Curriculum Vitae

NATTHAPHAT SIRI-ANGKUL, MD

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Current Positions: *Staff*, Cardiac Electrophysiology Research and Training (CERT) Center
Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

Lecturer, Department of Physiology
Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

Graduate Research Assistant,
Cellular and Molecular Biology (CMB) Program
Cellular and Molecular Arrhythmia Research Program (CMARP)
Division of Cardiovascular Medicine, Department of Medicine,
University of Wisconsin School of Medicine and Public Health,
University of Wisconsin-Madison, Madison, WI, USA
(Advisor: Prof. Timothy J. Kamp, MD, PhD)

EDUCATION

2017 *Doctor of Medicine (MD) First-Class Honor*
Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

PROFESSIONAL LICENSE

2017 - Present MD (Thailand)

ACADEMIC RANKS

2017 - Present *Lecturer*, Department of Physiology,
Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

HONORS AND AWARDS

2023	*American Heart Association (AHA) Predoctoral Fellowship*
2020	An offer of the *University of Minnesota Medical School Dean's Distinguished Graduate Fellowship*, with an offer of admission into the *Graduate Program in Integrative Biology and Physiology*, University of Minnesota, Minneapolis, MN, USA
2017	*The Certificate of Achievement in Contributing to the Enhancement of the University's Reputation*, Chiang Mai University, Chiang Mai, Thailand
2017	*The Award for Excellence in Overall Academic Performance*, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
2016	*Outstanding Manner Award for Medical Students*, The Medical Council of Thailand, Bangkok, Thailand
2016	*Prince Mahidol Award Youth Program Scholarship*, Prince Mahidol Award Foundation, Bangkok, Thailand (Thai mentor: Prof. Nipon Chattipakorn, MD, PhD; International mentor: Assoc. Prof. Lai-Hua Xie, PhD)
2016	*Outstanding Academic Achievement Award*, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
2015	*Top-Scored 5th-Year Medical Student Award*, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
2014	*8th Rank (individual score) and quarter-finalist (team competition)*, The 12th Inter-Medical School Physiology Quiz (IMSPQ), University of Malaya, Kuala Lumpur, Malaysia
2013	*Award for the Best Score in Human Urinary System*, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
2013	*Top-Scored 3rd-Year Medical Student Award*, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
2012	*The Professor Vit & Mrs. Pornpen Meenakanit Award for the Best Score in Human Respiratory System*, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
2012	*The Professor Sood Sangvichien Award for the Best Score in Human Locomotive System*, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
2011	*Award for the Best Score in Introduction to Medical Science II*, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
2011	*Top-Scored 1st-Year Medical Student Award*, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
2011	*The Professor Dr. Tab Nilanidhi Foundation Award for the Best Score in Medical Science (Medicine)*, The Prof. Dr. Tab Nilanidhi Foundation, Bangkok, Thailand
2010	*Gold Medal*, The 7th Thailand Biology Olympiad

ORGANIZATIONS AND PARTICIPATION

2023 - Present	The Honor Society of Phi Kappa Phi (ΦΚΦ), USA
2019 - Present	Physiological Society of Thailand
2018 - Present	American Heart Association (Council on Basic Cardiovascular Sciences)
2017 - Present	Medical Council of Thailand

SCIENTIFIC PRESENTATION AT INTERNATIONAL MEETINGS

Mar 29, 2019	*Electrophysiological Alterations and Calcium Dyshomeostasis in Iron-Overloaded Ventricular Cardiomyocytes*. The 9th Federation of the Asian and Oceanian Physiological Societies (FAOPS) Congress in conjunction with the 96th Annual Meeting of the Physiological Society of Japan, Kobe, Japan
Jan 29, 2019	*Electrophysiological Alterations and Calcium Dyshomeostasis in Iron-Overloaded Ventricular Cardiomyocytes*. Prince Mahidol Award Conference (PMAC), Prince Mahidol Award Foundation, Bangkok, Thailand
Aug 3, 2018	*Mitochondrial Permeability Transition Pore, Calcium Uniporter and Iron Overload in the Heart.* The 13th Basic Cardiovascular Sciences (BCVS) Scientific Sessions, American Heart Association (AHA) Council on Basic Cardiovascular Sciences, San Antonio, TX, USA

SCIENTIFIC PRESENTATION AT NATIONAL AND REGIONAL MEETINGS

Dec 19, 2019	*Development of Novel Therapeutic Interventions Using Medical Device and Pharmacological Therapies Targeting Mitochondria to Prevent Chemotherapy-induced Cardiotoxicity and Chemobrain: From Bench to Bedside Investigations*. Academic exhibition at the press conference of the NSTDA Chair Professor Grant 2019 to Prof. Nipon Chattipakorn; National Science and Technology Development Agency (NSTDA), Bangkok, Thailand
Nov 8, 2019	*Cellular Electrophysiology in Cardiac Iron Overload: Arrhythmogenic Role of TRPC Channels*. The 17th Neurologic and Cardiac Electro-physiology Symposium (NCES), Chiang Mai, Thailand
Aug 25-26, 2017	*Heart and Brain Research by the Cardiac Electrophysiology Research and Training (CERT) Center*. Academic exhibition at the 25th Anniversary of Thailand Research Fund (TRF), Bangkok, Thailand

INVITED LECTURES

Dec 19, 2020	*How to Build Your First Data-Driven EKG Interpreter from Scratch (Session I: Electrocardiography - A Brief Review for Medical Students)*. Medical A.I. Fundamentals Through the Lens of Biomedical Signal Processing: Workshop for Medical Students, Chiang Mai University Medical Student Organization (CMSO), Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
Oct 11, 2020	*ClubMed Talkathon III: The Research Journey*. Chiang Mai University Medical Student Research Club, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
2019	*Road to Becoming a PMAYP Scholar*. Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand; Faculty of Medicine, Naresuan University, Phitsanulok, Thailand; and School of Medicine, Mae Fah Luang University, Chiang Rai, Thailand
2017	*First Step to be a Researcher*. Chiang Mai University Medical Student Organization (CMSO), Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
2013	*Surviving the Preclinical Years*. Second-year Medical Students Welcoming Ceremony, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
2011 - 2016	*Biology of the Circulatory System*. Science Olympiad Camp, Faculty of Science, Chiang Mai University, Chiang Mai, Thailand in collaboration with The Promotion of Academic Olympiad and Development of Science Education Foundation (POSN)

PROFESSIONAL ACTIVITIES

Reviewer of manuscripts for:

Frontiers in Cardiovascular Medicine
Frontiers in Cell and Developmental Biology

OTHER ACADEMIC AND SOCIAL ACTIVITIES

2019	*Chair of the Competition Committee*, Chiang Mai University International Medical Challenge (CMU IMC), Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
2017 - Present	*Member of the Organizing Committee*, The Neurologic and Cardiac Electrophysiology Symposium (NCES), Cardiac Electrophysiology Research and Training (CERT) Center, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
2017 - Present	*Advisor*, Chiang Mai University Medical Student Research Club, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
2017 - 2019	*Advisor and Member of the Selection Committee* of Chiang Mai University medical student delegates participating in the Inter-Medical School Physiology Quiz (IMSPQ)

2017	*Elective Course in Drug Discovery and Membrane Physiology*, Department of Physiology, Faculty of Science, Mahidol University, Bangkok, Thailand (Prof. Chatchai Muanprasat, MD, PhD)
2017	*Elective Course in Calcium and Bone Research*, Center of Calcium and Bone Research (COCAB), Department of Physiology, Faculty of Science, Mahidol University, Bangkok, Thailand (Prof. Narattaphol Charoenphandhu, MD, PhD)
2015 - 2019	*Member of the Organizing Committee*, Annual Health Screening Service Project in Pa Sang District, Lamphun, Thailand (organized by the Department of Physiology, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand)
2015	*CMU Trekking Ceremony First-Aid Station Staff*, Chiang Mai University, Chiang Mai, Thailand
2014	*Elective Course in Cardiovascular and Thoracic Surgery*, Cardiovascular and Thoracic Surgery Division, Department of Surgery, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
2014	*Elective Course in Cardiovascular Medicine*, Cardiology Division, Department of Internal Medicine, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
2013 - 2016	*Junior Physician-Researcher Training Program*, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand (Mentor: Prof. Nipon Chattipakorn, MD, PhD)
2013	*Academic Head of the Mahidol Quiz Committee*, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
2013	*Vice-president*, The 16th Wanna Be a Doctor Camp, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
2011 - 2017	*Member of the Medical Student Academic Committee*, Chiang Mai University Medical Student Organization (CMSO), Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
2011 - 2016	*Invited Associate Instructor*, Science Olympiad Camp, Faculty of Science, Chiang Mai University (in collaboration with The Promotion of Academic Olympiad and Development of Science Education Foundation [POSN])
2011 - 2013	*Member of the Mahidol Project Committee*, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
2011	*Member of the 50 Hours for Community Project*, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

PEER REVIEWED ARTICLES

1. Yanpiset P, Maneechote C, Sriwichaiin S, **Siri-Angkul N**, Chattipakorn SC, Chattipakorn N, Gasdermin D-mediated pyroptosis in myocardial ischemia and reperfusion injury: Cumulative evidence for future cardioprotective strategies. *Acta Pharm Sin B.* [in press]
2. Pantiya P, Thonusin C, Sumneang N, Ongnok B, Chunchai T, Kerdphoo S, Jaiwongkam T, Arunsak B, **Siri-Angkul N**, Sriwichaiin S, Chattipakorn N, Chattipakorn SC. High Cardiorespiratory Fitness Protects against Molecular Impairments of Metabolism, Heart, and Brain with Higher Efficacy in Obesity-Induced Premature Aging. *Endocrinol Metab.* 2022;37(4):630-640.
3. Thonusin C, Pantiya P, Sumneang N, Chunchai T, Nawara W, Arunsak B, **Siri-Angkul N**, Sriwichaiin S, Chattipakorn SC, Chattipakorn N. Effectiveness of high cardiorespiratory fitness in cardiometabolic protection in prediabetic rats. *Mol Med.* 2022;28(1):31.
4. Sirikul W, **Siri-Angkul N**, Chattipakorn N, Chattipakorn SC. Fibroblast Growth Factor 23 and Osteoporosis: Evidence from Bench to Bedside. *Int J Mol Sci.* 2022;23(5):2500.
5. Buawangpong N, Pinyopornpanish K, **Siri-Angkul N**, Chattipakorn N, Chattipakorn SC. The role of trimethylamine-N-oxide in the development of Alzheimer's disease. *J Cell Physiol*. 2022;237(3):1661-1685.
6. Khuanjing T, Ongnok B, Maneechote C, **Siri-Angkul N**, Prathumsap N, Arinno A, Chunchai T, Arunsak B, Chattipakorn SC, Chattipakorn N. Acetylcholinesterase inhibitor ameliorates doxorubicin-induced cardiotoxicity through reducing RIP1-mediated necroptosis. *Pharmacol Res*. 2021;173:105882.
7. **Siri-Angkul N**, Dadfar B, Jaleel R, Naushad J, Parambathazhath J, Doye A, Xie LH, Gwathmey JK. Calcium and Heart Failure: How Did We Get Here and Where Are We Going? *Int J Mol Sci*. 2021;22(14):7392.
8. **Siri-Angkul N**, Chattipakorn SC, Chattipakorn N. The mechanistic insights of the arrhythmogenic effect of trastuzumab. *Biomed Pharmacother*. 2021;139:111620.
9. Piamsiri C, Maneechote C, **Siri-Angkul N**, Chattipakorn SC, Chattipakorn N. Targeting necroptosis as therapeutic potential in chronic myocardial infarction. *J Biomed Sci*. 2021;28(1):25.
10. Wongtanasarasin W, **Siri-Angkul N**, Wittayachamnankul B, Chattipakorn SC, Chattipakorn N. Mitochondrial dysfunction in fatal ventricular arrhythmias. *Acta Physiol (Oxf)*. 2021;231(4):e13624. — *Co-first author*
11. **Siri-Angkul N**, Song Z, Fefelova N, Gwathmey JK, Chattipakorn SC, Qu Z, Chattipakorn N, Xie LH. Activation of TRPC (Transient Receptor Potential Canonical) Channel Currents in Iron Overloaded Cardiac Myocytes. *Circ Arrhythm Electrophysiol*. 2021;14(2):197-212.
12. Kumfu S, **Siri-Angkul N**, Chattipakorn SC, Chattipakorn N. Silencing of lipocalin-2 improves cardiomyocyte viability under iron overload conditions via decreasing mitochondrial dysfunction and apoptosis. *J Cell Physiol*. 2021;236(7):5108-5120.
13. **Siri-Angkul N**, Chattipakorn SC, Chattipakorn N. Angiotensin converting enzyme 2 at the interface between renin-angiotensin system inhibition and coronavirus disease 2019. *J Physiol*. 2020;598(19):4181-4195. — *Editor's choice article*
14. Sumneang N, **Siri-Angkul N**, Kumfu S, Chattipakorn SC, Chattipakorn N. The effects of iron overload on mitochondrial function, mitochondrial dynamics, and ferroptosis in cardiomyocytes. *Arch Biochem Biophys*. 2020;680:108241.

15. Benjanuwattra J, **Siri-Angkul N**, Chattipakorn SC, Chattipakorn N. Doxorubicin and its proarrhythmic effects: a comprehensive review of the evidence from experimental and clinical studies. *Pharmacol Res*. 2020;151:104542.
16. Sumneang N, Kumfu S, Khamseekaew J, **Siri-Angkul N**, Fucharoen S, Chattipakorn SC, Chattipakorn N. Combined iron chelator with N-acetylcysteine exerts the greatest effect on improving cardiac calcium homeostasis in iron-overloaded thalassemic mice. *Toxicology*. 2019;427:152289.
17. **Siri-Angkul N**, Xie LH, Chattipakorn SC, Chattipakorn N. Cellular electrophysiology of iron-overloaded cardiomyocytes. *Front Physiol*. 2018;9:1615.
18. **Siri-Angkul N**, Chattipakorn SC, Chattipakorn N. Diagnosis and treatment of cardiac iron overload in transfusion-dependent thalassemia patients. *Expert Rev Hematol*. 2018;11(6):471-479.
19. **Siri-Angkul N**, Chattipakorn SC, Chattipakorn N. Roles of lipocalin 2 and adiponectin in iron overload cardiomyopathy. *J Cell Physiol*. 2018;233(7):5104-5111.
20. Tanajak P, Sa-Nguanmoo P, Sivasinprasan S, Thummasorn S, **Siri-Angkul N**, Chattipakorn S, Chattipakorn N. Cardioprotection of dapagliflozin and vildagliptin in cardiac reperfusion injury rats. *J Endocrinol*. 2018;236(2):69-84.
21. Tanajak P, Pintana H, **Siri-Angkul N**, Khamseekaew J, Apaijai N, Chattipakorn SC, Chattipakorn N. Vildagliptin and caloric restriction for cardioprotection in pre-diabetic rats. *J Endocrinol*. 2017;232(2):189-204.
22. Wijarnpreecha K, **Siri-Angkul N**, Shinlapawittayatorn K, Charoenkwan P,Silvilairat S, Siwasomboon C, Visarutratna P, Srichairatanakool S, Tantiworawit A, Phrommintikul A, Chattipakorn SC, Chattipakorn N. Heart rate variability as an alternative indicator for identifying cardiac iron status in non-transfusion dependent thalassemia patients. *PLoS One*. 2015;10(6):e0130837.

PEER REVIEWED ABSTRACTS

1. Fefelova N, **Siri-Angkul N**, Gwathmey J, Xie LH. Cardiac Ferroptosis Induced Through Novel Signaling Pathways. *Circulation*. 2021;144:A11118.
2. Kumfu S, Sripetchwandee J, **Siri-Angkul N**, Sumneang N, Maneechote C, Arunsak B, Chunchai T, Chattipakorn SC, Chattipakorn N. Ferroptosis Inhibitor Exerts Greater Efficacy Than Apoptosis and Necroptosis Inhibitors on Improving Cardiac Function via Restoring Cardiac Mitochondrial Function and Attenuating Cardiomyocyte Death in Rats With Iron-Overloaded Cardiomyopathy. *Circulation*. 2021;144:A9379.
3. Fefelova N, Wongjaikam S, **Siri-Angkul N**, Gwathmey J, Chattipakorn N, Chattipakorn SC, Xie LH. Deficiency of Mitochondrial Calcium Uniporter Protects Mouse Hearts From Iron Overload by Attenuating Ferroptosis. *Circulation*. 2020;142:A15737.
4. **Siri-Angkul N**, Gordan R, Wongjaikam S, Fefelova N, Gwathmey J, Chattipakorn SC, Chattipakorn N, Xie LH. Activation of Transient Receptor Potential Canonical Channel Currents in Iron-Overloaded Cardiac Myocytes. *Circ Res*. 2019;125:A507. — *Awarded "top 10 percent of the accepted abstracts" and selected to be re-presented at The American Heart Association (AHA) Scientific Sessions 2019*
5. **Siri-Angkul N**, Gordan R, Wongjaikam S, Fefelova N, Gwathmey J, Chattipakorn SC, Chattipakorn N, Xie LH. Cardiac Iron Overload: Impacts on Cellular Electrophysiology and Calcium Handling. *J Physiol Sci*. 2019;69:S106 (1P-046).

6. Gordan R, Wongjaikam S, Fefelova N, **Siri-Angkul N**, Gwathmey JK, Chattipakorn SC, Chattipakorn N, Xie LH. Mitochondrial permeability transition pore, calcium uniporter and iron overload in the heart. *Circ Res*. 2018;123:A254.
7. Tanajak P, Sa-nguanmoo P, Sivasinprasasn S, Thummasorn S, Intachai K, **Siri-Angkul N**, Chattipakorn SC, Chattipakorn N. Dipeptidyl peptidase-4 inhibitor markedly enhances the cardioprotective efficacy of sodium-glucose cotransporter-2 inhibitor in pre-diabetic rats with cardiac ischemia-reperfusion injury. *Eur Heart J*. 2017;38(suppl_1):1246-1247.

CONFERENCE PROCEEDINGS, SHORT PAPERS AND ABSTRACTS

1. **Siri-Angkul N**, Gordan R, Wongjaikam S, Fefelova N, Qu Z, Gwathmey JK, Chattipakorn SC, Chattipakorn N, Xie LH. Cellular electrophysiology in cardiac iron overload: arrhythmogenic role of TRPC channels. *Proceeding to the 17th Neurologic and Cardiac Electrophysiology Symposium (NCES)*. 2019;32-33.
2. **Siri-Angkul N**, Chattipakorn N, Xie LH. Electrophysiological alterations and calcium dyshomeostasis in iron-overloaded ventricular cardiomyocytes. *Proceeding to The Prince Mahidol Award Youth Program (PMAYP) Conference*. 2019;33-35.

TEXTBOOKS

1. **Siri-Angkul N**, Chattipakorn SC, Chattipakorn N. *Cardiotoxicity Caused by Doxorubicin and Trastuzumab: Current Understanding for Future Preventive Strategies*. In: Atta-ur-Rahman, editor. Frontiers in Clinical Drug Research - Anti-Cancer Agents (Vol. 9). Bentham Science Publishers. [in press]