

INTERNSHIP MODULES

edlixir offers specialized internship modules designed to provide students and researchers with hands-on experience in advanced areas of life sciences, biotechnology, and computational biology. Each module combines theoretical concepts with practical training, enabling participants to gain research-oriented skills and industry-relevant expertise. These internships are ideal for those aspiring to build careers in academia, pharmaceuticals, and biotechnology.



edlixir Internship Modules

edlixir offers structured internship programs designed to provide participants with both theoretical knowledge and practical skills across diverse domains of life sciences, biotechnology, and computational biology. Each module combines lectures, hands-on training, and project work, ensuring that students gain industry-relevant experience and research exposure.

Molecular Modelling of Proteins

- - Introduction to protein structure and function
- - Visualization of proteins using PyMOL/Chimera
- - Homology modeling and structure prediction
- - Validation of protein models

Molecular Docking and Simulation

- - Principles of ligand-protein interaction
- - Docking workflows using AutoDock/Schrödinger
- - Molecular dynamics simulations with GROMACS
- - Analysis and interpretation of docking results

Gene Expression Analysis

- - RNA isolation and cDNA synthesis
- - Quantitative PCR and microarray techniques
- - Next-generation sequencing for transcriptomics
- - Bioinformatics tools for differential gene expression

Proteomics

- - Protein extraction and quantification
- - 2D-Gel electrophoresis and mass spectrometry
- - Data analysis using proteomic databases
- - Applications of proteomics in biomarker discovery



Reverse Vaccinology

- - Basics of immunoinformatics
- - Genome mining for antigen candidates
- - Epitope prediction tools
- - Designing multi-epitope vaccines

Neuropharmacological Techniques

- - In vitro models for neuropharmacology
- - Behavioral assays in rodents
- - Electrophysiological methods
- - Drug screening and neurotoxicity assessment

Medicinal Chemistry

- - Drug discovery and design principles
- - Structure-activity relationships (SAR)
- - Lead optimization strategies
- - Spectroscopic characterization of compounds

QSAR (Quantitative Structure-Activity Relationship)

- - Introduction to QSAR modeling
- - Descriptor calculation and selection
- - Regression and classification models
- - Validation of QSAR models

Neurobiology

- - Neuroanatomy and neurophysiology basics
- - Cell culture models of the nervous system
- - Neural signaling pathways
- - Experimental techniques in neuroscience

Immunology

- - Innate and adaptive immune responses
- - Flow cytometry and ELISA techniques
- - Monoclonal antibody production



- - Immunoinformatics applications

Medical Physiology

- - Cardiovascular and respiratory physiology
 - - Endocrine system analysis
 - - Neurophysiology and muscle contraction studies
 - - Clinical case discussions
-

edlixir