

台万一教授 简历

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Group Website: <http://wytai.whu.edu.cn/scholar.google.com/citations?user=7N3iEJIAAAAJ&hl=en>

联系地址

武汉大学医学部药学院
湖北省武汉市武昌区东湖路 185 号
邮箱: wanyi-tai@whu.edu.cn

职业经历

2020/12-至今	武汉大学药学院, 教授, 博导
2019/02-2020/11	武汉大学药学院, 特聘研究员, 博导
2013/12 - 2018/12	美国华盛顿大学生物工程系, 博士后
2012/12 - 2013/11	美国北卡大学教堂山分校生物医学工程系, 博士后

教育经历

2007/08 - 2012/08	美国密苏里大学-堪萨斯城药学院, 药剂学博士
2004/09 - 2007/07	中国科学院上海药物研究所, 药物化学硕士
2000/09 - 2004/07	中国药科大学, 理学学士

研究兴趣与方向

1) siRNA 的化学修饰与递送

利用 dsRNA 结合蛋白对 siRNA 的特异性识别和装载能力, 以该类蛋白 dsRBD 为基础, 设计抗体融合蛋白和 dsRBD 嵌合抗原受体, 发展可 siRNA 靶向递送的生物大分子载体和人工生物合成的 exosome 类纳米膜囊载体。同时兼用化学修饰和生物偶联技术, 提高 siRNA 的疏水性、体内稳定性和生物相容性。

2) 融合蛋白, 融合抗体的结构设计以及药物偶联技术开发

抗体和蛋白质的功能和结构具有模块化特点, 利用生物合成和蛋白质重组技术, 对抗体或者其它治疗性蛋白质进行结构设计和功能模块重搭建, 实现靶向、载药、变构、双特异性和多功能融合, 以获得可精准调控的新型抗体药物和抗体类药物载体。

曾获荣誉

第三届精准医疗大会青年学者创新成果展示奖 2020

国家人才计划青年项目 2019

湖北省楚天学子 2019

Outstanding Leadership Award 2010

承担项目

主持国家自然科学基金面上项目“siRNA 的表面贴饰和膜融合递送”, (Grant No. 82073770, 2021.01-2024.12)

主持武汉大学科研启动基金 (Grant No: 600460004)

著作发表

论文 (*: corresponding author; #: equal contribution)

1) Wen Wang, Wanyi Tai*. “RNA binding protein as monodisperse carriers for siRNA delivery.” Med. Drug Discov. 2019, 3, 100011

- 2) Yan Zheng, Wanyi Tai*. Insight into the siRNA transmembrane delivery – from cholesterol conjugating to tagging. *WIREs Nanomedicine Nanobiotechnology* 2019, e1606
- 3) Wanyi Tai, Xiaohu Gao*. Cytosolic delivery of protein by cholesterol tagging. *Science Advance* 2020, 6, abb0310
- 4) Wanyi Tai*. Current aspects of siRNA bioconjugate for in vitro and in vivo delivery. *Molecules* 2019, 24(12), 2211
- 5) Wanyi Tai*. Chemical Modulation of siRNA lipophilicity for efficient delivery. *Journal of Controlled Release* 2019, 307, 98-107.
- 6) Wanyi Tai, Xiaohu Gao*. Silencing ribonucleoprotein: a biomimetic platform for targeted siRNA delivery. *Advanced Functional Materials* 2019, doi:10.1002/adfm.201902221
- 7) Wanyi Tai, Xiaohu Gao*. Synthetic polymer tag for intracellular delivery of siRNA. *Advanced Biosystems* 2018, 2, 1800075
- 8) Wanyi Tai, Junwei Li, Eva Corey, Xiaohu Gao*. A ribonucleoprotein octamer for targeted siRNA delivery. *Nature Biomedical Engineering* 2018, 2(5), 326-337
- 9) Wanyi Tai, Xiaohu Gao*. Noncovalent tagging of siRNA with steroids for transmembrane delivery. *Biomaterials* 2018, 178, 720-727.
- 10) Wanyi Tai, Xiaohu Gao*. Functional peptides for siRNA delivery *Advanced Drug Delivery Reviews* 2017, 110–111, 157–168.
- 11) Wanyi Tai, Ran Mo, Jin Di, Vinayak Subramanian, Xiao Gu, Zhen Gu*. Bio-inspired nanovesicles for glucose-responsive release of insulin. *Biomacromolecules* 2014, 15(10), 3495-3502.
- 12) Wanyi Tai#, Ran Mo#, Yue Lu, Tianyue Jiang, Zhen Gu*. Folding graft copolymer with pendant drug segment for co-delivery of anticancer drugs. *Biomaterials* 2014, 35(25), 7194-7203.
- 13) Wanyi Tai, Zhijin Chen, Ashutosh Barve, Zhonghua Peng, Kun Cheng*. A novel rapamycin-polymer conjugate based on a new poly(ethylene glycol) multiblock copolymer. *Pharmaceutical Research* 2014, 31(3), 706-719
- 14) Wanyi Tai, Zhijin Chen, Kun Cheng*. Expression profile and functional activity of peptide transporters in prostate cancer cells. *Molecular Pharmaceutics* 2013, 10(2), 477-487
- 15) Wanyi Tai, Ravi S. Shukla, Bin Qin, Benyi Li, Kun Cheng*. Development of a peptide-drug conjugate for prostate cancer therapy. *Molecular Pharmaceutics* 2011, 8(3), 901-912
- 16) Wan-Yi Tai#, Run-Tao Zhang#, Yi-Ming Ma, Min Gu, Gang Liu, Jia Li, Fa-Jun Nan*. Design, synthesis, and biological evaluation of ring-opened bengamide analogues. *ChemMedChem* 2011, 6(9), 1555-1558.
- 17) Wanyi Tai, Rubi Mahato, Kun Cheng*. The role of HER2 in cancer therapy and targeted drug delivery. *Journal of Controlled Release* 2010, 146(3), 264-275
- 18) Wanyi Tai, Bin Qin, Kun Cheng*. Inhibition of breast cancer cell growth and invasiveness by dual silencing of HER-2 and VEGF. *Molecular Pharmaceutics* 2010, 7(2), 543-556
- 19) Gang Liu#, Yi-Ming Ma#, Wan-Yi Tai#, Chuan-Ming Xie, Yu-Lin Li, Jia Li and Fa-Jun Nan*. 2008, Design, synthesis, and biological evaluation of caprolactam-modified bengamide analogues. *ChemMedChem* 2008, 3(1), 74–78. #, Co-First authorship

著作章节

- 1) Wanyi Tai, Kun Cheng*. (2013) “Advanced drug delivery in cancer therapy” In Mitra AK, Lee C. Cheng K. edits “Advanced drug delivery” Wiley-Blackwell, John Wiley & Sons, Inc.
- 2) Wanyi Tai, Zhen Gu*. (2015) “Enzyme Nanocapsules for Glucose Sensing and Insulin Delivery” In Peter Grunwald edits “Biocatalysis & Nanotechnology” Pan Stanford Publishing Pte. Ltd.

专利

- 1) Fa-Jun Nan, Jia Li, Jian Ding, Gang Liu, Chuan-Ming Xie, Yi Chen, Wan-Yi Tai. Alpha-amino-N-substituted amides, pharmaceutical composition containing them and uses thereof. Patent US 8470763
- 2) Zhen Gu, Wanyi Tai. Methods of folding a graft copolymer with dual anticancer drugs and related applications, PCT/US2015/031582
- 3) Wanyi Tai, Xiaohu Gao. Noncovalent tagging and non-endosomal transmembrane delivery of biologics. US Patent Application 62/800,093 filed 2/1/2019.

会议和邀请报告

- 1) Wanyi Tai, “Ribonucleoprotein nanomedicine for siRNA delivery”, **The 3rd International Conference on Nanomedicine**, Oct. 17, 2018, Shanghai, China.

- 2) Wanyi Tai, "Transmembrane delivery of siRNA by small molecular carriers", **2019 Chinese Medicinal Chemistry Symposium**, Aug. 15, 2019, Chengdu, China.
- 3) Wanyi Tai, "Molecule engineering for protein and siRNA delivery", **Invited seminar Novo Nordisk Research Centre China**, Dec. 1, 2020.