Curriculum Vitae

Name: **Baoming Wang, PhD**
ORCID: 0000-0002-8701-3896
Position: Postdoctoral Research Fellow
Address: School of Life Sciences, Faculty of Science, University of Technology Sydney (UTS)
Email: wang.baoming@uts.edu.au
Phone: +61 4 03071474

Qualification

2/2017-2/2021 PhD, University of Technology Sydney, Australia

9/2013-6/2016 Master of Molecular Biology, Jilin University, China

9/2009-6/2013 Bachelor of Bioscience, Jilin Normal University, China

Work Experience

9/2024 - to date Postdoctoral Research Fellow, University of Technology Sydney
- Development of EV-Based Therapeutics

12/2023 – 5/2024 R&D engineer, New Horizon Co. Ltd, China
- Development of several cancer early diagnosis kits to enable precision medicine

9/2021 – 10/2023 Manager of Translational Medicine, Genetron Health Co. Ltd, China
- Next generation sequencing (NGS) in cancer diagnosis
- Product consultancy

2/2021 – 8/2021 Postdoctoral Research Fellow, Woolcock Institute of Medical Research
- Mechanistic research and drug development in respiratory diseases

3/2019 – 12/2020 Tutor, University of Technology Sydney

Academic Experience

1/2023 - to date Journal editor, *Frontiers in Pharmacology*

Current Research

I am currently a Postdoctoral Research Fellow at the University of Technology Sydney (UTS), focusing on the development of extracellular vesicle (EV)-based therapeutics, with a particular interest in their application for respiratory diseases and lung cancer. My research journey began with a focus on understanding the underlying mechanisms of respiratory diseases and lung cancer. At the Woolcock Institute of Medical Research, I conducted research targeting asthma and other lung conditions, particularly those related to air pollution exposure and e-vaping. My research was the first to demonstrate, using a mouse model, that exposure to air pollution at levels commonly seen in Australia can increase the risk of Chronic Obstructive Pulmonary Disease (COPD) in the parent generation. Furthermore, using a maternal exposure model, I showed that such levels of pollution could also elevate the likelihood of asthma in the offspring. These findings influenced public health discussions on air quality standards and the need for stricter regulations to protect vulnerable populations. Building on this foundational understanding, I then turned my focus toward exploring new therapeutic strategies for lung cancer patients. During my time at Genetron Health Co. Ltd., I applied next-generation sequencing (NGS) for cancer diagnosis and precision medicine,

working to develop targeted treatments for lung cancer. This work improved the accuracy of lung cancer diagnosis and guided personalized treatment plans, directly enhancing patient outcomes. My interdisciplinary expertise spans in vitro experiments, mouse models, genomics, and pathology, with a keen interest in translating fundamental research into real-world applications.

My research has produced a total of 27 publications, contributing significantly to the fields of respiratory diseases, lung cancer, and molecular biology. My H-index is 15, reflecting the impactful nature of my work, with 1,174 citations to date. These metrics demonstrate the influence and recognition of my research within the scientific community.

Technical Skills

Gene sequencing

Modelling diseases and pre-clinical trials using rodents

Genetic Engineering: DNA cloning; construction, transfection and infection of recombinant virus.

Pathology Analysis

Molecular biology: Western blotting, ELISA, flow cytometry.

Omics technology: genomics, proteomics and pathomics

Award

1. 2019 European Respiratory Society: Certificate of Continuing Medical Education.
2. 2019 Australia and New Zealand Lung Disease Society: Best Presentation.
3. 2019 19th New South Wales Asthma Society: Best Poster.

Publications

(H-index:15, Citation: 1,174).

1. Brian G Oliver, Xiaomin Huang, Rochelle Yarak, Xu Bai, Qi Wang, Razia Zakarya, Karosham D Reddy, Chantal Donovan, Richard Y Kim, James Morkaya, **Baoming Wang**, Yik Lung Chan, Sonia Saad, Alen Faiz, David van Reyk, Alexei Verkhratsky, Chenju Yi, Hui Chen (2024). "Chronic maternal exposure to low-dose PM2. 5 impacts cognitive outcomes in a sex-dependent manner." Environment International 191: 108971.
2. Hui Chen, Long The Nguyen, Min Feng, **Baoming Wang**, Bai Xu, Rochelle Alexia Yarak, Yik Lung Chan, Seethalakshmi Viswanathan, Muralikrishna Gangadharan Komala, Carol Pollock, Brian Oliver, Sonia Saad (2024). Cross-generational impact of maternal exposure to low level of PM2.5 on kidney health. American Journal of Nephrology accepted
3. Shannon Thomson, Yik Lung Chan, Chenju Yi, **Baoming Wang**, Rita Machaalani, Brian G Oliver, Catherine A Gorrie and Hui Chen (2022). "Impact of high fat consumption on neurological functions after traumatic brain injury in rats." Journal of Neurotrauma 39(21-22): 1547-1560.
4. Xugang Zhang, **Baoming Wang**, Chunyang Wang, Chengde Liao, Shiping Wang, Ran Cao, Tonghui Ma and Kun Wang (2022). "Case report: A novel reciprocal ROS1-CD74 fusion in a NSCLC patient partially benefited from sequential tyrosine kinase inhibitors treatment." Frontiers in Oncology 12: 1021342.
5. Yue Li, **Baoming Wang**, Chunyang Wang, Dandan Zhao, Zhengchuang Liu, Yanling Niu, Xiaojuan Wang, Wei Li, Jianhua Zhu and Houquan Tao (2022). "Genomic and transcriptional profiling of Chinese melanoma patients enhanced potentially druggable targets: a multicenter study." Cancers 15(1): 283.
6. Jia Du, **Baoming Wang**, Mengxia Li, Chunyang Wang, Tonghui Ma and Jinlu Shan (2022). "A novel intergenic gene between SLC8A1 and PKDCC-ALK fusion responds to ALK TKI WX-0593 in lung adenocarcinoma: a case report." Frontiers in Oncology 12: 898954.

7. Hui Chen, **Baoming Wang**, Gerard Li, Joel R Steele, Sandy Stayte, Bryce Vissel, Yik Lung Chan, Chenju Yi, Sonia Saad and Rita Machaalani (2021). "Brain health is independently impaired by E-vaping and high-fat diet." Brain, behavior, and immunity 92: 57-66.
8. **Baoming Wang**, Hui Chen, Dia Xenaki, Jiayan Liao, Christine Cowie and Brian G Oliver (2021). "Differential inflammatory and toxic effects in-vitro of wood smoke and traffic-related particulate matter from Sydney, Australia." Chemosphere 272: 129616
9. **Baoming Wang**, Yik-Lung Chan, Gerard Li, Kin Fai Ho, Ayad G Anwer, Bradford J Smith, Hai Guo, Bin Jalaludin, Cristan Herbert and Paul S Thomas (2021). "Maternal particulate matter exposure impairs lung health and is associated with mitochondrial damage." Antioxidants 10(7): 1029.
10. **Baoming Wang**, Hui Chen, Yik Lung Chan and Brian G Oliver (2020). "Is there an association between the level of ambient air pollution and COVID-19?" American Journal of Physiology-Lung Cellular and Molecular Physiology 319(3): L416-L421.
11. **Baoming Wang**, Hui Chen, Yik Lung Chan, Gang Wang and Brian G Oliver (2020). "Why do intrauterine exposure to air pollution and cigarette smoke increase the risk of asthma?" Frontiers in Cell and Developmental Biology 8: 38.
12. Gerard Li, Yik L Chan, **Baoming Wang**, Sonia Saad, Jacob George, Brian G Oliver and Hui Chen (2020). "E‐cigarettes damage the liver and alter nutrient metabolism in pregnant mice and their offspring." Annals of the New York Academy of Sciences 1475(1): 64-77.
13. **Baoming Wang**, Yik Lung Chan, Shengyu Zhou, Sonia Saad, Hui Chen and Brian G Oliver (2020). "Offspring sex affects the susceptibility to maternal smoking-induced lung inflammation and the effect of maternal antioxidant supplementation in mice." Journal of Inflammation 17: 1-11.
14. Gerard Li, Yik L Chan, **Baoming Wang**, Sonia Saad, Brian G Oliver and Hui Chen (2020). "Replacing smoking with vaping during pregnancy: impacts on metabolic health in mice." Reproductive Toxicology 96: 293-299.
15. Xianfu Meng, Boyu Zhang, Yan Yi, Hui Cheng, **Baoming Wang**, Yanyan Liu, Teng Gong, Wei Yang, Yefeng Yao and He Wang (2020). "Accurate and real-time temperature monitoring during MR imaging guided PTT." Nano letters 20(4): 2522-2529.
16. Hui Chen, Gerard Li, Venkata Sita Rama Raju Allam, **Baoming Wang**, Yik Lung Chan, Claudia Scarfo, Maiken Ueland, Ronald Shimmon, Shanlin Fu and Paul Foster (2020). "Evidence from a mouse model on the dangers of thirdhand electronic cigarette exposure during early life." ERJ Open Research 6(2).
17. Yik Lung Chan, **Baoming Wang**, Hui Chen, Kin Fai Ho, Junji Cao, Guo Hai, Bin Jalaludin, Cristan Herbert, Paul S Thomas and Sonia Saad (2019). "Pulmonary inflammation induced by low-dose particulate matter exposure in mice." American Journal of Physiology-Lung Cellular and Molecular Physiology 317(3): L424-L430.
18. Chaohao Chen, Fan Wang, Shihui Wen, Qian Peter Su, Mike CL Wu, Yongtao Liu, **Baoming Wang**, Du Li, Xuchen Shan and Mehran Kianinia (2018). "Multi-photon near-infrared emission saturation nanoscopy using upconversion nanoparticles." Nature communications 9(1): 3290.
19. Dayong Jin, Peng Xi, **Baoming Wang**, Le Zhang, Jörg Enderlein and Antoine M van Oijen (2018). "Nanoparticles for super-resolution microscopy and single-molecule tracking." Nature methods 15(6): 415-423.
20. Yulong Sun, Wenjing Zhang, **Baoming Wang**, Xiaoxue Xu, Joshua Chou, Olga Shimoni, Alison T Ung and Dayong Jin (2018). "A supramolecular self-assembly strategy for upconversion nanoparticle bioconjugation." Chemical Communications 54(31): 3851-3854.
21. Fan Wang, Shihui Wen, Hao He, **Baoming Wang**, Zhiguang Zhou, Olga Shimoni and Dayong

Jin (2018). "Microscopic inspection and tracking of single upconversion nanoparticles in living cells." Light: Science & Applications 7(4): 18007-18007.
22. Shuai Lang, Lizheng Wang, Zixuan Wang, Rui Zhu, Jingyi Yan, **Baoming Wang**, Jiaxin Wu, Haihong Zhang, Hui Wu and Yan Zhou (2016). "Localization of neutralization epitopes on adenovirus fiber knob from species C." Journal of General Virology 97(4): 955-962.
23. Zhen Wang, Bin Yu, **Baoming Wang**, Jingyi Yan, Xiao Feng, Zixuan Wang, Lizheng Wang, Haihong Zhang, Hui Wu and Jiaxin Wu (2016). "A novel capsid-modified oncolytic recombinant adenovirus type 5 for tumor-targeting gene therapy by intravenous route." Oncotarget 7(30): 47287.
24. Jingyi Yan, Lizheng Wang, Zhen Wang, **Baoming Wang**, Ruiu Zhu, Jinpeng Bi, H Zhang, Hui Wu and Bin Yu (2016). "Engineered adenovirus fiber shaft fusion homotrimer of soluble TRAIL with enhanced stability and antitumor activity." Cell Death & Disease 7(6): e2274-e2274.
25. Jingyi Yan, Jianing Dong, Jiaxin Wu, Rui Zhu, Zhen Wang, **Baoming Wang**, Lizheng Wang, Zixuan Wang, Haihong Zhang and Hui Wu (2016). "Interaction between hexon and L4-100K determines virus rescue and growth of hexon-chimeric recombinant Ad5 vectors." Scientific reports 6(1): 22464.
26. **Baoming Wang**, Zhen Wang, Jingyi Yan, Lizheng Wang, Zixuan Wang, Jiaxin Wu, Haihong Zhang, Hui Wu, Wei Kong and Bin Yu (2015). "Expression, purification and characterization of heterotrimeric forms of sTRAIL using a polycistronic expression vector." Protein Expression and Purification 115: 118-124.
27. Zhen Wang, **Baoming Wang**, Junfang Lou, Jingyi Yan, Lei Gao, Ranshen Geng and Bin Yu (2014). "Mutation in fiber of adenovirus serotype 5 gene therapy vector decreases liver tropism." International Journal of Clinical and Experimental Medicine 7(12): 4942.