Xu Guo

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Education

School of Mathematics, University of Edinburgh UK
> Statistics with Data Science (master's degree), 2024-9~

School of Life and Pharmaceutical Sciences, Dalian University of Technology (985 & 211) CHN
> Bioinformatic (bachelor's degree), 2019-9~2023-6, GPA: 90.0/100
> Applied Chemistry (double degree), 2020-9~2023-6, GPA: 76.0/100

Institute of Microbiology, Chinese Academy of Sciences CHN
> QingYing Class (Graduation Project), 2023-1~2023-6, Paper Output

Employment & Internship

Prof. Frank Huang, Mayo Clinic USA
> Research on Medulloblastoma (Research Assistant), 2024-4~

Prof. Yanshuo Han, Dalian University of Technology CHN
> Research on Abdominal Aortic Aneurysm (Research Assistant), 2023-7~

Prof. Qi WU, Chinese Academy of Sciences CHN
> Evolutionary biology and Population Inheritance (Internship), 2021-7~2021-8

Prof. Shuangge Ma, Yale University USA
> Biostatistics (Summer Course), 2022-8~2023-9

Research Experience

Research on Medulloblastoma (MB) **July 2023–**
Overview: Immune infiltration and cell communication in MB; Cell-communication algorithm development; Single-cell data revealed the expression profile of CD74 in Group3 MB
Contribution: Data mining, Bioinformatics analysis, Visualization, scRNA-seq data analysis, Algorithm development

Research on Abdominal Aortic Aneurysm (AAA) **April 2024**
Overview: Research on the mechanism of AAA developing into rupture AAA; Mendelian randomization, GWAS-eQTL Colocalization and Multi-omics Analysis; Single-cell combined analysis of human and mouse; Development of functional enrichment scoring algorithm
Contribution: Data mining, Bioinformatics analysis, Methodology, Conception, High throughput data analysis, Visualization, scRNA-seq data analysis, Multi-omics analysis, Paper organization & writing, Algorithm development, R Package writing
Output: Publications [6], Algorithm Developed

Research on Medulloblastoma (AML) **Jun 2022–Aug 2023**
Overview: Identifcation and analysis of methylation signature genes and association with immune infltration in pediatric acute myeloid leukemia
Contribution: Leadership, Data mining, Methodology, Conception, Experiments design, Bioinformatics analysis, Visualization, Paper organization & validation.
Output: Publications [3], Other Awards

Exploration of metabolic biosynthesis diversity of Fungi **Oct 2021 - Jun 2023**
Overview: Cluster analysis of fungal biosynthetic gene clusters and exploration of metabolic biosynthesis diversity
Contribution: Data mining, Experiments design, Bioinformatics analysis, High throughput data analysis, Visualization, Server maintenance and usage
Output: Publications [4], Graduation thesis

Prognosis, treatment and drug development of maternal and pediatric cancers **Jul 2021 – Aug 2021**
Overview: Exploration of circRNA-based treatment for Osteosarcoma; Establishment, immunological analysis and drug prediction of a prognostic signature of ovarian cancer related to histone acetylation; Tumor immune infiltration and construction and analysis of ceRNA network in cervical cancer
Contribution: Data mining, Experiments design, Leadership, Methodology, Bioinformatics analysis, Visualization, Paper writing & Organization, Presentation, Paper submitting
Output: Publications [1] [2] [5], Main Awards [4] [6] [7] [8]

Exploration on the improvement and application of 2D resin **Sep 2020 – May 2022**
Overview: Exploration on the improvement and application of 2D resin
Contribution: Experiments Engaged, Data collection & analysis, Report writing, Presentation
Output: Main Awards [3]

Main Awards

[8] **Science and Technology Innovation Scholarship** (2022, Dalian University of Technology)
[7] **China Undergraduate Life Sciences Contest First prize** (2022, Education Department of Liaoning Province)

[6] China Undergraduate Life Sciences Contest First prize (2022，Education Department of Liaoning Province)
[5] Academic Merit Scholarship (2021, Dalian University of Technology)
[4] College Students' innovation and Entrepreneurship Competition Accepted (National level, 2021，Dalian University of Technology)
[3] College Students' innovation and Entrepreneurship Competition Accepted (School level, 2021, Dalian University of Technology)
[2] Academic Excellence Scholarship (2020, Dalian University of Technology)
[1] China High School Biology Olympiad Second prize (2018, Botanical Society of China and Will China's Zoology)

Publications

[7] *Comprehensive Multi-Omics Analysis Identifies HLA-DR and Causal Genes as Critical Factors in Abdominal Aortic Aneurysms Progression*
Authors: Xu Guo#, Xiaoxu Zhang#, Tan Li, Shuai Zhang ... Jian Zhang* and Yanshuo Han*
State: Circulation, **Peer Review, 2024-9**

[6] *Cross-Species Insight into Abdominal Aortic Aneurysm: Deciphering the Myeloid Code in Human and Mouse Models*
Authors: Xiaoxu Zhang#, **Xu Guo#**, Jamol Uzokov, Han Jiang ... Yanshuo Han*
State: Arteriosclerosis, Thrombosis, and Vascular Biology, **Under Review, 2024-9**

[5] *Targeting the has_circ_0000253/miR-7/COL5A2 Axis: Unveiling CCT-018159's Role in Halting Osteosarcoma Progression*
Authors: Xu Guo#, Xiangrui Zhu#, Xin Tian … Yanhuo Han*
State: European Journal of Clinical Investigation, **Under Review, 2024-9**

[4] *Compendium of natural products biosynthetic diversity encoded in fungal genomes*
Authors: Shu Zhang#, Guohui Shi#, Xinran Xu#, **Xu Guo**, Sijia Li, Zhiyuan Li, Qi Wu* & Wen-Bing Yin*
State: Journal of Fung, `Published`**, 2024-9**

[3] *Identification and analysis of methylation signature genes and association with immune infiltration in pediatric acute myeloid leukemia*
Authors: Huawei Zhu#, Yanbo Xu#, Jun Xia#, **Xu Guo#**, Yujie Fang … Yubo Liu*
State: Journal of Cancer Research and Clinical Oncology, **Published, 2023-8**

[2] *CircRNA-Based Cervical Cancer Prognosis Model, Immunological Validation and Drug Prediction*
Authors: Xu Guo, Sui Chen, Sihan Wang … Yanshuo Han*
State: Current Oncology, **Published, 2022-10**

[1] *Establishment, immunological analysis and drug prediction of a prognostic signature of ovarian cancer related to histone acetylation*
Authors: Yujie Fang1#, Jing Zhao1#, **Xu Guo** … Yanshuo Han*
State: Frontiers in Pharmacology, **Published, 2022-9**

*Note: # for co-first author, * for corresponding author and ... for omitting author.*

Skills

Programming: R (100/100), Python (100), Java (84), Perl (100), C (90), Linux (96), SQL (83).
Mathematics: Advanced Mathematics A1 (100), Probability and Statistics A (99), Linear Algebra A (89), Advanced Mathematics A2 (96), Bayesian Statistics.
Research skills: Statistical analysis and Visualization, RNA-seq, scRNA and Chip-seq, Database mining, Server usage, Multiple omics association, High throughput data processing, Molecular docking, Mendelian randomization, Bioinformatics algorithm development, etc.
Language: IELTS 6.5, Mandarin.