

HUANG Chen



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Research Areas: Bioinformatics, data analysis of high throughput sequencing to investigate potential biomarkers involved in diverse diseases.

Dr. Huang Cheng obtained a Bachelor's degree in Biotechnology in Life Science Institute, Nanchang University, 2007. He graduated with Master degree from Biological information science and technology institute, Harbin Medical University in 2010. During the master study, his research focused on using SVM to predict potential drug target from ion channel proteins. Then he worked in BGI Shenzhen as a data analyst on next generation sequencing (NGS) from 2010 to 2012. He obtained Ph.D with Biomedicine in ICMS, University of Macau (UM) at the end of 2016, and his study involved in mining potential bioactive polypeptides from transcriptome of corals based on NGS, prediction of gene clusters involved in biosynthesis of antibiotics from the novel bacterium using whole genome sequencing. Then he continues the post-doctoral study in faculty of Health and Science until 2020. His study mainly focused on the identification and functional investigation of novel lncRNAs implicated in diverse biological processes or diseases, including asthma, ABPA, zebrafish embryo development, DNA damage, cytotoxicity, etc. He has published over 20 SCI papers in the journals of Genome Biology Evolution, BMC Genomic International Journal of Biological Sciences, Journal of Cellular Physiology, etc. Now Dr. Huang worked as assistant professor State Key Laboratory of Quality Research in Chinese Medicine, Macau University of Science and Technology, the main

research interests include, but not limited to apply bioinformatics approach to develop prognostic scoring system and identify biomarker for tumor prognosis and precise treatment using high-throughput sequencing data.

Academic Qualifications

2012-2017	Ph.D. in Biomedical Sciences, Area of Specialization: Bioinformatics Institute of Chinese Medical Sciences, University of Macau, China
2007-2010	M.E. in Bioinformatics, Biological information science and technology institute, Harbin Medical University, China
2003-2007	B.S. in Biotechnology (Biopharmaceuticals), College of Life Science, Nanchang University, China

Working experiences

2020-present	Assistant Professor, State Key Laboratory of Quality Research in Chinese Medicine, Macau University of Science and Technology, Macao
2017-2020	Post-doctoral, Faculty of Health Sciences, University of Macau, Macao Analyst, Beijing Genomics Institute at Shenzhen
2010-2012	(BGI-shenzhen)

Publications

Representative Papers published as Co-first author[#] or Corresponding author*

1. Changcheng Lu[#], **Chen Huang[#]**, Shuhui Qu, Huiyuan Lin, Hai-Jing Zhong, Cheong-Meng Chong (2024). Oxyimperatorin attenuates LPS-induced microglial activation in vitro and in vivo via suppressing NF- κ B p65 signaling. ***Biomedicine & Pharmacotherapy*** (<https://doi.org/10.1016/j.biopha.2024.116379>)

2. Xiao Yang, Yingyi Wu, Xingyu Chen, Jiayue Qiu, **Chen Huang*** (2024). The Transcriptional Landscape of Immune-Response 3' -UTR Alternative Polyadenylation in Melanoma. ***Int. J. Mol. Sci.*** (<https://doi.org/10.3390/ijms25053041>)

3. Yi-Zhong Zhang[#], Huan-Ling Lai[#], **Chen Huang[#]**, Ze-Bo Jiang, Hao-Xin Yan, Xuan-Run Wang, Chun Xie, Ju-Min Huang, Wen-Kang Ren, Jia-Xin Li, Zhi-Ran Zhai, Xiao-Jun Yao, Qi-Biao Wu, Elaine Lai-Han Leung (2024). Tanshinone IIA induces ER stress and JNK activation to inhibit tumor growth and enhance anti-PD-1 immunotherapy in non-small cell lung cancer. ***Phytomedicine*** (<https://doi.org/10.1016/j.phymed.2024.155431>)

4. Xingyu Cheng, Min Deng, Zihan Wang, **Chen Huang*** (2024). MMP3C: An in-silico framework to depict cancer metabolic plasticity using gene expression profiles. ***Briefings in Bioinformatics*** (DOI: 10.1093/bib/bbad471)

5. Wang Zihan, Chen Xingyu, Si Weichen, **Chen Huang*** (2023). Systemic Pharmacology and Bioinformatics: Exploring the Modern biological Mechanisms of Rhubarb in the Treatment of Papillary Thyroid Carcinoma. ***MedComm - Future Medicine*** (DOI:10.1002/mef2.69)

6. **Chen Huang**, Min Deng, Dongliang Leng, Baoqing Sun, Peiyan Zheng, Xiaohua Douglas Zhang (2023). MIRS: An AI Scoring System for Predicting the Prognosis and Therapy of Breast Cancer.

Iscience (DOI: 10.1016/j.isci.2023.108322)

7. Yunwen Feng, Xingyu Chen, Xiaohua Douglas Zhang*, **Chen Huang*** (2023). Metabolic Pathway Pairwise-Based Signature as a Potential Non-Invasive Diagnostic Marker in Alzheimer's Disease Patients. *Genes* (doi.org/10.3390/genes14061285)

8. Tianyi Cheng, Yingyi Wu, Zhiyu Liu, Yi Yu, Shixue Sun, Min Guo, Baoqing Sun*, **Chen Huang*** (2022). CDKN2A-mediated molecular subtypes characterize the hallmarks of tumor microenvironment and guide precision medicine in Triple Negative Breast Cancer. *Frontiers in Immunology* (DOI 10.3389/fimmu.2022.970950)

9. LitingWu, XiangqingHou, WentingLuo, HaishengHu, XianhuiZheng, YueminChen, Zhangkai J.Cheng, **Chen Huang***, Baoqing Sun* (2022). Three patterns of sensitization to mugwort, timothy, birch and their major allergen components revealed by Latent class analysis. *Molecular Immunology* (<https://doi.org/10.1016/j.molimm.2022.03.009>)

10. Tianyi Cheng, Peiying Chen, Jingyi Chen, Yingtong Deng, **Chen Huang*** (2022). Landscape analysis of Matrix Metalloproteinases unveils key prognostic markers for patients with breast cancer. *Frontiers in Genetics* (<https://doi.org/10.3389/fgene.2021.809600>)

11. **Chen Huang**, Dongliang Leng, Peiyan Zheng, Min Deng, Baoqing Sun, Xiaohua Douglas Zhang (2021). Comprehensive transcriptome analysis of peripheral blood unravels key lncRNAs implicated in ABPA and asthma. *PeerJ* (DOI 10.7717/peerj.11453)

12. **Chen Huang**, Bo Zhu, Dongliang Leng, Wei Ge, Xiaohua Douglas Zhang (2021). Long noncoding RNAs implicated in embryonic development in Ybx1 knockout Zebrafish. *FEBS Open Bio* (DOI: 10.1002/2211-5463.13057).

13. Peiyan Zheng[#], **Chen Huang[#]**, Dongliang Leng, Baoqing Sun, Xiaohua Douglas Zhang (2020). Transcriptome analysis of Peripheral Whole Blood reveals key lncRNAs implicated in childhood asthma. *BMC Medical Genomics* (doi:10.21203/rs.2.15948/v1).

14. **Chen Huang**, Dongliang Leng, Kuan Cheok Lei, Shixue Sun, Xiaohua Douglas Zhang (2019). Transcriptome analysis reveals lncRNA-mediated complex regulatory network response to DNA damage in the liver tissue of *Rattus norvegicus*. *Journal of Cellular Physiology*. <https://doi.org/10.1002/jcp.28889>.

15. Dongliang Leng[#], **Chen Huang[#]**, Kuan Cheok Lei, Shixue Sun, Xiaohua Douglas Zhang (2019). Co-expression network analysis of lncRNAs and mRNAs in Rats liver tissue reveals the complex interactions in response to pathogenic cytotoxicity. *International Journal of Biological Sciences*. 2019; 15(11):2296-2307. doi:10.7150/ijbs.33735.

16. **Chen Huang**, Dongliang Leng, Shixue Sun, Xiaohua Douglas Zhang. (2019). Re-analysis of the coral *Acropora digitifera* transcriptome reveals a complex lncRNAs-mRNAs interaction network implicated in Symbiodinium infection. *BMC Genomics*. PMID: PMC6335708 doi: 10.1186/s12864-019-5429-3.

17. **Chen Huang**, Jean-Étienne RL Morlighem, Jing Cai, Qiwen Liao, Carlos Daniel Perez, Paula Braga Gomes, Min Guo, Gandhi Rádis-Baptista, Simon Ming Yuen Lee. (2017). Identification of long non-coding RNAs in two anthozoan species and their possible implications for coral bleaching. *Scientific Reports*. PMID: PMC5509713 DOI: 10.1038/s41598-017-02561-y.

18. **Chen Huang**, Ross Ka-Kit Leung, Min Guo, Li Tuo, Lin Guo, Wing Wai Yew, Inchio Lou, Simon Ming Yuen Lee, Chenghang Sun (2016). Genome-guided Investigation of Antibiotic Substances produced by *Allosalinactinospora lopnorenensis* CA15-2T from Lop Nor region, China. **Scientific Reports**. PMID: 26864220.

19. **Chen Huang**, Jean-Étienne RL Morlighem, Hefeng Zhou, Erica Patrícia Lima, Paula Braga Gomes, Jing Cai, Inchio Lou, Carlos Daniel Perez, Simon Ming Yuen Lee, Gandhi Rádis-Baptista (2016). The transcriptome of the zoanthid *Protopalpythoa variabilis* (Cnidaria, Anthozoa) reveals several predicted toxin-like and venom-auxiliary polypeptides. **Genome Biology Evolution**. PMID: 2756675825.

20. Alba F.C. Torres[#], **Chen Huang**[#], Cheong Meng Chong, Siu Wai Leung, Alvaro R. B. Prieto-da-Silva, Alexandre Havt, Yves P. Quinet, Alice M. C. Martins, Simon M. Y. Lee, Gandhi Radis-Baptista (2013). Transcriptome analysis in venom gland of the predatory giant ant *Dinoponera quadriceps*: insights into the polypeptide toxin arsenal of hymenopterans. **PLoS One**. PMID: 24498135.

21. **Chen Huang**, Ruijie Zhang, Zhiqiang Chen, Yongshuai Jiang, Zhenwei Shang, Peng Sun, Xuehong Zhang, Xia Lia (2009). Predict potential drug targets from the ion channel proteins based on SVM. **Journal of Theoretical Biology**. PMID: 19903486.

Representative Papers published as Co-author

22. Teng Zhang, Xinzheng Dong, Dandan Wang, **Chen Huang**, Xiaohua Douglas Zhang (2024). RespirAnalyzer: an R package for analyzing data from continuous monitoring of respiratory signals. **Bioinformatics Advances** (<https://doi.org/10.1093/bioadv/vbae003>)

23. Dongliang Leng, Ziyi Yang, Heng Sun, Chengcheng Song, **Chen Huang**, Ka U Ip, Guokai Chen, Chu-Xia Deng, Xiaohua Douglas Zhang, Qi Zhao (2023). Comprehensive analysis of tumor microenvironment reveals prognostic ceRNA network related to immune infiltration in sarcoma. **Clinical Cancer Research** (DOI: 10.1158/1078-0432.CCR-22-3396)

24. Min Guo, Siwei Xie, Junhua Wang, Yuzhi Zhang, Xiangyang He, Pengfei Luo, Jin Deng, Chunhui Zhou, Jiao Qin, **Chen Huang**, Libiao Zhang (2023). The difference in the composition of gut microbiota is greater among bats of different phylogenies than among those with different dietary habits. **Frontiers in Microbiology** (doi: 10.3389/fmicb.2023.1207482)

25. Haiyan Chen, Jing Xu, Siyu Wei, Zhe Jia, Chen Sun, Jingxuan Kang, Xuying Guo, Nan Zhang, Junxian Tao, Yu Dong, Chen Zhang, ... **Chen Huang**, Fanwu Kong, Guoping Tang, Yongshuai Jiang, Mingming Zhang (2023). RABC: Rheumatoid Arthritis Bioinformatics. **Nucleic Acids Research** (doi.org/10.1093/nar/gkac850)

26. Shixue Sun, **Chen Huang**, Dongliang Leng, Chang Chen, Teng Zhang, Kuan Cheok Lei, and Xiaohua Douglas Zhang (2021). Gene fusion of IL7 is involved in the regulation of idiopathic pulmonary fibrosis. **Therapeutic Advances in Respiratory Disease** (DOI: 10.1177/1753466621995045)

27. Heng Sun, JM Zeng, ZQ Miao, KC Lei, **Chen Huang**, LL Hu, Sek Man Su, Un In Chan, Kai Miao, Xu Zhang, Aiping Zhang, Sen Guo, Si Chen, Ya Meng, Min Deng, ..., Xiaohua Douglas Zhang, Xiaoling Xu, Chu-Xia Deng (2021). Dissecting the heterogeneity and tumorigenesis of BRCA1 deficient mammary tumors via single cell RNA sequencing. **Theranostics** (DOI: 10.7150/thno.63995).

28. Zhong-Yan Zhou, Wai-Rong Zhao, Ying Xiao, Xiang-Ming Zhou, **Chen Huang**, Wen-Ting Shi,

Jing Zhang, Qing Ye, Xin-Lin Chen, Jing-Yi Tang (2020). Antiangiogenesis effect of timosaponin AIII on HUVECs in vitro and zebrafish embryos in vivo. *Acta Pharmacol Sin.* 2020 Feb;41(2):260-269. doi: 10.1038/s41401-019-0291-z.

29. Jean-Étienne R L Morlighem, **Chen Huang**, Qiwen Liao, Paula Braga Gomes, Carlos Daniel Pérez, Álvaro Rossan de Brandão Prieto-da-Silva, Simon Ming-Yuen Lee, Gandhi Rádis-Baptista (2018). The Holo-Transcriptome of the Zoantharian *Protopalythoa variabilis* (Cnidaria: Anthozoa): A Plentiful Source of Enzymes for Potential Application in Green Chemistry, Industrial and Pharmaceutical Biotechnology. *Marine Drugs*. PMID: 29899267.

30. Qiwen Liao, Shengnan Li, Shirley Weng In Siu, Binrui Yang, **Chen Huang**, Judy Yuet-Wa Chan, Jean-Étienne R. L. Morlighem, Clarence Tsun Ting Wong, Gandhi Radis-Baptista, Simon Ming-Yuen Lee. Novel Kunitz-like Peptides Discovered in the Zoanthid *Palythoa caribaeorum* through Transcriptome Sequencing (2018). *Journal of Proteome research*. PMID: 29285938.

31. Min Guo, Ruifu Yang, **Chen Huang**, Qiwen Liao, Guangyi Fan, Chenghang Sun and Simon Ming-Yuen Lee. Evolutionary gradient of predicted nuclear localization signals (NLS)-bearing proteins in genomes of family Planctomycetaceae (2017). *BMC Microbiology*. PMID: 28376722.

32. Congyuan Cao, Inchio Lou, **Chen Huang**, Ming-Yuen Lee (2016). Metagenomic sequencing of activated sludge filamentous bacteria community using the Ion Torrent platform. *Desalination & Water Treatment*. Jan2016, Vol. 57 Issue 5, p2175

33. Zaijun Zhang, Guohui Li, Samuel S.W. Szeto, Cheong Meng Chong, Quan Quan, **Chen Huang**, Wei Cui, Baojian Guo, Yuqiang Wang, Yifan Han, K.W. Michael Siu, Simon Ming Yuen Lee, Ivan K. Chu (2015). Examining the neuroprotective effects of protocatechuic acid and chrysin on in vitro and in vivo models of Parkinson disease. *Free Radical Biology and Medicine*. PMID: 25769424.

34. Nitin Udpa, Roy Ronen, Dan Zhou, Junbin Liang, Tsering Stobdan, Otto Appenzeller, Ye Yin, Yuanping Du, Lixia Guo, Rui Cao, Yu Wang, Xin Jin, **Chen Huang**, Wenlong Jia Vineet Bafna and Gabriel G Haddad (2015). Whole genome sequencing of Ethiopian highlanders reveals conserved hypoxia tolerance genes. *Genome Biology*. 2014 15:R36.

35. Dan Zhou, Nitin Udpa, Roy Ronen, Tsering Stobdan, Junbin Liang, Otto Appenzeller, Huiwen W. Zhao, Yi Yin, Yuanping Du, Lixia Guo, Rui Cao, Yu Wang, Xin Jin, **Chen Huang**, Wenlong Jia, ... Siqi Liu, Kelly A. Frazer, Yingrui Li, Vineet Bafna, Gabriel G. Haddad (2013). Whole-Genome Sequencing Uncovers the Genetic Basis of Chronic Mountain Sickness in Andean Highlanders. *American Journal of Human Genetics*. PMID: 23954164.

Academic and social institutions

2018-present, Macao Bioinformatics Association, member of a council

