Discovery of Therapeutic Biomarkers and their Potential Inhibitors for Liver Cancer Therapy Using Bioinformatics Approaches

Team Members:

Balqees Mansour | Salaam Ridwan | Rukaya Omotosho-Sanni | Ajisegiri Sewedo Blessing

Team Members and their Roles

Salaam Ridwan

- Project conceptualization
- DEA Analysis and Interpretation
- Compound retrieval & Molecular docking result interpretation
- Manuscript writing (Introduction & Discussion)

Balqees Mansour

- DEA Analysis and Visualization
- Functional enrichment analysis
- Manuscript writing (result & Discussion)

Ajisegiri Blessing Sewedo

- Dataset retrieval and preprocessing
- Functional enrichment result interpretation
- Manuscript writing (Abstract & materials and methods)

Rukayat Omotosho-Sanni

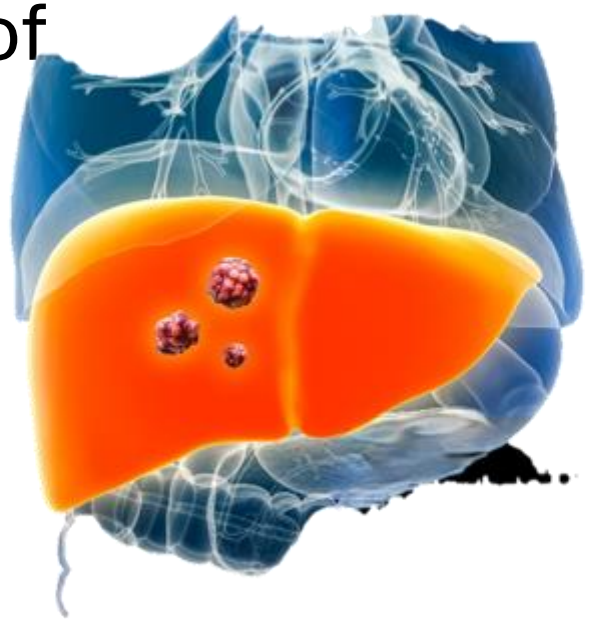
- Protein preparation and molecular docking
- ADMET analysis & interpretation
- Manuscript writing (result & Discussion)

Introduction

Biomarker discovery

- Third leading cause of mortality globally
- Suboptimal performance by conventional biomarkers
- Need for more effective biomarkers

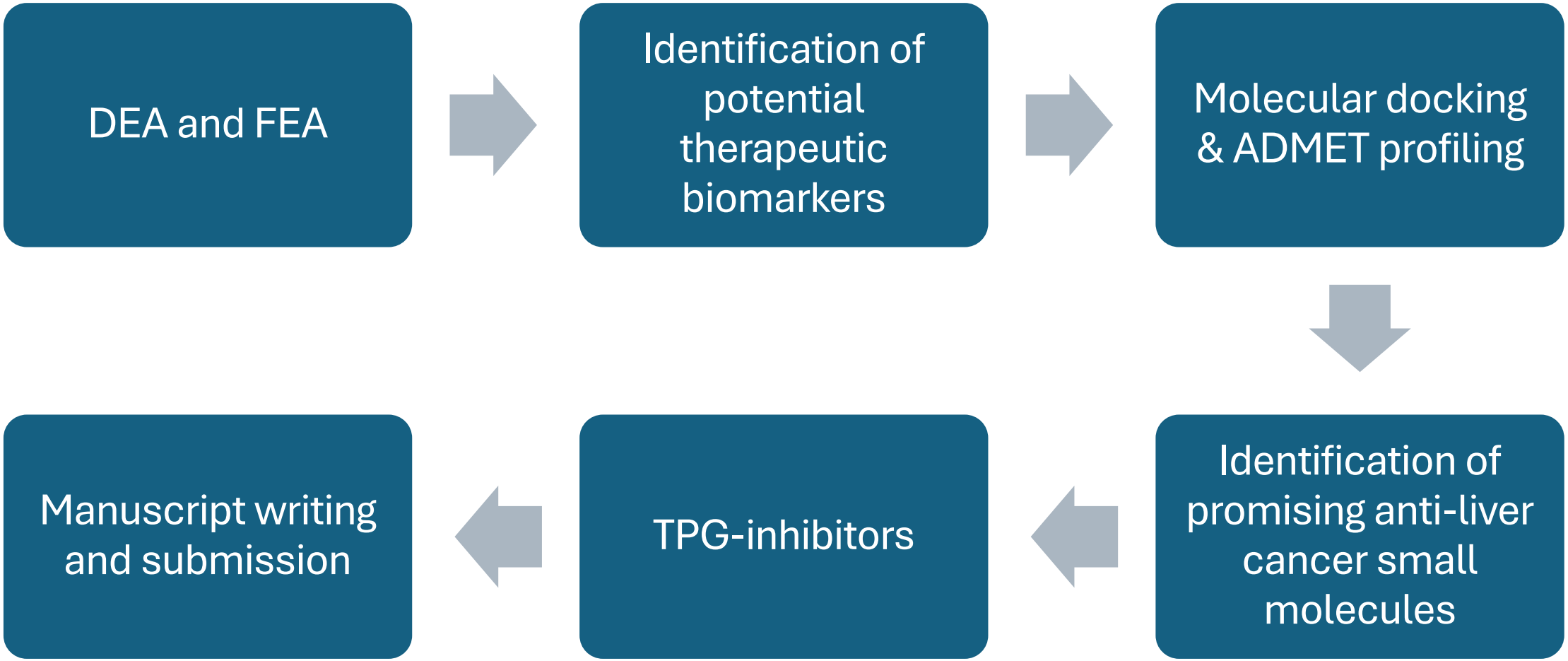
(Rashid et al., 2023; Mansouri et al., 2020)



Small molecule discovery

- Chemotherapy – common therapeutic approach for cancer
- Sorafenib & HCC
- Limitations – below average survival time, adverse side-effects, drug resistance (Anwanwan et al., 2020)

Method flowcharts



Expected results

DEA & FEA	• Identified upregulated and downregulated genes • Identified significantly enriched biological processes, molecular functions, cellular compartments and KEGG pathways
Molecular docking and ADMET Profiling	• Identified promising Protein-ligand complexes • Profiled pharmacokinetic and pharmacodynamics properties of promising drugs
Manuscript writing	• A well-written and complete manuscript for submission to Team Hackbio • Submission of reviewed, plagiarism-free manuscript to a reputable journal

Q/A Session