Stanford



Ronglih Liao

Douglass M. and Nola Leishman Professor of Cardiovascular Disease

Medicine - Cardiovascular Medicine

Bio

BIO

Dr. Liao is a Professor of Medicine and co-Director of Stanford Cardiac Amyloid Center. The major goal of her research program focuses on understanding the mechanisms that underlie the pathophysiology of heart failure and developing novel treatments to combat this process. Her laboratory has played an international leading role in the study of amyloid light chain (AL) cardiomyopathy, a rare and fatal form of cardiovascular disease. We have described the underlying pathophysiologic basis for amyloid cardiomyopathy and found that the circulating amyloidogenic light chain proteins that characterize this disease directly result in a specific cardiotoxic response. Consequently, our research work has redefined AL cardiomyopathy and has raised new treatment approaches. More recently, her research efforts have expanded to include transthyretin (ATTR) cardiac amyloidosis.

In line with her goal of revealing novel therapeutic strategies for patients with cardiovascular disease, our efforts have also focused on characterizing and harnessing endogenous cardiac regenerative mechanisms. Her laboratory initially demonstrated the therapeutic potential of exogenous primitive muscle cells delivered to the injured heart. This work was among the earliest milestones in the field and served as the basis for an international trial of cell-based therapy. Subsequently, Liao lab identified and characterized a population of cardiac progenitor cells and its relationship and dynamic activity following cardiac injury in the adult heart. Her laboratory aims to reveal the molecular mechanisms regulating the endogenous regenerative capacity of the heart and to harness such repair mechanisms for the treatment of cardiovascular disease. Dr. Liao has lectured extensively on both amyloid cardiomyopathy and stem cell biology, and have maintained a history of independent NIH funding in these areas for more than two decades.

Over the course of her academic career, she has taken the greatest pride in mentoring the next generation of scientists. Dr. Liao has had the privilege to supervise several dozen students, postdoctoral fellows, and junior faculty, many of whom have gone on to independent academic careers at the highest institutions. Her contribution to the advancement of scientific knowledge also includes lecturing at various university and academic institutions as well as at scores of conferences and symposia locally, nationally, and internationally.

ACADEMIC APPOINTMENTS

- Professor, Medicine - Cardiovascular Medicine
- Member, Cardiovascular Institute
- Member, Wu Tsai Human Performance Alliance
- Member, Maternal & Child Health Research Institute (MCHRI)

ADMINISTRATIVE APPOINTMENTS

- Co-Director, Stanford Amyloid Center, (2017- present)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Associate Director, Cardiac Muscle Research Laboratory, Boston University School of Medicine (1997 - 2003)
- Co-Director, Cardiac Muscle Research Laboratory, Boston University School of Medicine (2003 - 2005)
- Director, Integrated Cardiovascular Physiology Laboratory, Department of Medicine, Boston University School of Medicine (2004 - 2005)
- Director, Cardiac Muscle Research Laboratory, Department of Medicine, Brigham and Women's Hospital (2005 - 2016)
- Director, Brigham and Women's Hospital Cardiovascular Physiology Core (2010 - 2016)
- Vice Chair, Basic Cardiovascular Sciences Council, American Heart Association (2014 - 2016)
- Chair, Basic Cardiovascular Sciences Council, American Heart Association (2016 - 2018)
- Co-Director, Stanford Amyloid Center (2017 - present)
- Director, Brigham and Women's Hospital Physiological NMR Core (2017 - present)

PROFESSIONAL EDUCATION

- Postdoc, Brigham and Women's Hospital and Harvard Medical School , Myocardial energetics (1991)
- Postdoc, Beth Israel Hospital and Harvard Medical School , Cardiac physiology (1990)
- M.A. (hon), Harvard University , Biomedical Science (2015)
- PhD, University of Alabama at Birmingham , Biophysics (1990)

LINKS

- Liao Lab Website: http://med.stanford.edu/liaocmrl.html
- Stanford Amyloid Center: http://med.stanford.edu/amyloidcenter.html
- Stanford Cardiovascular Institute: https://med.stanford.edu/cvi.html

Publications

PUBLICATIONS

- **Clinical trials in-a-dish for cardiovascular medicine.** *European heart journal*
  Wu, X., Swanson, K., Yildirim, Z., Liu, W., Liao, R., Wu, J. C.
  2024

- **Functional Status and Quality of Life in Light-Chain Amyloidosis: Advanced Imaging, Longitudinal Changes, and Outcomes.** *JACC. Heart failure*
  Clerc, O. F., Vijayakumar, S., Cuddy, S. A., Bianchi, G., Canseco Neri, J., Taylor, A., Benz, D. C., Datar, Y., Kijewski, M. F., Yee, A. J., Ruberg, F. L., Liao, R., Falk, et al
  2024

- **Myocardial Characteristics, Cardiac Structure, and Cardiac Function in Systemic Light-Chain Amyloidosis.** *JACC. Cardiovascular imaging*
  Clerc, O. F., Cuddy, S. A., Jerosch-Herold, M., Benz, D. C., Katznelson, E., Canseco Neri, J., Taylor, A., Kijewski, M. F., Bianchi, G., Ruberg, F. L., Di Carli, M. F., Liao, R., Kwong, et al
  2024

- **Prognostic Value of Left Ventricular18F-Florbetapir Uptake in Systemic Light-Chain Amyloidosis.** *JACC. Cardiovascular imaging*
  Clerc, O. F., Datar, Y., Cuddy, S. A., Bianchi, G., Taylor, A., Benz, D. C., Robertson, M., Kijewski, M. F., Jerosch-Herold, M., Kwong, R. Y., Ruberg, F. L., Liao, R., Di Carli, et al
  2024

- **Mechanisms of left ventricular systolic dysfunction in light chain amyloidosis: a multiparametric cardiac MRI study.** *Frontiers in cardiovascular medicine*
  Katznelson, E., Jerosch-Herold, M., Cuddy, S. A., Clerc, O. F., Benz, D. C., Taylor, A., Rao, S., Kijewski, M. F., Liao, R., Landau, H., Yee, A. J., Ruberg, F. L., Di Carli, et al
  2024; 11: 1371810

- **Injectable Self-Oxygenating Cardio-Protective and Tissue Adhesive Silk-Based Hydrogel for Alleviating Ischemia After Mi Injury.** *Small (Weinheim an der Bergstrasse, Germany)*
  Hassan, S., Rezaei, Z., Luna, E., Yilmaz-Aykut, D., Lee, M. C., Perea, A. M., Jamaiyar, A., Bassous, N., Hirano, M., Tourk, F. M., Choi, C., Becker, M., Yazdi, et al
  2024: e2312261

- **Elucidating effects of the environmental pollutant benzo[a]pyrene [BaP] on cardiac arrhythmogenicity.** *Journal of molecular and cellular cardiology*
  Yang, J. Y., Mondéjar-Parreño, G., Jahng, J. W., Lu, Y., Hamburg, N., Nadeau, K. C., Conklin, D. J., Liao, R., Chandy, M., Wu, J. C.
  2024; 191: 23-26

- **Quantification of Right Ventricular Amyloid Burden with 18F-florbetapir PET/CT and its Association with Right Ventricular Dysfunction and Outcomes in Light-Chain Amyloidosis.** *European heart journal. Cardiovascular Imaging*
  Datar, Y., Clerc, O. F., Cuddy, S. A., Kim, S., Taylor, A., Neri, J. C., Benz, D. C., Bianchi, G., Yee, A. J., Sanchorawala, V., Ruberg, F. L., Landau, H., Liao, et al
  2024

- **Generation of two induced pluripotent stem cell lines from hereditary amyloidosis patients with polyneuropathy carrying heterozygous transthyretin (TTR) mutation.** *Stem cell research*
  Melesio, J., Bonilauri, B., Li, A., Pang, P. D., Liao, R., Witteles, R. M., Wu, J. C., Sallam, K.
  2023; 74: 103265

- **Signal intensity coefficient as a detector of aortic stenosis-induced myocardial fibrosis and its correlation to the long term outcome.** *International journal of cardiology*
  Chang, W. T., Lin, C. H., Lee, W. C., Kan, W. C., Lin, Y. C., Hiremath, P., Cheng, S., Liao, R., Chen, Z. C., Huang, P. S., Wu, N. C.
  2023: 131367

- **L-2-Hydroxyglutarate Protects Against Cardiac Injury via Metabolic Remodeling.** *Circulation research*
  He, H., Mulhern, R. M., Oldham, W. M., Xiao, W., Lin, Y. D., Liao, R., Loscalzo, J.
  2022: 101161CIRCRESAHA122321227

- **Reengineering Ponatinib to Minimize Cardiovascular Toxicity** *CANCER RESEARCH*
  Hnatiuk, A. P., Bruyneel, A. A. N., Tailor, D., Pandrala, M., Dheeraj, A., Li, W., Serrano, R., Feyen, D. A. M., Vu, M. M., Amatya, P., Gupta, S., Nakauchi, Y., Morgado, et al
  2022; 82 (15): 2777-2791

- **Large and Small Animal Models of Heart Failure With Reduced Ejection Fraction.** *Circulation research*
  Pilz, P. M., Ward, J. E., Chang, W., Kiss, A., Bateh, E., Jha, A., Fisch, S., Podesser, B. K., Liao, R.
  2022; 130 (12): 1888-1905

- **Reengineering Ponatinib to Minimize Cardiovascular Toxicity.** *Cancer research*
  Hnatiuk, A. P., Bruyneel, A. A., Tailor, D., Pandrala, M., Dheeraj, A., Li, W., Serrano, R., Feyen, D. A., Vu, M. M., Amatya, P., Gupta, S., Nakauchi, Y., Morgado, et al
  2022

- **Genome-wide CRISPR/Cas9 screening in human iPS derived cardiomyocytes uncovers novel mediators of doxorubicin cardiotoxicity.** *Scientific reports*
  Sapp, V., Aguirre, A., Mainkar, G., Ding, J., Adler, E., Liao, R., Sharma, S., Jain, M.
  2021; 11 (1): 13866

- **Angiotensin II blockers improve cardiac coronary flow under hemodynamic pressure overload.** *Hypertension research : official journal of the Japanese Society of Hypertension*
  Chang, W., Fisch, S., Dangwal, S., Chen, M., Cheng, S., Chen, Z., Liao, R.
  2021

- **MicroRNA-21 regulates right ventricular remodeling secondary to pulmonary arterial pressure overload.** *Journal of molecular and cellular cardiology*
  Chang, W., Fisch, S., Dangwal, S., Mohebali, J., Fiedler, A. G., Chen, M., Hsu, C., Yang, Y., Qiu, Y., Alexander, K. M., Chen, F. Y., Liao, R.
  2021

- **UBXN7 cofactor of CRL3KEAP1 and CRL2VHL ubiquitin ligase complexes mediates reciprocal regulation of NRF2 and HIF-1α proteins.** *Biochimica et biophysica acta. Molecular cell research*

Di Gregorio, J. n., Cilenti, L. n., Ambivero, C. T., Andl, T. n., Liao, R. n., Zervos, A. S.
2021; 1868 (4): 118963

- **Myocardial Composition in Light-Chain Cardiac Amyloidosis More Than 1 Year After Successful Therapy.** *JACC. Cardiovascular imaging*
  Cuddy, S. A., Jerosch-Herold, M., Falk, R. H., Kijewski, M. F., Singh, V., Ruberg, F. L., Sanchorawala, V., Landau, H., Maurer, M. S., Yee, A. J., Bianchi, G., Di Carli, M. F., Liao, et al
  2021

- **Thomas L. Force, MD: 1951-2020: A Brilliant Physician-Scientist Gone Too Soon.** *Circulation research*
  Koch, W. J., Vagnozzi, R. J., Wang, T. J., Liao, R. n., Houser, S. R.
  2021; 128 (1): 6–7

- **Decoding the Nanoenvironment in Cardiac Amyloidosis Through Proteomics** *JACC: CARDIOONCOLOGY*
  Alexander, K. M., Jha, A., Liao, R.
  2020; 2 (4): 644–46

- **Decoding the Nanoenvironment in Cardiac Amyloidosis Through Proteomics.** *JACC. CardioOncology*
  Alexander, K. M., Jha, A., Liao, R.
  2020; 2 (4): 644-646

- **Improved Quantification of CardiacAmyloid Burden in SystemicLight ChainAmyloidosis: Redefining Early Disease?** *JACC. Cardiovascular imaging*
  Cuddy, S. A., Bravo, P. E., Falk, R. H., El-Sady, S., Kijewski, M. F., Park, M., Ruberg, F. L., Sanchorawala, V., Landau, H., Yee, A. J., Bianchi, G., Di Carli, M. F., Cheng, et al
  2020

- **Localized Antileptin Therapy Prevents Aortic Root Dilatation and Preserves Left Ventricular Systolic Function in a Murine Model of Marfan Syndrome.** *Journal of the American Heart Association*
  Fisch, S., Bachner-Hinenzon, N., Ertracht, O., Guo, L., Arad, Y., Ben-Zvi, D., Liao, R., Schneiderman, J.
  2020: e014761

- **High-Frequency Ultrasound Echocardiography to Assess Zebrafish Cardiac Function.** *Journal of visualized experiments : JoVE*
  Evangelisti, A., Schimmel, K., Joshi, S., Shah, K., Fisch, S., Alexander, K. M., Liao, R., Morgado, I.
  2020

- **Mitochondrial MUL1 E3 ubiquitin ligase regulates Hypoxia Inducible Factor (HIF-1alpha) and metabolic reprogramming by modulating the UBXN7 cofactor protein.** *Scientific reports*
  Cilenti, L., Di Gregorio, J., Ambivero, C. T., Andl, T., Liao, R., Zervos, A. S.
  2020; 10 (1): 1609

- **Natural Compound Library Screening Identifies New Molecules for the Treatment of Cardiac Fibrosis and Diastolic Dysfunction.** *Circulation*
  Schimmel, K. n., Jung, M. n., Foinquinos, A. n., San José, G. n., Beaumont, J. n., Bock, K. n., Grote-Levi, L. n., Xiao, K. n., Bär, C. n., Pfanne, A. n., Just, A. n., Zimmer, K. n., Ngoy, et al
  2020

- **Outcomes in Patients With Cardiac Amyloidosis Undergoing Heart Transplantation.** *JACC. Heart failure*
  Barrett, C. D., Alexander, K. M., Zhao, H. n., Haddad, F. n., Cheng, P. n., Liao, R. n., Wheeler, M. T., Liedtke, M. n., Schrier, S. n., Arai, S. n., Weisshaar, D. n., Witteles, R. M.
  2020

- **Harnessing Cardiac Regeneration as a Potential Therapeutic Strategy for AL Cardiac Amyloidosis.** *Current cardiology reports*
  Joshi, S. n., Evangelisti, A. n., Liao, R. n., Alexander, K. M.
  2020; 22 (1): 1

- **Serum high-density lipoprotein cholesterol serves as a prognostic marker for light-chain cardiac amyloidosis.** *International journal of cardiology*
  Yang, T. n., Wan, K. n., Song, R. n., Guo, X. n., Xu, Y. n., Wang, J. n., Zhang, Q. n., Alexander, K. M., Liao, R. n., Chen, Y. n.
  2020

- **Modeling Secondary Iron Overload Cardiomyopathy with Human Induced Pluripotent Stem Cell-Derived Cardiomyocytes.** *Cell reports*

Rhee, J. W., Yi, H. n., Thomas, D. n., Lam, C. K., Belbachir, N. n., Tian, L. n., Qin, X. n., Malisa, J. n., Lau, E. n., Paik, D. T., Kim, Y. n., Choi, B. S., Sayed, et al

2020; 32 (2): 107886

- **A single combination gene therapy treats multiple age-related diseases.** *Proceedings of the National Academy of Sciences of the United States of America*

  Davidsohn, N., Pezzone, M., Vernet, A., Graveline, A., Oliver, D., Slomovic, S., Punthambaker, S., Sun, X., Liao, R., Bonventre, J. V., Church, G. M.

  2019

- **Gene Signatures to Distinguish Amyloid Cardiomyopathy Risk in Multiple Myeloma Patients**

  Jha, A., Morgado, I., Lee, D. J., Alexander, K., Tsai, C., Schimmel, K., Ward, J., Witteles, R., Liedtke, M., Liao, R., Dangwal, S.

  LIPPINCOTT WILLIAMS & WILKINS.2019

- **Prenatal Exposure of Cigarette Smoke Impacts Cardiac Regeneration**

  Schimmel, K., Morgado, I., Tsai, C., Evangelisti, A., Fisch, S., Ngoy, S., Lee, D., Dangwal, S., Alexander, K., Ward, J. E., Liao, R.

  LIPPINCOTT WILLIAMS & WILKINS.2019

- **Zebrafish model of amyloid light chain cardiotoxicity: regeneration versus degeneration** *AMERICAN JOURNAL OF PHYSIOLOGY-HEART AND CIRCULATORY PHYSIOLOGY*

  Mishra, S., Joshi, S., Ward, J. E., Buys, E. P., Mishra, D., Mishra, D., Morgado, I., Fisch, S., Lavatelli, F., Merlini, G., Dorbala, S., MacRae, C. A., Liao, et al

  2019; 316 (5): H1158–H1166

- **Zebrafish model of amyloid light chain cardiotoxicity: regeneration vs degeneration.** *American journal of physiology. Heart and circulatory physiology*

  Mishra, S., Joshi, S., Ward, J. E., Buys, E. P., Mishra, D., Mishra, D., Morgado, I., Fisch, S., Lavatelli, F., Merlini, G., Dorbala, S., MacRae, C. A., Liao, et al

  2019

- **Convergences of Life Sciences and Engineering in Understanding and Treating Heart Failure.** *Circulation research*

  Berry, J. L., Zhu, W., Tang, Y. L., Krishnamurthy, P., Ge, Y., Cooke, J. P., Chen, Y., Garry, D. J., Yang, H., Rajasekaran, N. S., Koch, W. J., Li, S., Domae, et al

  2019; 124 (1): 161–69

- **Alteration in ventricular pressure stimulates cardiac repair and remodeling.** *Journal of molecular and cellular cardiology*

  Unno, K. n., Oikonomopoulos, A. n., Fujikawa, Y. n., Okuno, Y. n., Narita, S. n., Kato, T. n., Hayashida, R. n., Kondo, K. n., Shibata, R. n., Murohara, T. n., Yang, Y. n., Dangwal, S. n., Sereti, et al

  2019

- **Quantitative [18F]florbetapir PET/CT may identify lung involvement in patients with systemic AL amyloidosis.** *European journal of nuclear medicine and molecular imaging*

  Khor, Y. M., Cuddy, S. n., Harms, H. J., Kijewski, M. F., Park, M. A., Robertson, M. n., Hyun, H. n., Di Carli, M. F., Bianchi, G. n., Landau, H. n., Yee, A. n., Sanchorawala, V. n., Ruberg, et al

  2019

- **Mortality from Heart Failure and Dementia in the United States: CDC WONDER 1999-2016.** *Journal of cardiac failure*

  Vuong, J. T., Jacob, S. A., Alexander, K. M., Singh, A., Liao, R., Desai, A. S., Dorbala, S.

  2018

- **Geographic Disparities in Reported US Amyloidosis Mortality From 1979 to 2015: Potential Underdetection of Cardiac Amyloidosis.** *JAMA cardiology*

  Alexander, K. M., Orav, J., Singh, A., Jacob, S. A., Menon, A., Padera, R. F., Kijewski, M. F., Liao, R., Di Carli, M. F., Laubach, J. P., Falk, R. H., Dorbala, S.

  2018

- **Guidelines for experimental models of myocardial ischemia and infarction.** *American journal of physiology. Heart and circulatory physiology*

  Lindsey, M. L., Bolli, R., Canty, J. M., Du, X. J., Frangogiannis, N. G., Frantz, S., Gourdie, R. G., Holmes, J. W., Jones, S. P., Kloner, R. A., Lefer, D. J., Liao, R., Murphy, et al

  2018; 314 (4): H812-H838

- **Cardiac macrophages promote diastolic dysfunction.** *The Journal of experimental medicine*

Hulsmans, M., Sager, H. B., Roh, J. D., Valero-Muñoz, M., Houstis, N. E., Iwamoto, Y., Sun, Y., Wilson, R. M., Wojtkiewicz, G., Tricot, B., Osborne, M. T., Hung, J., Vinegoni, et al
2018; 215 (2): 423-440

- **Oxygen-Generating Photo-Cross-Linkable Hydrogels Support Cardiac Progenitor Cell Survival by Reducing Hypoxia-Induced Necrosis.** *ACS biomaterials science & engineering*
  Alemdar, N., Leijten, J., Camci-Unal, G., Hjortnaes, J., Ribas, J., Paul, A., Mostafalu, P., Gaharwar, A. K., Qiu, Y., Sonkusale, S., Liao, R., Khademhosseini, A.
  2017; 3 (9): 1964-1971

- **Why publish in the American Journal of Physiology-Heart and Circulatory Physiology?** *American journal of physiology. Heart and circulatory physiology*
  Zucker, I. H., Lindsey, M. L., Delmar, M., De Windt, L. J., Des Rosiers, C., Diz, D. I., Hester, R. L., Jones, S. P., Kanagy, N. L., Kitakaze, M., Liao, R., Lopaschuk, G. D., Patel, et al
  2017; 313 (2): H221-H223

- **Amyloid Cardiomyopathy: Disease on the Rise.** *Circulation research*
  Liao, R., Ward, J. E.
  2017; 120 (12): 1865-1867

- **From the BCVS Chair.** *Circulation research*
  Liao, R.
  2017; 120 (11): 1707-1708

- **Theranostic Nucleic Acid Binding Nanoprobe Exerts Anti-inflammatory and Cytoprotective Effects in Ischemic Injury.** *Theranostics*
  Chen, H. H., Yuan, H., Cho, H., Feng, Y., Ngoy, S., Kumar, A. T., Liao, R., Chao, W., Josephson, L., Sosnovik, D. E.
  2017; 7 (4): 814-825

- **Developmental Regulation of Mitochondrial Apoptosis by c-Myc Governs Age- and Tissue-Specific Sensitivity to Cancer Therapeutics.** *Cancer cell*
  Sarosiek, K. A., Fraser, C., Muthalagu, N., Bhola, P. D., Chang, W., McBrayer, S. K., Cantlon, A., Fisch, S., Golomb-Mello, G., Ryan, J. A., Deng, J., Jian, B., Corbett, et al
  2017; 31 (1): 142-156

- **AL (Light-Chain) Cardiac Amyloidosis: A Review of Diagnosis and Therapy.** *Journal of the American College of Cardiology*
  Falk, R. H., Alexander, K. M., Liao, R., Dorbala, S.
  2016; 68 (12): 1323-1341

- **Viewing Extrinsic Proteotoxic Stress Through the Lens of Amyloid Cardiomyopathy.** *Physiology (Bethesda, Md.)*
  Sapp, V., Jain, M., Liao, R.
  2016; 31 (4): 294-9

- **Fortune Favors the Prepared: Safety and Efficacy of Allogeneic Hypoxia Preconditioned Mesenchymal Stromal Cells in Primates.** *Circulation research*
  Kuster, G. M., Liao, R.
  2016; 118 (6): 908-10

- **Early Detection of Drug-Induced Renal Hemodynamic Dysfunction Using Sonographic Technology in Rats.** *Journal of visualized experiments : JoVE*
  Fisch, S., Liao, R., Hsiao, L. L., Lu, T.
  2016

- **MicroRNA-34a Plays a Key Role in Cardiac Repair and Regeneration Following Myocardial Infarction.** *Circulation research*
  Yang, Y., Cheng, H. W., Qiu, Y., Dupee, D., Noonan, M., Lin, Y. D., Fisch, S., Unno, K., Sereti, K. I., Liao, R.
  2015; 117 (5): 450-9

- **A role for matrix stiffness in the regulation of cardiac side population cell function.** *American journal of physiology. Heart and circulatory physiology*
  Qiu, Y., Bayomy, A. F., Gomez, M. V., Bauer, M., Du, P., Yang, Y., Zhang, X., Liao, R.
  2015; 308 (9): H990-7

- **Ultrasound based assessment of coronary artery flow and coronary flow reserve using the pressure overload model in mice.** *Journal of visualized experiments : JoVE*
  Chang, W. T., Fisch, S., Chen, M., Qiu, Y., Cheng, S., Liao, R.
  2015: e52598
- **Cardiac stem cells: biology and clinical applications.** *Antioxidants & redox signaling*
  Goichberg, P., Chang, J., Liao, R., Leri, A.
  2014; 21 (14): 2002-17
- **Lysosomal dysfunction and impaired autophagy underlie the pathogenesis of amyloidogenic light chain-mediated cardiotoxicity.** *EMBO molecular medicine*
  Guan, J., Mishra, S., Qiu, Y., Shi, J., Trudeau, K., Las, G., Liesa, M., Shirihai, O. S., Connors, L. H., Seldin, D. C., Falk, R. H., MacRae, C. A., Liao, et al
  2014; 6 (11): 1493-507
- **Worming along in amyloid cardiotoxicity.** *Blood*
  Liao, R.
  2014; 123 (23): 3525-6
- **Identifying early changes in myocardial microstructure in hypertensive heart disease.** *PloS one*
  Hiremath, P., Bauer, M., Aguirre, A. D., Cheng, H. W., Unno, K., Patel, R. B., Harvey, B. W., Chang, W. T., Groarke, J. D., Liao, R., Cheng, S.
  2014; 9 (5): e97424
- **Ly-6Chigh monocytes depend on Nr4a1 to balance both inflammatory and reparative phases in the infarcted myocardium.** *Circulation research*
  Hilgendorf, I., Gerhardt, L. M., Tan, T. C., Winter, C., Holderried, T. A., Chousterman, B. G., Iwamoto, Y., Liao, R., Zirlik, A., Scherer-Crosbie, M., Hedrick, C. C., Libby, P., Nahrendorf, et al
  2014; 114 (10): 1611-22
- **Regenerative therapy for cardiovascular disease.** *Translational research : the journal of laboratory and clinical medicine*
  Pfister, O., Della Verde, G., Liao, R., Kuster, G. M.
  2014; 163 (4): 307-20
- **FLT3 activation improves post-myocardial infarction remodeling involving a cytoprotective effect on cardiomyocytes.** *Journal of the American College of Cardiology*
  Pfister, O., Lorenz, V., Oikonomopoulos, A., Xu, L., Häuselmann, S. P., Mbah, C., Kaufmann, B. A., Liao, R., Wodnar-Filipowicz, A., Kuster, G. M.
  2014; 63 (10): 1011-9
- **Assessment of right ventricular structure and function in mouse model of pulmonary artery constriction by transthoracic echocardiography.** *Journal of visualized experiments : JoVE*
  Cheng, H. W., Fisch, S., Cheng, S., Bauer, M., Ngoy, S., Qiu, Y., Guan, J., Mishra, S., Mbah, C., Liao, R.
  2014: e51041
- **Microfluidics-assisted fabrication of gelatin-silica core-shell microgels for injectable tissue constructs.** *Biomacromolecules*
  Cha, C., Oh, J., Kim, K., Qiu, Y., Joh, M., Shin, S. R., Wang, X., Camci-Unal, G., Wan, K. T., Liao, R., Khademhosseini, A.
  2014; 15 (1): 283-90
- **MicroRNA-26a regulates pathological and physiological angiogenesis by targeting BMP/SMAD1 signaling.** *Circulation research*
  Icli, B., Wara, A. K., Moslehi, J., Sun, X., Plovie, E., Cahill, M., Marchini, J. F., Schissler, A., Padera, R. F., Shi, J., Cheng, H. W., Raghuram, S., Arany, et al
  2013; 113 (11): 1231-41
- **Stanniocalcin1 is a key mediator of amyloidogenic light chain induced cardiotoxicity.** *Basic research in cardiology*
  Guan, J., Mishra, S., Shi, J., Plovie, E., Qiu, Y., Cao, X., Gianni, D., Jiang, B., Del Monte, F., Connors, L. H., Seldin, D. C., Lavatelli, F., Rognoni, et al
  2013; 108 (5): 378
- **Human amyloidogenic light chain proteins result in cardiac dysfunction, cell death, and early mortality in zebrafish.** *American journal of physiology. Heart and circulatory physiology*
  Mishra, S., Guan, J., Plovie, E., Seldin, D. C., Connors, L. H., Merlini, G., Falk, R. H., MacRae, C. A., Liao, R.
  2013; 305 (1): H95-103

- **Methods to study the proliferation and differentiation of cardiac side population (CSP) cells.** *Methods in molecular biology (Clifton, N.J.)*
  Sereti, K. I., Oikonomopoulos, A., Unno, K., Liao, R.
  2013; 1036: 95-106
- **Regional cardiac dysfunction and dyssynchrony in a murine model of afterload stress.** *PloS one*
  Bauer, M., Cheng, S., Unno, K., Lin, F. C., Liao, R.
  2013; 8 (4): e59915
- **Optimized ventricular restraint therapy: adjustable restraint is superior to standard restraint in an ovine model of ischemic cardiomyopathy.** *The Journal of thoracic and cardiovascular surgery*
  Lee, L. S., Ghanta, R. K., Mokashi, S. A., Coelho-Filho, O., Kwong, R. Y., Kwon, M., Guan, J., Liao, R., Chen, F. Y.
  2013; 145 (3): 824-31
- **PGC1α plays a critical role in TWEAK-induced cardiac dysfunction.** *PloS one*
  Shi, J., Jiang, B., Qiu, Y., Guan, J., Jain, M., Cao, X., Bauer, M., Su, L., Burkly, L. C., Leone, T. C., Kelly, D. P., Liao, R.
  2013; 8 (1): e54054
- **ATP-binding cassette G-subfamily transporter 2 regulates cell cycle progression and asymmetric division in mouse cardiac side population progenitor cells.** *Circulation research*
  Sereti, K. I., Oikonomopoulos, A., Unno, K., Cao, X., Qiu, Y., Liao, R.
  2013; 112 (1): 27-34
- **Adult cardiac progenitor cell aggregates exhibit survival benefit both in vitro and in vivo.** *PloS one*
  Bauer, M., Kang, L., Qiu, Y., Wu, J., Peng, M., Chen, H. H., Camci-Unal, G., Bayomy, A. F., Sosnovik, D. E., Khademhosseini, A., Liao, R.
  2012; 7 (11): e50491
- **Regeneration in heart disease-Is ECM the key?** *Life sciences*
  Bayomy, A. F., Bauer, M., Qiu, Y., Liao, R.
  2012; 91 (17-18): 823-7
- **Spot identification and quality control in cell-based microarrays.** *ACS combinatorial science*
  Bauer, M., Kim, K., Qiu, Y., Calpe, B., Khademhosseini, A., Liao, R., Wheeldon, I.
  2012; 14 (8): 471-7
- **The continuing evolution of the Langendorff and ejecting murine heart: new advances in cardiac phenotyping.** *American journal of physiology. Heart and circulatory physiology*
  Liao, R., Podesser, B. K., Lim, C. C.
  2012; 303 (2): H156-67
- **Cardiac side population cells: moving toward the center stage in cardiac regeneration.** *Circulation research*
  Unno, K., Jain, M., Liao, R.
  2012; 110 (10): 1355-63
- **Homocysteine induces cardiomyocyte dysfunction and apoptosis through p38 MAPK-mediated increase in oxidant stress.** *Journal of molecular and cellular cardiology*
  Wang, X., Cui, L., Joseph, J., Jiang, B., Pimental, D., Handy, D. E., Liao, R., Loscalzo, J.
  2012; 52 (3): 753-60
- **Wnt signaling exerts an antiproliferative effect on adult cardiac progenitor cells through IGFBP3.** *Circulation research*
  Oikonomopoulos, A., Sereti, K. I., Conyers, F., Bauer, M., Liao, A., Guan, J., Crapps, D., Han, J. K., Dong, H., Bayomy, A. F., Fine, G. C., Westerman, K., Biechele, et al
  2011; 109 (12): 1363-74
- **Evidence for human lung stem cells.** *The New England journal of medicine*
  Kajstura, J., Rota, M., Hall, S. R., Hosoda, T., D'Amario, D., Sanada, F., Zheng, H., Ogórek, B., Rondon-Clavo, C., Ferreira-Martins, J., Matsuda, A., Arranto, C., Goichberg, et al
  2011; 364 (19): 1795-806
- **Echocardiographic speckle-tracking based strain imaging for rapid cardiovascular phenotyping in mice.** *Circulation research*
  Bauer, M., Cheng, S., Jain, M., Ngoy, S., Theodoropoulos, C., Trujillo, A., Lin, F. C., Liao, R.

2011; 108 (8): 908-16

- **Notch1 in Bone Marrow-Derived Cells Mediates Cardiac Repair After Myocardial Infarction** *CIRCULATION*
  Li, Y., Hiroi, Y., Ngoy, S., Okamoto, R., Noma, K., Wang, C., Wang, H., Zhou, Q., Radtke, F., Liao, R., Liao, J. K.
  2011; 123 (8): 866-U83
- **Preventing cardiac remodeling: the combination of cell-based therapy and cardiac support therapy preserves left ventricular function in rodent model of myocardial ischemia.** *The Journal of thoracic and cardiovascular surgery*
  Mokashi, S. A., Guan, J., Wang, D., Tchantchaleishvili, V., Brigham, M., Lipsitz, S., Lee, L. S., Schmitto, J. D., Bolman, R. M., Khademhosseini, A., Liao, R., Chen, F. Y.
  2010; 140 (6): 1374-80
- **Loss of hypoxia-inducible factor prolyl hydroxylase activity in cardiomyocytes phenocopies ischemic cardiomyopathy.** *Circulation*
  Moslehi, J., Minamishima, Y. A., Shi, J., Neuberg, D., Charytan, D. M., Padera, R. F., Signoretti, S., Liao, R., Kaelin, W. G.
  2010; 122 (10): 1004-16
- **Inhibition of notch1-dependent cardiomyogenesis leads to a dilated myopathy in the neonatal heart.** *Circulation research*
  Urbanek, K., Cabral-da-Silva, M. C., Ide-Iwata, N., Maestroni, S., Delucchi, F., Zheng, H., Ferreira-Martins, J., Ogórek, B., D'Amario, D., Bauer, M., Zerbini, G., Rota, M., Hosoda, et al
  2010; 107 (3): 429-41
- **The paradoxical role of inflammation in cardiac repair and regeneration.** *Journal of cardiovascular translational research*
  Jiang, B., Liao, R.
  2010; 3 (4): 410-6
- **Amyloidogenic light chains induce cardiomyocyte contractile dysfunction and apoptosis via a non-canonical p38alpha MAPK pathway.** *Proceedings of the National Academy of Sciences of the United States of America*
  Shi, J., Guan, J., Jiang, B., Brenner, D. A., Del Monte, F., Ward, J. E., Connors, L. H., Sawyer, D. B., Semigran, M. J., Macgillivray, T. E., Seldin, D. C., Falk, R., Liao, et al
  2010; 107 (9): 4188-93
- **Regulation of VASP phosphorylation in cardiac myocytes: differential regulation by cyclic nucleotides and modulation of protein expression in diabetic and hypertrophic heart.** *American journal of physiology. Heart and circulatory physiology*
  Sartoretto, J. L., Jin, B. Y., Bauer, M., Gertler, F. B., Liao, R., Michel, T.
  2009; 297 (5): H1697-710
- **A feedback loop involving the Phd3 prolyl hydroxylase tunes the mammalian hypoxic response in vivo.** *Molecular and cellular biology*
  Minamishima, Y. A., Moslehi, J., Padera, R. F., Bronson, R. T., Liao, R., Kaelin, W. G.
  2009; 29 (21): 5729-41
- **Increased glucose uptake and oxidation in mouse hearts prevent high fatty acid oxidation but cause cardiac dysfunction in diet-induced obesity.** *Circulation*
  Yan, J., Young, M. E., Cui, L., Lopaschuk, G. D., Liao, R., Tian, R.
  2009; 119 (21): 2818-28
- **A novel role for tumor necrosis factor-like weak inducer of apoptosis (TWEAK) in the development of cardiac dysfunction and failure.** *Circulation*
  Jain, M., Jakubowski, A., Cui, L., Shi, J., Su, L., Bauer, M., Guan, J., Lim, C. C., Naito, Y., Thompson, J. S., Sam, F., Ambrose, C., Parr, et al
  2009; 119 (15): 2058-68
- **Disruption of striated preferentially expressed gene locus leads to dilated cardiomyopathy in mice.** *Circulation*
  Liu, X., Ramjiganesh, T., Chen, Y. H., Chung, S. W., Hall, S. R., Schissel, S. L., Padera, R. F., Liao, R., Ackerman, K. G., Kajstura, J., Leri, A., Anversa, P., Yet, et al
  2009; 119 (2): 261-8
- **Role of the ATP-binding cassette transporter Abcg2 in the phenotype and function of cardiac side population cells.** *Circulation research*
  Pfister, O., Oikonomopoulos, A., Sereti, K. I., Sohn, R. L., Cullen, D., Fine, G. C., Mouquet, F., Westerman, K., Liao, R.
  2008; 103 (8): 825-35
- **Evolving cell-based therapies for heart failure patients.** *Current treatment options in cardiovascular medicine*
  Podesser, B. K., Bauer, M., Liao, R.

2008; 10 (4): 358-67

- **Long-term effects of increased glucose entry on mouse hearts during normal aging and ischemic stress.** *Circulation*
  Luptak, I., Yan, J., Cui, L., Jain, M., Liao, R., Tian, R.
  2007; 116 (8): 901-9
- **The bone marrow--cardiac axis of myocardial regeneration.** *Progress in cardiovascular diseases*
  Liao, R., Pfister, O., Jain, M., Mouquet, F.
  2007; 50 (1): 18-30
- **Adult stem cells and heart regeneration.** *Expert review of cardiovascular therapy*
  Sohn, R. L., Jain, M., Liao, R.
  2007; 5 (3): 507-17
- **Isolation, culture, and functional analysis of adult mouse cardiomyocytes.** *Methods in molecular medicine*
  Liao, R., Jain, M.
  2007; 139: 251-62
- **Transcription factor CHF1/Hey2 suppresses cardiac hypertrophy through an inhibitory interaction with GATA4.** *American journal of physiology. Heart and circulatory physiology*
  Xiang, F., Sakata, Y., Cui, L., Youngblood, J. M., Nakagami, H., Liao, J. K., Liao, R., Chin, M. T.
  2006; 290 (5): H1997-2006
- **Selective loss of fine tuning of Gq/11 signaling by RGS2 protein exacerbates cardiomyocyte hypertrophy.** *The Journal of biological chemistry*
  Zhang, W., Anger, T., Su, J., Hao, J., Xu, X., Zhu, M., Gach, A., Cui, L., Liao, R., Mende, U.
  2006; 281 (9): 5811-20
- **Restoration of cardiac progenitor cells after myocardial infarction by self-proliferation and selective homing of bone marrow-derived stem cells.** *Circulation research*
  Mouquet, F., Pfister, O., Jain, M., Oikonomopoulos, A., Ngoy, S., Summer, R., Fine, A., Liao, R.
  2005; 97 (11): 1090-2
- **Mesenchymal stem cells in the infarcted heart.** *Coronary artery disease*
  Jain, M., Pfister, O., Hajjar, R. J., Liao, R.
  2005; 16 (2): 93-7
- **Cardiac-specific overexpression of GLUT1 prevents the development of heart failure attributable to pressure overload in mice.** *Circulation*
  Liao, R., Jain, M., Cui, L., D'Agostino, J., Aiello, F., Luptak, I., Ngoy, S., Mortensen, R. M., Tian, R.
  2002; 106 (16): 2125-31