

BIOGRAPHICAL SKETCH

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NAME: Wei Li

eRA COMMONS USER NAME (credential, e.g., agency login): weili2

POSITION TITLE: Distinguished Professor, University of Tennessee Health Science Center
Founder and CSO, SEAK Therapeutics, LLC

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
University of Science and Technology of China	B.S.	07/1992	Chemistry
Columbia University in the City of New York	Ph.D.	07/1999	Chemistry

A. Personal Statement:

A chemist by training, I have developed significant expertise in chemical biology and small molecule drug discovery over the past 25 years. My lab is equipped with software for computer-aided drug design, equipment for medicinal chemistry studies, complete cell culture labs, and equipment for biological investigations of drug actions. I have developed several approved animal protocols for pharmacokinetics, *in vivo* efficacy, and comprehensive toxicity studies.

We discovered a new generation of tubulin inhibitors targeting the colchicine-binding site, represented by the current investigational new drug Sabizabulin. The sabizabulin scaffold has been comprehensively patented (WO2011/109059 and WO2012/027481) and licensed to Veru Inc. for commercial development. Sabizabulin has completed multiple advanced clinical trials. These clinical trials showed that Sabizabulin is well-tolerated and has promising clinical efficacy and good safety profiles. I also established a startup company, SEAK Therapeutics LLC, to develop potentially more effective therapies for cancer and neurological diseases. As a medicinal chemist, my ultimate dream goal is to collaborate with biologists to develop a new drug that can benefit patients, whether they are suffering from cancer or neurological diseases.

Customize based on specific project

Currently Ongoing Projects:

PI: 1R01CA295996 (NIH/NCI)	Wang (MPI)	8/2025-7/2030
Targeted MDM2 degradation for improved treatment for triple-negative breast cancer		
PI: R01CA276152 (NIH/NCI)	Seagroves (MPI)	4/2023-3/2028
Targeting brain and bone metastases in metastatic breast cancer for improved patient survival.		
PI: R01CA148706 (NIH/NCI)	Miller (MPI)	1/2011-6/2026
Targeting the colchicine site in tubulin for cancer therapy.		
PI: R01CA240447 (NIH/NCI)	Zhou (MPI)	7/2020-6/2025
Dual inhibition of MDM2 and XIAP as a therapeutic strategy in cancer.		
MPI: R01AG072703 (NIH/NIA)	Liao (contact PI)	6/2022-5/2027
Validation of a novel tau clearance mechanism.		
MPI: R61/R33 NS124923 (NIH/NINDS)	Jiang (contact PI)	12/2021-11/2025
Targeting TRPC3 Channels for Epileptic Seizures		
PI: HT9425-23-1-0216 (DoD)	Yue (Co-PI)	7/2023-6/2027
Development of an orally available and low-toxic chemotherapy for improved ovarian cancer therapy.		

<u>Co-I: R01CA276135 (NIH/NCI)</u>	Zhou (PI)	12/2023-11/2028
Discovery of a novel MDM2-tubulin signaling pathway as a therapeutic target in AML.		
<u>Co-I: R01NS128336 (NIH/NINDS)</u>	Mahato (PI)	7/2022-5/2027
Lipid nanomedicine targeting multiple signaling pathways of medulloblastoma.		
<u>Co-I and mentor: R16GM154786 (NIH/NIGMS)</u>	Banerjee (PI)	2024-6/2028
Discovery of fused heterocyclic pyrazine-based novel anti-mitotic agents for metastatic melanoma		

B. Positions and Honors

Positions and Employment

2024-present	Co-leader, Chemical Biology Program, UTHSC Center for Cancer Research
2023-present	Executive Committee member, University of Tennessee Research Foundation
2022-present	Executive Committee member (2022-present); Secretary/Treasurer (2025-2026); Chair-elect (2025-2026); Chair (2026-2027 term), Division for Drug Discovery and Development, American Society of Pharmacology and Experimental Therapeutics (ASPET)
2020-present	UTHSC Distinguished Professor
2018-present	Founder and CSO, SEAK Therapeutics LLC
2017-present	Director, UTHSC College of Pharmacy Drug Discovery Center, UTHSC
2016-present	Vice President and Executive Committee Member, MALTO Medicinal Chemistry.
2015-present	Member of American Society for Pharmacology and Experimental Therapeutics (ASPET)
2015-2017	Secretary and Exec Committee Member, American Chemical Society Memphis Section
2014-2020	Professor and Faculty Director of Shared Instrument Facility, UTHSC, Memphis, TN
2009-2014	Associate Professor with tenure, UTHSC, Memphis, TN
2004-present	Member of the American Association for Cancer Research (AACR)
2004-2009	Tenure track Assistant Professor, UTHSC, Memphis, TN
2001-2004	Non-tenure track Assistant Professor, UTHSC, Memphis, TN
1999-2001	Instructor, University of Tennessee Health Science Center, Memphis, TN
1998-present	Member of American Chemical Society (ACS)
1994-1999	Graduate Research Assistant, Department of Chemistry, Columbia University, New York.
1992-1994	Research Assistant, Dalian Inst. of Chem. Phys., the Chinese Academy of Sciences, China.
1987-1992	Undergraduate Research, University of Science and Technology of China, China

Honors

2024	Inventor of the Year Award, the University of Tennessee Research Foundation
2022	Memphis Business Journal Health Care Hero Award
2015	Outstanding Alumni Lecturer, Dalian Inst. of Chem. Phys., the Chinese Academy of Sciences
2012, 2014	Research Award, University of Tennessee Research Foundation
2010, 2014	University of Tennessee Research Foundation Innovation Awards
1986	First Prize in National Young Chemist Competition for Chemistry Olympia, China

Journal and Grant Reviewer

Journal reviewer: Journal of American Chemical Society; Bioorganic Chemistry; Bioorganic Medicinal Chemistry Letters; Bioorganic Medicinal Chemistry; The Open Magnetic Resonance Journal; Molecular Diversity; European Journal of Medicinal Chemistry; Journal of Medicinal Chemistry; International Journal of Nanomedicine; PLoS One; Anti-cancer Agents in Medicinal Chemistry; Royal Society of Chemistry Journals; Medicinal Research Reviews; Molecule Cancer Therapeutics; Cancer Research; Oncotarget; Scientific Reports; Molecular Cancer Research; Chemical Sciences; Nature Communications; PNAS; Nature.

Grant reviewer: NIH (2011/07: ZRG1 BCMB-U 30; 2012/03: ZRG1 BCMB-R 30; 2012/07: BCMB I; 2012/11: NCI SBIR/STTR; 2014/03: NCI SBIR/STTR; 2014/07: NCI SBIR/STTR; 2015/03: NCI SBIR/STTR; 2015/06: NCI SBIR/STTR; 2015/12: NCI SBIR/STTR; 2016/01: NCI ZRG1 OTC-Y (02) M; 2016/03: NCI SBIR/STTR; 2016/09: NCI ZRG-OTC K(04); 2016/11: NCI SBIR/STTR; 2016/12: NCI SBIR/STTR; 2017/03: NCI SBIR/STTR; 2017/10: ZRG1 BCMB-D; 2017/10: ZRG1 BCMB-N; 2018/03, NCI SBIR/STTR; 2018/07, ZRG1 IDM-C(50)R; 2018/11, NCI SBIR/STTR; 2019/10-12, NIH, ZRG1-MOSS-R70, NIH Director's DP2 Award-2020; 2020/03, NCI, OTC-T SBIR/STTR; 2020/10-12, NIH Director's DP2 Award-2021; 2021/10, EBIT; 2021/10-12, NIH Director's DP2 Award-2022; 2022/06, NCI CDDT SBIR/STTR; 2022/11, NCI CDDT

SBIR/STTR; 2023/09, NCI SPORE (P50)); 2024/07, NCI CDPT SBIR/STTR; 2024/09, NCI ZRG1 CTH-C (55); NCI 2025/02: MCTA.

American Chemical Society; Human Frontier Science Program; National Science Foundation; Florida Department of Health; Estonian Science Foundation; US Army. Oklahoma Center for the Advancement of Science & Technology (OCAST); Czech Science Foundation; Health Research Council of New Zealand; The Cancer Society of New Zealand; Prostate Cancer UK; French National Cancer Institute (INCa).

Editorial Appointment:

Guest editor, *Pharmaceutical Research*, Theme Issue on drugs targeting tubulin inhibitors, Vol 29, 2012.
Guest editor, *Molecules*, Theme issue on Tubulin Inhibitors, 2017. Special Issue on Tubulin Inhibitors, 2020; Special Issue to honor Dr. Duane Miller, 2020.

Guest editor, *Acta Pharmaceutica Sinica B*, Theme Issue on drug targeting and resistance, 2018.

Guest editor, *Frontiers in Pharmacology*, 2023. A special issue on drug resistance.

Editorial Board and Section Editor (Anti-Cancer Agent section): *Current Medicinal Chemistry*, 2014-2024.

Editorial Board member, *Acta Pharmaceutica Sinica B*, 2016-present; *Molecules*, 2018-present; *Genes & Diseases*, 2018-present; *Cancer Letters*, 2020-2024.

C. Contribution to Science (220 peer-reviewed papers, 15 issued US patents and 6 book chapters)

1. Determine the effects of confined environments on photochemical reactions. When I was a graduate student at the chemistry department of Columbia University working under the direction of Professor Nick Turro, I contributed to elucidating the effects of confined environments on photochemical reactions.

- Wei Li**, Xuegong Lei, George Lem, Ann McDermott, Nicholas J. Turro, Nils Bottke and Waldemar Adam, "Oxygen and structural effect on silicalite ^{29}Si spin-lattice relaxation studied by high resolution ^{29}Si solid state NMR", **Chem. Mater.**, 12, 731-737 (**2000**).
- Nicholas J. Turro, Xue-Gong Lei, **Wei Li**, Zhiqiang Liu, and M. Francesca Ottaviani, "Adsorption of Cyclic Ketones on the External and Internal Surfaces of a Faujasite Zeolite (CaX). A Solid-State ^2H NMR, ^{13}C NMR, FT-IR, and EPR Investigation", **J. Am. Chem. Soc.**, 122, 12571-12581 (**2000**).
- Takashi Hirano, **Wei Li**, Lloyd Abrams, Paul J. Krusic, M. Francesca Ottaviani and N. J. Turro, "Reversible Oxygenation of a Diphenylmethyl Radical Rendered Supramolecularly Persistent" **J. Am. Chem. Soc.**, 121, 7170-7171 (**1999**).
- Nicholas J. Turro, Ann McDermott, Xuegong Lei, **Wei Li**, Lloyd Abrams, M. Francesca Ottaviani, Hege Stogard Beard, Kendall N. Houk, Brett R. Beno and Patrick S. Lee, "Photochemistry of ketones adsorbed on size/shape selective zeolites. A superamolecular approach to persistent carbon centered radicals", **Chem. Commun.**, 697-698 (**1998**).

2. Discovery and development of a new generation of tubulin inhibitors for cancer therapy. Starting from my independent academic career in 2004, I have worked towards the goal of developing a useful therapeutic agent. One major area that I have been working on is to develop a new generation of orally bioavailable tubulin inhibitors. In the past 10+ years, we have discovered novel series of orally bioavailable tubulin inhibitors targeting the colchicine binding site and their targeted delivery to tumor cells. We have obtained high-resolution crystal structures of tubulin protein with more than 20 of our potent compounds and deposited the structures to the PDB databank (examples of PDBs deposited: 5H7O, 6BR1, 6BRF, 6BRY, 6BS2, 6C47, 6C4B, 6C7U, and 6D88). I have been serving as the primary investigator in these studies.

- Kinsie Arnst, Yuxi Wang, Dong-Jin Hwang, Yi Xue, Terry Costello, David Hamilton, Qiang Chen, Jinliang Yang, Frank Park, James T. Dalton, Duane D. Miller, and **Wei Li**, "A potent, metabolically stable tubulin inhibitor targets the colchicine binding site and overcomes paclitaxel drug resistance", **Cancer Res**, 78(1):265-277, (**2018**). PMID: 29180476.
- Hao Chen, Shanshan Deng, Yuxi Wang, Najah Albadari, Gyanendra Kumar, Dejian Ma, Weimin Li, Stephen W. White, Duane D. Miller, and **Wei Li**, "Structure Activity Relationships Study of Novel 6 Aryl-2-Benzoyl-Pyridines as Tubulin Polymerization Inhibitors with Potent Antiproliferative Properties", **J Med Chem**, 63(2):827-846, (**2020**), PMID: 31860298.
- Deng S, Banerjee S, Chen H, Pochampally S, Wang Y, Yun MK, White SW, Parmar K, Meibohm

B, Hartman KL, Wu Z, Miller DD, **Li W**, "SB226, an inhibitor of tubulin polymerization, inhibits paclitaxel-resistant melanoma growth and spontaneous metastasis", **Cancer Letters**, 555:216046 (2023), PMID: 36596380 PMCID: PMC10321023.

- d. **Issued US Patents related to this area of contributions:** Compounds for treatment of cancer, US 8,592,465, issued on 11/26/2013; US 8,822,513, issued on 9/2/2014; US 9,029,408, issued on 5/12/2015; US 9,334,242, issued on 5/10/2016; US 9,447,049, issued on 9/20/2016; US 9,981,915, issued on 5/29/2018; US 10,022,356, issued on 7/17/2018; US 10,155,728, issued on 12/18/2018; US 10,301,285, issued on 5/28/2019; US 10,525,037, issued on 1/7/2020; US 10,865,196, issued on 12/15/2020; US 11,084,811, issued on 8/10/2021; US 11,465,987, issued on 10/11/2022.

3. Discovery of small molecule selective TRP ion channel inhibitors. My lab recently discovered a unique scaffold for selective TRPC3 ion channel inhibition. TRPC3 has been reported to be involved in several disease indications, including neurological diseases, neurodegenerative diseases, or cardiovascular diseases.

- a. Zhang S, Romero LO, Deng S, Wang J, Li Y, Yang L, Hamilton DJ, Miller DD, Liao FF, Cordero-Morales JF, Wu Z, **Li W**. "Discovery of a Highly Selective and Potent TRPC3 Inhibitor with High Metabolic Stability and Low Toxicity". **ACS Med Chem Lett.** 2021;12(4):572-8. PubMed PMID: 33859797; PMCID: PMC8040052.
- b. Yu Y, **Li W**, Jiang J. "TRPC channels as emerging targets for seizure disorders". **Trends Pharmacol Sci.** 2022;43(9):787-98. PubMed PMID: 35840362; PMCID: PMC9378536.
- c. Vijay K. Boda, Nelufar Yasmen, Jianxiong Jiang and **Wei Li**, "Pathophysiological significance and modulation of the transient receptor potential canonical 3 ion channel", **Medicinal Research Reviews**, 2024, Online ahead of print. PMID: 38715347; PMCID: PMC11452291.
- d. Jiaying Wang, Sicheng Zhang, Vijay K Boda, Hao Chen, Hyunseo Park, Keyur Parmar, Dejian Ma, Duane D Miller, Bernd Meibohm, Jianyang Du, Francesca-Fang Liao, Zhongzhi Wu, **Wei Li**, "Discovery of a potent and selective TRPC3 antagonist with neuroprotective effects". **Bioorg Med Chem**, 2025, 117:118021. PMID: 39612770, PMCID: PMC11648172.

4. Collaboration with researchers in other biomedical fields using expertise in chemistry. I have also contributed to other projects using my expertise in analytical chemistry and medicinal chemistry. These efforts have resulted in joint papers in various biomedical research fields outside my own research focus.

- a. Wang B, Liu Y, Huang L, Chen J, Li JJ, Wang R, Kim E, Chen Y, Justicia C, Sakata K, Chen H, Planas A, Ostrom RS, **Li W**, Yang G, McDonald MP, Chen R, Heck DH, Liao FF. A CNS-permeable Hsp90 inhibitor rescues synaptic dysfunction and memory loss in APP-overexpressing Alzheimer's mouse model via an HSF1-mediated mechanism. **Mol Psychiatry**, 22:990-1001, (2017). PMID: 27457810, PMCID: PMC5323357
- b. Zhousheng Xiao, Jerome Baudry, Li Cao, Jinsong Huang, Hao Chen, Charles R. Yates, **Wei Li**, Christopher M. Waters, Jeremy C. Smith, L. Darryl Quarles, "Polycystin-1 interacts with TAZ to stimulate osteoblastogenesis and inhibit adipogenesis", **J Clin Invest**, 128(1): 157-174, (2018). PMID: 29202470, PMCID: PMC5749530.
- c. Bhattarai RS, Kumar V, Romanova S, Bariwal J, Chen H, Deng S, Bhatt VR, Bronich T, **Li W**, Mahato RI. "Nanoformulation design and therapeutic potential of a novel tubulin inhibitor in pancreatic cancer". **J Control Release.** 2021, 329:585-597. PubMed PMID: 33010334. PMCID: PMC7904572.
- d. Zhousheng Xiao, Li Cao, Micholas Smith, Hanxuan Li, **Wei Li**, Jeremy Smith, and L. Darryl Quarles, "Genetic interactions between Polycystin-1 and TAZ in osteoblasts define a novel mechanosensing mechanism regulating bone formation in mice", **Bone Research**, 2023, 11,57.

Complete List of Published Work in My Bibliography:

<http://www.ncbi.nlm.nih.gov/sites/myncbi/wei.li.11/bibliography/45414079/public/?sort=date&direction=descending>