

MEDICAL BIOTECHNOLOGY LABORATORY

Medical Biotechnology Laboratory at SOAHS, MALLA REDDY UNIVERSITY offers state-of-the-art facilities for inquiry-based laboratory investigations and hands-on activities to help students better appreciate the promise of biotechnology and understand its tools and techniques. The laboratory has latest equipment to conduct various biotechnological experiments starting with basic cell biology to modern DNA analysis. The facilities available in the laboratory provide excellent opportunity for the undergraduate, post-graduate and Doctoral students to learn the techniques related to medical biotechnology.

The laboratory is equipped with Biosafety cabinet -2, PCR apparatus, Gel Electrophoresis Systems, Micropipettes, UV Trans-Illuminator, Orbital Shaker, Autoclave, Centrifuges, UV-VIS Spectrophotometer, Water bath, Freezer, Incubators, Magnetic stirrer, pH meter, Fume hood and other essential biotechnology equipment required for conducting meaningful experiments. The two-biotechnology labs can accommodate up to 90 students simultaneously for performing hands-on activities and lab experiments.

Cell biology Laboratory equip students with practical skills in cell biology techniques essential for industrial research labs, independent research experiences, and advanced courses. Students learn to describe different strategies for cell manipulation, understand cellular processes, and apply techniques like protein extraction and quantitation. The objectives of a Recombinant DNA Technology (RDT) lab include detecting, isolating, improving, and successfully re-expressing genes derived from a host organism. RDT involves cutting and pasting genes to understand their underlying functions and regulatory mechanisms, process reverse genetics, rectify genetic defects, transform disease-prone hosts with foreign genes, and produce antibodies in plants. The lab utilizes various techniques such as gel electrophoresis, restriction digestions, and enzyme-based methods to manipulate and isolate DNA segments of interest. Biophysical Techniques lab typically include training students in various biophysics and bioinstrumentation techniques essential for understanding life sciences and biotechnology. The lab aims to provide hands-on training on practical experiments and techniques relating to metabolism in biochemistry, enabling students to analyze metabolic problems, approach research problems specifically, and understand the significance of biochemical tests. Bioinformatics laboratory, which is equipped with computer systems and software is also established to work on drug designing, vaccine technology and

Artificial Intelligence and Machine Learning. The expertise available in the department guides the students to do relevant research projects in these areas.











