

There are plans to expand the molecular oncology laboratory to widen the scope of sequencing and add a dedicated cancer genomics laboratory to support both care and research.

PATHOLOGY

The UCI Pathology laboratory was created to reduce barriers to cancer diagnosis and cancer care. A patient need not have a diagnosis to access the Uganda Cancer Institute. All diagnostic tests can be undertaken at the UCI. The Lab offers Histology, Cytology and Immunohistochemistry services.

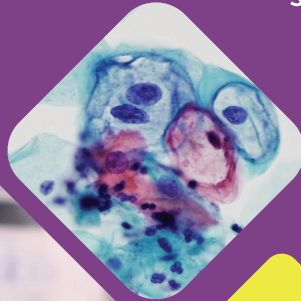
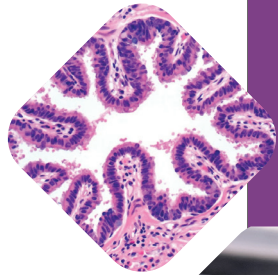
In the year 2024, the laboratory conducted analysis of 2,310 cytology samples, 7,315 histology samples and 12,255 Immunohistochemistry tests.

The laboratory also undertakes other specialized histology studies.

The Pathology service also has Digital Pathology services supported by two whole slide scanners that support teleconsultation, teaching and digital archiving.

BIOBANKING

The UCI is in the process of establishment and accreditation of Pan Cancer Biobank that will store both FFPE and other liquid specimens. The laboratory already has a collection of FFPE specimens and boasts of



eight (8) -80C freezers each capable of holding more than 50,000 vials. Our goal is to expand this capacity to continue to support cancer research and other biomedical research in the country.

OTHER SERVICES

The Laboratory serves as a training facility for several medical disciplines including cytotechnology, laboratory technology and Pathology Residents.

The laboratory also undertakes research and offers contract services to other facilities.

The UCI laboratory also offers consultation services for cancer diagnosis and other laboratory consultative services.



Uganda Cancer Institute

Pathology & Laboratory Medicine



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“Every Test for Every Cancer Patient”

The Division of Pathology and Laboratory Medicine (PALM)/UCI Laboratory at the Uganda Cancer Institute undertakes analysis of tissues and body fluids to support cancer diagnosis and care. The UCI laboratory is a SANAS accredited laboratory divided into several sections to provide total laboratory medicine support to cancer patients.

- 1) **Haematology**
- 2) **Clinical Chemistry**
- 3) **Transfusion**
- 4) **Microbiology**
- 5) **Molecular Oncology/Cancer Genomics**
- 6) **Pathology**
- 7) **Biobanking**

The UCI lab boasts of both specialized personnel and highly specialized technical equipment to support cancer care and research.



Haematology

The Haematology laboratory is part of the General Service laboratory and offers several diagnostic tests including Complete Blood Count, Reticulocyte counts, peripheral blood films, flow cytometry and a variety of specialized haematologic tests. The haematology laboratory supports not just diagnosis of haematologic malignancies but also offers supportive testing for other cancers.

Clinical Chemistry

The clinical chemistry laboratory provides biochemical analysis of samples and offers numerous tests including organic profiles such as Liver, renal, pancreatic, thyroid, bone, cardiac as well as metabolic and fertility panels. The chemistry lab also offers specialized tumor markers for all cancers as well as specialized oncology drug testing. The chemistry lab runs almost **900,000** tests per year.

Transfusion Laboratory

The UCI Transfusion Lab offers specialized blood grouping and cross matching and has recently acquired specialized equipment to support extended blood grouping and cross matching to support patient care.

The UCI Transfusion works closely with the Uganda Blood Transfusion Services (Nakasero Blood Bank) to support access to blood and blood products for cancer patients.



Microbiology

The UCI microbiology currently undertakes blood culture and sensitivity to support cancer care. Antimicrobial Stewardship is critically important in cancer patients where patients often have immunocompromise from both the disease and the treatment.

The laboratory also offers serology testing for a variety of diseases including HIV, HBV, HCV as well as other microbiology tests such as TPHA and urinalysis.

Molecular Oncology/Cancer Genomics

With the advancements in personalized cancer medicine, it is imperative that we offer targeted testing for cancer patients. This lab boasts of several equipment including Sequencers (Illumina, Oxford Nanopore), PCR machines, Gel electrophoresis equipment, automated DNA extraction equipment, DNA quantification equipment.

The laboratory also has an inhouse bio-informatician to support bioinformatics analysis. Currently the Molecular Oncology laboratory has the following capabilities.

- 1) Sequencing (including for BRCA1/BRCA2, other cancer genetic mutations)
- 2) BCR-ABL Quantitation
- 3) Mutation specific PCR
- 4) Quantitative PCR
- 5) Qualitative PCR
- 6) HBV viral loads
- 7) CMV viral loads
- 8) HCV viral loads
- 9) COVID-19 testing
- 10) Gel electrophoresis
- 11) Sample processing

