No.	K22-2056	
研究課題名	Functional polarization of tumour-associated macrophages by tumor microenvironment	
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(Form 2-2)

Principal Investigator
Xiao-dong He

IMSUT International Joint Usage/Research Center Project <International>

Joint Research Report (Annual/Project Completion)

Annual Report

Report

In 2022, we stimulated mouse macrophages with the construction of the lactylation of tumor microenvironment and performed transcriptome analysis to determine the possible mechanisms of tumor cell interaction with mouse macrophages.

At the same time, we constructed a co-culture system of HGC-27 and Raw264.7 cells, successfully isolated exosomes from the supernatant of cell culture medium, and analyzed microRNA-seq of exosomes. We use the CSHL research to develop a small program (https://github.com/wososa/PSI-Sigma),RNA splicing,RNA m6A methylation,DNA methylation and Gene expression analysis were combined for comprehensive analysis, mainly focusing on RNA splicing. We found some interesting biomarkers and validated them by cellular molecular biology methods.

The results were presented at the 8th National Conference on Computational Biology and Bioinformatics (NCCBB) and The Biomedical Big Data and Artificial Intelligence. At the same time, we published a review paper and a research paper. These are written: "This study was partly supported by a Grant from the International Joint Usage/Research Center, The Institute of Medical Science, the University of Tokyo."

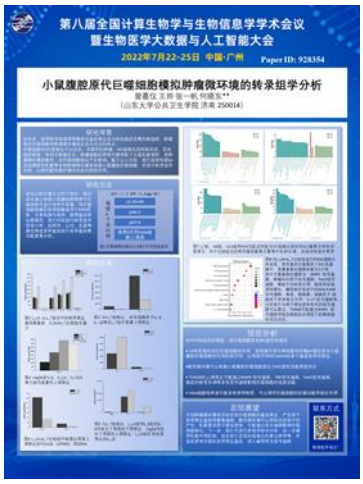
In addition, with the support of IMSUT, we have a certain foundation to work on, we have also obtained the project support from the National Natural Science Foundation of China and the Outstanding Innovation Fund of Shandong University, and trained two postgraduate students and one doctoral student.


Nutrition & Metabolism

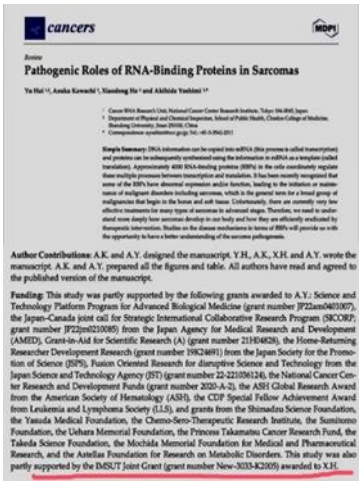
RESEARCH Open Access

Chondroitin sulfate alleviates osteoporosis caused by calcium deficiency by regulating lipid metabolism

Tianshu Liu[1,2†], Hai Yu[1,2†], Shuai Wang[1], Huimin Li[1,2], Xinyiran Du[1] and Xiaodong He[1,2*]


第八届全国计算生物学与生物信息学学术会议
暨生物医学大数据与人工智能大会
2022年7月22-25日 中国·广州 Paper ID: 928354

小鼠腹腔原代巨噬细胞模拟肿瘤微环境的转录组学分析


cancers

MDPI

Review

Pathogenic Roles of RNA-Binding Proteins in Sarcomas

Yu Hai [†], Asuka Kawachi [†], Xiaodong He * and Akihide Yoshimi *

Author Contributions: A.K. and A.Y. designed the manuscript. Y.H., A.K., X.H. and A.Y. wrote the manuscript. A.K. and A.Y. prepared all the figures and table. All authors have read and agreed to the published version of the manuscript.

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Research Results from the Project during FY2022

<Publications>

Hai Y., Kawachi A., He X., Yoshimi A. (2022) Pathogenic Roles of RNA-Binding Proteins in Sarcomas. Cancers (Basel). 14(15):3812.

Tianshu Liu; Hai Yu; Shuai Wang; Huimin Li; Xinyiran Du; Xiaodong He. (2023)Chondroitin sulfate alleviates osteoporosis caused by calcium defciency by regulating lipid metabolism, NUTRITION & METABOLISM, 2023, 20(6)

<Patent Applications>