

## ***Table of Contents***

Copyright VENTURE PLANNING GROUP  
This material is confidential for use by our clients only  
and may not be reprinted or reproduced.

**VENTURE PLANNING GROUP**  
reports@vpgcorp.com  
+ 1 212 564 2838

## **Table of Contents**

---

### **I. Introduction**

### **II. Major Product Development Opportunities**

- A. Reagent Kits and Test Systems/Panels
- B. Instrumentation
- 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
  - 1. Marketing Approaches
  - 2. Product Complexity
  - 3. Customer Preference
  - 4. Established Suppliers
  - 5. Emerging Suppliers
  - 6. Major Types of Distributors
  - 7. Market Segmentation Factor

### **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

## Table of Contents

### **VI. Worldwide Market and Technology Overview**

#### A. Cancer Statistics and Etiology

1. Breast Cancer
2. Lung Cancer
3. Colon and Rectum Cancer
4. Prostate Cancer
5. Stomach Cancer
6. Leukemia
7. Lymphoma
8. Oral Cancer
9. Skin Cancer
10. Uterine Cancer
11. Ovarian Cancer
12. Bladder Cancer

#### B. Major Current And Emerging Cancer Diagnostic Tests

1. Introduction
2. Tumor Marker Classification
3. ACTH
4. Alpha-Fetoprotein (AFP)
5. Beta-2 Microglobulin
6. CA 15-3/27.29
7. CA 19-9
8. CA-125
9. Calcitonin
10. Carcinoembryonic Antigen (CEA)
11. Estrogen and Progesterone Receptors
12. Ferritin
13. Gastrin
14. Human Chorionic Gonadotropin (HCG)
15. Insulin
16. NSE
17. Occult Blood
18. PAP Smear/HPV
19. Prostatic Acid Phosphatase (PAP)
20. Prostate-Specific Antigen (PSA)
21. Squamous Cell Carcinoma Antigen (SCC)
22. T and B Lymphocytes

## Table of Contents

- 23. TdT
- 24. Thyroglobulin
- 25. Tissue Polypeptide Antigen (TPA)
- 26. Biochemical Tumor Markers
  - ADA
  - B-Protein
  - PNP
  - 5'-Nucleotidase
- 27. Oncogenes
  - Abl/abl-bcr
  - AIB1
  - BCL-2
  - BRCA1
  - CD44
  - C-fos
  - C-myb
  - C-myc
  - CYP-17
  - Erb-B
  - HPC1
  - N-myc
  - P40
  - P51
  - P53
  - PIK3CA
  - PTI-1
  - Ras
  - Reg
  - Sis
  - Src
- 28. Polypeptide Growth Factors
  - Basic Fibroblast Growth Factor
  - Beta-TGF
  - Cachectin (TNT)
  - Calmodulin
  - ECFR
  - Nerve Growth Factor (NGF)
  - Epidermal Growth Factor (EGF)
  - Ornithine Decarboxylase
  - Transferrin
  - Transforming Growth Factor-Alpha

## Table of Contents

- 29. Ectopic Hormones
- 30. Colony Stimulating Factors
- 31. Lymphokines
  - Alpha-Interferon
  - B Cell Growth Factors
  - B Cell Growth Factor (BCGF)
  - Gamma-Interferon
  - Interleukin-1 (IL-1)
  - Macrophage Activating Factor
- 32. Immunohistochemical Stains
- 33. Emerging Tumor Markers
  - N-Acetylglucosamine
  - Actin
  - Alpha-Actin
  - Antineuronal Antibodies
  - 7B2
  - B72.3
  - Bax
  - BCD-F9
  - BLCA-4
  - Blood Group Antigens A,B,H
  - CA 50
  - CA 72-4/TAG-72
  - CA 195
  - CA-242
  - CA-549
  - CAM 26
  - CAR-3
  - Cathepsin-D
  - Chromogranin A and B
  - Cluster 1 Antigen
  - Cluster-5/5A Antigen
  - CTA
  - CU18
  - DR-70
  - DU-PAN-2
  - Endometrial Bleeding Associated Factor
  - Endostatin
  - Epithelial Membrane Antigen
  - Feulgen Hydrolysis
  - Fibronectin

## Table of Contents

- FSH
- (1->3)-L-fucosyltransferase
- Gastrin-Releasing Peptide (GRP)
- GDCFP-15
- Glucagon
- Glycoamines
- H23
- Her-2
- Human Carcinoma Antigen
- HPA
- HSP27
- Intermediate Filaments
- Cytokeratins/CK18/Cyfra 21-1
- Desmin
- Gliofibrillary Acid Protein
- Neurofilaments
- Vimentin
- KA 93
- Kinases
- KP16D3
- LAI
- Leukocyte Common Antigen
- Lewis Antigens
- Lysophosphatidic Acid (LPA)
- Ma 695/Ma 552
- MABDF3
- MAG
- ME1
- Minactivin
- MN/CA9
- MSA
- Mucin Cancer Antigen (MCA)
- Multiple Tumor Suppressor 1
- Myosin
- NEA-130
- NMP22
- OA-519
- Opiod Peptides
- P-glycoprotein
- Pancreatic Oncofetal Antigen (POA)
- Placental Lactogen
- PR92

## Table of Contents

- Proliferative Index, Ki-67
- Px
- RB Inactivation/Deletion
- Ret
- SCCL 175
- Selectin
- Sialic Acid
- Sialyl SSEA-1/SLX
- SN10
- Somatostatin
- TA-90
- TABA
- Tachykinin
- TAG 12
- TPS
- Troponin
- Tubulin
- VCAM
- VEGF
- Villen

### C. Instrumentation Review And Market Needs

### D. Current and Emerging Technologies

#### 1. Molecular Diagnostics

- a. Technology Overview
- b. Amplification Methods
- c. Sequencing
- d. Microarrays/Biochips

#### 2. Monoclonal and Polyclonal Antibodies

#### 3. Immunoassays

- a. Technological Principle
- b. Radioimmunoassay (RIA)
- c. Enzyme Immunoassays (EIA)
  - Overview
  - ELISA
  - Immunofiltration
  - Particle-Membrane Capture Immunoassay
  - Enzyme Amplification

## Table of Contents

- d. Fluorescent Immunoassays
  - e. Luminescence
    - Chemiluminescence
    - Bioluminescence
  - f. Latex Agglutination
    - g. Immunoprecipitation
  - h. Affinity Chromatography
  - e. Liposome Flow-Injection Immunoassay
  - 4. Chromosome Analysis
    - a. Chronic Myelogenous Leukemia (CML)
    - b. Acute Myeloid Leukemia (AML)
    - c. Acute Lymphoblastic Leukemia (ALL)
    - d. Malignant Lymphomas Lymphoid Malignancies
    - e. Chronic Lymphocytic Leukemia (CLL)
    - f. Solid Cancers
    - g. Chromosomal Translocation and Oncogenes
  - 5. Artificial Intelligence
  - 6. Flow Cytometry
  - 7. Two Dimensional Gel Electrophoresis (2-DGE)
  - 8. Biosensors
  - 9. Competing/Complementing Technologies
    - a. CT
    - b. MRI
    - c. NMR
    - d. PET
    - e. Photonics Spectroscopy
- E. Personal Testing

## **VII. France**

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



## Table of Contents

### **VIII. Competitive Profiles**

Abbott  
Agilent Technologies  
Applied Gene Technologies  
Arca Biopharma  
Beckman Coulter/Danaher  
Becton Dickinson  
bioMerieux  
Bio-Rad  
CellSearch  
Cepheid  
Clinical Genomics  
Decode Genetics  
DiaSorin  
Diazyme  
Eiken Chemical  
Elitech Group  
Enzo Biochem  
Epigenomics  
Exact Sciences  
Fujirebio  
Guided Therapeutics  
Hologic  
Janssen Diagnostics  
Leica Biosystems  
Kyowa Medex  
Myriad Genetics  
OncoLab  
Ortho-Clinical Diagnostics  
Panacea Pharmaceuticals  
PerkinElmer  
Polymedco  
Qiagen  
Quest Diagnostics  
Roche  
Scienion  
Sequenom  
Siemens Healthineers  
Takara Bio  
Theradiag

## Table of Contents

Thermo Fisher

Tosoh

Vermillion

Wako Pure Chemicals

### **IX. Appendix:** Major Universities and Research Centers Developing Cancer Diagnostic Technology and Applications

## **List of Tables**

Tumor Marker Classification

Major Companies Developing or Marketing  
ACTH Tests

Major Companies Developing or Marketing  
AFP Tests

Major Companies Developing or Marketing  
Beta-2 Microglobulin Tests

Major Companies Developing or Marketing  
CA 15-3/27.29 Tests

Major Companies Developing or Marketing  
CA 19-9 Tests

Major Companies Developing or Marketing  
CA 125 Tests

Major Companies Developing or Marketing  
Calcitonin Tests

Major Companies Developing or Marketing  
CEA Tests

Major Companies Developing or Marketing  
Estrogen Receptor Tests

Major Companies Developing or Marketing  
Progesterone Receptor Tests

Major Companies Developing or Marketing  
Ferritin Tests

Major Companies Developing or Marketing  
Gastrin Tests

Major Companies Developing or Marketing  
HCG Tests

## **List of Tables**

Major Companies Developing or Marketing  
Insulin Tests

Major Companies Developing or Marketing  
NSE Tests

Major Companies Developing or Marketing  
Occult Blood Tests

Major Companies Developing or Marketing  
PAP Smear/HPV Tests

Major Companies Developing or Marketing  
PAP Tests

Major Companies Developing or Marketing  
PSA Tests

Major Companies Developing or Marketing  
Lymphocyte Subclassification Tests

Biochemical Markers Potential Applications  
In Cancer Diagnosis

Oncogenes Potential Applications  
In Cancer Diagnosis

Major Companies Developing or Marketing  
Oncogene Tests

Growth Factors Potential Applications  
In Cancer Diagnosis

Colony Stimulating Factors Potential  
Applications in Cancer Diagnosis

Lymphokines Potential Applications In Cancer Diagnosis

Immunohistochemical Stains Potential  
Applications in Cancer Diagnosis

## **List of Tables**

Executive Summary Table: France, Total Cancer Diagnostic Test Volume and Sales Forecast by Market Segment

France, Estimated Cancer Death Rates Per 100,000 Population

France, Laboratories Performing Tumor Marker Tests by Market Segment

France, Hospital Laboratories Performing Tumor Marker Tests by Bed Size

France, Commercial/Private Laboratories Performing Tumor Markers by Annual Test Volume

France, Total Tumor Marker Test Volume Forecast by Market Segment

France, All Market Segments Major Tumor Marker Test Volume Forecast

France, Hospital Laboratories Major Tumor Marker Test Volume Forecast by Test

France, Commercial/Private Laboratories Marker Test Volume Forecast

France, Total Tumor Marker Sales Major Tumor Forecast by Market Segment

France, All Market Segments Major Tumor Marker Sales Forecast by Test

France, Hospital Laboratories Major Tumor Marker Sales Forecast by Test

## **List of Tables**

France, Commercial/Private Laboratories Cancer  
Diagnostics Market Forecast by Test

France, ACTH Test Volume and Diagnostics Sales  
Forecast by Market Segment

France, AFP Test Volume and Diagnostics Sales  
Forecast by Market Segment

France, Beta-2 Microglobulin Test Volume and  
Diagnostics Sales Forecast by Market Segment

France, CA 15-3/27.29 Test Volume and  
Diagnostics Sales Forecast by Market Segment

France, CA 19-9 Test Volume and Diagnostics  
Sales Forecast by Market

France, CA-125 Test Volume and Diagnostics  
Sales Forecast by Market Segment

France, Calcitonin Test Volume and Diagnostics  
Sales Forecast by Market Segment

France, Cathepsin Test Volume and Diagnostics  
Sales Forecast by Market Segment

France, CEA Test Volume and Diagnostics Sales  
Forecast by Market Segment

France, Colon-Specific Antigen Test Volume  
And Diagnostics Sales Forecast by Market Segment

France, Cytokeratins Test Volume and  
Diagnostics Sales Forecast by Market Segment

## **List of Tables**

France, Estrogen Receptor Test Volume and  
Diagnostics Sales Forecast by Market  
Segment

France, Ferritin Test Volume and  
Diagnostics Sales Forecast by Market  
Segment

France, Gastrin Test Volume and  
Diagnostics Sales Forecast by Market  
Segment

France, HCG Test Volume and Diagnostics Sales  
Forecast by Market Segment

France, Insulin Test Volume and  
Diagnostics Sales Forecast by Market  
Segment

France, Interferons Test Volume and  
Diagnostics Sales Forecast by Market  
Segment

France, Interleukins Test Volume and  
Diagnostics Sales Forecast by Market  
Segment

France, Lymphocyte Subtyping Test Volume  
And Diagnostics Sales Forecast by Market  
Segment

France, NSE Test Volume and Diagnostics  
Sales Forecast by Market Segment

France, Nucleolar Test Volume and Diagnostics  
Sales Forecast by Market Segment

France, Occult Blood Test Volume and  
Diagnostics Sales Forecast by Market  
Segment

## **List of Tables**

France, Oncogenes Test Volume and  
Diagnostics Sales Forecast by Market  
Segment

France, Pancreatic Oncofetal Antigen  
Test Volume and Diagnostics Sales  
Forecast by Market Segment

France, PAP Smear Test Volume and  
Diagnostics Sales Forecast by Market  
Segment

France, Parathyroid Hormone Test Volume and  
Diagnostics Sales Forecast by Market  
Segment

France, Progesterone Receptor Test Volume  
And Diagnostics Sales Forecast by Market  
Segment

France, PAP Test Volume and Diagnostics Sales  
Forecast by Market Segment

France, PSA Test Volume and Diagnostics Sales  
Forecast by Market Segment

France, S-100 Protein Test Volume and Sales  
Diagnostics Sales Forecast by Market  
Segment

France, Serotonin Test Volume and  
Diagnostics Sales Forecast by Market  
Segment

France, Sialic Acid Test Volume and  
Diagnostics Sales Forecast by Market  
Segment



## List of Tables

France, Squamous Cell Carcinoma Antigen  
Test Volume and Diagnostics Sales  
Forecast by Market Segment

France, TDT Test Volume and Diagnostics Sales  
Forecast by Market Segment

France, Thymidine Kinase Test Volume  
And Diagnostics Sales Forecast by  
Market Segment

France, Thyroglobulin Test Volume and  
Diagnostics Sales Forecast by Market  
Segment

France, TPA Test Volume and Diagnostics Sales  
Forecast by Market Segment

France, Total Tumor Marker Sales  
By Major Suppliers

France, AFP Testing Market Diagnostics  
Sales by Major Supplier

France, CA 15-3 Testing Market Diagnostics  
Sales by Major Supplier

France, CA 19-9 Testing Market Diagnostics  
Sales by Major Supplier

France, CA 125 Testing Market Diagnostics  
Sales by Major Supplier

France, CEA Testing Market Diagnostics  
Sales by Major Supplier

France, NSE Testing Market Diagnostics  
Sales by Major Supplier

## **List of Tables**

France, PAP Testing Market Diagnostics  
Sales by Major Supplier

France, PSA Testing Market Diagnostics  
Sales by Major Supplier