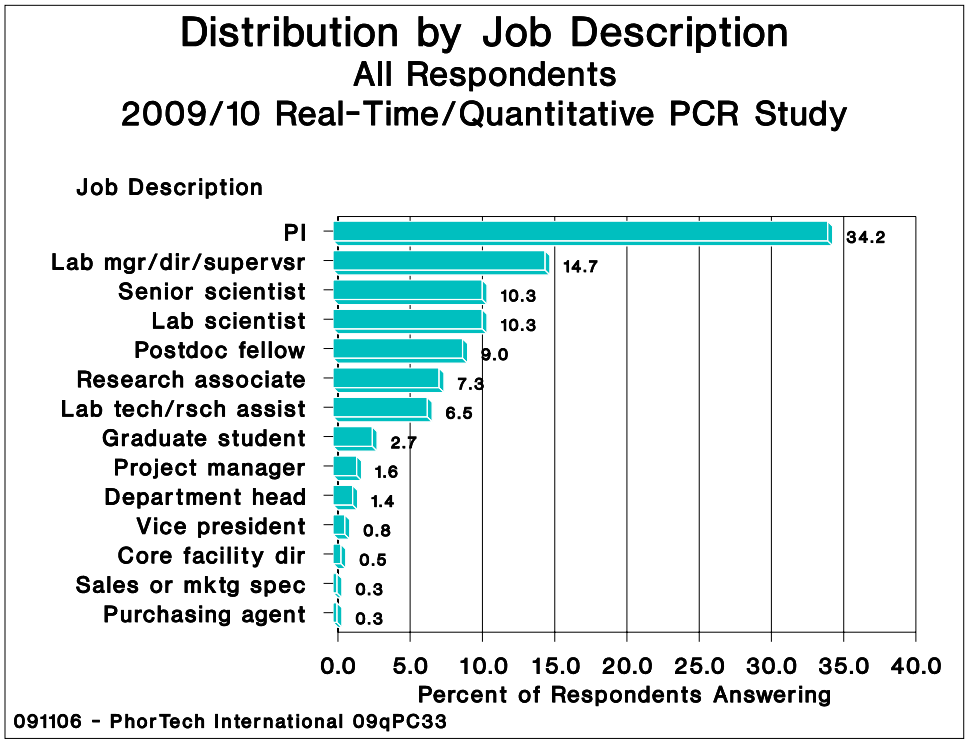
What most closely fits your job description? *(Best SINGLE answer, please)*: laboratory technician/research assistant, laboratory manager/director /supervisor, research associate, graduate student, postdoctoral fellow, laboratory scientist, principal investigator, project manager, senior scientist, department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

Rationale:

With this standard demographic question, the relative positions or job titles are examined. We would hope to have input from all levels, from principal investigators to laboratory technicians, as the area of responsibility, and therefore viewpoint, varies with the position.

Results:

Since this question was also located at the end of the questionnaire, the following horizontal bar graph depicts the distribution 368 respondents who completed the survey.



Analysis:

We received responses from all levels including a good representation of principal investigators, accounting for over 30% of the respondents. This is

significantly higher than any of the other single job descriptions listed, more than twice the 14.7% of lab managers, directors or supervisors. It is more than three fold the number of senior scientists or lab scientists, each accounting for 10% of these researchers. With 9.0%, postdoctoral fellows is the fifth most frequently mentioned position.

Grouping these job descriptions by level of scientists, respondents who are principal investigators, department heads, vice presidents, core facility directors, senior scientists, laboratory managers or supervisors are considered to be high level scientists. Summing these together, this includes fully 63.9% of these respondents making this the most predominant job level amongst the researchers answering this survey.

A further 9.3% of these researchers are lower level scientists, and therefore more likely to be working at the bench. This group includes graduate students, research assistants and laboratory technicians.

We define mid-level scientists as the remaining job descriptions such as project managers, post-doctoral fellows, research associates and laboratory scientists. This group comprises just under a third of all the scientists, or 26.7%. The remaining 2 researchers with non-lab positions consisting of a single sales and marketing specialist and a purchasing agent are not included in these calculations.

QUESTION 35.

Question:

How long have you been using real-time/quantitative PCR?: _____ years

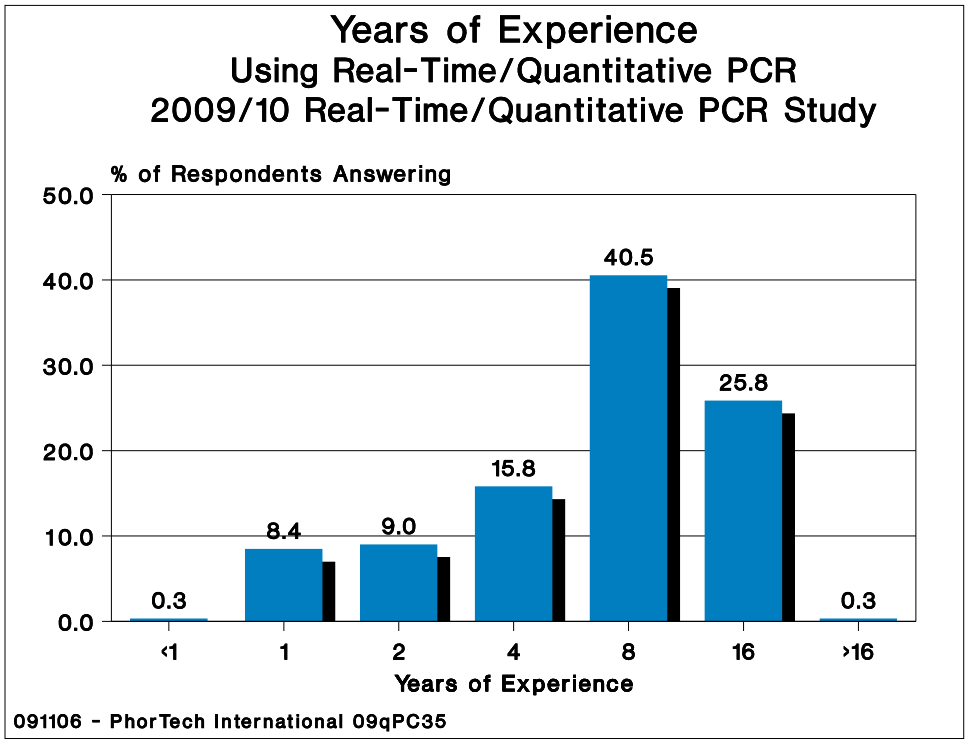
Rationale:

This query measures the familiarity of our respondents, in terms of the years of studying the topic of this survey, real-time PCR. We expect to have a wide range of responses varying from just a few to more than 10 years of experience with this technique.

Results:

The 368 researchers currently using real-time PCR have from 0.4 to a maximum of 20 years of experience or a combined total of 2,232 years using this technique. Despite the wide range of individual responses, varying from 0 years (by those just starting in this area within the last 12 months) to a maximum of 18 years, the mean and median values are relatively close, found to be 4.2 years and 4 years, respectively. The mode, or most common response, is 5.

The distribution of these responses is shown in the following vertical bar graph.



This pattern peaks with 40.5% of respondents reporting from 5 to 8 years working with real-time/quantitative PCR which includes the 6.1 year mean as well as the nearly identical 5 year median and 10 year mode.

Analysis:

From these results, we conclude that respondents to this survey represent a broad range based on years of experience including both the beginner just starting work in this area, to veteran researchers who have been working with real-time PCR since its inception. In fact, since the first real-time PCR platforms were introduced in the early 1990s, we wonder whether some of these might have included their experience with amplification in general.

However, we do believe that the considerable years of experience with real-time PCR makes these respondents well qualified to provide valuable insight when answering the questions on this survey.

X. The Questionnaire

Real-Time/Quantitative PCR Instrumentation & Reagent Study

Start

Please enter the User ID and password from your invitation email below.

User ID:

Password:

Next

Real-Time/Quantitative PCR Instrumentation & Reagent Study

intro

Thank you for taking time to answer our survey questionnaire. This survey is for researchers either currently utilizing real-time/quantitative PCR in their work or planning to start using this in the near future. We estimate that completing this survey will take you 12 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 T shirt with the message "When it comes to real-time PCR, my opinion counts" (in M, L, or XL). The specially commissioned graphic is shown at left.

Or, you could select an Inova brilliant LED keychain microlight which has recently been improved. These now boast visibility up to 1 mile, 4 different functions including a strobe mode, an impact and water-resistant case, and yet, are still small enough to fit on your keychain. Alternatively you might select our quality laser pointer (a great gift item).

We also offer a $7 gift card to Barnes & Noble (good towards a book, CD or cup of coffee on us), a $7 e-mail gift certificate good for on-line purchases at Amazon.com or a Starbucks gift card good for one pound of coffee (house blend) which can be used on-line or at your local coffee shop. We are also offering once again to send you a beautiful new 5 Euro banknote or you can request that we send a $7 contribution in your name to Habitat for Humanity instead of a personal gift.

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

Q0

First, tell us a little about yourself.

In which of the following geographic regions of the world are you currently living and working?

Select one: 6

Next

0% 100%

Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q1

Do you currently use real-time PCR in your work, or are you planning to start such work? *(Best SINGLE answer, please).*

- Yes, I currently use real-time PCR in my work
- No, I do not currently use real-time PCR , but I plan to start work in this area.
- No, I do not currently use real-time PCR and I have no plans to do so in the future.

Next

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Real-Time/Quantitative PCR Instrumentation & Reagent Study

QA

Later on in this survey, we will ask you how much some real-time PCR systems and reagents cost. Which currency would you like to use to describe these costs? *(Please specify the currency from the pull-down list).*

The currency I will use for this survey will be: Select currency: 6

Next

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Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q2

How are you involved (either personally or as a member of a group) in the purchase of real-time PCR instruments (or similar) products for your organization? *(Please check ALL that apply).*

- initiate/determine need for new instrument purchase
- determine necessary instrument specifications
- evaluate/select preferred instrument brand/model
- approve/authorize purchase
- other
- no involvement

Next

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Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q2a

How would you describe your organization? *(Best SINGLE answer, please).*

- academia
- hospital/medical center
- biotechnology/pharmaceutical industry
- clinical diagnostic laboratory
- government agency
- private non-profit research foundation
- other (please specify):

Next

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Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q3

Please estimate your overall level of satisfaction with your current real-time PCR system, using a scale from one to ten, where a '1' would mean very dissatisfied and a '10' indicates very satisfied.

	Level of Satisfaction									
	Dis-satisfied 1	2	3	4	5	6	7	8	9	Very satisfied 10
Current Real-Time PCR System										

Next

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Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q4

You can answer the following questions based upon your own personal use of real-time PCR 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

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Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q6

You indicated that you will be describing real-time PCR usage based upon the combined usage of your laboratory.

Please let us know how many researchers in your laboratory are currently working with real-time PCR and covered by your laboratory's budget.

researchers in the lab currently working with real-time PCR

Next

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Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q10

Based upon your [SCRIPT] work, why do you use real-time PCR in your research? *(Select ALL that apply).*

- analysis of disease genes
- biomarker discovery, validation and/or screening
- clinical trials
- confirmation of DNA microarray hits
- confirmation of RNAi results
- disease association studies
- expression profiling
- pharmacogenomics
- secondary screening (e.g. lead optimization)
- SNP discovery, validation or screening
- target identification
- target validation
- toxicogenomics
- other (please specifiy):

Q11

What best describes [SCRIPT] area of research? *(Best SINGLE answer, please).*

- basic research
- clinical research or translational research
- drug discovery/drug development
- agriculture
- clinical testing or diagnostics
- forensic/human identity testing
- food/beverage

Next

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Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q12

The next questions pertain to your [SCRIPT] usage of real time PCR using fluorescent detection (not other semi-quantitative techniques).

Based upon your [SCRIPT] usage, which applications currently utilize real time PCR? *(Check ALL that apply)*

- basic quantification studies (e.g copy number)
- gene expression
- genotyping
- pathogen detection/quantification
- other (please describe):

Q12a

And, what chemistries are you currently using for this work? *(Please check ALL that apply)*

- Molecular Beacons
- Scorpions
- SYBR Green
- TaqMan probes

Next

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Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q12b

What percent of your real-time quantitative PCR reactions are multiplexed (measure more than one PCR product in a single tube/well using different colors)? *(Please count each well of a 96-well plate as an individual reaction, or 96 reactions per plate.*

[ ] % of reactions multiplexed, on average *(Please insert a "0" if multiplexing is not used)*

If used, how many different PCR products per well do you typically detect?

[ ]

Next

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Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q12c

What type(s) of analysis are you performing on your real-time PCR results? *(Please check ALL that apply).*

- Standard curve
- Relative quantitation
- Alleleic discrimination with probe
- High resolution melt (HRM)
- Other: *(Please specify)*

Next

0% 100%

Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q22

You indicated that you don't currently use high resolution melt analysis (HRM). Are you aware of this method of analysis, and do you have any plans to start using HRM in the near future?

- Yes, I know about HRM analysis and PLAN to start using this method.
- Yes, I know about HRM analysis but HAVE NO PLANS to start using this in the near future.
- No, I am not aware of HRM analysis.

Next

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Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q23

Considering your [SCRIPT] usage, how many biological replicates and technical replicates are you typically using in each real-time PCR experiment? *(Please enter a '0' if not using.)*

_____ biological replicates per experiment and _____ technical replicates

Q24

How do you expect your usage of biological replicates to change in the near future?

Q25

How do you expect your usage of technical replicates to change in the near future?

Next

0% 100%

Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q13

Now, we would like to ask a few questions about real-time PCR instrumentation.

Please list the brand(s) and model(s) together with the plate/tube format used most frequently, number of instruments, year acquired, approximate cost per instrument (in [SCRIPT]), and number of users for all platforms used for real time/quantitative PCR that you own or have access to, starting with the most recent. *(Please take your time and fill out the table as completely and accurately as possible).*

Please list most recent first

Brand	Model	Plate/Tube Format	# of Insts	Year Acquired	Approx. Cost	# Users
		Select: 6		Select: 6		
		Select: 6		Select: 6		
		Select: 6		Select: 6		

Next

0% 100%

Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q14

Why did you choose the most recently aquired real-time/quantitative PCR platform?

Brand & Model: [SCRIPT] <s

Because:

Next

0% 100%

Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q19

Would you or your lab make that same decision again if you purchased another system today?

- Yes, same brand and model
- No, same brand but this model _____ instead.
- No, a different brand _____ and model _____ instead.

What is the reason for your answer?

Next

0% 100%

Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q20

Are you or your lab planning to purchase a real-time quantitative PCR system within the next year?

} Yes, } No

If yes, what price range are you or your PI willing to pay for this system?

because:

Q51

Please list any improvements you would like to see in real-time/quantitative PCR instrumentation.

Next

0% 100%

Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q15

Next are a few questions about your real-time PCR throughput.

Based on your [SCRIPT] usage, how many real-time PCR runs are performed each week? On average, how many reactions per run does this include? What is your typical reaction volume in ul? *(Please count each well of a plate as an individual reaction, i.e. a 96-well plate represents 96 reactions per plate)*

Real-Time Runs/Week	Reactions/Run	Reaction Volume (in ul)

Next

0% 100%

Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q7

For each sample source and origin, how many reactions per run do you perform , and how many runs do you perform per week? *(Based on your* [SCRIPT] *usage of real-time PCR/quantitative PCR work only).*

Source	Origin	Reactions/Run	Runs/Week
Select: 6	Select: 6		
Select: 6	Select: 6		
Select: 6	Select: 6		

Q8

What percent change do you foresee in the number of reactions you will run using real-time/quantitative PCR in the next 12 months? *(Please enter an estimate and indicate if positive or negative.)*

% Increase Decrease No change

Next

0% 100%

Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q32

In the next section, we will ask you about real-time/quantitative PCR platform manufacturers you are familiar with and how you would evaluate their performance.

From the alphabetic list of real-time/quantitative PCR platform manufacturers below, please indicate the companies you recognize. For example, you use their products on a regular basis or are familiar with their offerings. *(Please select ALL that apply. You may identify one additional company of your choice).*

- Applied Biosystems
- Bio-Rad Laboratories/MJ Research
- Cepheid
- Corbett Research
- Eppendorf
- PerkinElmer/PE Biosystems
- Roche
- Stratagene (Agilent)
- Other *(Please specify)*:

Next

0% 100%

Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q34

From the following list, please rate the importance of each of the following factors in your decision to select a real-time/quantitative platform. *(Using a 10 point scale, where '1' means not at all important and a '10' means very important. You may use a rating value more than once).*

	Not at all important 1	2	3	4	5	6	7	8	9	Very important 10
Ease of use										
Colleague's recommendation										
Previous experience										
Best technical/application support										
Consistent quality										
Multiplexing capability										
Reputation of supplier										
Value for money										
Reliable performance										

Next

0% 100%

Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q44

From the alphabetic pull-down lists of real-time/quantitive PCR platform manufacturers, please mark the one you would rank highest in each of the following areas you considered important. *(You may choose a manufacturer more than once).*

	Highest Ranking Manufacturer
Value for money	Select supplier: 6
Multiplexing capability	Select supplier: 6
Colleague's recommendation	Select supplier: 6
Previous experience	Select supplier: 6
Ease of use	Select supplier: 6
Best technical/application support	Select supplier: 6
Reliable performance	Select supplier: 6
Consistent quality	Select supplier: 6
Reputation of supplier	Select supplier: 6

Next

0% 100%

Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q18

The next series of questions examines your real-time/quantitative PCR reagent usage.

Do you feel more comfortable describing how much you spend for qPCR reagents per year, or alternatively, in terms of the price per reaction?

- the cost of qPCR reagents per year
- the price per qPCR reaction

Next

0% 100%

Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q18a

Considering your [SCRIPT] usage, how much do you spend for real-time/quantitative PCR reagents in a typical year? *(Please specify the amount (in [SCRIPT])*

_____ per year in [SCRIPT], on average

Next

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Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q18b

Considering your [SCRIPT] usage, how much do you typically spend per reaction for real-time/quantitative PCR reagents? *(Please specify the amount (in [SCRIPT])*

_____ per reaction in [SCRIPT], on average

Next

0% 100%

Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q9

Considering your [SCRIPT] usage, which format(s) of reagents do you prefer to purchase? *(Please check ALL that apply).*

- Individual reagents
- Kits
- Master mixes

Q16

From the following list, please select ALL thermostable enzyme suppliers that you have used in the past twelve months? *(Please select ALL that apply)*.

- AbGene (Thermo)
- Ambion (Applied Biosystems)
- Amersham Biosciences
- Applied Biosystems
- BD Clontech
- Bio-Rad/MJ
- Biogene
- Bioline
- BioPioneer
- Chemicon
- Continental/CLP
- Denville
- EmbiTec
- Epicentre
- Eppendorf
- Eurogentec
- Expression Technologies
- Fermentas
- Fisher Scientific (Thermo)
- Finnzymes
- Gene Choice
- Invitrogen
- MWG-Biotech
- New England Biolabs
- Novagen (EMB Biosciences)
- Promega
- Qbiogene
- Qiagen
- Roche Applied Science
- SABiosciences (formerly SuperArray)
- Sigma-Aldrich
- Stratagene
- Stressgen Bioreagents
- TaKaRa
- Toyobo
- US Biochemicals
- Other:
- None of these

Next

0% 100%

Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q17

The following questions pertain to your [SCRIPT] usage of real-time/quantitative PCR reagents.

Please let us know the major suppliers, format, and percent of your budget spent for real-time/quantitative PCR reagents. Beginning with the largest budget spend, please carefully complete each row of the table. How do you expect this to change in the coming 12 months? Continue until you have filled the table or accounted for your entire budget.

	Supplier	Format	% qPCR Rgt Budget	% Change in 1 Year
a.	Select Supplier	Select Format		
b.	Select Supplier	Select Format		
c.	Select Supplier	Select Format		
d.	Select Supplier	Select Format		
e.	Select Supplier	Select Format		

Next

0% 100%

Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q37

Let's finish up with a few questions about yourself and your work.

Do you work in a core facility that provides real-time PCR services? *(Best SINGLE answer, please).*

- Yes, I work in a core facility that provides these services.
- Yes, but I work in a core facility that does NOT provide these services.
- No, I don't work in a core facility.

Q37a

Where are your real-time PCR experiments run? *(Please check ALL that apply).*

- In my lab, a core facility that provides these services.
- In another core facility that provides these services.
- In our own laboratory or a colleague's laboratory
- In both a core facility and in our own/colleague's laboratory

Q30

Please indicate below your primary scientific discipline. *(Best SINGLE answer, please).*

Select one: 6

Q33

What most closely fits your job description? *(Best SINGLE answer, please).*

Select one: 6

Q35

How long have you been using real-time/quantitative PCR?

years

Q36

How willing would you say you are to adopt a new approach to real-time PCR in your work? *(Please answer using a scale from 1 to 10, where 1 means 'not willing' and 10 means 'very willing').*

	Not willing								Very willing	
	1	2	3	4	5	6	7	8	9	10
Adopt new approach for real-time PCR										

Next

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Real-Time/Quantitative PCR Instrumentation & Reagent Study

intro6a

Almost done! This would be a good place to note any final comments you may wish to make about this survey and real-time PCR systems in general.

Next

0% 100%

Real-Time/Quantitative PCR Instrumentation & Reagent Study

prize

Congratulations! You have successfully completed this market research project. Please go ahead and select your choice of *free* gift from the pull-down list below:

Select one: 6

who

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

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

Next

0% 100%

Real-Time/Quantitative PCR Instrumentation & Reagent Study

intro8

Thank you again for participating. We will send out the gifts at the close of this project - in about 6-8 weeks time.

We look forward to inviting you to participate in a future survey research project.

Best regards,

The PhorTech Team

0% 100%

Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q99

Sorry, but you must be working in this area (or have plans to start work in this area) to participate. We look forward to inviting you to another survey in the future.

0% 100%

Real-Time/Quantitative PCR Instrumentation & Reagent Study

Q100

Sorry, but we have filled the quotas for respondents with your background. We look forward to inviting you to a future bioresearch survey.

The PhorTech Team

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