

Published in final edited form as:

Arthritis Rheumatol. 2025 November 01; 77(11): 1548–1559. doi:10.1002/art.43243.

Trio whole exome sequencing in Chinese childhood-onset lupus reveals novel candidate genes

Jianyang Ma, PhD^{1,2,3}, Yuting Qin, PhD^{1,2,3}, Soon-Min Hong, MSc², Thuvaraka Ware, PhD⁶, Guojun Hou, PhD², Jingjing Tan, MSc⁵, Chengmei Xie, PhD^{1,2}, Pingjing Zhang, BS^{1,2}, Xiaoqian Wu, MSc^{1,2}, Todor Arsov, PhD⁴, Lanfang Cao, MD PhD³, T Daniel Andrews, PhD⁵, Philip Wu, PhD⁵, Qian Shen, PhD^{1,6}, Huihua Ding, MD PhD², Nan Shen, MD PhD^{1,2,*}, Carola G. Vinuesa, MD PhD^{1,6,*}, Yuke He, PhD^{1,2,*}

¹China-Australia Centre for Personalized Immunology (CACPI), Department of Rheumatology, Renji Hospital, Shanghai Jiao Tong University School of Medicine (SJTUSM), Shanghai, China, , 200001

²Shanghai Institute of Rheumatology, School of Medicine, Renji Hospital, Shanghai Jiao Tong University, Shanghai, China, , 200001

³Department of Pediatrics, Renji Hospital, Shanghai Jiao Tong University, Shanghai, China, , 200001

⁴Faculty of Medical Sciences, University Goce Delcev, Shtip, North Macedonia.

⁵Division of Immunology and Infectious Disease, John Curtin School of Medical Research, Australian National University, Canberra, Australian Capital Territory, Australia.

⁶The Francis Crick Institute, London, UK.

Abstract

This work is licensed under a [BY 4.0](#) International license.

Corresponding to Yuke He, China-Australia Centre for Personalized Immunology (CACPI), Department of Rheumatology, Renji Hospital, School of Medicine, Shanghai Jiao Tong University, 145 Shan Dong Middle Road, Shanghai 200001, China; hyk@mail.ustc.edu.cn.; Carola G. Vinuesa, The Francis Crick Institute, 1 Midland Road, London NW11AT, UK; carola.vinuesa@crick.ac.uk.; Nan Shen, Shanghai Institute of Rheumatology, Renji Hospital, School of Medicine, Shanghai Jiao Tong University, 145 Shan Dong Middle Road, Shanghai 200001, China; nanshensibs@gmail.com.

#These authors contributed equally.

*These authors contributed equally.

Declarations of interests

The authors declare no competing interests.

Author contributions

All authors contributed to at least one of the following manuscript preparation roles: Conceptualization, Methodology, Software, Investigation, Formal analysis, Data curation, Visualization, Validation. All authors were involved in drafting the article or revising it critically for important intellectual content, and all authors approved the final version of the manuscript for publication.

Study conception and design. Ma, N. Shen, Vinuesa, He.

Acquisition of data. Ma, Qin, Hong, Ware, Hou, Tan, Xie, Zhang, X. Wu, Arsov, Cao, Andrews, P. Wu, Q. Shen, Ding, N. Shen, Vinuesa, He.

Analysis and interpretation of data. Ma, Qin, Hong, Ware, Tan, Andrews, P. Wu, Xie, N. Shen, Vinuesa, He.

Writing – original draft. Ma, Qin, Hong, Ware, Hou, N. Shen, Vinuesa, He.

Writing – review & editing. Ma, Qin, Hong, Ware, Hou, Tan, Xie, Zhang, Wu, Arsov, Cao, Andrews, P. Wu, Q. Shen, Ding, N. Shen, Vinuesa, He.

Patient and public involvement statement

This research was done without direct patient involvement beyond sample collection. Patients did not participate in designing the study, analyzing the data, or drafting the manuscript.