

## Curriculum Vitae

**ASSOC. PROF. KREKWIT SHINLAPAWITTAYATORN, MD, PhD**

**รองศาสตราจารย์ ดร. นายแพทย์ เกริกวิษซ์ ศิลปวิทยาทร**



Office Address: Cardiac Electrophysiology Research & Training Center  
Department of Physiology, Faculty of Medicine  
Chiang Mai University  
110 Intrawaroros Road  
Sriphum, Mueang District, Chiang Mai 50200  
Thailand  
Phone : 011-66-53-935329 Ext 106  
Fax : 011-66-53-935368 Ext 116  
E-mail : [kshinlap@gmail.com](mailto:kshinlap@gmail.com)

### EDUCATION

2006-2011 Ph.D. (Physiology and Biophysics), Department of Physiology and Biophysics, Case Western Reserve University, Cleveland, Ohio, USA

2004 Doctor of Medicine (M.D.), Chiang Mai University, Chiang Mai, Thailand

### HONORS AND AWARDS

2019-2024 *NSTDA Research Chair*, the National Science and Technology Development Agency (NSTDA), Bangkok, Thailand (PI: Prof. Dr. Nipon Chattipakorn)

- 2018 *The Royal Golden Jubilee Fellowship Award for PhD Advisor*, Thailand Research Fund, Bangkok, Thailand
- 2017 *Faculty with the Highest Citations of the Year 2016 Award*, Faculty of Medicine, Chiang Mai University, Thailand
- 2017 *TRF-OHEC-SCOPUS Young Researcher Award in Health Science*, The Thailand Research Fund, Bangkok, Thailand
- 2016 *Gold Elephant Award for Best Young Research Scientist in Medical Science*, Chiang Mai University, Chiang Mai, Thailand
- 2015-2018 *TRF Research Scholar* (เมธีวิจัย สกว.), The Thailand Research Fund, Bangkok, Thailand
- 2014-2019 *NSTDA Research Chair*, the National Science and Technology Development Agency (NSTDA), Bangkok, Thailand (PI: Prof. Dr. Nipon Chattipakorn)
- 2014 *Outstanding Research Presentation Award*, the 14<sup>th</sup> Annual Meeting of Thailand Research Fund (TRF), Entitled “New Researchers Meet TRF Senior Scholars”, Pattaya, Thailand
- 2014 *Suandok's Value Award (One in One Hundred Project)*, Chiang Mai Medical School, Chiang Mai, Thailand (โครงการหนึ่งในร้อย: รางวัลค่านิยมคนสวนดอก)
- 2014 *Young Investigator Award (Physiology, Pharmacology and Pathology, Second Place Winner)*, American College of Cardiology (ACC), Washington, DC, USA
- 2013 *Chiang Mai University Young Researcher Fund*, Chiang Mai University, Chiang Mai, Thailand
- 2012 *Outstanding TRF Research of the Year 2012*, the Thailand Research Fund, Bangkok, Thailand (PI: Prof. Dr. Nipon Chattipakorn)
- 2012 *First Place of the Faculty Oral Presentation Competition (3<sup>rd</sup> CMU Research Award)*, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
- 2012-2015 *Anandhamahidol Supporting Scholar Award*, Anandhamahidol Foundation, Bangkok, Thailand

- 2012 *Faculty Achievement Award*, Cardiac Electrophysiology Research and Training Center, Chiang Mai, Thailand
- 2012-2014 *TRF-CHE Research Grant for New Scholar*, the Thailand Research Fund, Bangkok, Thailand
- 2012 *Doctoral Excellence Award (Physiology and Biophysics)*, the Graduate and Postdoctoral Awards Ceremony, Case Western Reserve University, Cleveland, Ohio, USA
- 2011 *Finalist of Student Research Achievement Award (Category: Membrane Biophysics)*, 55<sup>nd</sup> Annual Meeting of the Biophysical Society, Baltimore, Maryland, USA
- 2009 *First Place Graduate Student Poster Presentation (Department Annual Retreat)*, Department of Physiology and Biophysics, Case Western Reserve University, Cleveland, Ohio, USA
- 2009 *First Place of the Trainee's Poster Presentation Competition (Research Festival)*, MetroHealth Medical Center, Case Western Reserve University, Cleveland, Ohio, USA
- 2008 *Outstanding Research Scientist in Medical Science*, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
- 2008 *American Heart Association Pre-Doctoral Fellowship Award* (Percentile Rank: 0.93), American Heart Association, Great Rivers Affiliate, USA
- 2008 *Finalist of Student Research Achievement Award (Category: Membrane Biophysics)*, 52<sup>nd</sup> Annual Meeting of the Biophysical Society, Long Beach, California, USA
- 2007 *First Place of the Trainee's Oral Presentation Competition (Genetic Basis of Cardiovascular Disease)*, MetroHealth Medical Center, Case Western Reserve University, Cleveland, Ohio, USA
- 2007 *Recknagel Graduate Student Best Academic Record*, Department of Physiology and Biophysics, Case Western Reserve University, Cleveland, Ohio, USA
- 2006 *The Staff Development Scholarship*, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
- 2006 *The Faculty Development Scholarship*, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

- 2004 *Outstanding Academic Achievement*, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
- 2004 *Participating Scholarship*, The International Brain Research Organization (IBRO) Asia Pacific Associate School of Neuroscience, Chiang Mai, Thailand
- 2003 *Outstanding Academic Achievement*, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
- 2003 *Top Score in Family Medicine*, Department of Family Medicine, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
- 1997 *High Stand of Excellence in Outstanding Academic Achievement*, Montfort College, Chiang Mai, Thailand

#### **ROYAL DECORATIONS OF THAILAND**

- 2014 Commander (Third Class) of The Most Noble Order of the Crown of Thailand  
เครื่องราชอิสริยาภรณ์อันมีเกียรติยศยิ่งมงกุฎไทย ชั้นตริตาภรณ์มงกุฎไทย (ต.ม.)
- 2009 Companion (Fourth Class) of the Most Exalted Order of the White Elephant  
เครื่องราชอิสริยาภรณ์อันมีเกียรติยศยิ่งช้างเผือก ชั้นจตุรถาภรณ์ช้างเผือก (จ.ช.)

#### **PROFESSIONAL APPOINTMENT**

- 2017-Present Associate Professor, Department of Physiology, School of Medicine, Chiang Mai University, Chiang Mai, Thailand
- 2015-2017 Assistant Professor, Department of Physiology, School of Medicine, Chiang Mai University, Chiang Mai, Thailand
- 2015-Present Head of Cardiac Catheterization & Electrophysiology Laboratory, Cardiac Electrophysiology Research and Training Center, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
- 2014-Present Staff, Cardiac Electrophysiology Research and Training Center, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
- 2013-Present Assistant to the Chair for Research Affairs, Department of Physiology, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
- 2004-Present Staff, Cardiac Electrophysiology Research and Training Center, Department of Physiology, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

2004-2005                      Staff, Cardiac Electrophysiology Unit, Department of Physiology,  
School of Medicine, Chiang Mai University, Chiang Mai, Thailand

## **PROFESSIONAL LICENSES**

2004-Present                  M.D. (Thailand)

## **ORGANIZATION AND PARTICIPATION**

2009-Present                  Heart Rhythm Society

2007-Present                  American Biophysical Society

2006-Present                  Thai Physiology Society

June 2005                      The Meeting of the European Heart Rhythm Association  
(EUROPACE), Prague, Czech Republic

March 2004                      The 1<sup>st</sup> International Neurologic And Cardiac Electrophysiology  
Symposium (NCES), Chiang Mai, Thailand

February 2004                  The 1<sup>st</sup> International Brain Research Organization (IBRO)                  Asia  
Pacific Associate School of Neuroscience, Chiang Mai, Thailand

2004-Present                  Thai Medical Council

## **PROFESSIONAL ACTIVITIES**

### ***Editorial Board***

*Chiang Mai Medical Journal* (2013-Present)

*International Journal of Biochemistry & Physiology* (2018-Present)

*Proceeding to the 1<sup>st</sup> international Neurological and Cardiac Electrophysiology  
Symposium (NCES)* (2004)

***Critical Reviewer of Manuscripts for:***

*Acta Physiologica, American Journal of Cardiovascular and Thoracic Surgery, Anatomy & Physiology: Current Research, Cellular Physiology & Biochemistry, Animal Models and Experimental Medicine, Bioscience Reports, Cardiology Research and Practice, Chemico-Biological Interactions, Chronic Diseases and Translational Medicine, Clinics and Research in Hepatology and Gastroenterology, Current Molecular Medicine, Current Pharmaceutical Design, Experimental and Therapeutic Medicine, Heart Rhythm, The International Journal of Neuroscience, The Journal of Cardiovascular Medicine and Cardiology, Journal of Arrhythmia, Journal of Cytology & Histology, Khon Kaen University Research Journal, Medicine, Neuropeptides, Oxidative Medicine and Cellular Longevity, Payao University Research Journal, Plos One, SAGE Open Medicine, Scientific Reports, Theranostics*

#### **PRESENTATIONS AT NATIONAL MEETINGS**

- May 2014                    “102<sup>nd</sup> TRF Seminar Series-From Molecular To Market”, Chiang Mai, Thailand
- December 2005            “U.S.-Thai symposium on Biomedical Engineering in Thailand”, Bangkok, Thailand

#### **PRESENTATIONS AT INTERNATIONAL MEETINGS**

- March 2019                68<sup>th</sup> Annual Scientific Sessions, American College of Cardiology (ACC), New Orleans, LA, USA
- March 2018                95<sup>th</sup> Annual Meeting of the Physiological Society of Japan (JSP), Takamatsu, Kagawa, Japan
- March 2017                66<sup>th</sup> Annual Scientific Sessions, American College of Cardiology (ACC), Washington, DC, USA
- March 2014                63<sup>rd</sup> Annual Scientific Sessions, American College of Cardiology (ACC), Washington, DC, USA
- March 2013                62<sup>nd</sup> Annual Scientific Sessions, American College of Cardiology (ACC), San Francisco, California, USA

May 2011	32 <sup>nd</sup> Annual Scientific Sessions, Heart Rhythm Society, San Francisco, California, USA
March 2011	55 <sup>th</sup> Annual Meeting of the Biophysical Society, Baltimore, Maryland, USA
February 2010	54 <sup>th</sup> Annual Meeting of the Biophysical Society, San Francisco, California, USA
May 2009	30 <sup>th</sup> Annual Scientific Sessions, Heart Rhythm Society, Boston, Massachusetts, USA
February 2009	53 <sup>rd</sup> Annual Meeting of the Biophysical Society, Boston, Massachusetts, USA
February 2008	52 <sup>nd</sup> Annual Meeting of the Biophysical Society, Long Beach, California, USA
March 2006	70 <sup>th</sup> Annual Scientific Sessions, Japanese Circulation Society, Nagoya, Japan
March 2005	54 <sup>th</sup> Annual Scientific Sessions, American College of Cardiology (ACC), Orlando, Florida, USA

#### **INVITED LECTURES AT INTERNATIONAL MEETINGS**

October 26, 2019	<i>Vagus Nerve Stimulation: A Promising Cardioprotective Strategy Against Ischemia-Reperfusion Injury</i> , 12 <sup>th</sup> Asian Pacific Heart Rhythm Society Scientific Session (APHRs), Bangkok, Thailand
October 24, 2019	<i>Arrhythmic Disease Modeling</i> , 12 <sup>th</sup> Asian Pacific Heart Rhythm Society Scientific Session (APHRs), Bangkok, Thailand
February 23, 2013	<i>Sodium Channel Polymorphisms and Arrhythmogenic Events: Pro-Arrhythmic or Anti-Arrhythmic</i> , Asian Pacific Society of Cardiology Congress, Pattaya, Thailand

#### **INVITED LECTURES AT NATIONAL MEETINGS**

December 19, 2019	<i>Vagus Nerve Stimulation for Heart Diseases: An Example of Basic Research Towards Research Innovation</i> , 47 <sup>th</sup> Physiological Society of Thailand Annual Meeting, Bangkok, Thailand
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- July 25, 2014 *Vagus Nerve Stimulation Exerts Cardioprotection in Acute Myocardial Infarction*, 10<sup>th</sup> International Neurologic and Cardiac Electrophysiology Symposium (NCES), Chiang Mai, Thailand
- October 4, 2013 *Neuro-Cardiology: The Vagus Nerve Stimulation and Its Effects on Cardiac Functions*, Department of Medical Technology, Faculty of Allied Health Sciences, Naresuan University, Phitsanulok, Thailand
- November 28, 2012 *Molecular and Cardiac Electrophysiology*, Department of Medical Technology, Faculty of Allied Health Sciences, Naresuan University, Phitsanulok, Thailand
- July 5, 2012 *Anatomy and Physiology of Cardiovascular System*, Nursing Services Center, Faculty of Nursing, Chiang Mai University, Chiang Mai, Thailand
- June 25, 2012 *Vagus Nerve Stimulation as a Promising Cardioprotective Strategy Against Ischemia-Reperfusion Injury*, 9<sup>th</sup> International Neurologic and Cardiac Electrophysiology Symposium (NCES), Chiang Mai, Thailand
- January 20, 2012 *Modulations of Cardiac Sodium Channelopathies by a Common Sodium Channel Polymorphism*, Department of Microbiology, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
- December 9, 2011 *Modulations of Sodium Channel Long QT and Brugada Syndrome Mutations by a Common Sodium Channel Polymorphism*, Department of Biochemistry, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
- May 4, 2006 *Research and Application in Cardiovascular Diseases: Heart, PDE-5 Inhibitor, and Sudden Cardiac Death*, 35<sup>th</sup> Annual Scientific Sessions, Thai Physiology Society, Chiang Mai, Thailand
- August 17, 2005 *Device Therapy in Sudden Cardiac Death*, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
- February 2, 2005 *Electrocardiogram and Cardiac Arrhythmia*, Faculty of Veterinary Medicine, Chiang Mai University, Chiang Mai, Thailand

## **ACADEMIC ACTIVITIES**

### **Graduate Student's Dissertation Committees**

1. Nattayaporn Apaijai, B.S., Member of the Master Degree Committee  
Topic: Effects of Metformin and Vildagliptin on Cardiac Function in High-Fat Diet Induced Insulin Resistant Rats (Physiology)



2. Hiranya Pintana, B.S., Member of the Master Degree Committee  
Topic: Effects of Metformin and Vildagliptin on Learning and Memory Behaviors and Brain Mitochondrial Functions in High-Fat Diet Induced Insulin Resistant Rats  
(Physiology)
3. Kittiya Thunsiri, B.Eng., Member of the Master Degree Committee  
Topic: Effects of Vagus Nerve Stimulation on the Ventricular Defibrillation  
(Biomedical Engineering)
4. Sivaporn Sivasinprasasn, M.S., Member of the Doctorate Degree Committee  
Topic: Effects of Estrogen, Metformin and Vildagliptin on Cardiac Functions in Obese Insulin Resistance and Estrogen-Deprived Rats  
(Physiology)
5. Wanpitak Pongkan, D.V.M., Member of the Doctorate Degree Committee  
Topic: Effect of Testosterone and Vildagliptin on Cardiac Ischemic and Reperfusion Injury in High-Fat Diet Induced Insulin Resistant Orchiectomized Rats  
(Physiology)
6. Tharnwimol Inthachai, B.S., Member of the Master Degree Committee  
Topic: Effects of Metformin and Vildagliptin on the Rat's Heart with Chronic Myocardial Infarction  
(Physiology)
7. Wattana Nuntaphum, B.S., Major Advisor of the Master Degree Committee  
Topic: The Effects of Vagus Nerve Stimulation on the Heart Subjected to Acute Cardiac Ischemia/Reperfusion Injury in Swine  
(Physiology)

### **Graduate Student's Dissertation Examining Committees**

1. Sirinart Kumfu, M.S., Member of the Doctorate Degree Examining Committee  
Topic: Mechanisms of Iron Transportation Into the Hearts of Thalassemic Mice  
(Physiology)
2. Luerat Supakul, B.S., Member of the Master Degree Committee  
Topic: The Effect of Garlic Extract on Cardiac Function in Insulin Resistant Rats Induced by High-Fat Diet Consumption  
(Physiology)
3. Tharnwimol Inthachai, B.S., Member of the Master Degree Committee  
Topic: Effects of Metformin and Vildagliptin on the Rat's Heart with Chronic Myocardial Infarction  
(Physiology)

### **Mentor for Recipients of National Scientific Research Awards**

2016 Best Research Presentation Award (Master Level-Oral) 2016, The Physiological Society of Thailand (Watthana Nuntaphum, MSc)

### **Special Academic Appointments**

2017-Present The Institutional Animal Care and Use Committee (IACUC), Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

2016-Present The Institutional Biosafety Committee (IBC), Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

2012-Present Graduate School Faculty, Naresuan University, Phitsanulok, Thailand

2011-Present Graduate School Faculty, Chiang Mai University, Chiang Mai, Thailand

2011-Present Committee, Cardiovascular Section for Medical Curriculum, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

2011-Present Committee, Respiratory Section for Medical Curriculum, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

2004-Present Grand Round Committee, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

2004-Present Comprehensive Examination Committee for Pre-clinic Medical Student, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

2004-Present Physiological Curriculum Committee for 2<sup>nd</sup> years Medical Student, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

### **RESEARCH GRANT SUPPORT**

03/2019-02/2020 Endowment Fund, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand. "The Effects of Acetylcholine Receptors Activation in Cardioprotection Against Hypoxia/Reoxygenation-Induced Cell Injury in H9c2 Cell". (PI)

03/2017-02/2019 Endowment Fund, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand. "The Effects of Vagus Nerve Stimulation on

	Cardiac Mitochondrial Biogenesis in Swine's Heart Subjected to Acute Ischemia/Reperfusion Injury". (PI)
07/2015-06/2018	The Thailand Research Fund Grant (เมธีวิจัย สกว.), the Thailand Research Fund (RSA), Bangkok, Thailand. "The Effects of Vagus Nerve Stimulation on Acute Cardiac Ischemia/Reperfusion Injury". (PI)
07/2013-06/2014	Chiang Mai University Young Researcher Fund, Chiang Mai University, Thailand. "Effect of the Vagal Nerve Stimulation on the Ventricular Defibrillation". (PI)
07/2012-06/2014	TRF-CHE Research Grant for New Scholar, the Thailand Research Fund (MRG5580125), Bangkok, Thailand. "Role of Sodium Channel and Brugada Syndrome". (PI)
07/2008-06/2010	American Heart Association Pre-doctorol Fellowship Grant (0815479D), Great Rivers Affiliate, USA. "Role of Sodium Channel and Brugada Syndrome". (PI)
11/2004-10/2006	Endowment Fund, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand. "Effect of Sildenafil Citrate and Nitroglycerine Combination on Defibrillation Efficacy in Swine". (PI)
09/2004-02/2006	Endowment Fund, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand. "Effect of Sildenafil Citrate on Defibrillation Efficacy in Swine". (Co-PI)

## RESEARCH FIELDS OF INTEREST

1. Channelopathies in Heart Disease
2. Inherited Cardiac Arrhythmias
3. Ion Channels Trafficking
4. Regulation of Gene Expression and Gene Therapy
5. Patient-Specific Induced Pluripotent Stem (iPS) Cell Models
6. Heart-Brain Interactions in Cardiac Arrhythmias: Role of the Autonomic Nervous System
7. Cardiac Reperfusion Injury
8. Mitochondrial dynamics and Mitophagy

## PEER REVIEWED ARTICLES

### (\*Corresponding Author)

1. Prathumsap N, **Shinlapawittayatorn K**, Chattipakorn SC, Chattipakorn N. Effects of Doxorubicin on the Heart: From Molecular Mechanisms to Intervention Strategies. *Eur J Pharmacol*. 2020. (In press, Impact Factor = 3.170, Q1)
2. Bo-Thay C, Shwe T, Higgins L, Palee S, **Shinlapawittayatorn K**, Chattipakorn SC, Chattipakorn N. Aging induced by D-galactose Aggravates Cardiac Dysfunction via Exacerbating Mitochondrial Dysfunction in Obese-insulin Resistant Rats. *GeroScience* 2019. (In press, Impact Factor = 6.444, Q1)
3. Intachai K, Chattipakorn S, Chattipakorn N, **Shinlapawittayatorn K\***. Revisiting the Cardioprotective Effects of Acetylcholine Receptor Activation against Myocardial Ischemia/Reperfusion Injury. *Int J Mol Sci* 2018 19(9):2466. (Impact Factor = 4.183, Q1)
4. Nuntaphum W, Pongkan W, Wongjaikam S, Thummasorn S, Tanajak P, Khamseekaew J, Intachai K, Chattipakorn S, Chattipakorn N, **Shinlapawittayatorn K\***. Vagus Nerve Stimulation Exerts Cardioprotection Against Myocardial Ischemia/Reperfusion Injury Predominantly Through its Efferent Vagal Fibers. *Basic Res Cardiol* 2018 113(4):22. (Impact Factor = 6.470, Q1)
5. Charununtakorn ST, **Shinlapawittayatorn K**, Chattipakorn SC, Chattipakorn N. Humanin Directly Protects Cardiac Mitochondria Against Dysfunction Initiated by Oxidative Stress by Decreasing Complex I activity. *Mitochondrion* 2018;38:31-40. (Impact Factor = 3.449, Q1)
6. **Shinlapawittayatorn K**, Chattipakorn SC, Chattipakorn N. The Influence of Obese Insulin-Resistance on the Outcome of the Ischemia/Reperfusion Insult to the Heart. *Curr Med Chem* 2018;25(13):1501-1509. (Impact Factor = 3.894, Q1)
7. Clatot J, Hoshi M, Wan X, Liu H, Jain A, **Shinlapawittayatorn K**, Marionneau C, Ficker E, Ha T, Deschênes I. Voltage-Gated Sodium Channels Assemble and Gate as Dimers. *Nat Commun* 2017 12;8(1):2077. (Impact Factor = 11.878)
8. Weerateerankul P, **Shinlapawittayatorn K**, Palee S, Apaijai N, Chattipakorn SC, Chattipakorn N. Early Testosterone Replacement Attenuates Intracellular Calcium Dyshomeostasis in the Heart of Testosterone-Deprived Male Rats. *Cell Calcium* 2017;67:22-30. (Impact Factor = 3.932, Q1)
9. Charununtakorn ST, **Shinlapawittayatorn K**, Chattipakorn SC, Chattipakorn N. High Dose Humanin Analogue Applied During Ischemia Exerts Cardioprotection Against

Ischemia/Reperfusion Injury by Reducing Mitochondrial Dysfunction. *Cardiovasc Ther* 2017;35(5). (Impact Factor = 2.315, Q1)

10. **Shinlapawittayatorn K\***, Chattipakorn SC, Chattipakorn N. Subthreshold Vagal Nerve Stimulation and the Controversial Findings Regarding the Anti-Infarct Effect Against Myocardial Ischemia/Reperfusion Injury. *Exp Physiol* 2017;102(3):385. (Impact Factor = 2.912, Q2)
  11. Charununtakorn ST, Apaijai N, Kerdphoo S, **Shinlapawittayatorn K**, Chattipakorn SC, Chattipakorn N. Humanin exerts cardioprotection against cardiac ischemia-reperfusion injury through attenuation of mitochondrial dysfunction. *Cardiovasc Ther* 2016;34:404-414. (Impact Factor = 2.315, Q1)
  12. Palee S, Apaijai N, **Shinlapawittayatorn K**, Chattipakorn SC, Chattipakorn N. Acetylcholine Attenuates Hydrogen Peroxide-Induced Intracellular Calcium Dyshomeostasis Through Both Muscarinic and Nicotinic Receptors in Cardiomyocytes. *Cell Physiol Biochem* 2016;39(1):341-9. (Impact Factor = 5.5, Q1)
  13. Chunchai T, Samniang B, Sripetchwandee J, Pintana H, Pongkan W, Kumfu S, **Shinlapawittayatorn K**, KenKnight BH, Chattipakorn N, Chattipakorn SC. Vagus Nerve Stimulation Exerts the Neuroprotective Effects in Obese-Insulin Resistant Rats, Leading to the Improvement of Cognitive Function. *Sci Rep* 2016 May 26;6:26866. (Impact Factor = 4.011, Q1)
  14. Samniang B<sup>†</sup>, **Shinlapawittayatorn K<sup>†</sup>**, Chunchai T, Pongkan W, Kumfu S, Chattipakorn SC, KenKnight BH, Chattipakorn N. Vagus Nerve Stimulation Improves Cardiac Function by Preventing Mitochondrial Dysfunction in Obese-Insulin Resistant Rats. *Sci Rep* 2016 Feb 1;6:19749. (Impact Factor = 4.011, Q1)
- † These two authors contributed equally to this work
15. Sivasinprasasn S, **Shinlapawittayatorn K**, Chattipakorn SC, Chattipakorn N. Estrogenic Impact on Cardiac Ischemic/Reperfusion Injury. *J Cardiovasc Transl Res* 2016 Feb;9(1):23-39. (Impact Factor = 2.337, Q1)
  16. Charununtakorn ST, **Shinlapawittayatorn K**, Chattipakorn SC, Chattipakorn N. Potential Roles of Humanin on Apoptosis in the Heart. *Cardiovasc Ther* 2016 Apr;34(2):107-14. (Impact Factor = 2.756, Q1)
  17. Wijarnpreecha K, Siri-Angkul N, **Shinlapawittayatorn K**, Charoenkwan P, Silvilairat S, Siwasomboon C, Visarutratna P, Srichairatanakool S, Tantiworawit A, Phrommintikul A, Chattipakorn S, Chattipakorn N. Heart Rate Variability as an Alternative Indicator for Identifying Cardiac Iron Status in Non-Transfusion Dependent Thalassemia Patients. *PLoS One* 2015. 17;10(6):e0130837. (Impact Factor = 2.776, Q1)

18. **Shinlapawittayatorn K\***, Chinda K, Palee S, Surinkaew S, Kumfu S, Kumphune S, Chattipakorn S, KenKnight BH, Chattipakorn N. Vagus Nerve Stimulation Initiating During Ischemia, But Not Reperfusion, Exerts Cardioprotection and is Associated With Amelioration of Cardiac Mitochondrial Dysfunction. *Heart Rhythm* 2014;11(12):2278-87. (Impact Factor = 5.225, Q1)
19. Thunsiri K, **Shinlapawittayatorn K†**, Chinda K, Palee S, Surinkaew S, Chattipakorn S, KenKnight BH, Chattipakorn N. Application of vagus nerve stimulation from the onset of ventricular fibrillation to post-shock period improves defibrillation efficacy. *Int J Cardiol* 2014;176(3):1030-2. (Impact Factor = 3.471, Q1)

† These two authors contributed equally to this work

20. Pornsriniyom D, **Shinlapawittayatorn K**, Fong J, Andrews ND, Foldvary-Schaefer N. Continuous Positive Airway Pressure Therapy for Obstructive Sleep Apnea Reduces Interictal Epileptiform Discharges in Adults with Epilepsy. *Epilepsy & Behavior* 2014;37:171-174. (Impact Factor = 2.061, Q1)
21. Hoshi M, Du X, **Shinlapawittayatorn K**, Liu H, Chai S, Wan X, Ficker E, Deschenes I. Brugada Syndrome Disease Phenotype Explained in Apparently Benign Sodium Channel Mutations. *Circ Cardiovasc Genet* 2014;7(2):123-31. (Impact Factor = 6.105, Q1)
  - with editorial comment by Abriel H and Sottas V. Unexpected  $\alpha$ - $\alpha$  Interactions With  $Na_v1.5$  Genetic Variants in Brugada Syndrome. *Circ Cardiovasc Genet* 2014;7(2):97-99.
22. Khan S, Abu Jawdeh BG, Goel M, Schilling WP, Parker MD, Puchowicz M, Yadav S, Harris RC, Hoshi M, **Shinlapawittayatorn K**, Deschênes I, Ficker E, and Schelling JR. Lipotoxic Disruption of the  $Na^+/H^+$  Exchanger-PI(4,5)P2 Interaction Expedites Proximal Tubule Apoptosis. *J Clin Invest* 2014;124(3):1057-68. (Impact Factor = 12.282, Q1)
23. Supakul L, Pintana P, Apaijai N, Chattipakorn S, **Shinlapawittayatorn K**, Chattipakorn N. Protective Effects of Garlic Extract on Cardiac Function, Heart Rate Variability, and Cardiac Mitochondria in Obese Insulin Resistant Rats. *Eur J Nutr* 2013;53(3):919-28. (Impact Factor = 4.449, Q1)
24. **Shinlapawittayatorn K\***, Chinda K, Palee S, Surinkaew S, Thunsiri K, Weerateerangkul P, Chattipakorn S, KenKnight BH, Chattipakorn N. Low-amplitude, left vagus nerve stimulation significantly attenuates ventricular dysfunction and infarct size through prevention of mitochondrial dysfunction during acute ischemia-reperfusion injury. *Heart Rhythm* 2013;10(11):1700-07. (Impact Factor = 5.225, Q1)
  - with editorial comment by Laurita KR and Hirose M. Electrical Vagal Stimulation and Cardioprotection. *Heart Rhythm* 2013;10(11):1708-09.

25. Abu Jawdeh BG, Khan S, Deschênes I, Hoshi M, Goel M, Lock JT, **Shinlapawittayatorn K**, Babcock G, Lakhe-Reddy S, DeCaro G, Yadav SP, Mohan ML, Naga Prasad SV, Schilling WP, Ficker E, and Schelling JR. Phosphoinositide Binding Differentially Regulates NHE1 Na<sup>+</sup>/H<sup>+</sup> Exchanger-Dependent Proximal Tubule Cell Survival. *J Biol Chem* 2011;286(49):42435-45. (Impact Factor = 4.106, Q1)
26. **Shinlapawittayatorn K**, Dudash L, Poelzing S, Ficker E, Deschênes I. Cardiac Sodium Channel Fragments Spanning H558R Polymorphism Rescue Defective Trafficking of a Brugada Syndrome Mutation. *Circ Cardiovasc Genet* 2011;4(5):500-9. (Impact Factor = 6.105, Q1)
27. **Shinlapawittayatorn K**, Du X, Liu H, Ficker E, Kaufman ES, Deschênes I. A Common SCN5A Polymorphism Restores the Biophysical Defects of SCN5A Mutations. *Heart Rhythm* 2011;8(3):455-62. (Impact Factor = 5.225, Q1)
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#### PEER REVIEWED ABSTRACTS

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## BOOK CHAPTERS

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**Short Biography:** Krekwit Shinlapawittayatorn, MD, PhD  
Associate Professor of Cardiac Electrophysiology  
Head of Cardiac Catheterization Laboratory, Cardiac Electrophysiology  
Research and Training Center (CERT), Faculty of Medicine,  
Chiang Mai University, Chiang Mai, 50200 Thailand.

Associate Professor Dr. Krekwit Shinlapawittayatorn received his M.D. from the Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand, and Ph.D. in Physiology and Biophysics from Case Western Reserve University (CWRU), USA. He is currently the Head of Cardiac Catheterization Laboratory of the Cardiac Electrophysiology Research and Training (CERT) Center, Faculty of Medicine, Chiang Mai University, and also serves as an Associate Professor in the Department of Physiology, Faculty of Medicine, Chiang Mai University. Associate Professor Dr. Krekwit Shinlapawittayatorn has received many international and national scientific awards including the American Heart Association Pre-Doctoral Fellowship Award (Percentile Rank: 0.93) from the American Heart Association and Young Investigator Award (Physiology, Pharmacology and Pathology, Second Place Winner) from the American

College of Cardiology, Doctoral Excellence Award (Physiology and Biophysics) from Case Western Reserve University, the TRF Research Scholar Award from the Thailand Research Fund, the TRF-OHEC-SCOPUS Young Researcher Award in Health Science from the Thailand Research Fund and the Gold Elephant Award for Best Young Researcher in Medical Science from the Chiang Mai University. Currently, he has been studying the cardiac electrophysiological changes during vagus nerve stimulation and during ischemia and reperfusion injury, aging and chemotherapy-induced cardiotoxicity, using a wide range of study models ranging from cardiac mitochondria, isolated cardiomyocytes, and small as well as large (human-like) animal models to the bedside level for these pathophysiological studies.