侯盼盼

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教育經歷:

2005-2009	本科（生物醫學工程）	華中科技大學
2009-2014	博士（生物物理）	華中科技大學

工作經歷:

2014-2020	博士後	聖路易士華盛頓大學
2021-2025	助理教授	澳門科技大學
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學術貢獻:

離子通道蛋白廣泛表達於人體每一個細胞，對維持人體眾多生理活動至關重要。離子通道的異常開關可導致嚴重疾病（如心血管疾病、中風、癌症等），因此成為新藥研發與疾病治療的重要靶點。自 2009 年以來，我一直致力於心腦血管系統中關鍵離子通道的開關機制、病理生理以及新型治療方案（新藥開發）的研究，解決了領域內若干基礎性科學難題，獲得廣泛認可。研究成果以第一作者或通訊作者身份發表在 *Cell Research（2 篇）*、*Circulation Research*、*PNAS*、*Nature Communications（2 篇）*、*eLife（2 篇）*、*Pharmacological Research* 等權威期刊。

代表研究論文（#第一/共第一作者，*通訊/共同通訊作者）：

1. Xinyu Cheng, Shuangyan Wan, Dexiang Jiang, Hangyu Zhang, Bin Hu, Tong Che, Yuanpeng Chen, Weiwei Nan, Zhuo Zhou, Chenxin Xiao, Ling Zhong, Yuting Zhang, Bing Xiong, **Panpan Hou***, Jin Zhang*. Structural basis of the neuronal M-current generated by an asymmetric KCNQ2/3 assembly. ***Cell Research.*** 2026 May 25.
2. Ling Zhong, Xiaoqing Lin, Xinyu Cheng, Shuangyan Wan, Yaoguang Hua, Weiwei Nan, Bin Hu, Zhenzhen Yan, Dexiang Jiang, Hangyu Zhang, Fengjiao Liu, Chenxin Xiao, Zhuo Zhou, Haijie Yu, Lijuan Ma, Chen Huang, Vincent Kam Wai Wong, Sookja Kim Chung, Bing Shen, Zhi-Hong Jiang, Erwin Neher, Wandi Zhu, Jin Zhang*, **Panpan Hou***. Secondary structure transitions and dual PIP2 binding define cardiac KCNQ1-KCNE1 channel gating. ***Cell Research.*** 2025. 18(6).
3. Ling Zhong#, Zhenzhen Yan#, Dexiang Jiang, Kuo-Chan Weng, Yue Ouyang, Hangyu Zhang, Xiaoqing Lin, Chenxin Xiao, Huaiyu Yang, Jing Yao, Xinjiang Kang, Changhe Wang, Chen Huang, Bing Shen, Sookja Kim Chung, Zhi-Hong Jiang, Wandi Zhu, Erwin Neher, Jonathan R Silva*, **Panpan Hou*.** Targeting the IKs Channel PKA Phosphorylation Axis to Restore Its Function in High-Risk LQT1 Variants. ***Circulation Research.*** 2024 Sep 13;135(7):722-738.
4. **Panpan Hou***, Lu Zhao, Ling Zhong, Jingyi Shi, Hong Zhan Wang, Junyuan Gao, Huilin Liu, Joan Zuckerman, Ira S Cohen, Jianmin Cui*. The fully activated open state of KCNQ1 controls the cardiac “fight-or-flight” response. ***PNAS Nexus***. 2024 Oct 9;3(10).

5. Zhenzhen Yan#, Ling Zhong#, Wandi Zhu, Sookja Kim Chung, **Panpan Hou***. Chinese herbal medicine for the treatment of cardiovascular diseases ─ targeting cardiac ion channels. ***Pharmacological Research***. 2023. 106765.
6. Demin Ma#, Ling Zhong#, Zhenzhen Yan, Jing Yao, Yan Zhang, Fan Ye, Yuan Huang, Dongwu Lai, Wei Yang*, **Panpan Hou***, Jiangtao Guo*. Structural mechanisms for the activation of human cardiac KCNQ1 channel by electro-mechanical coupling enhancers. ***PNAS.*** 2022. 119(45).
7. **Panpan Hou,** Po Wei Kang, Audrey Deyawe Kongmeneck, Nien-Du Yang, Yongfeng Liu, Jingyi Shi, Xianjin Xu, Kelli McFarland White, Mark A. Zaydman, Marina A. Kasimova, Guiscard Seebohm, Ling Zhong, Xiaoqin Zou, Mounir Tarek*, and Jianmin Cui*. Two-stage electro-mechanical coupling of a K_V channel in voltage-dependent activation. ***Nature Communications*.** 2020; 11: 676.
8. **Panpan Hou,** Jodene Eldstrom, Jingyi Shi, Ling Zhong, Kelli McFarland, Yuan Gao, David Fedida, Jianmin Cui*. Inactivation of KCNQ1 potassium channels reveals dynamic coupling between voltage sensing and pore opening. ***Nature Communications.*** 2017. 8(1):1730.
9. **Panpan Hou,** Jingyi Shi, Kelli McFarland White, Yuan Gao, Jianmin Cui*. ML277 specifically enhances the fully activated open state of KCNQ1 by modulating VSD-pore coupling. ***eLife.*** 2019. Jul 22;8.
10. Keenan C. Taylor#, Po Wei Kang#, **Panpan Hou**#, Nien-Du Yang, Georg Kuenze, Jarrod A. Smith, Jingyi Shi, Hui Huang, Kelli McFarland White, Dungeng Peng, Alfred L. George Jr., Jens Meiler, Robert L. McFeeters, Jianmin Cui*, and Charles Sanders*. Structure and Physiological Function of the KCNQ1 Channel Voltage Sensor Intermediate State. ***eLife*.** 2020. Feb 24;2.
11. Haowen Liu#, **Panpan Hou**#, Xiying Guo#, Zhiwen Zhao, Bin Hu, Xia Li, Lu-Yang Wang, Jiuping Ding*, Sheng Wang*. Structural Basis for Calcium and Magnesium Regulation of a Large Conductance Calcium-Activated Potassium Channel with β1 Subunits. ***J. Biol. Chem.*** 2014. 289:16914-16923.
12. Junnan Li, Zhenni Yang, Shaoying Zhang, Yangliang Ye, Jiangnan He, Yan Zhang, Huayun Han, Wan Kong, Jiangru Liu, Yu Min, Juwen Shen, Lianghe Mei, Zongsheng Chen, Panpan Hou, Jiangtao Guo, Qiansen Zhang & Huaiyu Yang*. Small molecule inhibits KCNQ channels with a non-blocking mechanism. ***Nature Chemical Biology***. 2025.(5)3874.
13. Shaoying Zhang, Demin Ma, Kun Wang, Ya Li, Zhenni Yang, Xiaoxiao Li, Junnan Li, Jiangnan He, Lianghe Mei, Yangliang Ye, Zongsheng Chen, Juwen Shen, **Panpan Hou**, Jiangtao Guo, Qiansen Zhang, Huaiyu Yang*. A small-molecule activation mechanism that directly opens the KCNQ2 channel. ***Nature Chemical Biology***. 2024.(3)7265.
14. Demin Ma, Yueming Zheng, Xiaoxiao Li, Xiaoyu Zhou, Zhenni Yang, Yan Zhang, Long Wang, Wenbo Zhang, Jiajia Fang, Guohua Zhao, **Panpan Hou**, Fajun Nan, Wei Yang, Nannan Su, Zhaobing Gao, Jiangtao Guo. Ligand activation mechanisms of human KCNQ2 channel. ***Nature Communications***. 2023 14:6632
15. Julian A. Schreiber, Melina Möller, Mark Zaydman, Lu Zhao, Zachary Beller, Sebastian Becker, Nadine Ritter, **Panpan Hou,** Jingyi Shi, Jon Silva, Eva Wrobel, Nathalie Strutz-Seebohm, Niels Decher, Nicole Schmitt, Sven G. Meuth, Martina Düfer, Bernhard Wünsch, Jianmin Cui, and Guiscard Seebohm. A benzodiazepine activator locks Kv7.1 channels open by electro-mechanical uncoupling. ***Communications Biology***. 2022. 5:3
16. Yangyang Lin#, Sam Z. Grinter#, Zhongju Lu#, Xianjin Xu#, Hong Zhan Wang, Hongwu Liang, **Panpan Hou,** Junyuan Gao, Chris Clausen, Jingyi Shi, Wenshan Zhao, Zhiwei Ma, Yongfeng Liu, Kelli McFarland White, Lu Zhao, Po Wei Kang, Guohui Zhang, Ira S. Cohen*, Xiaoqin Zou* & Jianmin Cui*. Modulating the voltage sensor of a cardiac potassium channel shows antiarrhythmic effects. ***PNAS.*** 2021 May 18;118(20).
17. Wandi Zhu, Andrea Mazzanti, Taylor L. Vwoelker, **Panpan Hou**, Jonathan D. Moreno, Paweorn Angsutararux, Kristen M. Naegle, Silvia G. Priori, Jonathan R. Silva*. Predicting Patient Response to the Antiarrhythmic Mexiletine Based on Genetic Variation: Personalized Medicine for Long QT Syndrome. ***Circulation Research.*** 2018. 124(4):539-552.

學術兼職:

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