SCHOOL OF LIFE SCIENCES
MANIPAL
*(A constituent unit of MAHE, Manipal)*

# Diagnostics & Services Tests

Catalogue

Contact: 0820 – 2922058/2923501 Email: mlsc@manipal.edu Working hours:Mon-Sat(9am-5pm)

# INDEX


1. **Molecular, Next Generation Sequencing, Panels, Exome and Genetic Tests** **2-11**
2. **Molecular and Genetic Tests: QF-PCR for Prenatal Diagnosis** **12**
3. **Molecular and Genetic Tests: Prenatal Diagnostics for mutation** **13**
4. **Flow Cytometry Tests** **14-15**
5. **Genetic Tests- Karyotyping** **16**
6. **Other Tests** **16**

# Molecular and Genetic Tests

| Test Code | Name of the Condition | Name of Gene | Exons/Mutations | Type of Test | Sample Required |
|---|---|---|---|---|---|
| **CYS026** | Cystic Fibrosis | *CFTR* | Δf508 | QF-PCR | Blood * |
| **PCR006** | Hemochromatosis | *HFE* | H63D and C282Y | PCR and RFLP | Blood * |
| **AMY008** | Amyloidosis | *TTE Transthyretin* | Val30Met | PCR-DNA sequencing | Blood |
| **PCR010** | Hepatitis B Virus (HBV) | *'S' gene* | (Semi-Quantitative) | PCR | Blood |
| **HEP013** | Hepatitis B Virus (HBV) | *'S' gene* | Quantitative | Real Time-PCR | Blood |
| **WIL006** | Wilson's Disease | *ATP7B* | Any single exon | PCR-DNA sequencing | Blood* |
| **PCR011** | Wilson's Disease | *ATP7B* | Exons 8, 12 & 13 | PCR-DNA sequencing | Blood * |
| **6ME002** | 6-Mercaptopurine/ azathioprine toxicity | *TPMT* | TPMT*2, TPMT*3A, TPMT*3B,TPMT*3C | PCR-RFLP | Blood |
| **PCR016** | Hyperhomocysteinuria Venous thromboembolic disease Cardiovascular disease | *MTHFR* | C677T polymorphism A1298C polymorphism | PCR-RFLP | Blood |
| **PCR027** | Beta-Thalassemia | *HBB* | Exons 1, 2 & 3, intron 1 and parts of intron 2 & the 3′-UTR | PCR and DNA sequencing | Blood * |
| **PCR026** | Sickle Cell Anemia | *HBB* | Exons 1,2 & flanking sequences | PCR- DNA Sequencing | Blood |
| **PCR018** | Fragile X | *FMR 1 and FMR 2* | Triplet expansion | PCR | Blood* |
| **HUN002** | Huntington's disease | *HTT* | Trinucleotide repeat | Capillary gel electrophoresis | Blood |

Note:

1. Sample Required: Blood – indicates 5 ml anticoagulated (EDTA/Heparin) blood, unless otherwise mentioned.
2. * - 5 ml blood samples from parents required
3. ** - 5 ml blood samples from parents (required) and other siblings whenever possible
4. Immediately transport the blood sample at room temperature. If delayed, please store samples at 4°C to prevent RBC lysis.
5. Samples not meeting these conditions will be rejected.



**School of Life Sciences, Manipal – 576104**
**Website: www.manipal.edu/diagnostics**

# Molecular and Genetic Tests

| Test Code | Name of the Condition | Name of Gene | Exons/Mutations | Type of Test | Sample Required |
|---|---|---|---|---|---|
| **PCR020** | Thrombosis Association | PAI-I | 4G/5G polymorphism | PCR | Blood |
| **PCR021** | Thrombosis (Leiden) Association | Factor V | G1691A polymorphism | PCR-RFLP | Blood |
| **PCR022** | Thrombosis Association | Prothrombin | G20210A polymorphism | PCR-RFLP | Blood |
| **PCR025** | Resistance to drugs association | MDR I/ABCB1 | C3435T/G2677A/G26677T polymorphism | PCR-DNA sequencing | Blood |
| **PCR028** | Beta 2 adrenoreceptor | B2-AR | Complete coding sequence | PCR-DNA sequencing | Blood |
| **JAK002** | JAK 2 | Jak2 | Jak2 (V617F) | PCR-RFLP | Blood |
| **FLT002** | Acute Myeloid Leukemia | FLT3 | ITD | PCR-Fragment analysis | Blood |
| **GIL001& GIL002** | Gilbert's syndrome | UGT1A | UGT1A*28 polymorphism | PCR-DNA sequencing | Blood |
| **SPI012** | Spinal muscular atrophy | SMN1 | Deletion in exon 7 & 8 | PCR-RFLP | Blood |
| **DUC001** | Duchenne Muscular Dystrophy | Dystrophin | Deletions in 20 exons | PCR | Blood |
| **HEM026** | Hemophilia A Carrier analysis | Factor VIII | Linkage analysis | PCR-RFLP | Blood** |
| **HEM027** | Hemophilia B Carrier analysis | Factor IX | Linkage analysis | PCR-RFLP | Blood** |
| **5FU004** | 5-FU, Methotrexate toxicity | TYMS, DPYD | Polymorphisms | PCR/PCR-RFLP | Blood |

Note:

1. In the Table, Sample Required: Blood – indicates 5 ml anticoagulated (EDTA/Heparin) blood, unless otherwise mentioned.
2. * - 5 ml blood samples from parents required.
3. ** - 5 ml blood samples from parents (required) and other siblings whenever possible
4. Immediately transport the blood sample at room temperature. If delayed, please store samples at 4°C to prevent RBC lysis.
5. Samples not meeting these conditions will be rejected.

# Molecular and Genetic Tests

| Test Code | Name of the Condition | Name of Gene | Exons/Mutations | Type of Test | Sample Required |
|---|---|---|---|---|---|
| **MY005** | Myotonic Dystrophy | *DM1* | Repeat expansion | PCR | Blood |
| **ACH001** | Achondroplasia | *FGF-R3* | Mutation analysis | PCR-RFLP | Blood |
| **HYP010** | Hypochondroplasia | *FGF-R3* | Mutation analysis | PCR-RFLP | Blood |
| **PRA002** | Prader-Willi/Angleman Syndrome | *SNRPN* | Methylation analysis | MSP-PCR | Blood |
| **ALP011** | Alpha-1, Antitrypsin deficiency | *AA1* | Mutational analysis | PCR-RFLP | Blood |
| **PAP001& 103** | Papillon Lefvre Syndrome (PLS) | *Cathepsin C* | Mutation analysis Exon 7 | PCR-Sequencing | Blood |
| **EPS002** | Epstein Barr Virus A & B | *EBV* | EBNA | PCR | Blood |
| **HUM005** | Human Papilloma virus | *HPV* | L1 | PCR | Blood |
| **HUM006** | Human Papilloma virus | *HPV* | L1 – Subtype | PCR-Sequencing | Blood |
| **RAS001** | K-Ras mutation screen | *KRAS* | Codon 12 and 13 | PCR-Sequencing | Tissue |
| **P53001** | P53 mutations screen | *p53* | Exon 4,5,6,7&8 | PCR-Sequencing | Tissue/ blood |
| **SPI015** | Spinocerebellar ataxia – (SCA 1/ 2/ 3/ 6/ 7) | *Any one marker SCA1/ SCA2/ MJD/CACNA1A/SCA 7* | Triplet repeat analysis | QF-PCR | Blood |
| **QFP004** | Spinocerebellar ataxia – (SCA 1, 2, 3, 6, and 7) | *SCA1, SCA2, MJD, CACNA1A, SCA7* | Triplet repeat analysis | QF-PCR | Blood |

Note:

1. In the Table, Sample Required: Blood – indicates 5 ml anticoagulated (EDTA/Heparin) blood, unless otherwise mentioned.
2. * - 5 ml blood samples from parents required.
3. ** - 5 ml blood samples from parents (required) and other siblings whenever possible
4. Immediately transport the blood sample at room temperature. If delayed, please store samples at 4°C to prevent RBC lysis.
5. Samples not meeting these conditions will be rejected.

# Molecular and Genetic Tests

| Test Code | Name of the Condition | Name of Gene | Exons/Mutations | Type of Test | Sample Required |
|---|---|---|---|---|---|
| **CON101** | Non-syndromic hearing loss | *Connexin-26* | Mutations | PCR/DNA sequencing | Blood |
| **PFA001** | Malaria | *P. falciparum* | Quantitative Detection | Real Time PCR | Blood |
| **PVI001** | Malaria | *P. vivax* | Quantitative Detection | Real Time PCR | Blood |
| **APE001** | Apert syndrome | *FGF-R2* | Mutation | PCR/RFLP | Blood |
| **RES009** | Resistance to Warfarin | *VKORC1, CYP2C9, PON1* | VKORC1-1639G>A<br>CYP2C9*2<br>PON1Gln192Arg<br>PON1Leu55Met | PCR-RFLP | Blood |
| **MOR004** | Morquio A Syndrome | *GALNS* | All 16 exons | PCR-sequencing | Blood |
| **MOR005** | Morquio B Syndrome and GM1 Gangliosidosis | *GLB1* | All 14 exons | PCR-sequencing | Blood |
| **SET001** | Setleis syndrome | *TWIST2* | Single exon | PCR-Sequencing | Blood |
| **FUH001** | Fuhrmann syndrome | *WNT7A* | All 4 exons | PCR-Sequencing | Blood |
| **PRO058** | Progressive Pseudorheumatoid Dysplasia | *WISP3* | All 5 coding exons | PCR–Sequencing | Blood |
| **GST001** | Glutathione -S-Transferase | *GST – T1, M1, P1* | Polymorphisms/mutations | PCR/RFLP | Blood |
| **SEQ002**<br>**SEQ003**<br>**SEQ004** | Sequencing of:<br>i) any single exon<br>ii) any five exons<br>iii) any ten exons | *Name(s) of the gene and the exon(s) number(s) to be provided* | Synthesis of primers and sequencing | | |

Note:

1. Sample Required: Blood – indicates 5 ml anticoagulated (EDTA/Heparin) blood, unless otherwise mentioned.
2. * - 5 ml blood samples from parents required
3. ** - 5 ml blood samples from parents (required) and other siblings whenever possible
4. Immediately transport the blood sample at room temperature. If delayed, please store samples at 4°C to prevent RBC lysis.
5. Samples not meeting these conditions will be rejected.

# Molecular and Genetic Tests

| Test Code | Name of the Condition | Name of Gene | Exons/Mutations | Type of Test | Sample Required** |
|---|---|---|---|---|---|
| **MEL002** | MELAS | MT-TL1, MT-ND5 | MT-TL1<br>• m.3243A>G<br>• m.3256C>T<br>• m.3260A>G<br>• m.3271T>C<br>• m.3291T>C<br>MT-ND5<br>• m.13513G>A | PCR-sequencing | EDTA/sodium citrate peripheral blood – 5ml |
| **MYO006** | Myoclonic epilepsy with ragged red fibers (MERRF) | MT-TK | MT-TK (accounts for ~90% of cases)<br>• m.8344A>G<br>• m.8356T>C<br>• m.8363G>A<br>• m.8361G>A | PCR-sequencing | EDTA/sodium citrate peripheral blood – 5ml |
| **LEB001** | Leber hereditary optic neuropathy (LHON) | MT-ND1<br>MT-ND4<br>MT-ND6 | 90% of cases due to one of three common mtDNA mutations<br>• MT-ND4 m.11778G>A<br>• MT-ND6 m.14484T>C<br>• MT-ND1 m.3460G>A<br>Mutations in other mtDNA genes are rare causes of LHON | PCR-sequencing | EDTA/sodium citrate peripheral blood – 5ml |
| **MIT004** | Mitochondria DNA Deletion and mitochondria copy number | mtDNA large deletions and copy number | mtDNA analysis | Real Time PCR | EDTA/sodium citrate peripheral blood – 5ml |

# Molecular and Genetic Tests

| Test Code | Name of the Condition | Name of Gene | Exons/Mutations | Type of Test | Sample Required** |
|---|---|---|---|---|---|
| **WHO003** | Whole mitochondria genome sequencing | Complete sequence analysis of the mtDNA using an Ion torrent platform | Analysis of whole mitochondria genome | Next generation sequencing | EDTA/sodium citrate peripheral blood – 5ml, muscle tissue sample, fibroblast |
| **BET003** | Beta thalassemia | HBB gene | 619 bp deletion in HBB | PCR-agarose gel electrophoresis | EDTA/sodium citrate/heparin peripheral blood – 5ml |
| **LEP003** | Leptospirosis | Leptospira detection | Quantitative Detection | Real Time PCR | Blood, Urine |
| **HYP011** | Hyperhomocysteinemia | Detection of homocysteine level | Quantitative detection | HPLC | Fasting blood |
| **GLU006** | Glycated hemoglobin | Detection of Hemoglobin A1c | Quantitative detection | Mass Spectrometry | EDTA/sodium citrate peripheral blood – 5ml |
| **RES010** | Resistance to Clopidogrel | CYP2C19 | CYP2C19*2 | PCR-RFLP | Sodium citrate peripheral blood – 5ml |
| **EPI018** | Epidermolysis Bullosa | COL17A1 and LAMB3 | COL17A1 and LAMB3 Mutation Analysis for Junctional Epidermolysis Bullosa | PCR-sequencing | EDTA/sodium citrate peripheral blood – 5ml, tissue samples |
| **WHO004** | Whole exome sequencing | Whole exome sequencing to identify potentially disease-causing variants in rare and complex disease research | Analysis of whole human exome | Next generation sequencing | EDTA/sodium citrate peripheral blood – 5ml, tissue samples |
| **COM041** | Comprehensive Malignancy screening | 409 Cancer gene panel | Target Sequencing 409 genes | Next generation sequencing | EDTA/Sodium citrate peripheral blood -5ml, tissue samples |

# Molecular and Genetic Tests

| Test Code | Name of the Condition | Name of Gene | Exons/Mutations | Type of Test | Sample Required** |
|---|---|---|---|---|---|
| **TAR004** | Targeted gene sequencing | Targeted gene sequencing to identify potentially disease-causing variants in rare and complex disease research | Analysis of individual genes by sequencing | Next generation sequencing | EDTA/sodium citrate peripheral blood – 5ml, tissue samples |
| **NOO001** | Noonan Research Panel | Noonan syndrome is a relatively common autosomal dominant congenital disorder. The noonan Panel assesses 14 genes known to be related with this disorder: A2ML1, BRAF, CBL, HRAS, KRAS, MAP2K1, MAP2K2, NRAS, PTPN11, RAF1, RIT1, SHOC2, SOS1 and SPRED1. | Targeted resequencing of gene panel | Next generation sequencing | EDTA/sodium citrate peripheral blood – 5ml |
| **TBR001** | TB Research Panel | The panel was developed as a quick, accurate and cost effective method to identify variants in genes associated with antimicrobial resistance in Mycobacterium tuberculosis (TB). The panel assesses 8 genes related to antimicrobial resistance (embB, eis, gyrA, inhA, katG, pncA, rpoB, rpsL). | Targeted resequencing of gene panel | Next generation sequencing | TB culture sample, Sputum samples |
| **PUL019** | Pulmonary Research Panel | This Mendelian Disease panel was developed as a quick, accurate and cost effective method to identify genetic mutations associated with inherited pulmonary disorders. The panel assesses 130 genes known to harbor mutations affecting the functioning of the lungs. | Targeted resequencing of gene panel | Next generation sequencing | EDTA/sodium citrate peripheral blood – 5ml |

# Molecular and Genetic Tests

| Test Code | Name of the Condition | Name of Gene | Exons/Mutations | Type of Test | Sample Required** |
|---|---|---|---|---|---|
| **DER017** | Dermatology Research Panel | This Mendelian Disease panel was developed as a quick, accurate and cost-effective method to identify genetic mutations associated with inherited dermatological impairment. The panel assesses 214 genes known to harbor mutations affecting the skin. | Targeted resequencing of gene panel | Next generation sequencing | EDTA/sodium citrate peripheral blood – 5ml, Tissue |
| **DYS001** | Dysmorphia-Dysplasia Research Panel | This Mendelian Disease panel was developed as a quick, accurate and cost-effective method to identify genetic mutations associated with inherited dysmorphia-Dysplasia. The panel assesses 389 genes known to harbor mutations causing dysmorphia or dysplasia. | Targeted resequencing of gene panel | Next generation sequencing | EDTA/sodium citrate peripheral blood – 5ml |
| **INB001** | Inborn Errors of Metabolism Research Panel | This Mendelian Disease panel was developed as a quick, accurate and cost effective method to identify genetic mutations associated with inherited metabolic disorders. The panel assesses 570 genes known to harbor mutations affecting metabolic functioning. | Targeted resequencing of gene panel | Next generation sequencing | EDTA/sodium citrate peripheral blood – 5ml |
| **PRI006** | Primary Immune Deficiency Research Panel | This Mendelian Disease panel was developed as a quick, accurate and cost effective method to identify genetic mutations associated with primary immunodeficiencies. The panel assesses 266 genes known to harbor mutations affecting the functioning of the immune system. | Targeted resequencing of gene panel | Next generation sequencing | EDTA/sodium citrate peripheral blood – 5ml |

# Molecular and Genetic Tests

| Test Code | Name of the Condition | Name of Gene | Exons/Mutations | Type of Test | Sample Required** |
|---|---|---|---|---|---|
| **END072** | Endocrine Research Panel | This Mendelian Disease panel was developed as a quick, accurate and cost-effective method to identify genetic mutations associated with inherited diseases of the endocrine system. The panel assesses 310 genes known to harbor mutations affecting endocrine functioning. | Targeted resequencing of gene panel | Next generation sequencing | EDTA/sodium citrate peripheral blood – 5ml |
| **GAS023** | Gastrointestinal Research Panel | This Mendelian Disease panel was developed as a quick, accurate and cost effective method to identify genetic mutations associated with inherited gastrointestinal disorders. The panel assesses 189 genes known to harbor mutations affecting gastrointestinal functioning. | Targeted resequencing of gene panel | Next generation sequencing | EDTA/sodium citrate peripheral blood – 5ml, Tissue |
| **NEU017** | Neurological Research Panel | This panel was developed as a quick, accurate and cost effective method to identify genetic mutations associated with inherited neurological disorders. The panel assesses 757 genes known to harbor mutations affecting the functioning of the brain and nervous system. | Targeted resequencing of gene panel | Next generation sequencing | EDTA/sodium citrate peripheral blood – 5ml, Tissue |
| **HEM033** | Hematology Research Panel | This Mendelian Disease panel was developed as a quick, accurate and cost effective method to identify genetic mutations associated with inherited hematological disorders. The panel assesses 404 genes known to harbor mutations affecting the blood. | Targeted resequencing of gene panel | Next generation sequencing | EDTA/sodium citrate peripheral blood – 5ml |

# Molecular and Genetic Tests

| Test Code | Name of the Condition | Name of Gene | Exons/Mutations | Type of Test | Sample Required** |
|---|---|---|---|---|---|
| **VIS006** | Vision Research Panel | This Mendelian Disease panel was developed as a quick, accurate and cost-effective method to identify genetic mutations associated with inherited blindness or other impairments of vision. The panel assesses 330 genes known to harbor mutations causal of vision impairment. | Targeted resequencing of gene panel | Next generation sequencing | EDTA/sodium citrate peripheral blood – 5ml, Tissue |
| **CAR039** | Cardiovascular Research Panel | This Mendelian Disease panel was developed as a quick, accurate and cost-effective method to identify genetic mutations associated with inherited cardiovascular defects. The panel assesses 424 genes known to harbor mutations affecting cardiovascular functioning. | Targeted resequencing of gene panel | Next generation sequencing | EDTA/sodium citrate peripheral blood – 5ml, Tissue |
| **REN015** | Renal Research Panel | This Mendelian Disease panel was developed as a quick, accurate and cost effective method to identify genetic mutations associated with inherited renal disorders. The panel assesses 96 genes known to harbor mutations affecting the functioning of the kidneys. | Targeted resequencing of gene panel | Next generation sequencing | EDTA/sodium citrate peripheral blood – 5ml, Tissue |
| **DEA001** | Deafness Research Panel | This Mendelian Disease panel was developed as a quick, accurate and cost-effective method to identify genetic mutations associated with inherited deafness. The panel assesses 124 genes known to harbor mutations affecting hearing functioning. | Targeted resequencing of gene panel | Next generation sequencing | EDTA/sodium citrate peripheral blood – 5ml, Tissue |
| **BLE007** | Bleeding Disorder Panel | This Mendelian Disease panel was developed as a quick, accurate and cost-effective method to identify genetic mutations associated with bleeding disorder | Targeted resequencing of gene panel | Next generation sequencing | EDTA/sodium citrate peripheral blood – 5ml |

# Molecular and Genetic Tests: QF-PCR for Prenatal Diagnosis

(Aneuploidy chromosomes 13, 18, 21 and X)

| Test Code | Type of Test | Sample | Report Duration |
|---|---|---|---|
| **ANE003** | Aneuploidy of Chromosome 13 | *AF/CVS/FB/POC along with parental blood samples | 5 days |
| **ANE004** | Aneuploidy of Chromosome 18 | | 5 days |
| **ANE005** | Aneuploidy of Chromosome 21 | | 5 days |
| **ANE006** | Aneuploidy of sex chromosomes (X & Y) | | 5 days |
| **ANE007** | Aneuploidy of any two chromosomes 13/18/21 | | 5 days |
| **ANE008** | Aneuploidy of Chromosome 13, 18, & 21 | | 5 days |
| **ANE009** | Aneuploidy of Chromosome13, 18, 21 and the sex chromosomes (X and Y) | | 5 days |

**Note:**
All samples for QF-PCR should be transported at room temperature **IMMEDIATELY** (unless otherwise mentioned) under aseptic precautions. Tubes with samples should be protected from damage by padding with soft material. Samples not meeting these requirements will NOT be accepted.

1. Amniotic fluid or AF (10ml in sterile container).

2. Chorionic villus sample or CVS (in 10 ml HBSS in sterile container).

3. Fetal blood or FB (heparin/EDTA in sterile container).

4. Products of conception or POC (in sterile normal saline).

5. 5 ml blood samples from parents required.

# Molecular and Genetic Tests: Prenatal Diagnosis for mutations

| Test Code | Name of the Condition | Name of Gene | Exons/Mutations | Type of Test | Sample Required** |
|---|---|---|---|---|---|
| **PRE017** | Prenatal Diagnosis for SMA | *SMN1* | Deletion in exon 7 & 8 and maternal cell contamination | PCR/RFLP and QF-PCR with chromosome 21 microsatellites | CVS/AF & **5ml of blood |
| **PRE018** | Prenatal Diagnosis for Thalassemia | *HBB* | Mutational analysis and maternal cell contamination | PCR/DNA sequencing and QF-PCR with chromosome 21 microsatellites | CVS/ amniotic fluid or fetal blood. **5ml blood |
| **PRE019** | Prenatal Diagnosis for DMD | *DMD* | Deletions and maternal cell contamination | Multiplex PCR and QF-PCR with chromosome 21 microsatellites | CVS/AF & **5ml of blood |
| **PRE020** | Prenatal Diagnosis for Hemophilia A | *Factor VIII* | Carrier X chromosome | Linkage analysis with microsatellites/intragenic SNPs | CVS/AF & **5ml of blood (proband's blood sample) |
| **PRE022** | Prenatal Diagnosis for Achondroplasia | *FGFR3* | Mutation analysis and maternal cell contamination | PCR-RFLP/ QF-PCR | CVS/AF & **5ml of blood |
| **PRE023** | Prenatal Diagnosis for Hypochondroplasia | *FGFR3* | Mutation analysis and maternal cell contamination | PCR-RFLP/ QFPCR | CVS/AF & **5ml of blood |
| **PRE024** | Prenatal Diagnosis for Cystic Fibrosis | *CTFR* | Δf508 | QF-PCR | CVS/AF & **5ml of blood |
| **PRO057** | Prenatal Diagnosis for Progressive Pseudorheumatoid | *WISP3* | Mutation analysis and maternal cell contamination | PCR– Sequencing/QF-PCR | CVS/AF & **5ml of blood |

Note:

1. In the Table, Sample Source: Blood – indicates 5 ml anticoagulated (EDTA/Heparin) blood, unless otherwise mentioned.
2. Immediately transport the blood sample at room temperature. If delayed, please store samples at 4°C to prevent RBC lysis.
3. ** 5 ml blood - Additionally, 5 ml blood sample from mother is required and other siblings whenever possible.
4. Samples not meeting these conditions will be rejected.

# Flow Cytometry Tests

| Test Code | Panel | CD markers | Name of the condition | Sample Required |
|---|---|---|---|---|
| **ALL004** | ALL | CD3/CD7/CD10/CD19/CD34 /CD33/CD13/CD45 | Acute Lymphoid Leukemia | Peripheral blood or Bone Marrow |
| **ALL003** | ALL | CD3/CD7/CD10/CD13/CD19 /CD33/CD34/CD45/CD 79b/TDT | Acute Lymphoid Leukemia (With anti TDT & CD79) | Peripheral blood or Bone Marrow |
| **AML001** | AML | CD3/CD7/CD10/CD19/CD34 /CD33/CD13/CD45/CD14 | Acute Myeloid Leukemia | Blood or Bone Marrow |
| **CLP002** | CLPD | CD5/CD10/CD19/CD20/CD2 3/CD25/CD103/kappa/lambd a | Chronic Lymphoproliferative Disorder (With CD103) | Blood or Bone Marrow |
| **CLP001** | CLPD | CD5/CD10/CD19/CD20/CD2 3/CD25/kappa/lambda | Chronic Lymphoproliferative Disorder (Without CD103) | Blood or Bone Marrow |
| **DNA003** | DNA ploidy | —— | DNA Ploidy – Leukemia | Blood or Bone Marrow |
| **DNA004** | DNA ploidy | —— | DNA Ploidy in Solid tumors | Paraffin embedded tissue blocks |
| **HIV004** | HIV | CD4 / CD8/CD3 | HIV Monitoring | Blood or Bone Marrow |
| **HLA008** | HLA-B27 | HLA-B27 | Ankylosing Spondylitis | Blood |
| **PNH002** | PNH | CD55/ CD59 | Paroxysmal nocturnal hemoglobinuria (PNH) - RBC | Blood or Bone Marrow |
| **PNH003** | PNH | CD55/ CD59/CD16 | Paroxysmal nocturnal hemoglobinuria (PNH) - WBC | Blood or Bone Marrow |

Note:

1. Required sample: Heparinized/ EDTA 5 ml of peripheral blood or 3 ml of bone marrow.
2. All samples must be transported immediately at room temperature. Do not freeze the samples
3. Samples not meeting the requirements will not be accepted.
4. Rs. 800 extra will be charged for additional antibody.
5. Reports will be available within a minimum of 3 working days.

# Flow Cytometry Tests

## Any single Antibody (percentage)

| Test Code | CD Marker |
|---|---|
| **CD2001** | **CD2** |
| **CD3001** | CD3 |
| **CD4005** | CD4 |
| **CD5001** | CD5 |
| **CD7001** | CD7 |
| **CD8001** | CD8 |
| **CD1010** | CD10 |
| **CD1101** | CD11a |
| **CD1005** | CD13 |
| **CD1401** | CD14 |
| **CD1501** | CD15 |
| **CD1601** | CD16 |
| **CD1006** | CD19 |
| **CD2020** | CD20 |
| **CD2022** | CD22 |
| **CD2023** | CD23 |
| **CD2025** | CD25 |
| **CD3101** | CD31 |
| **CD3002** | CD33 |
| **CD3006** | CD34 |

| Test Code | CD Marker |
|---|---|
| **CD4041** | CD41 |
| **CD4401** | CD44 |
| **CD4003** | CD45 |
| **CD5055** | CD55 |
| **CD5056** | CD56 |
| **CD5059** | CD59 |
| **CD6101** | CD61 |
| **CD6069** | CD69 |
| **CD7101** | CD71 |
| **CD7901** | CD79b |
| **CD1103** | CD103 |
| **CD1117** | CD117 |
| **CD1330** | CD133 |
| **CD2350** | CD235a |
| **HLA104** | HLADR |
| **KAP001** | Kappa |
| **LAM006** | Lambda |
| **TCR001** | TCR-αβ |
| **TCR002** | TCR-γδ |
| **TDT001** | TDT |

Note:

1. Required sample: Heparinized/ EDTA 5 ml of peripheral blood or 3 ml of bone marrow.
2. All samples must be transported immediately at room temperature. Do not freeze the samples
3. Samples not meeting the requirements will not be accepted.
4. Rs. 800 extra will be charged for additional antibody.
5. Reports will be available within a minimum of 3 working days.

# Genetic Tests – Karyotyping

| Test Code | Sample | Report Duration |
|---|---|---|
| **KAR010** | Blood (2ml, heparinized tube)<br>* Transport within 24 hours | 7 days |
| **KAR011** | Amniotic fluid (20ml in sterile container)<br>* Transport within 12 hours | 20 days |
| **KAR012** | Chorionic villus sampling (10ml in HBSS,PBS or Saline in sterile container)<br>* Transport within 12 hours | 20 days |
| **KAR013** | Bone marrow (1ml in heparinized tube)<br>* Transport immediately | 8 days |
| **KAR014** | Percutaneous umbilical blood sampling (2ml in heparinized container)<br>* Transport immediately | 8 days |
| **KAR015** | Products of Conception<br>(aseptically remove a small piece ~1 cm of fetal skin, or other types of fetal tissue, place in sterile normal saline and send it IMMEDIATELY to the laboratory) | 21 days |
| **CHR005** | Chromosomal breakage syndrome Blood (2ml, heparinized tube)<br>* Transport within 24 hours | 8 days |

# Other Tests

| Test Code | Name | Sample | Report Duration |
|---|---|---|---|
| **LEA003** | Lead analysis (Blood)<br>(Stripping voltametry) | 2ml anticoagulated Blood (EDTA or Heparinized)<br>Transport immediately at room temperature.<br>Do Not Freeze | 2 days |
| **AAS001** | Metal analysis (Atomic Absorption Spectrometry)<br>Mercury/Lead/Zinc/ Copper/Iron/Cobalt/ Magnesium/Manganese/Chromium/ Nickel/Aluminium/Molybdenum/Calcium | 2ml anticoagulated Blood (EDTA/Heparin) or<br>Tissue/Hair/Soil/Medicinal extract<br>Transport immediately at room temperature.<br>Do Not Freeze | 1 week |

**Note:**

1. All samples for karyotyping should be transported at room temperature **IMMEDIATELY** (unless otherwise mentioned) under aseptic precautions to enable proper culture of cells.

2. Sample-containing tubes should be protected from damage by padding with soft material.

3. Samples not meeting these requirements will NOT be accepted.

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# QUALITY SERVICE IS OUR MOTTO

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