



Michael Lin

Associate Professor of Neurobiology, of Bioengineering and, by courtesy, of Chemical and Systems Biology

 NIH Biosketch available Online

 Curriculum Vitae available Online

CONTACT INFORMATION

• Administrative Contact

Alissa Ceja - Administrative Assistant

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Bio

BIO

Our lab applies biochemical and engineering principles to the development of protein-based tools for imaging and control of biochemical processes. Topics of investigation include fluorescent proteins structure and biophysics, fluorescent protein-based biosensors, neuronal activity sensors, spatiotemporal analysis of protein translation pathways, chemical control of protein translation, and light-responsive proteins.

ACADEMIC APPOINTMENTS

- Associate Professor, Neurobiology
- Associate Professor, Bioengineering
- Associate Professor (By courtesy), Chemical and Systems Biology
- Member, Bio-X
- Member, Cardiovascular Institute
- Member, Maternal & Child Health Research Institute (MCHRI)
- Faculty Fellow, Sarafan ChEM-H
- Member, Stanford Cancer Institute
- Member, Wu Tsai Neurosciences Institute

HONORS AND AWARDS

- Burroughs Wellcome Career Award for Medical Scientists, Burroughs Wellcome Foundation (2007-2013)
- Damon Runyon-Rachleff Cancer Innovation Award, Damon Runyon Foundation (2012-2014)
- Pioneer Award, NIH (2013-2018)
- Roger Tsien Award for Excellence in Chemical Biology, World Molecular Imaging Society (2019)

PROFESSIONAL EDUCATION

- BA, Harvard University , Biochemical Sciences (1994)
- PhD, Harvard Medical School , Biological & Biomedical Sciences, Lab of Michael E. Greenberg (2002)

- MD, UCLA , Medicine (2004)
- Postdoctoral Fellowship, UCSD , Lab of Roger Y. Tsien (2009)

LINKS

- Lin Lab Web Site: <https://linlab.stanford.edu>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Our lab applies biochemical and engineering principles to the development of protein-based tools for investigating biology in living animals. Topics of investigation include fluorescent protein-based voltage indicators, synthetic light-controllable proteins, bioluminescent reporters, and applications to studying animal models of disease.

Teaching

COURSES

2023-24

- Protein Engineering: BIOE 231, BIOE 331 (Spr)

2022-23

- Protein Engineering: BIOE 231, BIOE 331 (Win)

2021-22

- Protein Engineering: BIOE 231, BIOE 331 (Win)

STANFORD ADVISEES

Med Scholar Project Advisor

David Wang

Doctoral Dissertation Reader (AC)

Yuxi Ke, Marija Pavlovic, Lexy Strom

Postdoctoral Faculty Sponsor

Sungmoo Lee, Mikkel Madsen, Daesun Song, Xinzhi Zou

Doctoral Dissertation Advisor (AC)

Julisia Chau, Alex Hao, Pengli Wang, Yan Wu

Master's Program Advisor

Wen-Chieh Chao, Hunter Hendrix, MeiLi O'Bannon, Alexander Shih, Clara Yi, Samuel Zhang, Xucheng Zhang

Doctoral (Program)

Andy Chen, Chan Yu Kuo, Shuyu Shi, Yinglin Situ, Jiaqi Wu, Aurora Xu

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Neurosciences (Phd Program)

Publications

PUBLICATIONS

- **A positively tuned voltage indicator for extended electrical recordings in the brain.** *Nature methods*
Evans, S. W., Shi, D., Chavarha, M., Plitt, M. H., Taxidis, J., Madruga, B., Fan, J. L., Hwang, F., van Keulen, S. C., Suomivuori, C., Pang, M. M., Su, S., Lee, et al
2023; 20 (7): 1104-1113
- **Kinase-Modulated Bioluminescent Indicators Enable Noninvasive Imaging of Drug Activity in the Brain.** *ACS central science*
Wu, Y., Walker, J. R., Westberg, M., Ning, L., Monje, M., Kirkland, T. A., Lin, M. Z., Su, Y.
2023; 9 (4): 719-732
- **Optobiochemistry: Genetically Encoded Control of Protein Activity by Light.** *Annual review of biochemistry*
Seong, J., Lin, M. Z.
2021
- **A compact synthetic pathway rewires cancer signaling to therapeutic effector release.** *Science (New York, N.Y.)*
Chung, H. K., Zou, X. n., Bajar, B. T., Brand, V. R., Huo, Y. n., Alcudia, J. F., Ferrell, J. E., Lin, M. Z.
2019; 364 (6439)
- **StaPLs: versatile genetically encoded modules for engineering drug-inducible proteins.** *Nature methods*
Jacobs, C. L., Badiiee, R. K., Lin, M. Z.
2018; 15 (7): 523–26
- **Optical control of cell signaling by single-chain photoswitchable kinases.** *Science*
Zhou, X. X., Fan, L. Z., Li, P., Shen, K., Lin, M. Z.
2017; 355 (6327): 836-842
- **Fluorescent indicators for simultaneous reporting of all four cell cycle phases.** *Nature methods*
Bajar, B. T., Lam, A. J., Badiiee, R. K., Oh, Y., Chu, J., Zhou, X. X., Kim, N., Kim, B. B., Chung, M., Yablonovitch, A. L., Cruz, B. F., Kulalert, K., Tao, et al
2016
- **High-fidelity optical reporting of neuronal electrical activity with an ultrafast fluorescent voltage sensor.** *Nature neuroscience*
St-Pierre, F., Marshall, J. D., Yang, Y., Gong, Y., Schnitzer, M. J., Lin, M. Z.
2014; 17 (6): 884-889
- **Non-invasive intravital imaging of cellular differentiation with a bright red-excitabile fluorescent protein** *NATURE METHODS*
Chu, J., Haynes, R. D., Corbel, S. Y., Li, P., Gonzalez-Gonzalez, E., Burg, J. S., Ataie, N. J., Lam, A. J., Cranfill, P. J., Baird, M. A., Davidson, M. W., Ng, H., Garcia, et al
2014; 11 (5): 572-578
- **Imaging of Evoked Cortical Depolarizations Using Either ASAP2s, or chi-VSFP, or Di-4-Anepps, or Autofluorescence Optical Signals.** *Journal of integrative neuroscience*
Milicevic, K. D., Zhu, M. H., Barbeau, B. L., Baser, O., Erol, Z. Y., Liu, L. X., Lin, M. Z., Antic, S. D.
2023; 22 (6): 160
- **Machine learning identifies experimental brain metastasis subtypes based on their influence on neural circuits.** *Cancer cell*
Sanchez-Aguilera, A., Masmudi-Martín, M., Navas-Olive, A., Baena, P., Hernández-Oliver, C., Priego, N., Cordon-Barris, L., Alvaro-Espinosa, L., García, S., Martínez, S., Lafarga, M., Lin, M. Z., Al-Shahrour, et al
2023
- **Kinase-Modulated Bioluminescent Indicators Enable Noninvasive Imaging of Drug Activity in the Brain** *ACS CENTRAL SCIENCE*
Wu, Y., Walker, J. R., Westberg, M., Ning, L., Monje, M., Kirkland, T. A., Lin, M. Z., Su, Y.
2023
- **An optimized bioluminescent substrate for non-invasive imaging in the brain.** *Nature chemical biology*
Su, Y., Walker, J. R., Hall, M. P., Klein, M. A., Wu, X., Encell, L. P., Casey, K. M., Liu, L. X., Hong, G., Lin, M. Z., Kirkland, T. A.
2023
- **Non-invasive bioluminescent imaging of kinase inhibition in mouse brain**

Su, Y., Wu, Y., Lin, M.
WILEY.2023

- **Rational Design of Improved and Novel Photodissociable GFPs and RFPs**
Westberg, M., Trigo, M. L., Devenish, S., Huang, P., Lin, M. Z.
WILEY.2023
- **Track: Protein Phase Separation in Biomolecular Condensates Using Phase Separation as Mechanism to Enhance Inducibility of a Synthetic Therapeutic Pathway**
Chau, J., Westberg, M., Song, D., Lin, M.
WILEY.2023
- **Combinatorial effects of RhoA and Cdc42 on the actin cytoskeleton revealed by photoswitchable GEFs** *SENSORS AND ACTUATORS B-CHEMICAL*
Ryu, H., Lee, H., Ju, J., Park, J., Oh, E., Lin, M. Z., Seong, J.
2022; 369
- **Optical regulation of endogenous RhoA reveals selection of cellular responses by signal amplitude.** *Cell reports*
Ju, J., Lee, H. N., Ning, L., Ryu, H., Zhou, X. X., Chun, H., Lee, Y. W., Lee-Richerson, A. I., Jeong, C., Lin, M. Z., Seong, J.
2022; 40 (2): 111080
- **Enhanced safety and efficacy of protease-regulated CAR-T cell receptors.** *Cell*
Labanieh, L., Majzner, R. G., Klysz, D., Sotillo, E., Fisher, C. J., Vilches-Moure, J. G., Pacheco, K. Z., Malipatlolla, M., Xu, P., Hui, J. H., Murty, T., Theruvath, J., Mehta, et al
2022
- **A red fluorescent protein with improved monomericity enables ratiometric voltage imaging with ASAP3.** *Scientific reports*
Kim, B. B., Wu, H., Hao, Y. A., Pan, M., Chavarha, M., Zhao, Y., Westberg, M., St-Pierre, F., Wu, J. C., Lin, M. Z.
2022; 12 (1): 3678
- **FRET Imaging of Rho GTPase Activity with Red Fluorescent Protein-Based FRET Pairs.** *Methods in molecular biology (Clifton, N.J.)*
Bajar, B. T., Guan, X., Lam, A., Lin, M. Z., Yasuda, R., Laviv, T., Chu, J.
2022; 2438: 31-43
- **A Bright, Nontoxic, and Non-aggregating red Fluorescent Protein for Long-Term Labeling of Fine Structures in Neurons.** *Frontiers in cell and developmental biology*
Ning, L., Geng, Y., Lovett-Barron, M., Niu, X., Deng, M., Wang, L., Ataie, N., Sens, A., Ng, H., Chen, S., Deisseroth, K., Lin, M. Z., Chu, et al
2022; 10: 893468
- **Optical control of fast and processive engineered myosins in vitro and in living cells.** *Nature chemical biology*
Ruijgrok, P. V., Ghosh, R. P., Zemsky, S. n., Nakamura, M. n., Gong, R. n., Ning, L. n., Chen, R. n., Vachharajani, V. T., Chu, A. E., Anand, N. n., Eguchi, R. R., Huang, P. S., Lin, et al
2021
- **Simultaneous Detection of Four Cell Cycle Phases with Live Fluorescence Imaging.** *Methods in molecular biology (Clifton, N.J.)*
Bajar, B. T., Lin, M. Z.
2021; 2274: 25-35
- **Brightening up Biology: Advances in Luciferase Systems for in Vivo Imaging.** *ACS chemical biology*
Liu, S., Su, Y., Lin, M. Z., Ronald, J. A.
2021
- **Integrated Neurophotonic: Toward Dense Volumetric Interrogation of Brain Circuit Activity-at Depth and in Real Time.** *Neuron*
Moreaux, L. C., Yatsenko, D., Sacher, W. D., Choi, J., Lee, C., Kubat, N. J., Cotton, R. J., Boyden, E. S., Lin, M. Z., Tian, L., Tolias, A. S., Poon, J. K., Shepard, et al
2020; 108 (1): 66-92
- **Novel NanoLuc substrates enable bright two-population bioluminescence imaging in animals.** *Nature methods*
Su, Y., Walker, J. R., Park, Y., Smith, T. P., Liu, L. X., Hall, M. P., Labanieh, L., Hurst, R., Wang, D. C., Encell, L. P., Kim, N., Zhang, F., Kay, et al
2020
- **On the cutting edge: protease-based methods for sensing and controlling cell biology.** *Nature methods*

- Chung, H. K., Lin, M. Z.
2020
- **Kilohertz two-photon fluorescence microscopy imaging of neural activity in vivo.** *Nature methods*
Wu, J., Liang, Y., Chen, S., Hsu, C., Chavarha, M., Evans, S. W., Shi, D., Lin, M. Z., Tsia, K. K., Ji, N.
2020
 - **Two-Photon Voltage Imaging of Spontaneous Activity from Multiple Neurons Reveals Network Activity in Brain Tissue.** *iScience*
Li, B. n., Chavarha, M. n., Kobayashi, Y. n., Yoshinaga, S. n., Nakajima, K. n., Lin, M. Z., Inoue, T. n.
2020; 23 (8): 101363
 - **An Axonal Blueprint: Generating Neuronal Polarity with Light-Inducible Proteins** *CELL CHEMICAL BIOLOGY*
Lin, M. Z.
2019; 26 (12): 1634–36
 - **An Axonal Blueprint: Generating Neuronal Polarity with Light-Inducible Proteins.** *Cell chemical biology*
Lin, M. Z.
2019; 26 (12): 1634-1636
 - **Ultrafast Two-Photon Imaging of a High-Gain Voltage Indicator in Awake Behaving Mice.** *Cell*
Villette, V., Chavarha, M., Dimov, I. K., Bradley, J., Pradhan, L., Mathieu, B., Evans, S. W., Chamberland, S., Shi, D., Yang, R., Kim, B. B., Ayon, A., Jalil, et al
2019; 179 (7): 1590
 - **Novel NanoLuc substrates enable bright and sustained bioluminescence imaging in animals**
Walker, J., Park, Y., Smith, T., Wang, D., Hall, M., Liu, L., Hurst, R., Su, Y., Encell, L., Kim, N., Casey, K., Kirkland, T., Lin, et al
AMER CHEMICAL SOC.2019
 - **Novel substrates for NanoLuc luciferase with improved brightness and signal duration for bioluminescence imaging in vivo**
Walker, J. R., Park, Y., Lin, M., Kirkland, T. A., Hall, M. P., Encell, L. P., Oh, Y., Liu, L.
AMER ASSOC CANCER RESEARCH.2019
 - **SYNTHETIC BIOLOGY A compact synthetic pathway rewires cancer signaling to therapeutic effector release** *SCIENCE*
Chung, H. K., Zou, X., Bajar, B. T., Brand, V. R., Huo, Y., Alcudia, J. F., Ferrell, J. E., Lin, M. Z.
2019; 364 (6439): 451+
 - **An orange calcium-modulated bioluminescent indicator for non-invasive activity imaging** *NATURE CHEMICAL BIOLOGY*
Oh, Y., Park, Y., Cho, J. H., Wu, H., Paulk, N. K., Liu, L., Kim, N., Kay, M. A., Wu, J. C., Lin, M. Z.
2019; 15 (5): 433+
 - **An orange calcium-modulated bioluminescent indicator for non-invasive activity imaging.** *Nature chemical biology*
Oh, Y., Park, Y., Cho, J. H., Wu, H., Paulk, N. K., Liu, L. X., Kim, N., Kay, M. A., Wu, J. C., Lin, M. Z.
2019
 - **Kinase pathway inhibition restores PSD95 induction in neurons lacking fragile X mental retardation protein.** *Proceedings of the National Academy of Sciences of the United States of America*
Yang, Y. n., Geng, Y. n., Jiang, D. n., Ning, L. n., Kim, H. J., Jeon, N. L., Lau, A. n., Chen, L. n., Lin, M. Z.
2019
 - **A Suite of Transgenic Driver and Reporter Mouse Lines with Enhanced Brain-Cell-Type Targeting and Functionality** *CELL*
Daigle, T. L., Madisen, L., Hage, T. A., Valley, M. T., Knoblich, U., Larsen, R. S., Takeno, M. M., Huang, L., Gu, H., Larsen, R., Mills, M., Bosma-Moody, A., Siverts, et al
2018; 174 (2): 465+
 - **Excitation wavelength optimization improves photostability of ASAP-family GEVIs** *MOLECULAR BRAIN*
Xu, F., Shi, D., Lau, P., Lin, M. Z., Bi, G.
2018; 11: 32
 - **A Single-Chain Photoswitchable CRISPR-Cas9 Architecture for Light-Inducible Gene Editing and Transcription.** *ACS chemical biology*
Zhou, X. X., Zou, X., Chung, H. K., Gao, Y., Liu, Y., Qi, L. S., Lin, M. Z.
2018; 13 (2): 443-448

- **Understanding CRY2 interactions for optical control of intracellular signaling** *NATURE COMMUNICATIONS*
Duan, L., Hope, J., Ong, Q., Lou, H., Kim, N., McCarthy, C., Acero, V., Lin, M. Z., Cui, B.
2017; 8: 547
- **The Growing and Glowing Toolbox of Fluorescent and Photoactive Proteins** *TRENDS IN BIOCHEMICAL SCIENCES*
Rodriguez, E. A., Campbell, R. E., Lin, J. Y., Lin, M. Z., Miyawaki, A., Palmer, A. E., Shu, X., Zhang, J., Tsien, R. Y.
2017; 42 (2): 111-129
- **A Single-Chain Photoswitchable CRISPR-Cas9 Architecture for Light-Inducible Gene Editing and Transcription** *A Single-Chain Photoswitchable CRISPR-Cas9 Architecture for Light-Inducible Gene Editing and Transcription*
Zhou, X. X., Zou, X., Chung, H. K., Gao, Y., Liu, Y., Qi, L. S., Lin, M. Z.
2017: 443-48
- **Fast two-photon imaging of subcellular voltage dynamics in neuronal tissue with genetically encoded indicators.** *eLife*
Chamberland, S. n., Yang, H. H., Pan, M. M., Evans, S. W., Guan, S. n., Chavarha, M. n., Yang, Y. n., Salesse, C. n., Wu, H. n., Wu, J. C., Clandinin, T. R., Toth, K. n., Lin, et al
2017; 6
- **Cell-Type-Specific Optical Recording of Membrane Voltage Dynamics in Freely Moving Mice** *CELL*
Marshall, J. D., Li, J. Z., Zhang, Y., Gong, Y., St-Pierre, F., Lin, M. Z., Schnitzer, M. J.
2016; 167 (6): 1650-?
- **The Growing and Glowing Toolbox of Fluorescent and Photoactive Proteins.** *Trends in biochemical sciences*
Rodriguez, E. A., Campbell, R. E., Lin, J. Y., Lin, M. Z., Miyawaki, A., Palmer, A. E., Shu, X., Zhang, J., Tsien, R. Y.
2016
- **Simultaneous dual-color fluorescence lifetime imaging with novel red-shifted fluorescent proteins.** *Nature methods*
Laviv, T., Kim, B. B., Chu, J., Lam, A. J., Lin, M. Z., Yasuda, R.
2016
- **A Guide to Fluorescent Protein FRET Pairs** *SENSORS*
Bajar, B. T., Wang, E. S., Zhang, S., Lin, M. Z., Chu, J.
2016; 16 (9)
- **Genetically encoded indicators of neuronal activity.** *Nature neuroscience*
Lin, M. Z., Schnitzer, M. J.
2016; 19 (9): 1142-1153
- **Structure-guided wavelength tuning in far-red fluorescent proteins.** *Current opinion in structural biology*
Ng, H., Lin, M. Z.
2016; 39: 124-133
- **A bright cyan-excitable orange fluorescent protein facilitates dual-emission microscopy and enhances bioluminescence imaging in vivo.** *Nature biotechnology*
Chu, J., Oh, Y., Sens, A., Ataie, N., Dana, H., Macklin, J. J., Laviv, T., Welf, E. S., Dean, K. M., Zhang, F., Kim, B. B., Tang, C. T., Hu, et al
2016; 34 (7): 760-767
- **Subcellular Imaging of Voltage and Calcium Signals Reveals Neural Processing In Vivo** *CELL*
Yang, H. H., St-Pierre, F., Sun, X., Ding, X., Lin, M. Z., Clandinin, T. R.
2016; 166 (1): 245-257
- **Quantitative Multiscale Cell Imaging in Controlled 3D Microenvironments.** *Developmental cell*
Welf, E. S., Driscoll, M. K., Dean, K. M., Schäfer, C., Chu, J., Davidson, M. W., Lin, M. Z., Danuser, G., Fiolka, R.
2016; 36 (4): 462-475
- **Improving brightness and photostability of green and red fluorescent proteins for live cell imaging and FRET reporting** *SCIENTIFIC REPORTS*
Bajar, B. T., Wang, E. S., Lam, A. J., Kim, B. B., Jacobs, C. L., Howe, E. S., Davidson, M. W., Lin, M. Z., Chu, J.
2016; 6
- **Replication-Competent Influenza Virus and Respiratory Syncytial Virus Luciferase Reporter Strains Engineered for Co-Infections Identify Antiviral Compounds in Combination Screens.** *Biochemistry*

- Yan, D., Weisshaar, M., Lamb, K., Chung, H. K., Lin, M. Z., Plemper, R. K.
2015; 54 (36): 5589-5604
- **Optical control of biological processes by light-switchable proteins** *WILEY INTERDISCIPLINARY REVIEWS-DEVELOPMENTAL BIOLOGY*
Fan, L. Z., Lin, M. Z.
2015; 4 (5): 545-554
 - **Tunable and reversible drug control of protein production via a self-excising degron.** *Nature chemical biology*
Chung, H. K., Jacobs, C. L., Huo, Y., Yang, J., Krumm, S. A., Plemper, R. K., Tsien, R. Y., Lin, M. Z.
2015; 11 (9): 713-720
 - **Tunable and reversible drug control of protein production via a self-excising degron** *NATURE CHEMICAL BIOLOGY*
Chung, H. K., Jacobs, C. L., Huo, Y., Yang, J., Krumm, S. A., Plemper, R. K., Tsien, R. Y., Lin, M. Z.
2015; 11 (9): 713-?
 - **Optical control of biological processes by light-switchable proteins.** *Wiley interdisciplinary reviews. Developmental biology*
Fan, L. Z., Lin, M. Z.
2015; 4 (5): 545-554
 - **Designs and sensing mechanisms of genetically encoded fluorescent voltage indicators.** *Current opinion in chemical biology*
St-Pierre, F., Chavarha, M., Lin, M. Z.
2015; 27: 31-38
 - **Experimental systems for optogenetic control of protein activity with photodissociable fluorescent proteins** *Conference on Optical Techniques in Neurosurgery, Neurophotonics, and Optogenetics II*
Zhou, X. X., Lin, M. Z.
SPIE-INT SOC OPTICAL ENGINEERING.2015
 - **Investigating neuronal function with optically controllable proteins.** *Frontiers in molecular neuroscience*
Zhou, X. X., Pan, M., Lin, M. Z.
2015; 8: 37-?
 - **Optobiology: optical control of biological processes via protein engineering** *BIOCHEMICAL SOCIETY TRANSACTIONS*
Kim, B., Lin, M. Z.
2013; 41: 1183-1188
 - **Photoswitchable fluorescent proteins: ten years of colorful chemistry and exciting applications.** *Current opinion in chemical biology*
Zhou, X. X., Lin, M. Z.
2013; 17 (4): 682-690
 - **Fluorescent and photo-oxidizing TimeSTAMP tags track protein fates in light and electron microscopy** *NATURE NEUROSCIENCE*
Butko, M. T., Yang, J., Geng, Y., Kim, H. J., Jeon, N. L., Shu, X., Mackey, M. R., Ellisman, M. H., Tsien, R. Y., Lin, M. Z.
2012; 15 (12): 1742-?
 - **New Alternately Colored FRET Sensors for Simultaneous Monitoring of Zn²⁺ in Multiple Cellular Locations** *PLOS ONE*
Miranda, J. G., Weaver, A. L., Qin, Y., Park, J. G., Stoddard, C. I., Lin, M. Z., Palmer, A. E.
2012; 7 (11)
 - **Optical Control of Protein Activity by Fluorescent Protein Domains** *SCIENCE*
Zhou, X. X., Chung, H. K., Lam, A. J., Lin, M. Z.
2012; 338 (6108): 810-814
 - **Improving FRET dynamic range with bright green and red fluorescent proteins** *NATURE METHODS*
Lam, A. J., St-Pierre, F., Gong, Y., Marshall, J. D., Cranfill, P. J., Baird, M. A., McKeown, M. R., Wiedenmann, J., Davidson, M. W., Schnitzer, M. J., Tsien, R. Y., Lin, M. Z.
2012; 9 (10): 1005-?
 - **Beyond the rainbow: new fluorescent proteins brighten the infrared scene** *NATURE METHODS*
Lin, M. Z.
2011; 8 (9): 726-728

- **Toward the Second Generation of Optogenetic Tools** *JOURNAL OF NEUROSCIENCE*
Knoepfel, T., Lin, M. Z., Levskaya, A., Tian, L., Lin, J. Y., Boyden, E. S.
2010; 30 (45): 14998-15004
- **TimeSTAMP tagging of newly synthesized proteins.** *Current protocols in protein science / editorial board, John E. Coligan ... [et al.]*
Lin, M. Z., Tsien, R. Y.
2010; Chapter 26: Unit 26 5-?
- **Autofluorescent Proteins with Excitation in the Optical Window for Intravital Imaging in Mammals** *CHEMISTRY & BIOLOGY*
Lin, M. Z., McKeown, M. R., Ng, H., Aguilera, T. A., Shaner, N. C., Campbell, R. E., Adams, S. R., Gross, L. A., Ma, W., Alber, T., Tsien, R. Y.
2009; 16 (11): 1169-1179
- **Mammalian Expression of Infrared Fluorescent Proteins Engineered from a Bacterial Phytochrome** *SCIENCE*
Shu, X., Royant, A., Lin, M. Z., Aguilera, T. A., Lev-Ram, V., Steinbach, P. A., Tsien, R. Y.
2009; 324 (5928): 804-807
- **Characterization of Engineered Channel rhodopsin Variants with Improved Properties and Kinetics** *BIOPHYSICAL JOURNAL*
Lin, J. Y., Lin, M. Z., Steinbach, P., Tsien, R. Y.
2009; 96 (5): 1803-1814
- **A drug-controllable tag for visualizing newly synthesized proteins in cells and whole animals** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Lin, M. Z., Glenn, J. S., Tsien, R. Y.
2008; 105 (22): 7744-7749
- **Selective labeling of proteins with chemical probes in living cells** *PHYSIOLOGY*
Lin, M. Z., Wang, L.
2008; 23 (3): 131-141
- **Improving the photostability of bright monomeric orange and red fluorescent proteins** *NATURE METHODS*
Shaner, N. C., Lin, M. Z., McKeown, M. R., Steinbach, P. A., Hazelwood, K. L., Davidson, M. W., Tsien, R. Y.
2008; 5 (6): 545-551
- **Eph-dependent tyrosine phosphorylation of ephexin1 modulates growth cone collapse** *NEURON*
Sahin, M., Greer, P. L., Lin, M. Z., Poucher, H., Eberhart, J., Schmidt, S., Wright, T. M., Shamah, S. M., O'Connell, S., Cowan, C. W., Hu, L., Goldberg, J. L., Debant, et al
2005; 46 (2): 191-204
- **Survival factor-mediated BAD phosphorylation raises the mitochondrial threshold for apoptosis** *DEVELOPMENTAL CELL*
Datta, S. R., Ranger, A. M., Lin, M. Z., Sturgill, J. F., Ma, Y. C., Cowan, C. W., Dikkes, P., Korsmeyer, S. J., Greenberg, M. E.
2002; 3 (5): 631-643
- **Neurotrophins use the Erk5 pathway to mediate a retrograde survival response** *NATURE NEUROSCIENCE*
Watson, F. L., Heerssen, H. M., BHATTACHARYYA, A., Klesse, L., Lin, M. Z., Segal, R. A.
2001; 4 (10): 981-988
- **EphA receptors regulate growth cone dynamics through the novel guanine nucleotide exchange factor ephexin** *CELL*
Shamah, S. M., Lin, M. Z., Goldberg, J. L., Estrach, S., Sahin, M., Hu, L., Bazalakova, M., NEVE, R. L., Corfas, G., Debant, A., Greenberg, M. E.
2001; 105 (2): 233-244
- **Neurogenin promotes neurogenesis and inhibits glial differentiation by independent mechanisms** *CELL*
Sun, Y., Nadal-Vicens, M., Misono, S., Lin, M. Z., Zubiaga, A., Hua, X. X., Fan, G. P., Greenberg, M. E.
2001; 104 (3): 365-376
- **EphB receptors interact with NMDA receptors and regulate excitatory synapse formation** *CELL*
Dalva, M. B., Takasu, M. A., Lin, M. Z., Shamah, S. M., Hu, L., Gale, N. W., Greenberg, M. E.
2000; 103 (6): 945-956
- **Rapid nuclear responses to target-derived neurotrophins require retrograde transport of ligand-receptor complex** *JOURNAL OF NEUROSCIENCE*
Watson, F. L., Heerssen, H. M., Moheban, D. B., Lin, M. Z., Sauvageot, C. M., BHATTACHARYYA, A., Pomeroy, S. L., Segal, R. A.

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- **Akt promotes cell survival by phosphorylating and inhibiting a forkhead transcription factor** *CELL*

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