



3.1.5 University has the following facilities

1. Central Research Laboratory / Central Research Facility
2. Animal House/ Medicinal Plant Garden / Museum
3. Media laboratory/Business Lab/e-resource Studios
4. Research/Statistical Databases/Health Informatics
5. Clinical Trial Centre

1-Central Research Laboratory / Central Research Facility



KING GEORGE'S MEDICAL UNIVERSITY

LUCKNOW UTTAR PRADESH INDIA

CENTER FOR ADVANCE RESEARCH

- Centre for Advanced Research (CFAR) has state-of-the-art facilities in Molecular biology lab, Stem cell/ Cell culture lab and Cytogenetics lab.
- These laboratories are equipped with facilities like microCT, Drug screening on ex vivo patient samples, Gene expression analysis lab, Metabolomics, Pesticide estimation, flow cytometry, Stem cell isolation and characterisation, etc.
- Several investigators from different universities and Institutes have been used/ using these facilities on a collaborative and reagent-sharing basis.



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Registrar
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Gene Expression Assay System



MALDI-TOF DNA Sequencer

High throughput SNPs analysis platform.
Rapid determination of short DNA sequences



Gene Titan-MC

This is an automated platform where every step is preoptimized and gives highly reproducible result between experiments.
supports gene expression and genotyping studies on multi-format array plates.

Microarray based gene expression



Microarray

This is an automated chip based expression analysis system.
This equipment is equipped with automatic liquid handling system.



NanoString

This is a direct, reliable and highly sensitive multiplexed measurement of nucleic acids (DNA and RNA) based on a novel digital barcode technology .
The system is very resistant to poor quality of the RNA samples and it is perfectly suited for critical samples such as FFPE samples.

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Real Time PCR/ Q-PCR



RT/Q-PCR



PCR



Absolute or relative expression of RNA can be quantified by this machine. Taqman probe or Sybr green dye can be used for this assay. In Chromatin immunoprecipitation, DNA pull down by specific antibodies can be quantified by Q-PCR.

By using specific primer, any part of genome can be amplified and looked for Polymorphism, mutational analysis. Amplified sequences can be used for other application like cloning etc.

FPLC (Fast Protein Liquid Chromatography)



FPLC

This is a column based protein purification machine. Peptide, nucleic acid, tagged protein from complex mixture can be purified very efficiently and quickly.



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Fluorescent Activated Cell Sorter (Cell Sorter)



Aria III (Cell sorter)

This system can identify a cell population by using up to 10 markers. This sorter is a 4 way sorter and can sort up to 4 population at time. This equipment has 3 lasers.



AutoMACS Magnetic cell separator

This system can separate cell population by using magnetic beads tagged antibodies. Sterile separated cells can be cultured or used for cell and molecular biology work.

μ CT and In Vivo Bioluminescence and Fluorescence Imaging system for small animals



μ CT

This system can scan small animals like mice, rat and rabbits. It is equipped with anesthesia chamber and analysis software. This machine can be used for scanning of hard tissue like bones and cartilages along with soft tissue like tumor xenograft.



In vivo imager

This system can identify a fluorescently tagged cells in vivo and can provide 3D information. This equipment has one 488 nm laser.

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μ CT

Microct-based imaging of animals as well as teeth:

μ CT is a very powerful equipment to study the bone architecture in small animals and human teeth at 10 μ m resolution



Drug Screening in *ex vivo* cultured patient samples

This system can scan small animals like mice, rat and rabbits.

It is equipped with anesthesia chamber and analysis software.

This machine can be used for scanning of hard tissue like bones and cartilages along with soft tissue like tumor xenograft.

In vivo imager



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RESEARCH LAB DEPARTMENT OF ANATOMY



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In vivo imager



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DEPARTMENT OF BIOCHEMISTRY

μ CT



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Molecular Biology Lab

In vivo imager



This system can identify a fluorescently tagged cells in vivo and can provide 3D information. This equipment has one 488 nm laser.

DNA Isolation Experiment of RTPCR & PCR

μ CT and In Vivo Bioluminescence and Fluorescence Imaging system for small animals

DEPARTMENT OF MICROBIOLOGY

μ CT



This system can scan small animals like mice, rat and rabbits. It is equipped with anesthesia chamber and analysis software. This machine can be used for scanning of hard tissue like bones and cartilages along with soft tissue like tumor xenograft.

BSL-3 LAB

In vivo imager



This system can identify a fluorescently tagged cells in vivo and can provide 3D information. This equipment has one 488 nm laser.

VRDL Lab

μ CT and In Vivo Bioluminescence and Fluorescence Imaging system for small animals

DEPARTMENT OF PATHOLOGY

μ CT



This system can scan small animals like mice, rat and rabbits. It is equipped with anesthesia chamber and analysis software. This machine can be used for scanning of hard tissue like bones and cartilages along with soft tissue like tumor xenograft.

Multiheader Microscope In vivo imager



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PCR Lab

μ CT and In Vivo Bioluminescence and Fluorescence Imaging system for small animals

Department of Radiodiagnosis

μ CT



This system can scan small animals like mice, rat and rabbits. It is equipped with anesthesia chamber and analysis software. This machine can be used for scanning of hard tissue like bones and cartilages along with soft tissue like tumor xenograft.

MRI Console

In vivo imager



This system can identify a fluorescently tagged cells in vivo and can provide 3D information. This equipment has one 488 nm laser.