

SPERM NUCLEOTIDE ASSAY

The Sperm Nucleotide Assay is a specialized molecular test designed to evaluate the integrity of sperm DNA at the nucleotide level. While routine semen analysis assesses count, motility, and morphology, this advanced assay goes deeper to detect DNA damage, fragmentation, and chromatin abnormalities that may impact fertilization, embryo development, and pregnancy outcomes.

PRENATAL TESTING

Used during pregnancy when both parents are carriers or at risk. Methods include:

1. Chorionic Villus Sampling (CVS) – Performed around 10–13 weeks of pregnancy. A small sample of placental tissue is analyzed for sickle cell mutations.
2. Amniocentesis – Performed around 15–20 weeks of pregnancy. Amniotic fluid is tested to detect fetal hemoglobin gene mutations.
3. Preimplantation Genetic Testing (PGT-M) – Conducted during IVF to screen embryos for sickle cell mutations before implantation.

PATERNITY TESTING

Paternity testing is a DNA-based analysis used to determine biological parentage. The test compares specific genetic markers (STR loci) between the child and the alleged father to confirm or exclude biological relationship with a very high degree of accuracy. It is useful for legal, personal, and immigration purposes.

EMBRYONIC DNA SCREENING

Embryonic DNA screening (Preimplantation Genetic Testing – PGT) analyzes embryos created through IVF to detect genetic abnormalities before implantation. It helps identify chromosomal abnormalities (PGT-A), single-gene disorders (PGT-M), or structural rearrangements (PGT-SR), improving implantation success rates and reducing the risk of genetic disease transmission.

HEMATOLOGY TESTING

Hematology testing involves laboratory analysis of blood to evaluate overall health and detect disorders such as anemia, infections, clotting abnormalities, and blood cancers. Common tests include Full Blood Count (FBC), blood film examination, and hemoglobin analysis.

PRECISION MOLECULAR DIAGNOSTICS

Our Advanced Clinical DNA/RNA Analysis service utilizes cutting-edge molecular techniques to detect, quantify, and characterize genetic material associated with inherited disorders, infectious diseases, oncology markers, and other clinical conditions. Using technologies such as PCR, RT-PCR, and sequencing, we provide highly sensitive and specific results that support early diagnosis, disease monitoring, and personalized treatment strategies for Genetic disease screening, cancer molecular profiling, Infectious disease detection, and gene expression analysis

BIOINFORMATICS SERVICES

Our Bioinformatics unit integrates biology, computer science, and statistics to analyze and interpret complex genomic and molecular data. We provide comprehensive data processing, sequence analysis, variant interpretation, and genomic reporting to support clinical diagnostics, research, and precision medicine initiatives. Basically for genomic data analysis, variant annotation and interpretation, gene expression analysis

METAGENOMIC ANALYSIS

Metagenomic analysis enables the identification of all genetic material present in a sample, allowing detection of bacteria, viruses, fungi, and parasites without the need for traditional culture methods. This advanced approach is particularly useful for diagnosing complex or unknown infections, studying microbial communities, and conducting environmental or clinical microbiome research. Infectious disease diagnosis, microbiome profiling, and antimicrobial resistance detection to mention a few



MOLECULAR DIAGNOSTIC LABORATORY

TenderRock Solutions (Advisory)



- Environmental management & sustainability advisory
- Applied life sciences & scientific research advisory



- Research design & coordination
- Data analysis & evidence synthesis
- Technical reporting & policy briefs



- Mentorship (students & early-career)
- Public science education & engagement

Complementary entities

TRS Molecular Diagnostic Laboratory



- Hands-on molecular diagnostic training
- Laboratory internships (students & early-career)

Socials



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TRS... Science. Sustainability. Solutions



MOLECULAR DIAGNOSTICS LABORATORY

CLINICAL PRECISION TESTING

TRUSTED SCIENCE. ACCURATE RESULTS.



Hematology & Blood Diagnostics:

Sickle Cell Variant (SCV) Testing,
Complete Hematology Panels



Molecular & Infectious Disease Diagnostics:

PCR-based detection, Molecular
Microbial Analysis



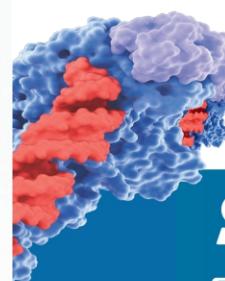
Advanced Analytical & Research Support:

DNA/RNA analysis, Proteomics,
Metagenomics, Bioinformatics



Genetic & Reproductive Science:

Paternity Testing, Gamete Nucleotide
Assessment, Embryonic DNA Screening



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COLLABORATING PARTNERS

