

## Curriculum Vitae

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### EDUCATION

- 1998-2001 The Prince Royal's College, Chiang Mai, Thailand
- 2001-2007 Doctor of Medicine (First-class honors and Academic Gold Medal Award), Faculty of Medicine, Chiang Mai, Thailand
- 2007-2008 Intern, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
- 2008-2011 Certificate program in Clinical Sciences in Medicine, Chiang Mai University, Chiang Mai, Thailand
- 2008-2011 Resident of Internal Medicine, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
- 2012-2014 Ph.D. pre-candidate of Molecular and Integrative Physiology, University of Michigan Medical School, Ann Arbor, Michigan, USA
- 2014-2017 Ph.D. candidate of Molecular and Integrative Physiology, University of Michigan Medical School, Ann Arbor, Michigan, USA

- 2015-2017 Certificate program in Advanced Metabolic Endocrinology, Metabolic Medical Institute, Boca Raton, Florida, USA
- 2017-2018 Postdoctoral fellow at Division of Metabolism, Endocrinology and Diabetes, Department of Internal Medicine, University of Michigan Medical School, Ann Arbor, Michigan, USA

## HONORS AND AWARDS

- 1999 Academic Award for outstanding student, The Prince Royal's College, Chiang Mai, Thailand
- 2000 Academic Award for outstanding student, The Prince Royal's College, Chiang Mai, Thailand
- 2001 Academic Award for outstanding student, The Prince Royal's College, Chiang Mai, Thailand
- 2001 Best Student Award in Academic Performance, The Prince Royal's College, Chiang Mai, Thailand
- 2001 Student Award in Service Performance, The Prince Royal's College, Chiang Mai, Thailand
- 2002 Academic Medal Award for outstanding first year medical student, Chiang Mai University, Chiang Mai, Thailand
- 2003 Best Student Award in Academic Performance for second year medical student, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
- 2003 Academic Medal Award for outstanding second year medical student, Chiang Mai University, Chiang Mai, Thailand
- 2004 Academic Medal Award for outstanding third year medical student, Chiang Mai University, Chiang Mai, Thailand
- 2005 Award for the best medical student in Radiology, Chiang Mai University, Chiang Mai, Thailand
- 2005 Academic Medal Award for outstanding fourth year medical student, Chiang Mai University, Chiang Mai, Thailand
- 2006 Academic Medal Award for outstanding fifth year medical student, Chiang Mai University, Chiang Mai, Thailand
- 2007 Academic Medal Award for outstanding sixth year medical student, Chiang Mai University, Chiang Mai, Thailand
- 2007 First-class honors and Academic Gold Medal Award of Doctor of Medicine, Chiang Mai University, Chiang Mai, Thailand.
- 2011 Distinguished Research Award ("The Prevalence of weight maintenance and factors that prevent weight regain after successful weight loss"), Department of Internal Medicine, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

- 2019 Registration Reimbursement Award (“Effects of PCSK9 inhibitor and atorvastatin on mitochondria of red muscle fibers in obesity” at 9th Federation of the Asian and Oceanian Physiological Societies Congress, Kobe, Japan
- 2022 International Travel Grant Award (“Blood Metabolomes as Non-Invasive Biomarkers and Targets of Metabolic Interventions for Doxorubicin- and Trastuzumab-Induced Heart Failure”) at the American Heart Association Scientific Sessions 2022, Chicago, Illinois, USA

#### PROFESSIONAL APPOINTMENT

- 2012-2018 Lecturer, Department of Internal Medicine, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
- 2018-2020 Lecturer, Department of Physiology, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
- 2020-present Assistant professor, Department of Physiology, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

#### PROFESSIONAL DEGREES AND LICENSE

- 2017-present Ph.D.
- 2007-present M.D.
- 2011-present Thai Board of Internal Medicine

#### ORGANIZATION AND PARTICIPATION

- 2007-present Thai Medical Council
- 2011-present Royal College of Physicians of Thailand

#### PRESENTATIONS AT NATIONAL MEETINGS

- April 2011 Poster presentation “The Prevalence of Weight Maintenance and Factors that Prevent Weight Regain After Successful Weight Loss” at 27th annual meeting of the Royal College of Physicians of Thailand, Pattaya, Thailand

#### PRESENTATIONS AT INTERNATIONAL MEETINGS

- June 2016 Poster presentation “Effects of Intrinsic Oxidative Capacity (VO<sub>2</sub>max) and Weight Loss on Age-Related Changes in Plasma Metabolite Levels” at 76<sup>th</sup> Scientific Sessions of American Diabetic Association, New Orleans, Louisiana
- October 2016 Poster presentation “Effects of Intrinsic Oxidative Capacity (VO<sub>2</sub>max) and Weight Loss on Skeletal Muscle and Plasma Metabolite Levels” at A. Alfred Taubman Medical Research Institute 9<sup>th</sup> Annual Symposium, Ann Arbor, Michigan

- June 2017 Poster presentation “Effect of Intrinsic Oxidative Capacity ( $VO_{2max}$ ) on Mitochondrial DNA and Metabolite Levels in Human Skeletal Muscle” at 77<sup>th</sup> Scientific Sessions of American Diabetic Association, San Diego, California
- November 2017 Oral presentation “Evidence that High Oxidative Capacity is Associated with Slow Metabolic Aging in Humans” at Brehm Tower Summer Diabetes Symposium, Ann Arbor, Michigan
- March 2019 Poster presentation “Effects of PCSK9 inhibitor and atorvastatin on mitochondria of red muscle fibers in obesity” at 9<sup>th</sup> Federation of the Asian and Oceanian Physiological Societies Congress, Kobe, Japan
- June 2019 Poster presentation “Comparative Effects of PCSK9 Inhibitor and High-Dose Atorvastatin on Mitochondria of Red Muscle Fibers in Obese Female Rats” at 79<sup>th</sup> Scientific Sessions of American Diabetic Association, San Francisco, California
- June 2020 Poster presentation “Comparative Effects of Atorvastatin, a Proprotein Convertase Subtilisin/Kexin Type 9 Inhibitor (PCSK9i), and Estrogen on Oxidative Muscle Mitochondria in a Rat Model of Obesity with Menopause” at 80<sup>th</sup> Scientific Sessions of American Diabetic Association, Virtual meeting
- June 2021 Poster presentation “The Effect of Exercise Capacity on Metabolic and Cardiac Aging in Normal and Obese Rats” at 81<sup>th</sup> Scientific Sessions of American Diabetic Association, Virtual meeting
- April 2022 Poster presentation “High Cardiorespiratory Fitness Exerts Cardioprotection in Obese Rats Regardless of Lifestyle Modification” at 71<sup>th</sup> Annual Scientific Sessions of the American College of Cardiology, Washington, DC
- June 2022 Poster presentation “High Cardiorespiratory Fitness Exerts Metabolic Protection in Obese Rats, Regardless of Caloric Restriction or Short-term Exercise” at 82<sup>th</sup> Scientific Sessions of American Diabetic Association, New Orleans, Louisiana
- November 2022 Poster presentation “Blood Metabolomes as Non-Invasive Biomarkers and Targets of Metabolic Interventions for Doxorubicin- and Trastuzumab-Induced Heart Failure” at American Heart Association Scientific Sessions 2022. Chicago, Illinois

#### INVITED LECTURES AT INTERNATIONAL MEETINGS

- October 2021 The Parenteral and Enteral Nutrition Society of Asia (PENSA) 2021, Virtual meeting

#### INVITED LECTURES AT NATIONAL MEETINGS

- October 2019 MED CMU 60<sup>th</sup> Anniversary Meeting “Now and Future in Health Care”, Chiang Mai, Thailand
- February 2022 Thai Metabolomics Society Webinar Series “MED x MET”, Virtual meeting
- January 2023 Research Trend in Cardiology, Chiang Mai University, Chiang Mai, Thailand

## ACADEMIC ACTIVITIES

### Graduate Student's Dissertation Committees

1. Napatsorn Imerb, Member of the Doctoral Degree Committee  
Topic: "Effects of Aging and Obesity on Bone Remodeling and Effects of Hyperbaric Oxygen Therapy on Bone Remodeling in D-Galactose Induced Aging Rats with and without Obesity"
2. Lingling Huang, Member of the Doctoral Degree Committee  
Topic: "Effects of Insulin Therapy on Gut Microbiota of Gestational Diabetes Mellitus (GDM) and Their Newborns"
3. Patchareeya Amput, Member of the Doctoral Degree Committee  
Topic: "The Comparative Effects of Proprotein Convertase Subtilisin/kexin Type 9 (PCSK9) Inhibitor and Atorvastatin on Cardiac Function and in Obese-Insulin Resistant Female Rats with or without Estrogen Deprivation"
4. Busarin Arunsak, Member of the Master Degree Committee  
Topic: "The Comparative Effects of Proprotein Convertase Subtilisin/kexin Type 9 (PCSK9) Inhibitor and Atorvastatin on Brain Function and Cognitive Function in Obese-Insulin Resistant Female Rats"
5. Kewarin Jinawong, Member of the Master Degree Committee  
Topic: "The Effects of Necroptosis Inhibitor on Cognitive Function and Neuropathology in Obese-Insulin Resistant Rats Induced by High-Fat Diet Consumption"

### Special Academic Appointments

2018-Present                      Graduate School Faculty, Chiang Mai University, Chiang Mai, Thailand

### GRANT SUPPORT

October 2022-September 2025                      Anandamahidol Foundation

### RESEARCH GRANT SUPPORT

March 2022 – February 2024	National Research Council of Thailand (PI) Title "The Predictive Effects of Cardiorespiratory Fitness on Sarcopenia, and the Modulating Effects of Caloric Restriction and Exercise on This Prediction in D-Galactose-Induced Premature Aging Rats"
December 2020 – December 2022	The Faculty of Medicine Endowment Fund for Research, Faculty of Medicine, Chiang Mai University (PI) Title "Effects of cardiorespiratory fitness on brain aging in caloric-restricted rats after high fat diet-induced aging"
May 2020 – May 2022	The Faculty of Medicine Endowment Fund for Research, Faculty of Medicine, Chiang Mai University (PI)

March 2019 - February 2021	<p>Title “Effects of cardiorespiratory fitness on brain aging in high fat diet-induced aging rats compared to normal rats”</p> <p>Thailand Science Research and Innovation (PI)</p>
January 2019 - January 2021	<p>Title “Effects of cardiorespiratory fitness on body weight and cardiometabolic features in obese versus non-obese rats, and on maintenance of body weight and cardiometabolic benefits after termination of caloric restriction- and exercise training-induced successful weight loss in obese rats”</p> <p>The Faculty of Medicine Endowment Fund for Research, Faculty of Medicine, Chiang Mai University (PI)</p> <p>Title “The comparative effects of proprotein convertase subtilisin/kexin type 9 (PCSK9) inhibitor and high dose atorvastatin on the mitochondria of oxidative muscle fibers in obese female rats with and without estrogen deprivation”</p>

#### RESEARCH FIELDS OF INTEREST

1. Metabolomics
2. Metabolism
3. Cardiovascular disease
4. Cardiotoxicity
5. Obesity and insulin resistance
6. Aging
7. Skeletal muscle

#### PEER REVIEWED ARTICLES

1. **Thonusin C**, Nawara W, Khuanjing T, Prathumsup N, Arinno A, Ongnok B, Arunsak B, Sriwichaiin S, Chattipakorn SC, Chattipakorn N. Blood metabolomes as non-invasive biomarkers and targets of metabolic interventions for doxorubicin and trastuzumab-induced cardiotoxicity. Arch Toxicol. 2023 Feb;97(2):603-618.
2. Upaphong P, **Thonusin C**, Choovuthayakorn J, Chattipakorn N, Chattipakorn SC. The Possible Positive Mechanisms of Pirenoxine in Cataract Formation. Int. J. Mol. Sci. 2022 Aug 21;23(16):9431.
3. Sriwichaiin S, Thiennimitr P, **Thonusin C**, Sarichai P, Buddhasiri S, Kumfu S, Nawara W, Kittichotirut W, Fucharoen S, Chattipakorn N, Chattipakorn SC. Deferiprone has less benefits on gut microbiota and metabolites in high iron-diet induced iron overload thalassemic mice than in iron overload wild-type mice: A preclinical study. Life Sci. 2022 Aug 8;307:120871.
4. 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 Better Protective Efficacy in Obesity-Induced Premature Aging. *Endocrinol Metab.* 2022 Aug;37(4):630-640.

\* Pantiya P and **Thonusin C** equally contribute to this article as co-first authors.

5. Huang L, Sililas P, **Thonusin C**, Tongsong T, Luewan S, Chattipakorn N, Chattipakorn SC. The Association between Gut Microbiota and Insulin Therapy in Women with Gestational Diabetes Mellitus. *Can J Diabetes.* 2022 May 31;S1499-2671.
6. Imerb N, **Thonusin C**, Pratchayasakul W, Arunsak B, Nawara W, Ongnok B, Aeimlapa R, Charoenphandhu N, Chattipakorn N, Chattipakorn SC. D-galactose-induced aging aggravates obesity-induced bone dyshomeostasis. *Sci Rep.* 2022 May 20;12(1):8580.
7. **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 Mar 10;28(1):31.
8. Srivichit B, **Thonusin C**, Chattipakorn N, Chattipakorn SC. Impacts of bisphosphonates on the bone and its surrounding tissues: mechanistic insights into medication-related osteonecrosis of the jaw. *Arch Toxicol* 2022 May;96(5):1227-1255.
9. Imerb N, **Thonusin C**, Pratchayasakul W, Arunsak B, Nawara W, Aeimlapa R, Charoenphandhu N, Chattipakorn N, Chattipakorn SC. Hyperbaric oxygen therapy improves age induced bone dyshomeostasis in non-obese and obese conditions. *Life Sci.* 2022 Apr 15;295:120406.
10. Trongtrakul K, **Thonusin C**, Pothirat C, Chattipakorn SC, Chattipakorn N. Past Experiences for Future Applications of Metabolomics in Critically Ill Patients with Sepsis and Septic Shocks. *Metabolites.* 2021 Dec 21;12(1):1.
11. Huang L, Sililas P, **Thonusin C**, Luewan S, Chattipakorn SC. Early gut dysbiosis could be an indicator of unsuccessful diet control in gestational diabetes mellitus. *J Diabetes.* 2021 Dec;13(12):1054-1058.
12. Likhitweerawong N, **Thonusin C**, Boonchooduang N, Louthrenoo O, Nookaew I, Chattipakorn N, Chattipakorn SC. Profiles of urine and blood metabolomics in autism spectrum disorders. *Metab Brain Dis.* 2021 Oct;36(7):1641-1671.
13. Nantasupha C, **Thonusin C**, Charoenkwan K, Chattipakorn SC, Chattipakorn N. Metabolic reprogramming in epithelial ovarian cancer. *Am J Transl Res* 2021 Sep 15;13(9):9950-9973.
14. Sililas P, Huang L, **Thonusin C**, Luewan S, Chattipakorn N, Chattipakorn SC, Tongsong T. Association between gut microbiome and development of gestational diabetes mellitus. *Microorganisms* 2021 Aug 8;9(8):1686.
15. **Thonusin C**, Chattipakorn SC, Chattipakorn N. Staying fit and the obese aging heart condition. *Aging (Albany NY).* 2021 May 13;13(10):13374-13375.
16. Huang L, **Thonusin C**, Chattipakorn N, Chattipakorn SC. Impacts of gut microbiota on gestational diabetes mellitus: a comprehensive review. *Eur J Nutr.* 2021 Aug;60(5):2343-2360.
17. Imerb N, **Thonusin C**, Chattipakorn N, Chattipakorn SC. Aging, obese-insulin resistance, and bone remodeling. *Mech Ageing Dev.* 2020 Aug 25;191:111335.

18. Pantiya P, **Thonusin C**, Chattipakorn N, Chattipakorn SC. Mitochondrial abnormalities in neurodegenerative models and possible interventions: Focus on Alzheimer's disease, Parkinson's disease, Huntington's disease. *Mitochondrion*. 2020 Aug 20;55:14-47.
19. Amput P, Palee S, Arunsak B, Pratchayasakul W, **Thonusin C**, Kerdphoo S, Jaiwongkam T, Chattipakorn SC, Chattipakorn N. PCSK9 inhibitor and atorvastatin reduce cardiac impairment in ovariectomized prediabetic rats via improved mitochondrial function and Ca<sup>2+</sup> regulation. *J Cell Mol Med*. 2020 Jul 6;24(16):9189–203.
20. Arunsak B, Pratchayasakul W, Amput P, Chattipakorn K, Tosukhowong T, Kerdphoo S, Jaiwongkam T, **Thonusin C**, Palee S, Chattipakorn N, Chattipakorn SC. Proprotein convertase subtilisin/kexin type 9 (PCSK9) inhibitor exerts greater efficacy than atorvastatin on improvement of brain function and cognition in obese rats. *Arch Biochem Biophys*. 2020 Aug 15;689:108470.
21. **Thonusin C**, Pantiya P, Jaiwongkam T, Kerdphoo S, Arunsak B, Amput P, Palee S, Pratchayasakul W, Chattipakorn N, Chattipakorn SC. A proprotein convertase subtilisin/kexin type 9 inhibitor provides comparable efficacy with lower detriment than statins on mitochondria of oxidative muscle of obese estrogen-deprived rats. *Menopause*. 2020 Oct;27(10):1155-1166.
22. **Thonusin C**, Shinlapawittayatorn K, Chattipakorn SC, Chattipakorn N. The impact of genetic polymorphisms on weight regain after successful weight loss. *Br J Nutr*. 2020 Oct 28;124(8):809-823.
23. **Thonusin C**, Apaijai N, Jaiwongkam T, Kerdphoo S, Arunsak B, Amput P, Palee S, Pratchayasakul W, Chattipakorn N, Chattipakorn SC. The comparative effects of high dose atorvastatin and proprotein convertase subtilisin/kexin type 9 inhibitor on the mitochondria of oxidative muscle fibers in obese-insulin resistant female rats. *Toxicol Appl Pharmacol*. 2019 Aug 29;382:114741.
24. **Thonusin C**, IglayReger HB, Soni T, Rothberg AE, Burant CF, Evans CR. Evaluation of Intensity Drift Correction Strategies Using MetaboDrift, a Normalization Tool for Multi-Batch Metabolomics Data. *J Chromatogr A*. 2017 Nov 10;1523:265-274.
25. Overmyer KA, **Thonusin C**, Qi NR, Burant CF, Evans CR. Impact of Anesthesia and Euthanasia on Metabolomics of Mammalian Tissues: Studies in a C57BL/6J Mouse Model. *PLoS One*. 2015 Feb 6;10(2):e0117232.
26. **Thonusin C**, Buranapin S. The Prevalence of Weight Maintenance and Factors that Prevent Weight Regain After Successful Weight Loss. *Thai Journal of Parenteral and Enteral Nutrition*, Vol. 22 No. 3.

#### PEER REVIEWED ABSTRACTS

1. Leemasawat K, **Thonusin C**, Osataphan N, Phrommintikul A, Somwangpresert A, Apaijai N, Chattipakorn SC, Chattipakorn N. “Blood Metabolomes as Non-Invasive Markers for Early Detection of Doxorubicin-Induced Cardiotoxicity in Breast Cancer Patients Independent of HER2 Expression” at 72<sup>nd</sup> Annual Scientific Sessions of the American College of Cardiology, New Orleans, Louisiana.
2. Weerasathain R, Piriyaikhuntorn P, Tantiworawit A, Buranapin S, **Thonusin C**, Niprapan P, Hantrakun N, Punnachet T, Rattanathammethee T, Hantrakool S, Chai-Adisaksopha C, Rattarittamrong E,



Norasetthada L, Chattipakorn N, Chattipakorn SC. “Changes in Plasma Metabolomes and Effects of Oral Nutritional Supplements on Adults Thalassemia Patients with Malnutrition: A Prospective Randomized Controlled Trial” at 64<sup>th</sup> American Society of Hematology annual meeting and exposition. New Orleans, Louisiana

3. **Thonusin C**, Nawara W, Khuanjing T, Prathumsap N, Arinno A, Ongnok B, Arunsak B, Sriwichaiin S, Chattipakorn SC, Chattipakorn N. “Blood Metabolomes as Non-Invasive Biomarkers and Targets of Metabolic Interventions for Doxorubicin- and Trastuzumab-Induced Heart Failure” at American Heart Association Scientific Sessions 2022. Chicago, Illinois
4. Suparan K, Ongnok B, Khuanjing T, **Thonusin C**, Chattipakorn N, Chattipakorn SC. “Donepezil Prevents Cognitive Impairment and Gut Epithelial Disruption in Doxorubicin-Treated Rats” at The Alzheimer's Association International Conference 2022, San Diego, California
5. Pantiya P, **Thonusin C**, Ongnok B, Chunchai T, Sumneang N, Chattipakorn N, Chattipakorn SC. “High Cardiorespiratory Fitness Exerts a Neuroprotective Effect Against Obesity, Regardless of Lifestyle Modification” at The Alzheimer's Association International Conference 2022, San Diego, California
6. **Thonusin C**, Pantiya P, Chattipakorn SC, Chattipakorn N. “High Cardiorespiratory Fitness Exerts Metabolic Protection in Obese Rats, Regardless of Caloric Restriction or Short-term Exercise” at 82<sup>nd</sup> Scientific Sessions of American Diabetic Association, New Orleans, Louisiana
7. **Thonusin C**, Chattipakorn SC, Chattipakorn N. “High Cardiorespiratory Fitness Exerts Cardioprotection in Obese Rats Regardless of Lifestyle Modification” at 71<sup>st</sup> Annual Scientific Sessions of the American College of Cardiology, Washington, DC.
8. Imerb N, **Thonusin C**, Pratchayasakul W, Arunsak B, Nawara W, Aeimlapa R, Charoenphandhu N, Chattipakorn N, Chattipakorn SC. “D-galactose-Induced Aging Aggravates Obesity-Induced Bone Dyshomeostasis” at The American Society for Bone and Mineral Research (ASBMR) meeting 2021, Austin, Texas
9. Pratchayasakul W, Arunsak B, Amput P, Kerdphoo S, Jaiwongkam T, Chunchai T, **Thonusin C**, Chattipakorn N, Chattipakorn SC. “Proprotein convertase subtilisin/kexin type 9 inhibitor and atorvastatin exert greater efficacy than estrogen on attenuating brain pathology and learning deficit in obesity with estrogen-deprived condition” at The Alzheimer's Association International Conference 2021, Denver, Colorado
10. Pantiya P, **Thonusin C**, Ongnok B, Chunchai T, Sumneang N, Chattipakorn N, Chattipakorn SC. “The Predictive Effect of Cardiorespiratory Fitness (CRF) on Brain Aging in Normal Condition Versus Obesity-Induced Premature Aging” at The Alzheimer's Association International Conference 2021, Denver, Colorado
11. Huang L, **Thonusin C**, Luewan S, Thongsong T, Chattipakorn N, Chattipakorn SC. “Gut Dysbiosis at the Time of Diagnosis with Gestational Diabetes Mellitus (GDM) Is an Indicator of Insulin Therapy” at 81<sup>st</sup> Scientific Sessions of American Diabetic Association, Virtual meeting
12. **Thonusin C**, Pantiya P, Sumneang N, Sriwichaiin S, Chattipakorn N, Chattipakorn SC. “The Effect of Exercise Capacity on Metabolic and Cardiac Aging in Normal and Obese Rats” at 81<sup>th</sup> Scientific Sessions of American Diabetic Association, Virtual meeting

13. **Thonusin C**, Arunsak B, Amput P, Palee S, Pratchayasakul W, Chattipakorn N, Chattipakorn SC. “Comparative Effects of Atorvastatin, a Proprotein Convertase Subtilisin/Kexin Type 9 Inhibitor (PCSK9i), and Estrogen on Oxidative Muscle Mitochondria in a Rat Model of Obesity with Menopause” at 80<sup>th</sup> Scientific Sessions of American Diabetic Association, Virtual meeting
14. **Thonusin C**, Arunsak B, Amput P, Palee S, Pratchayasakul W, Chattipakorn N, Chattipakorn SC. “Comparative Effects of PCSK9 Inhibitor and High-Dose Atorvastatin on Mitochondria of Red Muscle Fibers in Obese Female Rats” at 79<sup>th</sup> Scientific Sessions of American Diabetic Association, San Francisco, California
15. **Thonusin C**, Arunsak B, Amput P, Palee S, Pratchayasakul W, Chattipakorn N, Chattipakorn SC. “Effects of PCSK9 inhibitor and atorvastatin on mitochondria of red muscle fibers in obesity” at 9<sup>th</sup> Federation of the Asian and Oceanian Physiological Societies Congress, Kobe, Japan
16. IglayReger HB, **Thonusin C**, Evans CR, Parker CA, LaBarre JL, Miller NM, Rothberg AE, Burant CF. “Effects of statins on VO<sub>2</sub>peak and plasma metabolomics profiles in obese individuals. at The American Society for Metabolic & Bariatric Surgery (ASMBS) meeting 2018, Nashville, Tennessee
17. **Thonusin C**, IglayReger HB, Treutelaar MK, Rothberg AE, Evans CR, Burant CF. “Effect of Intrinsic Oxidative Capacity (VO<sub>2</sub>max) on Mitochondrial DNA and Metabolite Levels in Human Skeletal Muscle” at 77<sup>th</sup> Scientific Sessions of American Diabetic Association, San Diego, California
18. **Thonusin C**, IglayReger HB, Rothberg AE, Evans CR, Burant CF. “Effects of Intrinsic Oxidative Capacity (VO<sub>2</sub>max) and Weight Loss on Age-Related Changes in Plasma Metabolite Levels” at 76<sup>th</sup> Scientific Sessions of American Diabetic Association, New Orleans, Louisiana