

Table of Contents



Over 1,000 corporations in 70 countries are relying on our market intelligence, expert analysis, and strategic insight, critical to the development and implementation of effective business, R&D and marketing programs.

www.LeadingMarketResearch.com

www.VPGMarketResearch.com

reports@vpgcorp.com

+1 212 564 2838

Table of Contents

I. Introduction

II. Major Product Development Opportunities

- A. Instrumentation
- B. Reagent Kits and Test Systems/panels
- C. Computers, Software and Automation
- D. Auxiliary Products

III. Design Criteria for Decentralized Testing Products

IV. Alternative Market Penetration Strategies

- A. Internal Development
- B. Collaborative Arrangements
- C. University Contracts
- D. Distribution Strategies for Decentralized Testing Markets

V. Potential Market Entry Barriers and Risks

- A. Market Maturity
- B. Cost Containment
- C. Competition
- D. Technological Edge and Limitations
- E. Patent Protection
- F. Regulatory Constraints
- G. Decentralized Testing Market Challenges

VI. Worldwide Market and Technology Review

A. DNA Sequencing

1. Introduction
2. Sequencing Methods
3. Autoradiography
4. The Human Genome Project
5. Sequencing Automation
6. Image Scanners
7. Fluorescent Detection
8. Gene Profiling
9. Gene Expression
10. Polymorphism Screening
11. Protein Interaction Networks

Table of Contents (continued)

B. DNA and RNA Probe Technologies

1. Basic Principles
2. Probe Preparation
3. The DNA Probe Test
4. Test Formats
5. Labeling Techniques
6. Amplification Methods

C. Detection Technologies

1. Radioactive Methods
2. Non-Isotopic Methods

D. Instrumentation

Review of latest analyzers from Abbott, Beckman Coulter/Danaher, Becton Dickinson, bioMerieux, Bio-Rad, Cepheid, Hologic, Qiagen, Roche, Siemens Healthineers, and other suppliers.

E. Biochips: Genosensors, Microarrays, Labs-on-the-Chip

- Liquid Transportation and Mixing
- Separation
- Reaction
- Detection

F. Pharmacogenomics

G. Major Applications

1. Cancer Testing

- a. Overview
- b. Major Cancer Types
 - Prostate
 - Lung
 - Colon and Rectum
 - Breast
 - Skin
 - Uterine
 - Leukemia
 - Oral
- c. Oncogenes
 - Abl/abl-bcr
 - AIB1
 - BCL-2
 - BRCA1
 - CD44
 - C-fos
 - C-myb
 - C-myc

Table of Contents (continued)

- CYP17
- Erb-B
- HPC1
- N-myc
- P40
- P51
- P53
- PIK3CA
- PTI-1
- Ras
- Reg
- Sis
- Src

2. Genetic Diseases

- a. Overview
- b. Nucleic Acid Amplification
- c. Chromosome Imaging
- d. Genomics Technologies
- e. Proteomics Technologies
- f. Current Pharmacogenomic Tests
- g. Future Pharmacogenomic Testing
- h. Major Diseases
 - Achondroplasia
 - Autosomal Dominant Polycystic Kidney Disease
 - Cancer
 - Cosmetogenomics
 - Cystic Fibrosis
 - Down's Syndrome
 - Duchenne and Becker Muscular Dystrophy
 - Factor V (Leiden)
 - Factor IX Deficiency
 - Fragile X Syndrome
 - Heart Disease
 - Hemochromatosis
 - Hemophilia
 - Huntington's Disease
 - Maternal-Fetal Incompatibility
 - Multiple Endocrine Neoplasia
 - Phenylketonuria (PKU)
 - Polycystic Kidney Disease (PKD)
 - Prenatal Screening
 - Retinitis Pigmentosa
 - Retinoblastoma
 - Sickle Cell Anemia
 - Spinal Muscular Atrophy
 - Vitamin B12 Metabolism
- i. Social Issues and Concerns

Table of Contents (continued)

- 3. Forensic Testing
 - a. Overview
 - b. Multilocus and Single Locus Probes
 - c. DNA Profile Data Banks
 - d. Judicial Implementation
 - e. Major Crime Categories
 - f. Factors Contributing to the DNA Probe Market Expansion
 - Technology Availability
 - Use of Hair as Evidence
 - g. Wildlife Forensics
- 4. Paternity Testing/HLA Typing
- 5. Other Applications
 - a. Disease Susceptibility Testing
 - b. Cardiovascular Diseases
 - c. Diabetes
 - d. Alzheimer's Disease
 - e. Periodontal Disease
 - f. Plasma Purification
 - g. Organ Transplantation
 - h. Water Contamination
 - i. Other
- H. Competing/Complementing Technologies
 - 1. Monoclonal Antibodies/Immunoassays
 - 2. RNA Probes
 - 3. Two-Dimensional Electrophoresis
 - 4. Flow Cytometry

VII. Country Market Analyses: Molecular Diagnostic Analyzers and Reagent Market Shares and Forecasts for 100 Tests--Volume and Sales Forecasts

Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, United Arab Emirates

VIII. Competitive Assessments

The report provides strategic assessments of over 40 leading molecular diagnostics market players and start-up companies with innovative technologies and products, including:

Abbott, Agilent Technologies, Beckman Coulter/Danaher, Becton Dickinson, bioMerieux, Bio-Rad, Cepheid, DiaSorin, Eiken Chemical, Enzo, Fujirebio, Grifols, Hologic, Illumina, LabCorp/Sequenom, Leica Biosystems, Myriad Genetics, Ortho-Clinical Diagnostics, Qiagen, Quest Diagnostics, Quidel, Roche, Shimadzu, Siemens Healthineers, Sierra Molecular, Takara Bio, Tecan Group, Thermo Fisher, Wako and others.

IX. Appendix: Major Universities and Research Centers Developing Innovative Molecular Diagnostic Technologies and Products