**ZHANG Ning (Ph.D.)**

**Academic qualifications:**

|  |  |
| --- | --- |
| 2012.9-2016.6: | Bachelor, Major in Chinese medicine, Guangzhou University of Chinese Medicine, Guangzhou, China  |
| 2016.9-2019.6:  | Master, Major in Biology, School of Life Sciences, Tianjin University, Tianjin, China  |
| 2020.1-2023.2: | Ph.D., Major in Chinese Medicine, School of Chinese Medicine, The Chinese University of Hong Kong, Hong Kong |
| 2023.4-now: | Postdoctoral Fellow, School of Chinese Medicine, The Chinese University of Hong Kong, Hong Kong |

**Previous academic positions held:**

|  |  |
| --- | --- |
| 2019.8-2019.12: | Research Assistant, Dept. of Biomedical Engineering, The Chinese University of Hong Kong, Hong Kong |

**Previous relevant research work:**

**Drug screening and discovery towards osteoporosis therapy**. The paper published in 2020 explained the pros and cons of denosumab treatment in osteoporosis and the implication for novel aptamer treatment (***Front Cell Dev Biol***, 2020). After that, considering the safety and compliance concerns of current FDA-approved antibody for the treatment of osteoporosis, I therefore present relevant discussion and offer perspectives on the development of next-generation sclerostin inhibitors by following several ways, such as concomitant medication, artificial intelligence-based strategy, druggable modification, and bispecific inhibitors strategy (***Acta Pharm Sin B***, 2022).

**Structural loop target discovery within proteins and aptamer drug discovery**. One genetic approach study suggested that sclerostin loop3 played an important role in sclerostin inhibiting bone formation, whereas the protective effect of sclerostin on cardiovascular system was independent of loop3 (***Nat Commun***, 2022). After that, an aptamer was pharmacologically screened targeting sclerostin loop 3, which could promote bone formation without increase cardiovascular risk in osteogenesis imperfect model (***Theranostics***, 2022). The aptamer drug candidate has been granted Orphan Drug Designation by US FDA (DRU-2019-6966), which is the first successful case in Hong Kong.

**Publication records**:

**Representative publications in the recent five years** (# Co-first author)

1. Wang LY, **Zhang N#**, Liu J, Yang X, Yu YY, Li DJ, Jiang HW, Sun MH, Li NX, Ma DQ, Huang Y, Lu AP, Zhang BT, Zhang G. Macrophagic sclerostin loop2-ApoER2 interaction required by sclerostin for suppressing inflammatory responses. ***Metabolism***-***clinical and experimental***, 2023.
2. Zhang Y, Song XJ, Chen C, Liu L, Xu YY, **Zhang N**, Huang WD, Zheng J, Yuan WS, Tang L, Lin Z. Structural insights of the toxin-antitoxin system VPA0770-VPA0769 in Vibrio parahaemolyticus. ***Int J Biol Macromol,*** 2023. **(Impact factor: 8.025)**
3. Yu S, Li DJ, **Zhang N#**, Ni SJ, Sun MH, Wang LY, Xiao H, Liu DD, Liu J, Yu YY, Zhang ZK, Yeung Samuel, Zhang S, Lu AP, Zhang ZL, Zhang BT, Zhang G. Drug discovery of sclerostin inhibitors. ***Acta Pharm Sin B***, 2022. **(Impact factor: 14.90)**
4. Yu Y, Wang LY, Ni SJ, Li DJ, Liu J, Chu HY, **Zhang N**, Sun MH, Li NX, Ren Q, Zhuo ZJ, Zhong CX, Xie DL, Li YS, ZHANG ZK, Zhang HR, Li M, Zhang ZL, Chen L, Pan XH, Xia WB, Zhang S, Lu AP, Zhang BT, Zhang G. Targeting loop3 of sclerostin preserves its cardiovascular protective action and promotes bone formation. ***Nat Commun***, 2022. 13(1): p. 4241. (**Impact factor: 17.69**)
5. Wang LY, Yu, Y, Ni SJ, Li D, Liu J, Xie DL, Chu HY, Ren Q, Zhong CX, **Zhang N**, Li N, Sun MH, Zhang ZK, Zhuo ZJ, Zhang HR, Zhang S, Li M, Xia W, Zhang ZL, Chen L, Shang P, Pan XH, Lu AP, Zhang BT, Zhang G. Therapeutic aptamer targeting sclerostin loop3 for promoting bone formation without increasing cardiovascular risk in osteogenesis imperfecta mice. ***Theranostics***, 2022. 12(13), 5645–5674. (**Impact factor: 11.60**)
6. **Zhang N**, Kisiswa L, Ramanujan A, Li Z, Sim E. W., Tian X, Yuan W, Ibáñez C. F., Lin Z. Structural basis of NF-κB signaling by the p75 neurotrophin receptor interaction with adaptor protein TRADD through their respective death domains. ***J Biol Chem***, 2021, 297(2): p.100916. **(Impact factor: 5.485)**
7. **Zhang N**, Chen Z, Liu D, Jiang H, Zhang ZK, Lu A, Zhang BT, Yu Y, Zhang G. Structural Biology for the Molecular Insight between Aptamers and Target Proteins. ***Int J Mol Sci***, 2021, 22(8), 4093. **(Impact factor: 6.208)**
8. Chen Z, **Zhang N**, Chu HY, Yu Y, Zhang ZK, Zhang G, Zhang BT. Connective Tissue Growth Factor: From Molecular Understandings to Drug Discovery. ***Front Cell Dev Biol,*** 2020; 8:593269. **(Impact factor: 6.081)**
9. **Zhang N#**, Zhang ZK, Yu Y, Zhuo Z, Zhang G, Zhang BT. Pros and Cons of Denosumab Treatment for Osteoporosis and Implication for RANKL Aptamer Therapy. ***Front Cell Dev Biol,*** 2020; 8:325. **(Impact factor: 6.081)**
10. **Zhang N**, Yuan W, Fan JS, Lin Z. Structure of the C-terminal domain of TRADD reveals a novel fold in the death domain superfamily. ***Sci Rep*** 2017; 7:7073. **(Impact factor: 4.996)**

**Awards**

1. Best Investigator Award. **Zhang N**. International Conference on Aging Research in Chinese Medicine: Musculoskeletal and Neurological Degeneration and Repair, 2021, Hong Kong, China
2. Best Presenter Award. **Zhang N**. The Chinese University of Hong Kong, School of Chinese Medicine, Graduate Seminar Term 1, 2020-21, Hong Kong, China.
3. Outstanding Graduate. **Zhang N**. Tianjin University, 2019, Tianjin, China
4. National Scholarship for Graduate Student. **Zhang N**. Tianjin University, 2017, Tianjin, China.