



Tinghu Zhang

Senior Research Scientist, Center for Therapeutics Discovery

Bio

BIO

Tinghu Zhang is a senior research scientist at Cancer Institute of Stanford. Dr. Zhang is an expert in chemical biology and medicinal chemistry. His research focuses on using the small molecule inhibitor and degrader to investigate the biology and pharmacology of protein targets which include kinases and transcription factors. Tinghu made significant contributions to the field of chemical biology by discovering several first-in-class covalent inhibitors for variety of protein targets such as JNK, CDK7, CDK12/13, TEAD and PIP4K. Tinghu is also a pioneer scientist in the development of degrader molecular and most recently bivalent TCIP (Transcription Chemical Inducer Proximity). Tinghu also led several translational programs with industrial sponsors. Under his leadership, several prototype molecules have been out-licensed to the established pharmaceutical companies or biotech startups. Prio to Stanford, Tinghu was a senior scientist and the chemistry group leader at the Center of Protein Degradation (CPD) at Dana-Farber Cancer Institute. Dr. Zhang received his PhD in chemistry from USTC (China) in 2004.

Publications

PUBLICATIONS

- **Discovery of bivalent small molecule degraders of cyclin-dependent kinase 7 (CDK7).** *European journal of medicinal chemistry*
Ji, W., Du, G., Jiang, J., Lu, W., Mills, C. E., Yuan, L., Jiang, F., He, Z., Bradshaw, G. A., Chung, M., Jiang, Z., Byun, W. S., Hinshaw, et al
2024; 276: 116613
- **Molecular Bidents with Two Electrophilic Warheads as a New Pharmacological Modality.** *ACS central science*
Li, Z., Jiang, J., Ficarro, S. B., Beyett, T. S., To, C., Tavares, I., Zhu, Y., Li, J., Eck, M. J., Jänne, P. A., Marto, J. A., Zhang, T., Che, et al
2024; 10 (6): 1156-1166
- **Broad-spectrum activity against mosquito-borne flaviviruses achieved by a targeted protein degradation mechanism.** *Nature communications*
Liu, H. Y., Li, Z., Reindl, T., He, Z., Qiu, X., Golden, R. P., Donovan, K. A., Bailey, A., Fischer, E. S., Zhang, T., Gray, N. S., Yang, P. L.
2024; 15 (1): 5179
- **ZNL0325, a Pyrazolopyrimidine-Based Covalent Probe, Demonstrates an Alternative Binding Mode for Kinases.** *Journal of medicinal chemistry*
Li, Z., Lu, W., Beyett, T. S., Ficarro, S. B., Jiang, J., Tse, J., Kim, A. Y., Marto, J. A., Che, J., Jänne, P. A., Eck, M. J., Zhang, T., Gray, et al
2024
- **Genome-Wide CRISPR Screens Identify Multiple Synthetic Lethal Targets That Enhance KRASG12C Inhibitor Efficacy.** *Cancer research*
Mukhopadhyay, S., Huang, H. Y., Lin, Z., Ranieri, M., Li, S., Sahu, S., Liu, Y., Ban, Y., Guidry, K., Hu, H., Lopez, A., Sherman, F., Tan, et al
2023
- **Proteomics-Based Discovery of First-in-Class Chemical Probes for Programmed Cell Death Protein 2 (PDCD2).** *Angewandte Chemie (International ed. in English)*
Ji, W., Byun, W. S., Lu, W., Zhu, X., Donovan, K. A., Dwyer, B., Che, J., Yuan, L., Abulaiti, X., Corsello, S. M., Fischer, E. S., Zhang, T., Gray, et al

2023: e202308292

- **Rewiring cancer drivers to activate apoptosis.** *Nature*
Gourisankar, S., Krokhotin, A., Ji, W., Liu, X., Chang, C., Kim, S. H., Li, Z., Wenderski, W., Simanauskaite, J. M., Yang, H., Vogel, H., Zhang, T., Green, et al
2023
- **New scaffolds for type II JAK2 inhibitors overcome the acquired G993A resistance mutation.** *Cell chemical biology*
Arwood, M. L., Liu, Y., Harkins, S. K., Weinstock, D. M., Yang, L., Stevenson, K. E., Plana, O. D., Dong, J., Cirka, H., Jones, K. L., Virtanen, A. T., Gupta, D. G., Ceas, et al
2023
- **Development and characterization of selective FAK inhibitors and PROTACs with in vivo activity.** *Chembiochem : a European journal of chemical biology*
Koide, E., Mohardt, M. L., Doctor, Z. M., Yang, A., Hao, M., Donovan, K. A., Kuismi, C. C., Nelson, A. J., Abell, K., Aguiar, M., Che, J., Stokes, M. P., Zhang, et al
2023: e202300141
- **Catalytic Degraders Effectively Address Kinase Site Mutations in EML4-ALK Oncogenic Fusions.** *Journal of medicinal chemistry*
Gao, Y., Jiang, B., Kim, H., Berberich, M. J., Che, J., Donovan, K. A., Hatcher, J. M., Huerta, F., Kwiatkowski, N. P., Liu, Y., Liuni, P. P., Metivier, R. J., Murali, et al
2023
- **Structure-Based Design of Y-Shaped Covalent TEAD Inhibitors.** *Journal of medicinal chemistry*
Lu, W., Fan, M., Ji, W., Tse, J., You, I., Ficarro, S. B., Tavares, I., Che, J., Kim, A. Y., Zhu, X., Boghossian, A., Rees, M. G., Ronan, et al
2023
- **Development of a Covalent Inhibitor of c-Jun N-Terminal Protein Kinase (JNK) 2/3 with Selectivity over JNK1.** *Journal of medicinal chemistry*
Lu, W., Liu, Y., Gao, Y., Geng, Q., Gurbani, D., Li, L., Ficarro, S. B., Meyer, C. J., Sinha, D., You, I., Tse, J., He, Z., Ji, et al
2023
- **Depletion of creatine phosphagen energetics with a covalent creatine kinase inhibitor.** *Nature chemical biology*
Darabedian, N., Ji, W., Fan, M., Lin, S., Seo, H. S., Vinogradova, E. V., Yaron, T. M., Mills, E. L., Xiao, H., Senkane, K., Huntsman, E. M., Johnson, J. L., Che, et al
2023
- **Development of potent and selective degraders of PI5P4Kgamma.** *European journal of medicinal chemistry*
Ji, W., Wang, E. S., Manz, T. D., Jiang, J., Donovan, K. A., Abulaiti, X., Fischer, E. S., Cantley, L. C., Zhang, T., Gray, N. S.
2022; 247: 115027
- **Covalent disruptor of YAP-TEAD association suppresses defective hippo signaling.** *eLife*
Fan, M., Lu, W., Che, J., Kwiatkowski, N. P., Gao, Y., Seo, H., Ficarro, S. B., Gokhale, P. C., Liu, Y., Geffken, E. A., Lakhani, J., Song, K., Kuljanin, et al
2022; 11
- **Exploring the target scope of KEAP1 E3 ligase-based PROTACs.** *Cell chemical biology*
Du, G., Jiang, J., Henning, N. J., Safaee, N., Koide, E., Nowak, R. P., Donovan, K. A., Yoon, H., You, I., Yue, H., Eleuteri, N. A., He, Z., Li, et al
2022
- **Targeting transcription in heart failure via CDK7/12/13 inhibition.** *Nature communications*
Hsu, A., Duan, Q., Day, D. S., Luo, X., McMahon, S., Huang, Y., Feldman, Z. B., Jiang, Z., Zhang, T., Liang, Y., Alexanian, M., Padmanabhan, A., Brown, et al
2022; 13 (1): 4345
- **Synthesis and Structure-Activity relationships of cyclin-dependent kinase 11 inhibitors based on a diaminothiazole scaffold.** *European journal of medicinal chemistry*
Li, Z., Ishida, R., Liu, Y., Wang, J., Li, Y., Gao, Y., Jiang, J., Che, J., Sheltzer, J. M., Robers, M. B., Zhang, T., Westover, K. D., Nabet, et al
2022; 238: 114433
- **A preclinical platform for assessing antitumor effects and systemic toxicities of cancer drug targets.** *Proceedings of the National Academy of Sciences of the United States of America*

- Li, X., Huang, C. H., Sánchez-Rivera, F. J., Kennedy, M. C., Tschaharganeh, D. F., Morris, J. P., Montinaro, A., O'Rourke, K. P., Banito, A., Wilkinson, J. E., Chen, C. C., Ho, Y. J., Dow, et al
2022; 119 (17): e2110557119
- **Development of PDE6D and CK1alpha Degraders through Chemical Derivatization of FPFT-2216.** *Journal of medicinal chemistry*
Teng, M., Lu, W., Donovan, K. A., Sun, J., Krupnick, N. M., Nowak, R. P., Li, Y., Sperling, A. S., Zhang, T., Ebert, B. L., Fischer, E. S., Gray, N. S.
1800
 - **Structure-activity relationship study of THZ531 derivatives enables the discovery of BSJ-01-175 as a dual CDK12/13 covalent inhibitor with efficacy in Ewing sarcoma.** *European journal of medicinal chemistry*
Jiang, B., Jiang, J., Kalthener, I. H., Iniguez, A. B., Anand, K., Ferguson, F. M., Ficarro, S. B., Seong, B. K., Greifenberg, A. K., Dust, S., Kwiatkowski, N. P., Marto, J. A., Stegmaier, et al
2021; 221: 113481
 - **Selective degradation-inducing probes for studying cereblon (CRBN) biology.** *RSC medicinal chemistry*
Powell, C. E., Du, G., Bushman, J. W., He, Z., Zhang, T., Fischer, E. S., Gray, N. S.
2021; 12 (8): 1381-1390
 - **Exploring Ligand-Directed N-Acyl-N-alkylsulfonamide-Based Acylation Chemistry for Potential Targeted Degradation Development.** *ACS medicinal chemistry letters*
Teng, M., Jiang, J., Ficarro, S. B., Seo, H., Bae, J. H., Donovan, K. A., Fischer, E. S., Zhang, T., Dhe-Paganon, S., Marto, J. A., Gray, N. S.
2021; 12 (8): 1302-1307
 - **Correction: Fragment-based covalent ligand discovery.** *RSC chemical biology*
Lu, W., Kostic, M., Zhang, T., Che, J., Patricelli, M. P., Jones, L. H., Chouchani, E. T., Gray, N. S.
2021; 2 (2): 670-671
 - **Fragment-based covalent ligand discovery.** *RSC chemical biology*
Lu, W., Kostic, M., Zhang, T., Che, J., Patricelli, M. P., Jones, L. H., Chouchani, E. T., Gray, N. S.
2021; 2 (2): 354-367
 - **Synergistic Anti-Tumor Effect of Combining Selective CDK7 and BRD4 Inhibition in Neuroblastoma.** *Frontiers in oncology*
Gao, Y., Volegova, M., Nasholm, N., Das, S., Kwiatkowski, N., Abraham, B. J., Zhang, T., Gray, N. S., Gustafson, C., Krajewska, M., George, R. E.
2021; 11: 773186
 - **PRM-LIVE with Trapped Ion Mobility Spectrometry and Its Application in Selectivity Profiling of Kinase Inhibitors.** *Analytical chemistry*
Zhu, H., Ficarro, S. B., Alexander, W. M., Fleming, L. E., Adelmant, G., Zhang, T., Willetts, M., Decker, J., Brehmer, S., Krause, M., East, M. P., Gray, N. S., Johnson, et al
2021