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Tumor tissue architecture, immune cells and molecular characteristics in relation to immune escape in colon cancer: what rises must fall

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Citation

Zhu, H. (2026, July 9). *Tumor tissue architecture, immune cells and molecular characteristics in relation to immune escape in colon cancer: what rises must fall*. Retrieved from <https://hdl.handle.net/1887/4307839>

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Note: To cite this publication please use the final published version (if applicable).

Curriculum vitae

Hehuan Zhu was born in Suizhou, Hubei Province, China on March 30th, 1993. After completing his high school education at Suizhou No.2 High School, he started his university education majoring in Medicine at China Three Gorges University. During the final year of his bachelor's studies, he completed a comprehensive one-year clinical internship, rotating through a wide range of hospital departments, including internal medicine, surgery, ophthalmology, otolaryngology, and obstetrics and gynecology. Through these extensive clinical rotations, he discovered a strong passion for surgery.

Following his bachelor's degree, he pursued a master's degree in Surgery (Urology) at Xiamen University under the guidance of Prof. Jianming Tan, a renowned expert in urology and stem cell research. Alongside his academic research, he underwent practical clinical surgical training, actively participating in procedures such as kidney transplantations and renal cell carcinoma resections. From February 2017 to June 2019, he performed his research training at the Fujian Provincial Institute of Organ Transplantation, where his research mainly focused on the role of the PBLD gene in clear cell renal cell carcinoma.

Upon completion of this work, Hehuan took on a position as a research assistant at the University of Macau Cancer Center in the group of Prof. Lijun Di. During this period, he conducted functional studies on the CtBP gene in the context of triple-negative breast cancer.

To further deepen his expertise in the tumor microenvironment, he joined the Department of Surgery at the Leiden University Medical Center (LUMC) as a PhD candidate. He conducted his research in the group of Dr. Peter Kuppen and Prof. Dr. Rob Tollenaar, who served as his supervisors, with Dr. Jessica Roelands later joining the team as his co-supervisor. During his PhD, his research was focused on tumor immunology in colon cancer. He systematically studied the interplay between spatial T cell organization, locus-specific HLA class I expression, and the tissue architecture to understand the mechanisms of immune escape. Over the course of his research journey, he accumulated extensive publication experience in top scientific journals and developed deep expertise in mentoring early career researchers in biology.

Now, having completed his PhD, Hehuan plans to transition into the industry, where he wishes to apply his extensive expertise in tumor immunology and systems biology towards the development of novel translational applications and therapeutics.

PhD portfolio

List of publications

Published

1. **Zhu H**, Zhang X, Nazemalhosseini-Mojarad E, Roelands J, de Muynck LDAN, Ravensbergen CJ, Hoorntje R, Stouten I, Hokland M, Vahrmeijer AL, Tollenaar RAEM, Koster E, Kuppen PJK. The Need for a Systems Biology Approach in Cancer Explained. *Int J Mol Sci*. 2025. DOI: 10.3390/ijms27010141
2. **Zhu H**, Roelands J, Ahmed EI, Stouten I, Hoorntje R, van Vlierberghe RLP, Ijsselsteijn ME, Lei X, de Miranda NFCC, Tollenaar RAEM, Vahrmeijer AL, Bedognetti D, Hendrickx WRL, Kuppen PJK. Location matters: spatial dynamics of tumor-infiltrating T cell subsets is prognostic in colon cancer. *Front Immunol*. 2024. DOI: 10.3389/fimmu.2024.1293618
3. Zuo W, Lin T, **Zhu H**, Huang X, Guo Y, Long Q, Liang Y, Chen Y, Xu X, Su Y, Su W. Tremella polysaccharide alleviated the toxicity of bisphenol A on *Caenorhabditis elegans* via regulation of IIS/MAPK/skn-1 pathways and increasing antioxidant ability. *Ecotoxicol Environ Saf*. 2025. DOI: 10.1016/j.ecoenv.2025.119389

Under review or under revision

1. **H Zhu**, R van Nieuwkerk, S van der Kroft, R L.P. van Vlierberghe, M E. IJsselsteijn, W Zuo, T Vauvert F. Hviid, R A.E.M. Tollenaar, A L. Vahrmeijer, D Bedognetti, W R.L. Hendrickx, J Roelands, P J.K. Kuppen. HLA Class I Expression and Tumor Immune Infiltration Together Shape Colon Cancer Immune Contexture. *Under review*.

2. **H Zhu**, N G Dekker-Ensink, R L.P. van Vlierberghe, M E. Ijsselsteijn, R A.E.M. Tollenaar, A L. Vahrmeijer, D Bedognetti, N F.C.C. de Miranda, W R.L. Hendrickx, P J.K. Kuppen, and J Roelands. Locus specific HLA class I diversity and tissue expression in colon cancer. ***Under review.***

Conferences and presentations

1. East Lake Forum | Huazhong University of Science and Technology.
Presentation, China, 2025
2. 1st Young Scholars Forum, Fujian Medical University, Presentation, China,
2025
3. Dutch Society for Immunology annual meeting, Presentation, the Netherlands,
2024
4. International conference on the HLA-G molecule, Presentation, France, 2022
5. European Network of Immunology Institutes Summer School, Poster, Italy,
2023
6. Latest Trend in Infection and Immunity Else Kröner Symposium, Poster,
Germany, 2023
7. Society for Immunotherapy of Cancer, Poster, USA, 2022

Acknowledgements

Many thanks to all whose professional and personal support helped me to complete this thesis!

First of all, I would like to express my deepest gratitude to my supervisors, Dr. Peter Kuppen, Prof. Dr. Rob Tollenaar, and Dr. Jessica Roelands, for their invaluable guidance, dedication, and support throughout my PhD journey.

Peter, thank you not only for your expert guidance on my tumor immunology projects but also for giving me the incredible opportunity to travel from a distant eastern country, China, to study, live, and pursue my PhD here in the Netherlands. Rob, thank you for your insightful help with my research and your genuine care for my well-being throughout these years. Jessica, thank you for your meticulous help and for being a wonderful role model; it has been truly inspiring to witness your growth from obtaining your own PhD to becoming an assistant professor.

My sincere thanks go to the professors and scholars within the Surgery department, other departments at LUMC, and external institutes who collaborated on my projects: Prof. Dr. Thorbald van Hall, Prof. Dr. Paul Quax, and Dr. Davide Bedognetti. Because of your guidance and our collaboration, we were able to make meaningful scientific progress together.

I am very grateful to the technicians in the Surgery department: Ronald, Geeske, Connie, Dima, Shadhvi, Marvin, and Natascha. Thank you for your patience, technical guidance, and hands-on help with my experiments. To my fellow PhD candidates in the department: Elham, Ana, Lizzie, Xi, Somayeh, Tom, Nada, and Mats. Thank you for helping me in so many ways. We have shared some truly great times, and I will always cherish the memories we made together.

I would also like to thank the interns I had the pleasure of mentoring, including Roos, Savannah, Imke, and Rachel. Together, we successfully completed numerous experiments and co-authored scientific publications.

In addition, I would like to thank my friends at LUMC, Zheng, Xiaoke, and Xin, for your constant support in both my daily life and my research. To my friends in Leiden: Zoe, Kedi, Ying, Zihao, Lingyun, and XLX. Thank you for being my support system during these PhD years.

Even from afar, I felt the warmth of friendship. Katherine in Seattle, thank you for remotely "supervising" my project progress and caring for my personal life. Weimin and Xiaoyun in Macau and Wuhan, thank you for your continuous long-distance care and encouragement over the years.

Finally, my deepest gratitude goes to my parents. I could not have completed this PhD without your unconditional love and support.

Looking back on this journey, I have seen and learned so much. I have been taught many valuable lessons and have grown immensely, both as a scientist and as a person. I am truly grateful and proud of myself for holding on and persevering to the very end.