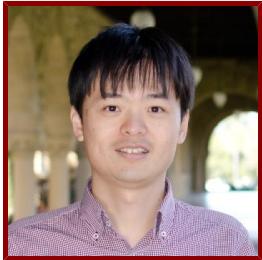


Stanford



Masataka Nishiga

Instructor, Cardiovascular Institute

Bio

BIO

Dr. Nishiga is an Instructor at the Stanford Cardiovascular Institute. As a physician-scientist, he focuses on unraveling the mechanisms of cardiovascular diseases and developing innovative treatments. His research path was sparked by firsthand experiences with heart failure patients during his clinical practice, where he recognized the urgent need for more effective treatments. After completing his cardiology fellowship in Japan, he pursued a Ph.D. at Kyoto University, focusing on the role of microRNAs and non-coding RNAs in heart failure, cardiac fibrosis, and atherosclerosis. Currently at Stanford and under the guidance of Dr. Joseph Wu, Dr. Nishiga's postdoctoral research leverages iPSCs and CRISPR technology. His primary research areas include the cardiac impacts of cancer therapies, the cardiovascular effects of COVID-19, and the influence of marijuana use on vascular inflammation.

ACADEMIC APPOINTMENTS

- Instructor, Cardiovascular Institute

HONORS AND AWARDS

- NIH K99/R00 Pathway to Independence Award, National Heart, Lung, and Blood Institute (NHLBI) (2023 - 2028)
- TRDRP Postdoctoral Fellowship, Tobacco-Related Disease Research Program (TRDRP), University of California, Office of the President (2020 - 2022)
- JSPS Oversees Research Fellowship, Japan Society for the Promotion of Science (JSPS) (2018 - 2020)
- Astellas Oversees Research Fellowship, Astellas Foundation for Research on Metabolic Disorders (2017 - 2018)

PROFESSIONAL EDUCATION

- PhD, Kyoto University , Cardiovascular Medicine (2017)
- Cardiology Fellowship, Tenri Hospital (Nara, Japan) , Cardiology (2012)
- Residency, Tenri Hospital (Nara, Japan) , Internal Medicine (2009)
- MD, Kyoto University , Medicine (2007)

LINKS

- Joseph Wu lab: <http://med.stanford.edu/wulab.html>
- Stanford Cardiovascular Institute: <https://med.stanford.edu/cvi.html>

Publications

PUBLICATIONS

- Cryo-electron tomography reveals the structural diversity of cardiac proteins in their cellular context. *bioRxiv : the preprint server for biology*

Woldeyes, R. A., Nishiga, M., Vander Roest, A. S., Engel, L., Giri, P., Montenegro, G. C., Wu, A. C., Dunn, A. R., Spudich, J. A., Bernstein, D., Schmid, M. F., Wu, J. C., Chiu, et al
2023

- **Adverse Impact of Cannabis on Human Health.** *Annual review of medicine*
Chandy, M., Nishiga, M., Wei, T. T., Hamburg, N. M., Nadeau, K., Wu, J. C.
2023
- **Cannabinoid receptor 1 antagonist genistein attenuates marijuana-induced vascular inflammation.** *Cell*
Wei, T. T., Chandy, M., Nishiga, M., Zhang, A., Kumar, K. K., Thomas, D., Manhas, A., Rhee, S., Justesen, J. M., Chen, I. Y., Wo, H. T., Khanamiri, S., Yang, et al
2022
- **Ferroptosis of Pacemaker Cells in COVID-19.** *Circulation research*
Nishiga, M., Jahng, J. W., Wu, J. C.
2022; 130 (7): 978-980
- **The use of new CRISPR tools in cardiovascular research and medicine.** *Nature reviews. Cardiology*
Nishiga, M., Liu, C., Qi, L. S., Wu, J. C.
2022
- **Deciphering pathogenicity of variants of uncertain significance with CRISPR-edited iPSCs.** *Trends in genetics : TIG*
Guo, H., Liu, L., Nishiga, M., Cong, L., Wu, J. C.
2021
- **microRNA-33 maintains adaptive thermogenesis via enhanced sympathetic nerve activity.** *Nature communications*
Horie, T., Nakao, T., Miyasaka, Y., Nishino, T., Matsumura, S., Nakazeki, F., Ide, Y., Kimura, M., Tsuji, S., Rodriguez, R. R., Watanabe, T., Yamasaki, T., Xu, et al
2021; 12 (1): 843
- **Macrophages: Potential Therapeutic Target of Myocardial Injury in COVID-19.** *Circulation research*
Nishiga, M., Wu, J. C.
2021; 129 (1): 47-49
- **CRISPRi/a Screening with Human iPSCs.** *Methods in molecular biology (Clifton, N.J.)*
Nishiga, M., Qi, L. S., Wu, J. C.
2021; 2320: 261-281
- **Lionheart LincRNA alleviates cardiac systolic dysfunction under pressure overload.** *Communications biology*
Kuwabara, Y., Tsuji, S., Nishiga, M., Izuhara, M., Ito, S., Nagao, K., Horie, T., Watanabe, S., Koyama, S., Kiryu, H., Nakashima, Y., Baba, O., Nakao, et al
2020; 3 (1): 434
- **COVID-19 and cardiovascular disease: from basic mechanisms to clinical perspectives.** *Nature reviews. Cardiology*
Nishiga, M. n., Wang, D. W., Han, Y. n., Lewis, D. B., Wu, J. C.
2020
- **Therapeutic genome editing in cardiovascular diseases.** *Advanced drug delivery reviews*
Nishiga, M. n., Qi, L. S., Wu, J. C.
2020
- **Utility of collagen-derived peptides as markers of organ injury in patients with acute heart failure.** *Open heart*
Nagao, K. n., Tamura, A. n., Sato, Y. n., Hata, R. n., Kawase, Y. n., Kadota, K. n., Horie, T. n., Sowa, N. n., Nishiga, M. n., Ono, K. n., Inada, T. n., Tanaka, M. n.
2020; 7 (1): e001041
- **Cardioprotective Effects of VCPModulator KUS121 in Murine and Porcine Models of Myocardial Infarction.** *JACC. Basic to translational science*
Ide, Y., Horie, T., Saito, N., Watanabe, S., Otani, C., Miyasaka, Y., Kuwabara, Y., Nishino, T., Nakao, T., Nishiga, M., Nishi, H., Nakashima, Y., Nakazeki, et al
2019; 4 (6): 701–14
- **Identification of Differential Roles of MicroRNA-33a and -33b During Atherosclerosis Progression With Genetically Modified Mice.** *Journal of the American Heart Association*
Koyama, S., Horie, T., Nishino, T., Baba, O., Sowa, N., Miyasaka, Y., Kuwabara, Y., Nakao, T., Nishiga, M., Nishi, H., Nakashima, Y., Nakazeki, F., Ide, et al

2019; 8 (13): e012609

- **MiR-33a is a therapeutic target in SPG4-related hereditary spastic paraplegia human neurons.** *Clinical science (London, England : 1979)*
Nakazeki, F., Tsuge, I., Horie, T., Imamura, K., Tsukita, K., Hotta, A., Baba, O., Kuwabara, Y., Nishino, T., Nakao, T., Nishiga, M., Nishi, H., Nakashima, et al 2019
- **An in Vivo miRNA Delivery System for Restoring Infarcted Myocardium.** *ACS nano*
Yang, H. n., Qin, X. n., Wang, H. n., Zhao, X. n., Liu, Y. n., Wo, H. T., Liu, C. n., Nishiga, M. n., Chen, H. n., Ge, J. n., Sayed, N. n., Abilez, O. J., Ding, et al 2019
- **Hepatokine alpha1-Microglobulin Signaling Exacerbates Inflammation and Disturbs Fibrotic Repair in Mouse Myocardial Infarction.** *Scientific reports*
Hakuno, D., Kimura, M., Ito, S., Satoh, J., Nakashima, Y., Horie, T., Kuwabara, Y., Nishiga, M., Ide, Y., Baba, O., Nishi, H., Nakao, T., Nishino, et al 2018; 8 (1): 16749
- **SREBF1/MicroRNA-33b Axis Exhibits Potent Effect on Unstable Atherosclerotic Plaque Formation In Vivo.** *Arteriosclerosis, thrombosis, and vascular biology*
Nishino, T., Horie, T., Baba, O., Sowa, N., Hanada, R., Kuwabara, Y., Nakao, T., Nishiga, M., Nishi, H., Nakashima, Y., Nakazeki, F., Ide, Y., Koyama, et al 2018; 38 (10): 2460-2473
- **Circulating markers of collagen types I, III, and IV in patients with dilated cardiomyopathy: relationships with myocardial collagen expression.** *ESC heart failure*
Nagao, K., Inada, T., Tamura, A., Kajitani, K., Shimamura, K., Yukawa, H., Aida, K., Sowa, N., Nishiga, M., Horie, T., Makita, T., Ono, K., Tanaka, et al 2018
- **SREBF1/MicroRNA-33b Axis Exhibits Potent Effect on Unstable Atherosclerotic Plaque Formation In Vivo ARTERIOSCLEROSIS THROMBOSIS AND VASCULAR BIOLOGY**
Nishino, T., Horie, T., Baba, O., Sowa, N., Hanada, R., Kuwabara, Y., Nakao, T., Nishiga, M., Nishi, H., Nakashima, Y., Nakazeki, F., Ide, Y., Koyama, et al 2018; 38 (10): 2460–73
- **Loss of perostin ameliorates adipose tissue inflammation and fibrosis in vivo.** *Scientific reports*
Nakazeki, F., Nishiga, M., Horie, T., Nishi, H., Nakashima, Y., Baba, O., Kuwabara, Y., Nishino, T., Nakao, T., Ide, Y., Koyama, S., Kimura, M., Tsuji, et al 2018; 8 (1): 8553
- **MicroRNA-33 regulates the population of peripheral inflammatory Ly6Chigh monocytes through dual pathways.** *Molecular and cellular biology*
Baba, O., Horie, T., Nakao, T., Hakuno, D., Nakashima, Y., Nishi, H., Kuwabara, Y., Nishiga, M., Nishino, T., Ide, Y., Nakazeki, F., Koyama, S., Kimura, et al 2018
- **Induced pluripotent stem cells as a biopharmaceutical factory for extracellular vesicles.** *European heart journal*
Nishiga, M. n., Guo, H. n., Wu, J. C.
2018
- **Dynamic changes of serum microRNA-122-5p through therapeutic courses indicates amelioration of acute liver injury accompanied by acute cardiac decompensation.** *ESC heart failure*
Koyama, S., Kuragaichi, T., Sato, Y., Kuwabara, Y., Usami, S., Horie, T., Baba, O., Hakuno, D., Nakashima, Y., Nishino, T., Nishiga, M., Nakao, T., Arai, et al 2017; 4 (2): 112-121
- **MicroRNA-33 Controls Adaptive Fibrotic Response in the Remodeling Heart by Preserving Lipid Raft Cholesterol** *CIRCULATION RESEARCH*
Nishiga, M., Horie, T., Kuwabara, Y., Nagao, K., Baba, O., Nakao, T., Nishino, T., Hakuno, D., Nakashima, Y., Nishi, H., Nakazeki, F., Ide, Y., Koyama, et al 2017; 120 (5): 835-847
- **Prevention of neointimal formation using miRNA-126-containing nanoparticle-conjugated stents in a rabbit model** *PLOS ONE*
Izuhara, M., Kuwabara, Y., Saito, N., Yamamoto, E., Hakuno, D., Nakashima, Y., Horie, T., Baba, O., Nishiga, M., Nakao, T., Nishino, T., Nakazeki, F., Ide, et al 2017; 12 (3)
- **Genetic Ablation of MicroRNA-33 Attenuates Inflammation and Abdominal Aortic Aneurysm Formation via Several Anti-Inflammatory Pathways.** *Arteriosclerosis, thrombosis, and vascular biology*
Nakao, T. n., Horie, T. n., Baba, O. n., Nishiga, M. n., Nishino, T. n., Izuhara, M. n., Kuwabara, Y. n., Nishi, H. n., Usami, S. n., Nakazeki, F. n., Ide, Y. n., Koyama, S. n., Kimura, et al 2017; 37 (11): 2161–70
- **Predictors of Rapid Progression and Clinical Outcome of Asymptomatic Severe Aortic Stenosis** *CIRCULATION JOURNAL*

Nishimura, S., Izumi, C., Nishiga, M., Amano, M., Imamura, S., Onishi, N., Tamaki, Y., Enomoto, S., Miyake, M., Tamura, T., Kondo, H., Kaitani, K., Nakagawa, et al
2016; 80 (8): 1863-1869

- **Prognostic Significance of ST-Segment Elevation in Leads V1-2 in Patients With Severe Aortic Stenosis** *CIRCULATION JOURNAL*
Taniguchi, T., Shiomi, H., Kosuge, M., Morimoto, T., Nakatsuma, K., Nishiga, M., Sasa, T., Saito, N., Kimura, T.
2016; 80 (2): 526-?
- **Expression Patterns of miRNA-423-5p in the Serum and Pericardial Fluid in Patients Undergoing Cardiac Surgery** *PLOS ONE*
Miyamoto, S., Usami, S., Kuwabara, Y., Horie, T., Baba, O., Hakuno, D., Nakashima, Y., Nishiga, M., Izuohara, M., Nakao, T., Nishino, T., Ide, Y., Nakazeki, et al
2015; 10 (11)
- **Acute myocardial infarction and 30-year coronary aneurysm follow-up by serial angiography in a young adult with Kawasaki disease.** *Cardiovascular intervention and therapeutics*
Matsushita, K., Tamura, T., Nishiga, M., Kaitani, K., Izumi, C., Nakagawa, Y.
2015; 30 (2): 142-146
- **MicroRNA-451 Exacerbates Lipotoxicity in Cardiac Myocytes and High-Fat Diet-Induced Cardiac Hypertrophy in Mice Through Suppression of the LKB1/AMPK Pathway** *CIRCULATION RESEARCH*
Kuwabara, Y., Horie, T., Baba, O., Watanabe, S., Nishiga, M., Usami, S., Izuohara, M., Nakao, T., Nishino, T., Otsu, K., Kita, T., Kimura, T., Ono, et al
2015; 116 (2): 279-U217
- **MicroRNA-33b knock-in mice for an intron of sterol regulatory element-binding factor 1 (Srebf1) exhibit reduced HDL-C in vivo** *SCIENTIFIC REPORTS*
Horie, T., Nishino, T., Baba, O., Kuwabara, Y., Nakao, T., Nishiga, M., Usami, S., Izuohara, M., Nakazeki, F., Ide, Y., Koyama, S., Sowa, N., Yahagi, et al
2014; 4
- **MicroRNA-33 regulates sterol regulatory element-binding protein 1 expression in mice** *NATURE COMMUNICATIONS*
Horie, T., Nishino, T., Baba, O., Kuwabara, Y., Nakao, T., Nishiga, M., Usami, S., Izuohara, M., Sowa, N., Yahagi, N., Shimano, H., Matsumura, S., Inoue, et al
2013; 4
- **Effects of Medical Treatment on the Prognosis and Risk of Embolic Events in Patients with Severe Aortic Plaque** *JOURNAL OF ATHEROSCLEROSIS AND THROMBOSIS*
Nishiga, M., Izumi, C., Matsutani, H., Hashiwada, S., Takahashi, S., Hayama, Y., Nakajima, S., Sakamoto, J., Hanazawa, K., Miyake, M., Tamura, T., Kondo, H., Motooka, et al
2013; 20 (11): 821-829
- **A case of significantly increased mitral regurgitation early after atrial septal defect closure.** *Journal of echocardiography*
Nishiga, M., Izumi, C., Matsutani, H., Hashiwada, S., Takahashi, S., Hayama, Y., Nakajima, S., Sakamoto, J., Hanazawa, K., Miyake, M., Tamura, T., Kondo, H., Motooka, et al
2012; 10 (2): 69-71
- **Progression of Isolated Tricuspid Regurgitation Late After Left-Sided Valve Surgery - Clinical Features and Mechanisms** *CIRCULATION JOURNAL*
Izumi, C., Miyake, M., Takahashi, S., Matsutani, H., Hashiwada, S., Kuwano, K., Hayashi, H., Nakajima, S., Nishiga, M., Hanazawa, K., Sakamoto, J., Kondo, H., Tamura, et al
2011; 75 (12): 2902-2907
- **Cardiac tamponade during transesophageal echocardiography in a patient with infective endocarditis.** *Journal of echocardiography*
Miyake, M., Izumi, C., Kuwano, K., Honjo, G., Matsutani, H., Hashiwada, S., Takahashi, S., Nishiga, M., Nakajima, S., Yamao, K., Hanazawa, K., Sakamoto, J., Yoshitani, et al
2010; 8 (1): 25-27