



Wang Boyang

Research Interests

AI AI for biomedicine, multi-omics, structure biology and pharmacy

Bioinformatics Multi-omics disease mechanism research, drug mechanism discovery and network pharmacology

Education

- 2024.5- **Visiting scholar**, *National University of Singapore, Singapore, Singapore*
2024.11 Bioinformatics & AI, Structure biology
2020.9- **PhD Student**, *Tsinghua University, Beijing, China*
present Bioinformatics & AI
2018.3- **Exchange Student**, *Shanghai Jiao Tong University, Shanghai, China*
2018.8 Automation
2016.9- **Bachelor's Degree**, *Harbin Institute of Technology, Harbin, China*
2020.8 Automation

Selected Publications

- 2025 **Leveraging Network Target Theory for Efficient Prediction of Drug-Disease Interactions: A Transfer Learning Approach**
Liu Q#, Chen Z#, **Wang B#**, Pan B#, Zhang Z, Shen M, Zhao W, Zhang T, Li S*, Liu L*. *Advanced Science*, 2025. (IF=14.3, published)
- 2025 **A computational based new treatment strategy with randomized, double-blind, three-armed, parallel-controlled, multicenter clinical trials on *Mycoplasma pneumoniae pneumonia* in children**
Zhong C#, Guo S#, Liu Q#, Sun D#, **Wang B#**, Hu S, Li X, Zhao W, Ding Y, Yuan B, Liu J, Xiang L, Li N, Xue Z, Li Y, Teng Y, Yi R, Li S*, Ma R*. *Chinese Medicine*, 2025. (IF=5.3, accepted)
- 2024 **Comparison of Jinzhen Oral Liquid and Ambroxol Hydrochloride and Clenbuterol Hydrochloride Oral Solution in the Treatment of Acute Bronchitis in Children: A Multicenter, Non-inferiority, Prospective, Randomized Controlled trial**
Fan Q#, Wu C#, Du Y#, **Wang B#**, Xie Y, Zhang Z, Su W, Wang Z, Xu C, Li X, Ding Y, An X, Chen J, Xiao Y, Yu R, Li N, Wang J, Teng Y, Lv H, Yang N, Wen Y, Huang X, Pan W, Liu Y, Xi X, Zhao Q, Liu C, Xu J, Zhang H, Zhuo L, Rong Q, Xia Y, Shen Q, Li S*, Wang J*, Wu S*. *Acta Pharm Sin B*, 2024 Dec;14(12):5186-5200. (IF=14.7, published)
- 2024 **Elucidating the role of artificial intelligence in drug development from the perspective of drug-target interactions**
Wang B#, Zhang T#, Liu Q#, Sutcharitchan C, Zhou Z, Zhang D, Li S*. *Journal of Pharmaceutical Analysis*, 2024. (IF=8.8, published)

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🌐 wby20.github.io/paul.github.io/ • 🌐 Boyang Wang • 🌐 WBY20

- 2024 **Uncovering the role of traditional Chinese medicine in immune-metabolic balance of gastritis from the perspective of Cold and Hot: Jin Hong Tablets as a case study**
Wang B#, Zhang T#, Liu Q#, Sutcharitchan C, Zhou Z, Zhang D, Li S*. *Chinese Medicine*, 2024 Oct 4;19(1):134. (IF=5.3, published)
- 2024 **Biological mechanism of Traditional Chinese Medicine Formula and Herbs in Treating Diseases from the perspective of Cold and Hot**
Wang B, Chen P, Zhang P, Li S*. *World Journal of Traditional Chinese Medicine*, February 29, 2024. 10(3):p 274-283. (IF=4.4, published)
- 2023 **Exploring the effect of Weifuchun capsule on the toll-like receptor pathway mediated HES6 and immune regulation against chronic atrophic gastritis**
Wang B#, Zhou W#, Zhang H#, Wang W, Zhang B, Li S*. *Journal of Ethnopharmacology*, 2023 Mar 1; 303:115930. (IF=5.4, published)
- 2023 **Uncovering the mechanisms of Yi Qi Tong Qiao Pill in the treatment of allergic rhinitis based on Network target analysis**
Wang B, Zhang D, Zhang T, Sutcharitchan C, Hua J, Hua D*, Zhang B*, Li S*. *Chinese Medicine*, 2023 Jul 24; 18(1):88. (IF=4.9, published)

Works In Progress

Bioinformatics and Algorithm Developing

Gao Z#, Wang B#, et al. **Uncovering the metabolic reprogramming of macrophages for Gegen Qinlian Decoction in alleviating meta-inflammation of T2DM.**
(Signal Transduction and Targeted Therapy, in revision)

Wang B#, Pan B, Zhang T, et al. **Transfer Learning and Permutation-Invariance improving Predicting Genome-wide, Cell-Specific and Directional Interventions Effects of Complex Systems.**
(Acta Pharm Sin B, in revision)

Wang B, Kun D, Sun D, et al. **Revealing the Mechanisms of Compound Kushen Injection in the Treatment of Radiation-Induced Lung Injury and Lung Cancer: From Regulating Oxidative Stress to Modulating Macrophages.**
(Engineering, in revision)

Wang B#, Zhao W#, Chen P#, et al. **ARegulation of Cell Cycle by Pien Tze Huang in preventing Hepatocellular carcinoma progression.**
(Phytomedicine, in revision)

Zhang T#, Wang B#, Qu J#, et al. **Screening the Homologous Food-Medicine Kelp as a Dietary Intervention for Fructose-accelerated colitis-associated colorectal cancer tumorigenesis.**
(Nature Food, under review)

Pan B#, Wang B#, et al. **Systematic Development of Multi-Component Drug from Traditional Medicine: Targeting EGFR-PCNA Axis through Synergistic Danggui Sini Decoction-derived Compounds in Gastric Cancer.**
(Journal of Advanced Research, under review)

Wang B#, Zhang T#, Zhang D, et al. **A Phenotype-Molecule Transfer Learning Model: Clinical Analysis and Mechanistic Insights of Yinqiao Qingre Pill in Wind-Heat Syndrome Common Cold Intervention.**
(Engineering, under review)

Structure Biology and Algorithm Developing

Hu T#, Wang B#, et al. **A Rapid AI-driven mutation screening method for enhancing protein functionality.**
(Advanced Science, in revision)

Other Publications

- 2024 **Network pharmacology: towards the artificial intelligence-based precision traditional Chinese medicine**
Zhang P#, Zhang D#, Zhou W#, Wang L, **Wang B**, Zhang T, Li S*. *Briefings in Bioinformatics*, 2023 Nov 22; 25(1):bbad518. (IF=9.5, published)
- 2024 **Recent advances in traditional Chinese medicine network pharmacology: Integration of network target with artificial intelligence and multi-modal multi-omics technologies**
Wang Z, Zhang T, **Wang B**, Li S*. *Chinese Journal of Natural Medicines*, 2024. (IF=4.0, published)
- 2024 **Recent advances in traditional Chinese medicine network pharmacology: Integration of network target with artificial intelligence and multi-modal multi-omics technologies**
Zhao W, **Wang B**, Li S*. *Chinese Herbal Medicine*, 2024 Sep 3;16(4):558-560. (IF=4.7, published)
- 2024 **Cold and Hot syndromes in traditional Chinese medicine: Insights from the perspective of immunometabolic homeostasis**
Chen P, **Wang B**, Zhang P, Li S*. *World Journal of Traditional Chinese Medicine*, March 05, 2024. 10(4):p 434-442. (IF=4.4, published)
- 2023 **Network-based cancer precision prevention with artificial intelligence and multi-omics**
Zhang P, **Wang B**, Li S*. *Science Bulletin (Beijing)*, 2023 Jun 30; 68(12):1219-1222. (IF=18.9, published)
- 2023 **Research and development practice of traditional Chinese medicine based on network target theory and technology**
Shao Li*, Boyang **Wang**, et al. *China Journal of Chinese Materia Medica*, 2023, 48(22):5965-5976. (cover paper, published)
- 2022 **Network Target Theory, Key Techniques and Applications in Traditional Chinese Medicine**
Shao Li*, Peng Zhang, Xin Wang, Bo Zhang, **Boyang Wang**. *Modernization of Traditional Chinese Medicine and Materia Medica-World Science and Technology*, 2022 (09), 3261-3269. (cover paper, published)

Awards and Honors

- 2024 Highest prize in 49th International Exhibition of Inventions Geneva (**Gold with congratulations of the Jury**, the 3rd author)
- 2024 Wuhai Talent Scholarship 2nd Prize in Tsinghua University
- 2024 Jiukun Scholarship 2nd Prize in Tsinghua University
- 2020 National Scholarship in HIT
- 2020 Outstanding Graduate in HIT
- 2018–2020 People's Scholarship 1st Prize in HIT (4 times)
- 2019 "AVIC" 2nd Class Scholarship in HIT
- 2017 College Student Science and Technology Innovation Project 1st Prize in HIT
- 2020 Merit Student in HIT
- 2020 Outstanding Youth League Cadre in Automation Department in HIT