

# Future US Nucleic Acid Testing Market Outlook

<https://marketpublishers.com/r/U3D33C5E012EN.html>

Date: February 2012

Pages: 880

Price: US\$ 6,720.00 (Single User License)

ID: U3D33C5E012EN

## Abstracts

### Highlights

Comprehensive 880-page market segmentation analysis of the US NAT market.

Major issues pertaining to the US NAT laboratory practice, as well as key economic, regulatory, demographic, social and technological trends with significant market impact during the next ten years.

An extensive review of DNA probe and biochip technologies, test formats, detection methodologies, trends in testing automation and amplification methods.

Ten-year test volume and reagent sales forecasts for the following categories:

Infectious Diseases

Cancer

Forensic Testing

Genetic Diseases

Paternity Testing/HLA Typing

Review of testing methodologies and instrumentation technologies.

Feature comparison of automated and semiautomated analyzers.

Sales and market shares of leading suppliers.

Over 60 specific opportunities for NAT instruments, test systems, IT and auxiliary products.

Profiles of major suppliers, and emerging market entrants, including their sales, product portfolios, marketing tactics, technological know-how, new products in R&D, collaborative arrangements and business strategies.

Alternative market penetration strategies.

Potential market entry barriers and risks.

Business planning issues and concerns.

Contains 880 pages and 37 tables

## Contents

### INTRODUCTION

### WORLDWIDE MARKET AND TECHNOLOGY OVERVIEW

#### 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

#### B. DNA AND RNA PROBE TECHNOLOGY

1. Basic Principles
2. Probe Preparation
3. The DNA Probe Test
  - a. Sample Preparation
  - b. Hybridization
  - c. Separation
  - d. Detection/Measurement
4. Test Formats
  - a. Filter Hybridization
  - b. Southern Blot
  - c. Northern Blot
  - d. In Situ Hybridization
  - e. Others
5. Labeling Techniques
6. Amplification Methods
  - Polymerase Chain Reaction
  - Temperature Cyclers

- PCR Variations
  - Immuno-PCR
  - QC-PCR
  - DAP-PCR
- Strand Displacement Activation
- TMA
- Ligase Chain Reaction
- Branched DNA
  - Hybridization Protection Assay
- Nucleic-Acid Sequence-Based Amplification
- Self-Sustained Sequence Replicase
- Others
  - Ampliprobe
  - CAR
  - CAS
  - CPT
  - Dendritic Polymer Technology
  - ISO-CR
  - LAT
  - Probe Networks
  - RAMP
  - Repair Chain Reaction
  - Rolling Circles
  - Sequence Independent Gene Amplification
  - Sequence Initiation Reaction
  - SISPA
  - Solid Phase Amplification

## **C. DETECTION TECHNOLOGIES**

1. Radioactive Methods
  - a. Overview
  - b. Major Isotopes
    - P-32
    - S-35
    - H-3
    - I-125
2. Non-Isotopic Methods
  - a. Enzymatic Labels

- b. Chemical Labeling
  - Indirect Chemical Labeling
  - Direct Chemical Labeling
- c. Fluorescence
- d. Chemiluminescence
- e. Electrical Conductivity

## **D. INSTRUMENTATION REVIEW**

1. Abbott LCx
2. Beckman Coulter/Biomek FK
3. Becton Dickinson SDA
4. Bio-Rad GeneScope
5. Gen-Probe Tigris
6. Roche Cobas Amplicor
7. Tecan LS Series

## **E. BIOCHIPS: GENOSENSORS, MICROARRAYS, AND LABS-ON-THE-CHIP**

- Liquid Transportation and Mixing
- Separation
- Reaction
- Detection

## **F. PHARMACOGENOMICS**

## **G. MAJOR APPLICATIONS**

1. Microbiology/Infectious Diseases
  - a. Overview
  - b. Major Infectious Diseases
    - AIDS
    - Structure and Composition
    - Classification
    - AIDS Origins
    - Animal Lentivirus Systems
    - Virus Receptors
    - HIV Infections in Humans
    - Pathogenesis and Pathology

CD4T Lymphocytes and Memory Cells  
Monocytes and Macrophages  
Lymphoid Organs  
Neural Cells  
Viral Coinfections  
    Clinical Findings  
Plasma Viral Load  
Pediatric AIDS  
    Neurologic Disease  
    Opportunistic Infections  
    Cancer  
Immunity  
    Virus Isolation  
    Serology  
    Viral Nucleic Acid/Antigen Detection  
Epidemiology  
    Worldwide Spread of AIDS  
    United States  
    Routes of Transmission  
DNA Probes  
    Overview  
    Quantitative PCR  
    In Situ PCR  
    Needed Improvements  
Viral Load/Drug Resistance Testing  
Genotype and Phenotype Testing  
Blood Banking Considerations  
    Adenovirus  
Background  
Diagnostic Tests  
Vaccines and Drugs  
Adeno-Associated Viruses (AAV)  
    Anthrax/Bacillus Anthracis  
Background  
Diagnostic Tests  
Vaccines and Drugs  
    Babesiosis  
Background  
    BEA and Other Bartonella Diseases

Background

Diagnostic Tests

Vaccines and Drugs

Chagas Disease

Background

Campylobacter

Background

Diagnostic Tests

Culture Identification

Vaccines and Drugs

Chlamydia

Background

Chlamydia psittaci

Chlamydia pneumoniae

Chlamydia trachomatis

Diagnostic Tests

Vaccines and Drugs

Creutzfeldt-Jakob's Disease

Background

Blood Transmission

Diagnostic Tests

Major Commercial and Academic Players

Bayer

Disease Sciences/Bio Tec Global

Imperial College School of Medicine

Ortho-Clinical Diagnostics

Pall

ProMetic Life Sciences

Proteome Sciences/Idexx

Q-One Biotech

Serono

U.S. Agricultural Research Service

Drugs

Vaccines

Cytomegalovirus

Background

Chorioretinitis

Gastrointestinal

Central Nervous System Disease

Diagnostic Tests

Vaccines and Drugs

Ebola Virus

Background

Epidemiology

Clinical Syndromes

Diagnostic Tests

Vaccines and Drugs

EchoVirus

Background

Acute Aseptic Meningitis

Encephalitis

Exanthems

Respiratory Disease

Myopericarditis

Neonatal Infections

Diagnostic Tests

Vaccines and Drugs

Encephalitis

Background

Diagnostic Tests

Vaccines and Drugs

Enteroviruses

Background

Diagnostic Tests

Viral Isolation and Identification

Antibody Tests

Vaccines and Drugs

Epstein-Barr Virus

Background

Diagnostic Tests

Vaccines and Drugs

Gonorrhea

Background

Diagnostic Tests

Vaccines and Drugs

Hepatitis

Hepatitis A

Hepatitis B



- Structure and Composition
- Replication
- Hepatitis C
- Hepatitis D (Delta)
- Hepatitis E
- Hepatitis G
- Hepatitis Infections Pathology
- Clinical Findings
- Laboratory Tests
  - Hepatitis A
  - Hepatitis B
  - Hepatitis C
  - Hepatitis D
  - Hepatitis E
- Virus-Host Immune Reactions
- Epidemiology
  - Hepatitis A
  - Hepatitis B
  - Hepatitis C
  - Hepatitis D (Delta)
- Vaccines and Drugs
  - Herpes Simplex Virus
- Background
- Diagnostic Tests
- Vaccines and Drugs
  - Legionella
- Background
- Diagnostic Tests
- Vaccines and Drugs
  - Lyme Disease
- Background
- Clinical Description
- Clinical Case Definition
- Laboratory Criteria for Diagnosis
- Case Classification
- Diagnostic Tests
- Vaccines and Drugs
  - Malaria
  - Mycoplasma

**Background**

Ureaplasma Urealyticum &amp; Mycoplasma Hominis

**Diagnostic Tests****Vaccines and Drugs**

Papillomaviruses/HPV

**Background**

HPV in Cancer

Cervical Neoplasm

**Diagnostic Tests****Vaccines and Drugs**

Prevention

Parvovirus B19

**Background**

Microbiology

Epidemiology

Clinical Syndromes

Erythema Infectiosum (Slapped Cheek)

Adult Polyarthropathy

Transient Aplastic Crisis

Transient Pancytopenia

Red Cell Aplasia in Immunocompromised

Perinatal Infections

**Diagnostic Test****Vaccines and Drugs**

Pneumonia

**Background****Diagnostic Tests****Vaccines and Drugs**

Polyomaviruses

**Background****Diagnostic Tests****Vaccines and Drugs**

Salmonellosis

**Background****Diagnostic Tests****Vaccines and Drugs**

Shigellosis

**Background****Diagnostic Tests**

Vaccines and Drugs

Streptococci

Background

Diagnostic Tests

Vaccines and Drugs

Group A Streptococci

Group B Streptococci

Toxoplasmosis

Background

Diagnostic Tests

Vaccines and Drugs

Tuberculosis

Background

Diagnostic Tests

Microscopic Characteristics

Cultural Characteristics

Skin Tests

MDRTB

Vaccines and Drugs

West Nile Virus

Background

Clinical Syndromes

Diagnostic Tests

Vaccines and Drugs

Yersinia

Background

Diagnostic Tests

Vaccines and Drugs

c. Antibiotic Susceptibility

2. 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

CYP17

Erb-B

HPC1

N-myc

P40

P51

P53

PIK3CA

PTI-1

Ras

Reg

Sis

Src

### 3. 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
- 4. Forensic Testing
  - a. Overview
  - b. Multilocus and Single Locus Probes
    - Multilocus Probes
    - Single Locus Probes
    - PCR and RFLP
  - c. The FBI
  - d. DNA Profile Data Banks
    - U.S.A.
    - U.K.
  - e. Judicial Implementation
  - f. Major Crime Categories
  - g. Factors Contributing to the DNA Probe Market Expansion
    - Technology Availability
    - Use of Hair as Evidence
  - h. Wildlife Forensics
- 5. Paternity Testing/HLA Typing
- 6. 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

## **I. WORLDWIDE MARKET OVERVIEW**

- 1. Business Environment
- 2. Market Structure
- 3. Market Size and Growth

### **USA**

- A. Executive Summary
- B. Business Environment
- C. Market Structure
- D. Market Size, Growth And Major Suppliers' Sales And Market Shares

### **Major Product Development Opportunities**

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

### **Design Criteria For Decentralized Testing Products**

### **Alternative Market Penetration Strategies**

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

### **Markets**

- 1. Marketing Approaches
- 2. Product Complexity
- 3. Customer Preference

4. Established Suppliers
5. Emerging Suppliers
6. Major Types Of Distributors
7. Market Segmentation

#### 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

#### Competitive Profiles

Abbott  
Affymetrix  
Agilent  
Applied Gene Technologies  
Arca  
Beckman Coulter/Danaher  
Becton Dickinson  
Biokit  
BioMerieux  
Bio-Rad  
Biotest  
Caliper  
Cepheid  
Decode  
Diadexus  
Eiken  
Enzo  
Exact Sciences  
Fujirebio  
Gen-Probe  
Hologic  
Illumina  
Innogenetics/Solvay  
Kreatech  
Li-Cor Biosciences  
Life Technologies

Monogram Biosciences  
Myriad Genetics  
Nanogen/Elitech  
Novartis  
Orchid CellMark  
Ortho-Clinical Diagnostics  
Proteome Sciences  
Qiagen  
Roche  
Scienion  
Sequenom  
Shimadzu  
Siemens  
Sierra Molecular  
Takara Bio  
Tecan Group

## **APPENDIXES**

Appendix I: Major Universities and Research Centers Developing NAT Technology

Appendix II: Glossary of Terms

Appendix III: Currency Exchange Rates



## List Of Tables

### LIST OF TABLES

Major Companies Developing or Marketing AIDS NAT And Other Direct Identification Tests

Major Companies Developing or Marketing Adenovirus NAT And Other Direct Identification Tests

Major Companies Developing or Marketing Campylobacter NAT And Other Direct Identification Tests

Major Companies Developing or Marketing Chlamydia NAT And Other Direct Identification Tests

Major Companies Developing or Marketing CMV Molecular Diagnostic And Other Direct Identification Tests

Major Companies Developing or Marketing EBV Molecular Diagnostic And Other Direct Identification Tests

Major Companies Developing or Marketing Gonorrhoea NAT And Other Direct Identification Tests

Major Companies Developing or Marketing Hepatitis NAT And Other Direct Identification Tests

Major Companies Developing or Marketing Herpes NAT And Other Direct Identification Tests

Major Companies Developing or Marketing Legionella NAT And Other Direct Identification Tests

Major Companies Developing or Marketing Lyme Disease NAT And Other Direct Identification Tests

Major Companies Developing or Marketing Mycoplasma NAT And Other Direct Identification Tests

Major Companies Developing or Marketing Papilloma Virus NAT And Other Direct Identification Tests

Major Companies Developing or Marketing Pneumonia NAT And Other Direct Identification Tests

Major Companies Developing or Marketing Salmonella NAT And Other Direct Identification Tests

Major Companies Developing or Marketing Shigella NAT And Other Direct Identification Tests

Major Companies Developing or Marketing Streptococci NAT And Other Direct Identification Tests

Major Companies Developing or Marketing Toxoplasmosis NAT And Other Direct

## Identification Tests

Major Companies Developing or Marketing Tuberculosis NAT And Other Direct Identification Tests

Oncogenes Potential Application in Cancer Diagnosis

Major Companies Developing or Marketing Cancer NAT Tests

Major Companies Developing or Marketing NAT Assays For Genetic Diseases

Summary Table U.S.A., NAT Test Volume And Sales Forecast by Major Application

U.S.A., Laboratories Performing DNA Sequencing by Market Segment

U.S.A., NAT Market, Potential Laboratory Universe by Market Segment

U.S.A., NAT Test Volume Forecast By Major Application

U.S.A., Major Infectious Disease NAT Test Volume Forecast

U.S.A., Infectious Disease Screening NAT Volume by Test Forecast

U.S.A., NAT Market Forecast By Major Application

U.S.A., Infectious Disease Screening Nat Reagent Market Forecast by Test

U.S.A., NAT Market by Major Supplier

U.S.A., HIV/Hepatitis C NAT Market Reagent Sales By Major Supplier

U.S.A., West Nile Virus NAT Market Reagent Sales By Major Supplier

## I would like to order

Product name: Future US Nucleic Acid Testing Market Outlook

Product link: <https://marketpublishers.com/r/U3D33C5E012EN.html>

Price: US\$ 6,720.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

[info@marketpublishers.com](mailto:info@marketpublishers.com)

## Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/U3D33C5E012EN.html>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:  
Last name:  
Email:  
Company:  
Address:  
City:  
Zip code:  
Country:  
Tel:  
Fax:  
Your message:

**\*\*All fields are required**

Customer signature \_\_\_\_\_

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <https://marketpublishers.com/docs/terms.html>

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970