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HAO SUN



# 12 GENOMICS AND BIOINFORMATICS



### Principal Investigator

Hao Sun



### Team members

Liangqiang He, Yulong Qiao, Yuwei Zhang, Xing Zhao, Manyi Wen, Chuhan Li, Qiang Sun, Feng Yang

## Research Progress Summary

In the reporting period, Hao Sun and his team has 8 ongoing grants funded by the Research Grants Council – General Research Fund, the National Natural Science Foundation of China/ Research Grants Council Joint Research Scheme, the Food and Health Bureau – Health and Medical Research Fund, and the Research Grants Council – Theme-based Research

Scheme, for studying of transcriptional regulation mechanisms in muscle stem cells as well as next generation data analysis for plasma DNA/RNA sequencing. The team also published 5 papers on some high impact journals such as *Nature Communications* et al.

## Research and Scholarship

### Reviewer of Journal / Conference

Member's Name	Details	
	Role	Journal / Conference
Hao Sun	Reviewer	Bioinformatics
		Clinical Biochemistry
		Nature Communications
		RNA Biology

### Grants and Consultancy

Name	Project Title	Funding Source	Start Date (dd/mm/yyyy)	End Date (dd/mm/yyyy)	Amount (HK\$)
Hao Sun	Elucidation of Intrinsic and Extrinsic Alterations Regulating Skeletal Muscle Stem Cell Aging: Mechanisms for Sarcopenia	Food and Health Bureau – Health and Medical Research Fund	12/02/2021	01/12/2024	1,496,150
	Study on the Mechanism Underlying BMAL1/ CLOCK-mediated Regulation of Human Stem Cell Homeostasis and Aging	National Natural Science Foundation of China/Research Grants Council – Joint Research Scheme 2018/19	01/01/2019	31/12/2022	1,166,714
	Genome-wide Computational Identification and in Vivo CRISPR Screen of Key Transcription Factors (TFs) and TF Hotspots Governing Muscle Satellite Cell Lineage Progression	Research Grants Council – General Research Fund	01/01/2019	31/12/2021	1,136,632
	Mechanistic Investigation of Linc-p27 Function in Skeletal Muscle Satellite Cell and Muscle Regeneration	Research Grants Council – General Research Fund	01/01/2019	31/12/2021	970,697

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Hao Sun	Plasma DNA as a Platform Technology for Cancer Detection	The Chinese University of Hong Kong – Focused Innovations Scheme C	01/12/2016	30/11/2021	2,093,500
		The Chinese University of Hong Kong Matching Fund for Research Grants Council – Theme-based Research Scheme	01/12/2016	30/11/2021	4,444,000
	To Investigate 3D Genome Dynamics During the Muscle Satellite Cell Lineage Progression	The Chinese University of Hong Kong Research Committee – Direct Grant	30/06/2020	29/05/2021	62,000



## Publications

### A. Journal Papers

1. Chen X, Yuan J, Xue G, Campanario S, Wang D, Wang W, Mou X, Liew SW, Umar MI, Isern J, Zhao Y, He L, Li Y, Mann CJ, Yu X, Wang L, Perdiguero E, Chen W, Xue Y, Nagamine Y, Kwok CK, Sun H, Muñoz-Cánoves P, Wang H. Translational control by DHX36 binding to 5'UTR G-quadruplex is essential for muscle stem-cell regenerative functions. *Nature Communication*. 2021;12(1). doi:10.1038/S41467-021-25170-w.
2. He L, Ding Y, Zhao Y, So KK, Peng XL, Li Y, Yuan J, He Z, Chen X, Sun H, Wang H. CRISPR/Cas9/AAV9-mediated *in vivo* editing identifies MYC regulation of 3D genome in skeletal muscle stem cell. *Stem Cell Reports*. 2021;16(10):2442-2458. doi: 10.1016/j.stemcr.2021.08.011.



## Noncoding Assessment of long RNAs in Magnoliophyta Species

Noncoding Assessment of long RNAs in Magnoliophyta Species.

**Source:** Sun K, Wang H, Sun H. NAMS webserver: Coding potential assessment and functional annotation of plant transcripts. *Briefing in Bioinformatics*. 2021;22(3). doi:10.1093/bib/bbaa200.

