



BIOINFORMATICS PROJECT TOPIC LIST

1. Sequence alignment analysis of Mpox Virus
2. Personalized drug in type II diabetes using Pharmacovigilance approach
3. Developing a Computational Model for Predicting the Emergence of New Mpox or SARS-CoV-2 Escape Variants with Enhanced Immune Evasion
4. Understanding efficacy of personalized medicine in Alzheimer's disease treatment: A Molecular docking approach
5. Studying the cervical cancer and its drugs target using multiple omics data analysis
6. Identification of potential drug targets of miR-4454 in CARS disease using bioinformatics databases and network pharmacology
7. Investigating the role of cervical cancer and its drug targets using proteomics data analysis
8. Identification of Disease-Causing Mutations: A Bioinformatics Database Approach (breast cancer)
9. Exploring genomics variants on cervical cancer a bioinformatics approach
10. Decoding genetic blueprint of type II diabetes through bioinformatics
11. Computational Drug Discovery Targeting Mpox: Virtual Screening and Molecular Docking Analysis of Potential Antiviral Compounds
12. Sequence alignment and homology modeling
13. Bioinformatics approaches to investigate antimicrobial resistance in humans

14. Predicting Drug Resistance in Cancer Using Multi-Omics Data Integration
15. Metagenomic Analysis of Gut Microbiota and Its Impact on Immune Response in Autoimmune Diseases
16. Designing Novel Therapeutic Strategies for Rare Genetic Diseases Using CRISPR-Based Functional Genomics
17. Exploring Epigenetic Modifications in Cardiovascular Diseases Through Computational Epigenomics
18. Integrative Analysis of Single-Cell RNA Sequencing Data to Uncover Cellular Heterogeneity in Tumor Microenvironment
19. Predictive Modeling of Drug-Drug Interactions in Personalized Medicine Using Network Pharmacology
20. Bioinformatics Approaches to Identify Biomarkers for Early Detection of Chronic Kidney Disease
21. Characterizing the Impact of Epitranscriptomics on Cancer Progression Using RNA Sequencing Data
22. Modeling Protein-Protein Interactions in Neurodegenerative Disease Using Structural Bioinformatics
23. Exploring Genetic and Epigenetic Factors Contributing to Drug Response Variability in Cancer Therapy
24. Investigating the Role of Circular RNAs in Cancer Metastasis Using Computational Approaches
25. Utilizing Bioinformatics and CADD pipelines to Identify Novel Therapeutic Targets of Mpox
26. Analyzing the Impact of Post-Translational Modifications on Protein Function in Disease States
27. Ligand-Based Virtual Screening for Discovery of Novel Dengue Virus or Mpox Virus Entry Inhibitors
28. Design and Optimization of Novel Inhibitors for Dengue Virus NS3 or Mpox Virus Protease Using Structure-Based Drug Design
29. Identifying Potential Inhibitors of Mpox with Enhanced Pharmacological Profiles: An In-Silico Drug Discovery to Development Approach

30. Structure-Based Multi-Target Screening, Molecular Docking, and DFT Analysis for Anti-Cancer Drug Discovery
31. Exploration of Hub Genes and therapeutics drug candidates in cancer through an Integrated Bioinformatics Framework
32. Single-Nucleotide Polymorphism (SNP) Analysis for Personalized Nutrition Based on Gut Microbiome
33. Pan-genome Analysis of Antibiotic-Resistant *Klebsiella pneumoniae* Strains
34. CRISPR Guide RNA Design for Improving Stress Tolerance in Rice
35. Mining Plant Metabolome Databases to Predict Bioactive Compounds for Herbal Drug Discovery
36. Role of Skin Microbiome in Psoriasis and Eczema: Comparative Metagenomic Study
37. Constructing a Systems Biology Model to Simulate Inflammatory Pathways in Rheumatoid Arthritis
38. Automated QSAR Modeling and Prediction of Anti-TB Compounds
39. Development of a Bioinformatics Workflow for scRNA-seq Quality Control and Cell Type Annotation
40. In Silico Identification of Neoantigens for Personalized Immunotherapy in Glioblastoma
41. Gene-Disease Network Analysis in Rare Mitochondrial Disorders
42. Identification of Neoantigens for Personalized Cancer Vaccines - Use AI to predict cancer-specific neoantigens from tumor sequencing data to guide vaccine development.
43. Gene Regulatory Network Analysis for Cancer - Use graph neural networks to infer and analyze gene regulatory networks in different cancer types