

EXECUTIVE SUMMARY

REPORT #13-004
May 2013

The Market for Primary Cells & Stem Cell-Derived Cells: Current and Future Opportunities

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Free data set through May 17, 2013 with purchase of the report. Regularly a \$1,200 value.

OVERVIEW

With barriers to entry low, the number of companies supplying high quality human tissue for research continues to rise. At the same time, the range of cell types available has also expanded to include more specialized normal cell types as well as cells isolated from non-normal or disease-state tissues. Many primary cell suppliers have also commercialized various types of multipotent stem cells, also called adult stem cells. Like other primary cells, adult stem cells have a finite number of population doublings in vitro. Depending on the cell type used, primary cells and adult stem cells are used in a wide variety of research applications: from basic or discovery research, to drug discovery and development; from ADME/Toxicology screening to regenerative medicine and in vitro tissue models.

In *The Market for Primary Cells & Stem Cell-Derived Cells: Current and Future Opportunities*, BioInformatics LLC takes the pulse of this dynamic market. This study seeks to identify where primary cells and primary cell suppliers fit in the universe of cells used in in vitro systems, whether or not the use of primary cells is increasing or decreasing, what cell types are used most often, how satisfied scientists are with commercially available primary cells, and what is the market size and anticipated growth rate.

Stem Cell-Derived Differentiated Cells

Pluripotent stem cells—those capable of differentiating into any cell type—have captured the imagination of scientists across many disciplines. As cell culture know-how has evolved, better and more reproducible conditions for maintaining these cells in their pluripotent state have been developed. Concomitant with optimizing cell culture conditions to maintain pluripotency have been efforts to optimize the in vitro environment to induce differentiation to create populations of highly pure and rigorously characterized differentiated cell types, including neurons, cardiomyocytes and hepatocytes.

Because terminally differentiated cells can be used in many applications where primary cells are currently employed and because the concept is relatively new, suppliers are asking multiple questions about this technology. Are researchers responding to the availability of this new source of cells? How many? What cell types are important? Where are they obtained? How will the use of primary cells be affected by the availability of stem cell-derived differentiated cell types? *The Market for Primary Cells & Stem Cell-Derived Cells: Current and Future Opportunities* profiles this emerging market and the role of commercial suppliers in this area.

STUDY OBJECTIVES

This study of the academic and pharma/biotech sectors in North America and Europe will provide an analysis of the market for primary cells and an assessment of the brand equity for the leading companies who serve this market. This report will also describe the emerging market for stem cell-derived differentiated cells—a potential threat (or opportunity) for this market.

OBJECTIVES:

This study will explore the following market analytics:

- The number of researchers who currently or plan to use primary cells in their research
- Proportion of researchers/labs who purchase primary cells
- Annual lab budget associated with primary cell purchase
- Market size, in terms of revenue, based on 2012
- Supplier share in terms of revenue
- Market growth in terms of revenue in the next 12 months (through 2013)

This study will explore the following product analytics:

- The different types of cells used in life science research
- Motivation for primary cell use
- The motivation for—or barriers preventing—the purchase of primary cells
- The top primary cell types used
- The leading suppliers of primary cells
- Customer satisfaction with primary cell product offerings
- The emerging commercial market for stem cell-derived differentiated cells by customer type, motivation for use, cell types, leading suppliers, and estimated budget

This study will explore the following brand analytics:

- The Brand Share Index for leading primary cell suppliers
- Customer loyalty and likelihood to reorder

REPORT HIGHLIGHTS

Section 1: Analysis and Interpretation of Survey Results

- Primary Cell Usage
 - Types of cells used in research
 - Future plans to use primary cells
 - Plans to evaluate the use of differentiated or progenitor cells derived from ECSs
 - Percentage of mammalian cell culture performed by cell type
 - Type of research for which primary cells are most often used
 - Types of animal species from which cells are used
 - Types of normal primary cells currently used in research
 - Types of diseased tissue from which primary cells are derived
 - Sources of primary cell types—including adult stem cells: isolated and established in the lab, obtained from a colleague or purchased from a commercial supplier
- Experience with Primary Cell Suppliers
 - Reasons NOT purchased from a commercial supplier
 - Reasons purchases were made from commercial suppliers
 - Format in which cells are purchased
 - Average liters of medias used to culture primary cells per month
 - Expected change in use of primary cells from commercial suppliers over 12 months
 - Primary cell BRAND used
 - Primary cell BRAND used most often
 - Percentage of cultures grown using cell-specific medium from same brand from whom primary cell was purchased
- Brand Experience with Primary Cell Suppliers
 - Satisfaction with primary cells by brand and by feature
 - Overall satisfaction with primary cells by brand
 - Likelihood to repurchase from same brand
 - Likelihood to recommend preferred brand
 - Familiarity with brands
 - Satisfaction with performance by brand
 - Acceptability of pricing by brand
 - Ease of purchase by brand
- Helpfulness of customer service and technical support by brand
- Lab Budgets for Primary Cells
 - Lab's budget for primary cells and media to culture primary cells in 2012 and projected 2013
 - Percentage of 2012 budget for primary cells and media spent by brand
- Stem-Cell Derived Differentiated Cells
 - Length of time stem cell-derived differentiated cells have been used
 - Type of research where stem cell-derived differentiated cells are most often used
 - Reason to use/plan-to-use stem cell-derived differentiated cells
 - Animal species from which differentiated cells are derived
 - Types of stem cell-derived differentiated cell types used/plan-to-use
 - Average number of liters of media used to culture stem cell-derived differentiated cells
 - Expected changes in use of stem cell-derived differentiated cells
 - Sources for differentiated stem cell-derived cell types: the lab, from colleagues or from commercial suppliers
 - Brands of stem cell-derived differentiated cell products used
 - Format stem cell-derived differentiated cells are purchased in
 - 2012 and 2013 (projected) lab budgets for stem cell-derived differentiated cells and media to culture these cells

Section 2: Methodology & Demographics

- Methodology - Questionnaire Overview
- Methodology - Questionnaire Design
- Demographics
- Questionnaire

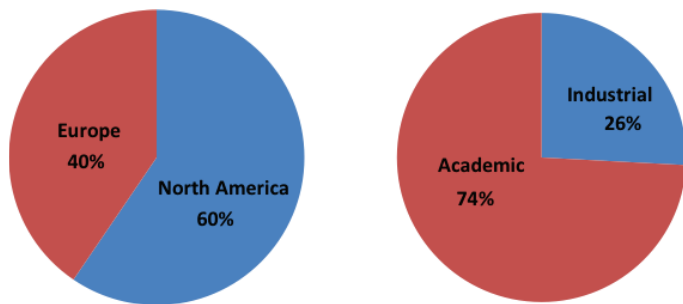
Section 3: Appendices

- Appendix A: Additional Insights
- Appendix B: Other Publications
- Appendix C: About BioInformatics, LLC
- Appendix D: Our Valued Clients

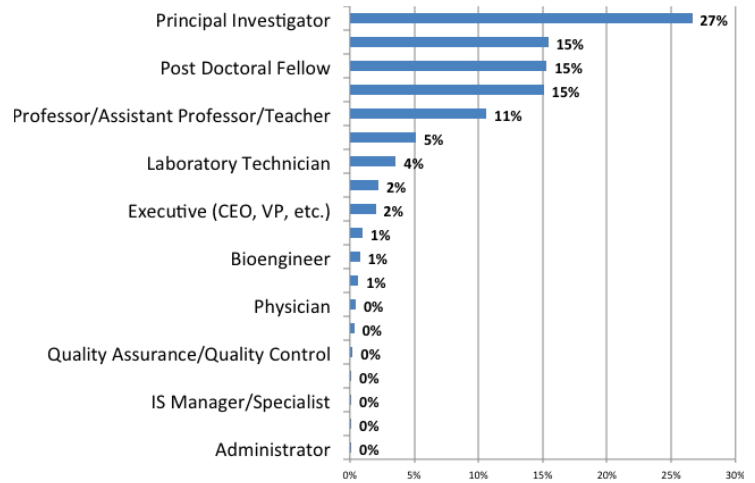
METHODOLOGY

The Market for Primary Cells & Stem-Cell Derived Cells: Current and Future Opportunities, is based on responses to a 43-question online survey for life scientists conducted by BioInformatics, LLC (Arlington, Virginia, USA). 894 life scientists participated in the survey between March 20 and April 9, 2013.

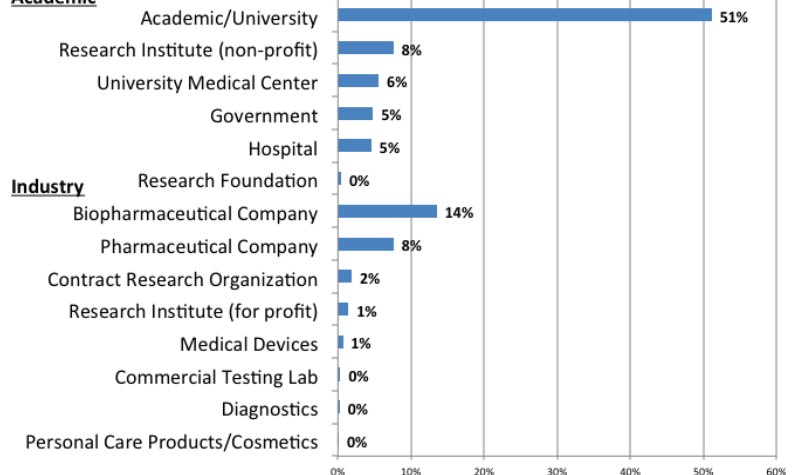
The electronic questionnaire was fielded to registered members of **The Science Advisory Board®**. BioInformatics sponsors The Science Advisory Board, an online community of over 72,000 scientists, physicians and healthcare professionals from around the world. The Science Advisory Board is divided into two panels (Research and Clinical) and “convenes” regularly via Internet (scienceboard.net) to voice their opinions on a wide variety of issues relating to biomedical research and clinical technologies. These experts — representing all aspects of the life sciences and medicine — have agreed to make themselves available to participate in our online research activities. The Science Advisory Board members who participated in this study were drawn from the Board’s Research Panel.



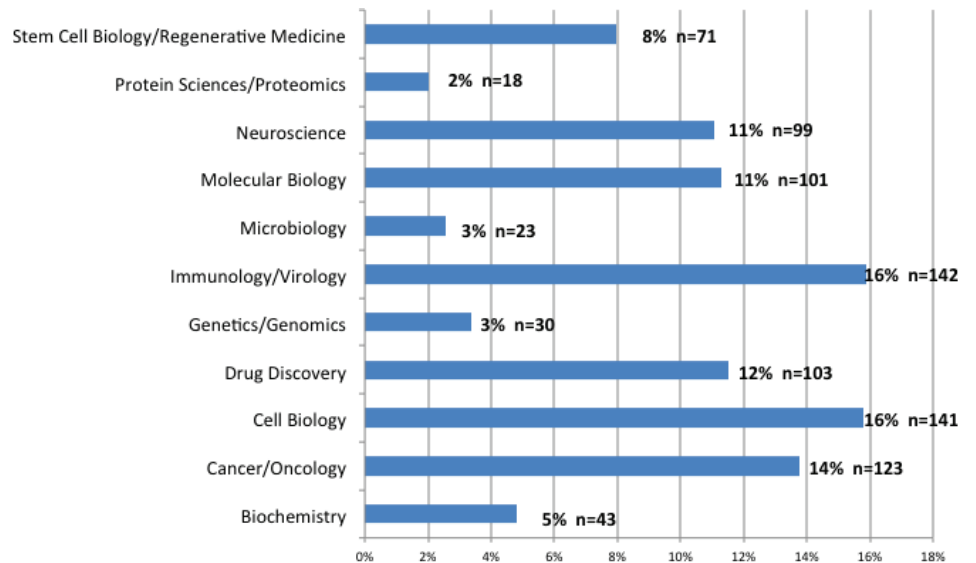
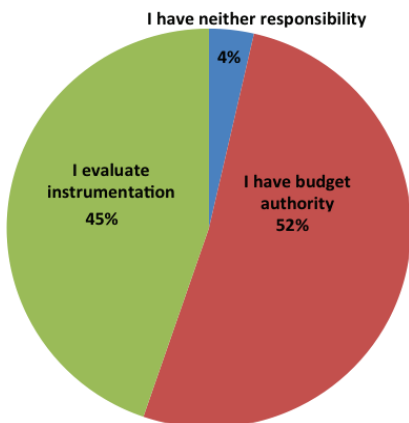
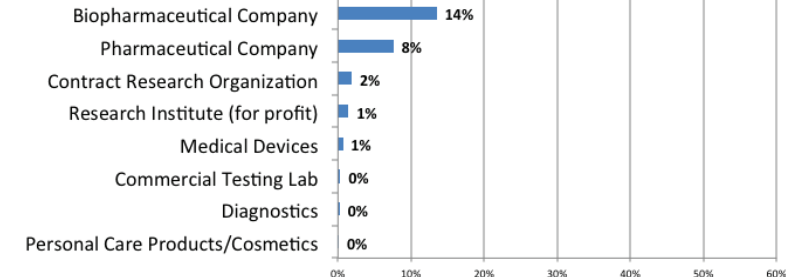
DEMOGRAPHICS



Academic

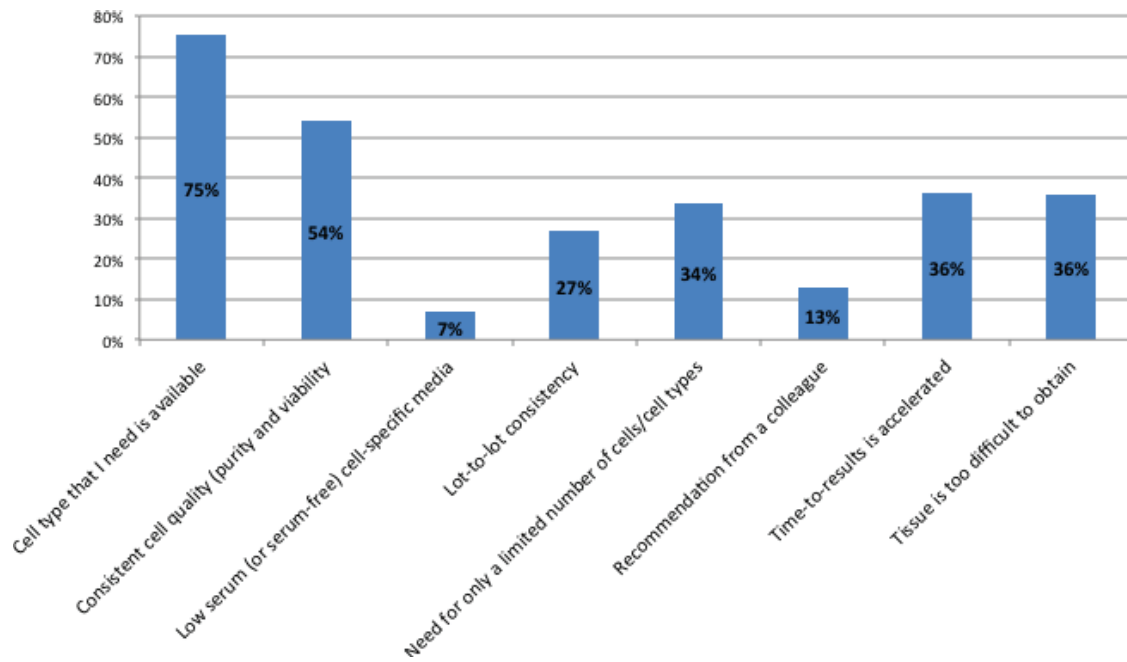


Industry

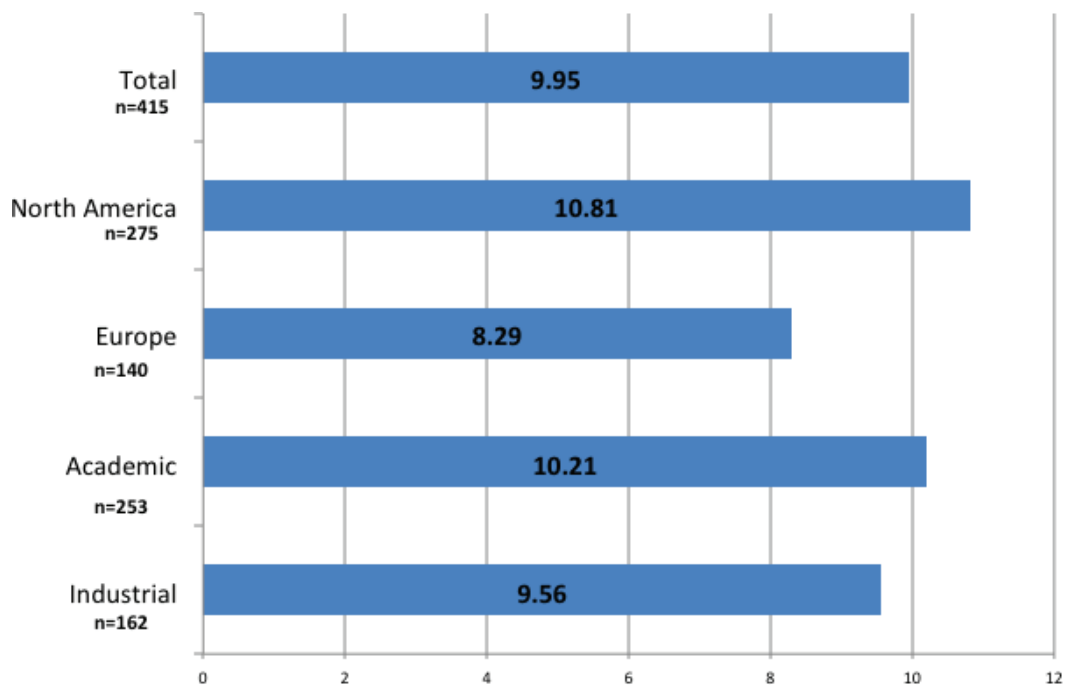


KEY FINDINGS

Why Purchase Primary Cells from Commercial Suppliers



Average Liters Per Month Used to Culture Primary Cells/Month



RECENT REPORTS

#13-002	Enhancing the Customer Experience: Insights and Life Science Supplier Rankings	March 2013	206 Pages
#13-001	Best Practices for Advertising to Life Scientists: Online and in Print	February 2013	85 Pages
#12-005	The Market for Stem Cell Research Products: Current and Future Opportunities	November 2012	122 Pages
#12-004	Mobile Marketing to Life Scientists	August 2012	133 Pages
#12-002	Life Science Sales Reps: A Guide to Best Practices in 2012	April 2012	202 Pages
#12-001	The 2012 Market for Antibodies	March 2012	116 Pages
#11-004	Maximize Your Share of the Life Science Instrumentation Market	June 2011	242 Pages
#11-003	The Global Outlook for Next Generation Sequencing: Usage, Platform Drivers & Workflow	October 2011	165 Pages
#11-002	Customer Service and Technical Support for Life Science Products: Customer Preferences	April 2011	200 Pages
#11-001	eMarketing to Life Scientists: Raise Your Voice Above the Noise	February 2011	172 Pages
#10-006	RNAi: Product Usage and Brand Assessment	October 2010	175 Pages
#10-005	Genomic Technologies: Market Insights for Life Science Suppliers	December 2010	193 Pages

WHY CHOOSE OUR REPORTS?

Sources of Independent, Unbiased Research

Unlike reports from other firms that are based on an analyst's subjective summary of information from publicly available sources, our reports are based on the results of detailed surveys of hundreds—even thousands—of scientific and medical professionals who buy your products.

Developed by a Team of Experts

Our questionnaires are developed by a multi-disciplinary team of scientists, industry veterans and market research experts with years of experience. These professionals understand that survey questions need to be asked in a way that ensures the answers will directly address the business challenges you face. Once the survey data is collected, this same team creates a unique report that presents the reader with a thorough understanding of the topic and the scientific and business implications of the results based on sophisticated statistical analytics.

Custom Analysis & Research Available

If you'd like to delve deeper into the data from a study, we can always perform custom cross-tabulations or other analysis on your behalf. We can even pose follow-up questions to respondents who answered in a particular way or conduct a custom study to extend your knowledge.

Carefully Selected Survey Participants

When others promote results from their online surveys, they fail to mention the uncontrolled nature of their broadcast email invitations. To provide you with the most valid and accurate results possible, the respondents to our surveys are members of our unique online panel—**The Science Advisory Board®**—which consists of almost 72,000 verified life science and biomedical professionals who have agreed to take part in our surveys, focus groups and other market research activities. These respondents are carefully selected based on their professional qualifications, market segments and geographic regions—we can even select them based on the products they use and their preferred suppliers.

Complimentary Consulting Provided

With your purchase, we offer one *free* hour of consultation with our talented team of scientific and business analysts who created the report. During this consultation, we can answer any questions you may have about the survey results and what we believe to be the significant trends affecting the market.

Invest in the most direct source of information from the scientists who buy your products, and the expert team that has been monitoring your clients since 1994.

ABOUT BIOINFORMATICS LLC

Since our inception in 1994, BioInformatics has provided critical market intelligence to leading companies serving the life science, medical device and pharmaceutical industries. We support clients across the entire market spectrum—from scientific research to diagnostics and therapeutics—providing high-level management with market insights from gene to drug.

Our multi-disciplinary team of scientific experts and business analysts creates value for our clients by combining extensive industry knowledge and experience. We offer a variety of products and services that enable executives to see themselves, their market and their competitors through the eyes of the most important information source of all—customers. We can precisely meet the needs of our clients through the most appropriate mix of research methodologies, including:

- Online Surveys
- Focus Groups
- In-depth Interviews

Our strength lies in our ability to integrate our understanding of science and medicine with cutting-edge market research techniques. As one of the first firms to recognize how the World Wide Web has transformed market research, BioInformatics formed **The Science Advisory Board®**. Launched in 1997, this global community currently consists of over 72,000 life science researchers, physicians and biomedical professionals who convene regularly via the Web to voice their opinions on a wide variety of issues relating to biomedical research and clinical technologies. Clients tap into this panel of experts and receive answers to their critical marketing questions in days, rather than weeks. In addition to providing real-time insights into the perceptions of the market, posing questions to The Science Advisory Board offers substantial cost savings over gathering information via traditional market research techniques.

BioInformatics offers both published reports and custom research services. Published reports allow marketing professionals to share in the results of broad-based market studies that provide access to high quality research at an affordable price. Our custom research is tailored to the specific needs of the company's executive management. For more information about BioInformatics' product and service offerings, please visit our Website at www.gene2drug.com, call **703.778.3080 x13** or email m.follin@gene2drug.com.

OUR VALUED CLIENTS

Biotechnology/Life Science

AbCam
AbD Serotec
AB SCIEX
Accelrys
Adnavance Technologies
Affymetrix
Agilent Technologies
Alcott Chromatography
Alfa Wassermann
Ambion
American Type Culture Collection
Anachem
Apple Computer
Applied Precision
ART Advanced Research Technologies
Asterand
Axxora
Barr Laboratories
BD Biosciences
Beckman Coulter
BIA Separations
Biocept
BioGenex
Bioneer
Bio-Rad Laboratories
Biotage
Bio-Tek Instruments
Blue Heron Biotechnology
BTF - Precise Microbiology
Carl Zeiss
Cell Signaling Technology
Cepheid
Charles River Laboratories
CIS bio
CLC bio
Clontech Laboratories
Corning

CyBio
DAKO
Dharmacon
DNAStar
DxS
eBIOINFORMATICS
Edge Biosystems
Eksigent Technologies
EMD Millipore
Entelechon
Epigenomics
Epitomics
Eppendorf
Eurogentec
Expression Analysis
Expression Pathology
Fermentas
Fine Science Tools
Fluidigm
Fluorous Technologies
Fujirebio Diagnostics
GE Healthcare
Gene Codes
Gene Therapy Systems
Genomic Solutions
Gen-Probe
GenVault Corporation
Genzyme
Glycominds
Helicos BioSciences
Hitachi Instruments
Hybrigenics
IBM Life Sciences
Illumina
Instron
Integrated DNA Technologies
Interagon
Irvine Scientific
Kirkegaard & Perry Laboratories
Kodak Scientific Imaging

Leica Microsystems
LI-COR
Life Technologies
Luminex
Macherey-Nagel
MDL Information Systems
Mettler-Toledo AutoChem
MiraiBio
Mo Bio Laboratories
Molecular Devices
MP Biomedicals
New England Biolabs
Nonlinear Dynamics
Novozymes
NuGEN Technologies
OligoEngine
OpGen
Osmonics
Ovid Technologies
Ozyme
Pall Life Sciences
PamGene
Pel-Freez
Percival Scientific
PerkinElmer Life Sciences
PetaGen
Photometrics
Photon Technology International
PhyNexus
Plexagen Diagnostics
Post Genome Institute
PPD
Promega
Protein Forest
Proteome Systems
Qbiogene
QIAGEN
R & D Systems
Ribomed Biotechnologies
Sachem

Sandia National Laboratories
Sarstedt
Schott Nexterion
Sigma-Aldrich
SomaLogic
Source Precision Medicine
Strand Genomics
Stratagene
SurModics
Takara Mirus Bio
Talent S.r.l.
Targeted Genetics
Tecan
TEF LABS
The Jackson Laboratory
Thermo Fisher Scientific
Thomas Scientific
TissueInformatics
Transgenomic
Universal Imaging
UVP
Virginia Bioinformatics Institute
Vision BioSystems
VWR International
Waters

Medical Diagnostics

Applied Imaging
Cholestech
Dade Behring
Diametrics Medical
Guidant
Hewlett-Packard Medical Products
LifeScan
Ortho-Clinical Diagnostics
Radiometer America
Tektronix
Varian

Pharmaceuticals

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Allergan
Amgen
AstraZeneca
Aventis
Baxter Healthcare
Bayer
Boehringer Ingelheim Pharmaceuticals
Cardinal Health
Centocor
Hoechst Marion Roussel
Janssen Pharmaceuticals
Merck
Novartis Pharmaceuticals
Novo Nordisk Pharmaceuticals
Pfizer
Schering-Plough

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Gerson Lehrman Group
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