Emerging Molecular and Immunohematology Blood Typing, Grouping And Infectious Disease NAT Screening Assays And Companies Developing New Technologies and Products

**Table of Contents**

1. Blood Typing and Grouping Tests
   a. ABO
   b. Antibody Panels
   c. Antibody Screening
   d. Antigen Typing
   e. Antiglobulin Test
   f. Crossmatch
   g. HLA Typing
   h. Rh
   i. Other Blood Groups

2. Blood Group Genotyping
   a. PCR
   b. PCR-RFLP
   c. AS-PCR or PCR-SSP
   d. Multiplex PCR
   e. Real Time PCR
   f. Sanger DNA Sequencing
   g. Pyrosequencing
   b. Microarrays
      - BeadChip Array
      - BloodChip
      - Genome Lab SNP Stream
      - Fluidic Microarray Systems
      - TaqMan OpenArray
      - MALDI-TOF-MS
      - Mini-Sequencing

3. Infectious Disease Screening Tests
   a. AIDS
      - Structure and Composition
      - Classification
      - Origin of AIDS
      - Animal Lentivirus Systems
      - Virus Receptors
      - HIV Infections in Humans
         - Pathogenesis & Pathology
         - Overview of Course of HIV Infection
      - 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
  - Protozoa
  - Fungi
  - Bacteria
  - Viruses
- Cancer
- Immunity
- Laboratory Diagnosis
  - Virus Isolation
  - Serology
  - Detection of Viral Nucleic Acid or Antigens
- Epidemiology
  - Worldwide Spread of AIDS
  - United States
  - Routes of Transmission
- Prevention, Treatment, And Control
  - Antiviral Drugs
  - Vaccines Against HIV
- Transmission of HIV in Blood Products
- HIV Transmission in Transplant and Artificial Insemination Recipients
- Diagnostic Tests
  - Enzyme Immunoassay Interpretation
  - Specificity, Sensitivity, and Predictive Value of Enzyme Immunoassay
- Competition Assays
- Western Blot Technique
- Immuno-Fluorescence Assay (IFA)
- Radioimmunoprecipitation
- HIV-1/HIV-2 Combination Testing
- Methods of HIV-Antigen Detection
- Antigen Assays and Blood Screening
- Urine Tests
- DNA Probes
- Overview
- Quantitative Polymerase Chain Reaction
- In Situ PCR
- Needed Improvements
- Viral Load/Drug Resistance Testing
- Genotype and Phenotype Testing
- Blood Banking Considerations

b. Hepatitis
- Hepatitis A
- Hepatitis B
  - Structure and Composition
  - Replication of Hepatitis B Virus
- Hepatitis C
- Hepatitis D (Delta Hepatitis)
- Hepatitis E
- Hepatitis G
- Hepatitis Virus Infections In Humans
  - Pathology
- Clinical Findings
- Laboratory Features
  - Hepatitis A
  - Hepatitis B
  - Hepatitis C
  - Hepatitis D
  - Hepatitis E
- Virus-Host Immune Reactions
- Epidemiology
  - Hepatitis A
  - Hepatitis B
  - Hepatitis C
  - Hepatitis D (Delta Agent)
- Vaccines and Drugs

c. Cytomegalovirus
- Background
- Chorioretinitis
- Gastrointestinal
- Central Nervous System Disease
- Diagnostic Tests
- Vaccines and Drugs

d. Syphilis
- Background
- Diagnostic Tests
- Vaccines and Drugs
e. West Nile Virus
   - Background
   - Clinical Syndromes
   - Diagnostic Tests
   - Vaccines and Drugs
f. Parvovirus B19
   - Microbiology
   - Epidemiology
   - Clinical Syndromes
     - Erythema Infectiosum Slapped (cheek)
     - Adult Polyarthropathy
     - Transient Aplastic Crisis
     - Transient Pancytopenia
     - Red Cell Aplasia in the Immunocompromised
     - Perinatal Infections
   - Diagnosis
   - Treatment
g. Creutzfeldt-Jakob’s Disease
   - Background
   - Transmission
   - Diagnostic Tests
   - Major Commercial and Academic Players
     - Bayer
     - Disease Sciences/BioTec 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
   i. Malaria
   j. Babesiosis

4. Pathogen Reduction
5. Leukocyte Reduction
   - Background
   - Methods
List of Tables

Major Companies Developing or Marketing Blood Typing and Grouping Tests

Major Companies Developing or Marketing HLA Typing Tests

Major Companies Developing or Marketing AIDS Tests

Major Companies Developing or Marketing Hepatitis Tests

Major Companies Developing or Marketing CMV Tests

Major Companies Developing or Marketing Syphilis Tests