

Curriculum Vitae

1. Name and Last name

(Thai) ผู้ช่วยศาสตราจารย์ ดร.นवलพรรณ ศิริบุญพงศ์

(English) Asst. Prof. Dr. Nualpun Sirinupong

2. Academic position

Research lecturer

3. Working Address

Center of Excellence in Functional Foods and Gastronomy,
Functional Food and Nutrition Program, Agro-Industry
Faculty, Prince of Songkla University, Hat Yai, 90112

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4. Education

- Ph.D (Biochemistry) Prince of Songkla University Thailand 2004
- B.Ed (Organic chemistry) Srinakharinwirot University (Songkla) Thailand 1996

5. Professional Training

- Postdoctoral Fellow: Wayne State University School of Medicine 2007-2011
Research Area: Structural Biochemistry
Major projects: Structures and functions of histone methyltransferases SmyD family

6. Technical expertise

- Biochemistry and Molecular Biology: Gene cloning, protein expression and purification including techniques: PCR, Site-directed mutagenesis, FPLC, GST pull down, western blot, electrophoresis, chromatography, and other biochemical/ biophysical methods
- Bioinformatics: Blast, multiple sequence alignment, phylogenetic analysis, sequence profile search.
- Nutrigenomic and proteomic approach and biological activity of functional food/ingredients by *in vitro* animal cell model.
- System Administration: Windows

7. Positions & Employment

- Research Lecturer, Center of Excellence in Functional Foods and Gastronomy, Functional Food and Nutrition Program, Faculty of Agro-Industry, Prince of Songkla University, Hat-Yai, Songkla, Thailand, 2012-Present
- Research Associate, Department of Biochemistry and Molecular Biology, School of Medicine, Wayne State University, Detroit, MI, USA, 2007-2012
- Scientists, Synchrotron application division, Synchrotron Light Research Institute, Nakhonratchasima, Thailand, 2006-2007

- Lecturer, Thaksin University, Department of Chemistry, Songkla, Thailand, 2004-2006

9. Main field of scientific interests

- Biological activity of functional foods and ingredients by *in vitro* animal cell model.
- Nutrigenomics and proteomic approach in nutraceuticals, functional foods, and ingredients.

10. Publications

1. Siripongvutikorn, S., Pumethakul, K., Yupanqui, CT., Seechamnaturakit, V., Detarun, P., Utaipan, T., Sirinupong, N., Chansuwan, W., Wittaya, T. and Samakradhamrongthai, RS. (2024). Antioxidant and Nitric Oxide Inhibitory Activity of the Six Most Popular Instant Thai Curries. *Foods* 2024, 13, 178. <https://doi.org/10.3390/foods13020178>.
2. Laosee, W., Kantachote, D., Chansuwan, W. and Sirinupong, N. (2022). Effects of Probiotic Fermented Fruit Juice-Based Biotransformation by Lactic Acid Bacteria and *Saccharomyces boulardii* CNCM I-745 on Anti-Salmonella and Antioxidative Properties. *Journal of Microbiology and Biotechnology*, (ISI SCIE, IF=3.277, Scopus Q2), 32(10), 1315-1324, <https://doi.org/10.4014/jmb.2206.06012>
3. Renaldi, G., Sirinupong, N., and Samakradhamrongthai, R. S. (2022). Effect of extraction pH and temperature on yield and physicochemical properties of gelatin from Atlantic salmon (*Salmo salar*) skin. *Agriculture and Natural Resources*, TCI Q4, 56 (2022) 687–696. Journal homepage: <http://anres.kasetsart.org>, <https://doi.org/10.34044/j.anres.2022.56.4.03>
4. Renaldi, G., Junsara, K., Jannu, T., Sirinupong, N., and Samakradhamrongthai, R. S. (2022). Physicochemical, textural, and sensory qualities of pectin/gelatin gummy jelly incorporated with *Garcinia atroviridis* and its consumer acceptability. *International Journal of Gastronomy and Food Science*, (ISI Q3, IF=3.194, Scopus Q1), 28, 1-7, <https://doi.org/10.1016/j.ijgfs.2022.100505>.
5. Sirinupong, N., Chansuwan, W. and Kaewkaen, P. (2021). Hydrolase-treated royal jelly attenuates H₂O₂- and glutamate-induced SH-SY5Y cell damage and promotes cognitive enhancement in a rat model of vascular dementia. *International Journal of Food Science*, (ISI-ESCI, Scopus Q2, Cite score=3.3). 2021, 1-11. <https://doi.org/10.1155/2021/2213814>.
6. Suwaluk R., Chansuwan W., Sirinupong N., Chinachoti P. (2021). Biological Properties of Peptide Released by in-vitro Stimulated Digestion of Cooked Meats. *Journal of Food and Nutrition Research*, (ISI SCIE, Scopus Q2), 9(2), 87-95. <https://doi.org/10.12691/jfnr-9-2-5>
7. Laosee, W., Kantachote, D., Chansuwan, W., Thongraung, C., and Sirinupong, N. (2021). Anti-salmonella potential and antioxidant activity of fermented fruit-based juice by lactic acid bacteria and its biotransformation. *Functional Foods in Health and Disease*, (ISI-ESCI, Scopus Q3), 11(8), 368-384.

8. Keawyok, K., Sirinupong, N. and Wichienchot, S. (2020). Nutritionally complete formula fortified with isomalto- oligosaccharide for hemodialysis patients. *Functional Foods in Health and Disease*, (ISI-ESCI, Scopus Q3), 10(7), 290-304.
9. Chansuwan, W., Khamyhae, M., Yang, Z. and Sirinupong, N. (2020). Hydrolase-treated royal jelly attenuates LPS-induced inflammation and IgE-antigen-mediated allergic reaction. *Functional Foods in Health and Disease*, (ISI-ESCI, Scopus Q3), 10(3), 127-142.
10. Khamyhae, M., Kanokwiroon, K., Chansuwan, W. and Sirinupong, N. (2020). Evaluation on antioxidative capacity, nephroprotective effect, and DNA damage protection of mixed low potassium vegetables and fruits juice powder in HEK-293 cells. *Functional Foods in Health and Disease*, (ISI-ESCI, Scopus Q3), 10(3), 111-126
11. Kasiwut, J., Youravong, W. and Sirinupong, N. (2019). Angiotensin I-converting enzyme inhibitory peptides produced from tuna cooking juice hydrolysate by continuous enzymatic membrane reactor. *Journal of Food Biochemistry* (ISI SCIE, Scopus Q2), 1(1), 1-9.
12. Buaduang, N., Chansuwan, W., Hutadilok-Tawatana, N., Yang, Z. and Sirinupong, N. (2019). Tilapia protein hydrolysate enhances transepithelial calcium transport in Caco-2 cells. *Functional Foods in Health and Disease*, (ISI-ESCI, Scopus Q3), 9(10), 678-694.
13. Budseekoad, S., Yupanqui, C.Y., Sirinupong, N., Alashi, A., Aluko, R. and Youravong, W. (2018). Structural and functional characterization of calcium and iron-binding peptides from mung bean protein hydrolysate. *Journal of Functional Foods*. 49, 333-341.
14. Jirawadee Kasiwut, Nualpun Sirinupong and Wirote Youravong. The Anticoagulant and Angiotensin I-Converting Enzyme (ACE) Inhibitory Peptides from Tuna Cooking Juice Produced By Alcalase. *Current Nutrition & Food Science*, 13, 1-10 (2018)
15. Mantaka Thuanthong, Cristian De Gobba, Nualpun Sirinupong, Wirote Youravong and Jeanette Otte. Purification and characterization of angiotensin- converting enzyme-inhibitory peptides from Nile tilapia (*Oreochromis niloticus*) skin gelatine produced by an enzymatic membrane reactor. *Journal of Functional Food*, 36, 243-254 (2017)
16. Spellmon, S., Sun, X., Xue, W., Holcomb, J., Chakravarthy, S., Shang, W., Edwards, B., Sirinupong, N., Li, C. and Yang, Z. New open conformation of SMYD3 implicates conformational selection and allostery. *AIMS Biophys*; 4(1): 1–18. doi:10.3934/biophy. 2017.1.1 (2017)
17. Thuanthong, M., Sirinupong, N. and Youravong, W. Triple helical structure of acid-soluble collagen derived from Nile tilapia skin as affected by extraction temperature. *J Sci Food Agric*. 96, 3795–3800 (2016)
18. Sirinupong, N. and Yang, Z. Epigenetics in Cystic Fibrosis: Epigenetic Targeting of a Genetic. *Current Drug Targets*, 16, 1-12 (2015)
19. Spellmon, N., Holcomb, J., Trescott, LR., Sirinupong, N. and Yang, Z. Structure and Function of SET and MYND Domain-Containing Proteins. *International Journal of Molecular Sciences* ISSN 1422-0067. 16, 1406-1428; doi:10.3390/ijms16011406 (2015)

20. Spellmon, N., Sun, X., Sirinupong, N., Edwards, B., Li, C. and Yang, Z. Molecular Dynamics Simulation Reveals Correlated Inter-Lobe Motion in Protein Lysine Methyltransferase SMYD2. *PLoS ONE*, 10(12): e0145758 (2015)
21. Sirinupong, N. and Yang, Z. Bioactive Food Components as Dietary Intervention for Cystic Fibrosis. *Curr Drug Targets*. Nov 22. (2015)
22. Rice, M., Jiang, Y., Holcomb, J., Trescott, LR., Spellmon, N., Sirinupong, N. and Yang, Z. SMYD2 Structure and Function: A Multispecificity Protein Lysine Methyltransferase. *Journal of Cytology & Molecular Biology*, Vol.10; 1(2): 7 (2014)
23. Tauntong, M., Sirinupong, N., and Youravong, W. Effect of Pre-Hydrolysis by Alcalase on Enzymatic Membrane Reactor Performance in Production of Low Molecular Weight Peptide from Nile Tilapia Skin Gelatin. *Kasetsart J. (Nat. Sci.)* 48, 929 - 941 (2014)
24. Jiang, Y., Wang, S., Holcomb, J., Trescott, L., Guan, X., Hou, Y., Brunzelle, J., Sirinupong, N., Li, C., Yang, Z. Crystallographic analysis of NHERF1-PLC β 3 interaction provides structural basis for CXCR2 signaling in pancreatic cancer. *Biochemical and Biophysical Research Communication*. *Biochem Biophys Res Commun*, Vol.446(2):638-43 (2014)
25. Holcomb, J., Jiang, Y., Lu, G., Trescott, L., Brunzelle, J., Sirinupong, N., Li, C., Naren, AP., Yang, Z., Structural Insights into PDZ-mediated Interaction of NHERF2 and LPA2, a Cellular Event Implicated in CFTR Channel Regulation. *PlosOne*, *Biochemical and Biophysical Research Communications*, Vol.446(1): 399-403 (2014)
26. Jiang, Y., Lu, G., Trescott, L., Hou, Y., Guan, X., Wang, S., Stamenkovich, A., Brunzelle, J., Sirinupong, N., Spaller, M., Li, C., Yang, Z., New Conformational State of NHERF1-CXCR2 Signaling Complex Captured by Crystal Lattice Trapping. *PLoS One* 8(12): e81904 (2013)
27. Lu, G., Wu, Y., Jiang, Y. Wang, S., Hou, Y., Guan, X., Brunzelle, J., Sirinupong, N., Sheng, S., Li, C., Yang, Z. Structural Insights into Neutrophilic Migration Revealed by the Crystal Structure of the Chemokine Receptor CXCR2 in Complex with the First PDZ Domain of NHERF1. *PLoS One* 8(10): e76219 (2013)
28. Charoenphun, N., Cheirsilp, B., Sirinupong, N. & Youravong, W. Calcium-binding peptides derived from tilapia (*oreochromis niloticus*) protein hydrolysate. *Eur Food Res Technol*, doi:DOI 10.1007/s00217-012-1860-2 (2012).
29. Suwanmanee, P., Sirinupong, N. and Suvachittanont, W. Regulation of 3-hydroxy-3-methylglutaryl-CoA synthase and 3-hydroxy-3-methylglutaryl-CoA reductase and rubber biosynthesis of *Hevea brasiliensis* (B.H.K.) Mull. Arg. *Isoprenoid Synthesis in Plants and Microorganisms*. pp 315-327 Published by Springer Verlagm (2011)
30. Jiang, Y., Sirinupong, N., Brunzelle, J., Doko, E. and Yang, Z. Crystal structures of histone and p53 methyltransferase SmyD2 reveal a conformational flexibility of the autoinhibitory C-terminal domain. *PLoS One* 6(6): e21640 (2011)
31. Sirinupong, N., Brunzelle, J., Doko, E. and Yang, Z. Structural insights into the autoinhibition and posttranslational activation of histone methyltransferase SmyD3. *J Mol Biol* 406: 149-159 (2011).

32. Sirinupong, N., Brunzelle, J., Ye, J., Pirzada, A., Nico, L. and Yang, Z. Crystal structure of cardiac-specific histone methyltransferase SmyD1 reveals unusual active site architecture. *J Biol Chem* 285: 40635-40644 (2010).
33. Pattanasiriwisawa, W. , Sirinupong, N. , Suwanmanee, P. , Daengkanit, C. and Siritapetawee, J. An attempt to analyze the bark disease in *Hevea brasiliensis* using X-ray absorption near-edge spectroscopy. *J. of Synchrotron Rad* 16: 622-627 (2009)
34. Sirinupong, N., Suwanmanee, P., Doolittle, R.F. and Suvachittanont, W. Molecular cloning of a new cDNA and expression of 3-hydroxy-3-methylglutaryl CoA synthase gene from *Hevea brasiliensis*. *Planta* 221:502-512 (2005)
35. Suwanmanee, P., Sirinupong, N. and Suvachittanont, W. Regulation of the expression of 3-hydroxy 3-methylglutaryl CoA synthase gene in *Hevea brasiliensis* B.H.K) Mull. Arg. *Plant Science* 166: 531-537 (2003)

11. Presentations

1. Nualpun Sirinupong, Joseph Brunzelle, Ernada Doko, Zhe Yang. Structural insights into the regulation of histone methyltransferase SmyD3: hinge motion control of posttranslational activation. **ASBMB annual meeting**, Washington DC, USA, 2011
2. Nualpun Sirinupong, Joseph Brunzelle, Jun Ye, Ali Pirzada, Lindsey Nico, and Zhe Yang. Cardiac Specific Histone Methyltransferase SmyD1 with Unusual Active Site Architecture. **American Crystallographic Association annual meeting**, Chicago, MI, USA, 2010.
3. Nualpun Sirinupong, Joseph Brunzelle, Jun Ye and Zhe Yang. Histone Methyltransferase SmyD1 with Unusual Active Site Architecture. **Ohio Valley Crystallography Symposium**, Toledo, MI, USA, 2010.
4. Nualpun Sirinupong, Plueng Suwanmanee, and Wallie Suvachittanont. Expression of 3-hydroxy 3-methylglutaryl CoA synthase and reductase gene in *Hevea brasiliensis* (B.H.K.) Mull. Arg. **ASBMB meeting**, Birmingham, England, 2001

12. Selected projects 2019-2024

Project leader

1. Neuroprotective and cognitive enhancement of bioactive royal hydrolysate in animal model of vascular dementia and application as functional ingredient in sorbate ice cream for elderly, 2019, Agricultural Research Development Agency (ARDA)
2. Functional Honey-Fruit Synbiotics Beverage Consisting of Cellular Anti-Aging Properties, 2020, National Research council of Thailand, Innovative house.
3. Hypoallergenic property test of hydrolysate royal jelly in animal, 2021, Agricultural Research Development Agency (ARDA)
4. Study on efficiency and safety of botanical galactogogues product derived from Thai herbs, 2021, Program Management Unit for Competitiveness (PMUC)

5. Prototype development of functional food for elderly from *Gnetum gnemon* Linn., 2022, Fundamental Fund: fiscal year 2022 by National Science Research and Innovation Fund (NSRF)
6. Effects of plant protein on muscle cell growth and cytoprotective in cultured muscle cell model, 2022, Fundamental Fund: fiscal year 2022 by National Science Research and Innovation Fund (NSRF)
7. Neuroprotective and cognitive enhancing of bioactive peptides derived from edible's bird nest in Alzheimer cells model and animal model of vascular dementia, 2022, Fundamental Fund: fiscal year 2022 by National Science Research and Innovation Fund (NSRF)
8. Production of functional synbiotic beverages from honey-fruit juices in pilot scale and its potential on intestinal barrier regulation in culture cell model, 2023, National Research council of Thailand, Innovative house.
9. Effect of active peptide from fish paste (Keil-pla) on antioxidative activity and intestinal permeability regulation in cell culture models, 2024, Fundamental Fund: fiscal year 2024 by National Science Research and Innovation Fund (NSRF).

Co-Researcher

1. Production of functional ingredients from Sangyod rice for commercial use: Pilot case of Sangyod rice, 2021, Program Management Unit for Competitiveness (PMUC).
2. Effects of Edible bird nest (EBN) soup on sarcopenia preventing in elderly people in animal cultured cell model, 2022, Fundamental Fund: fiscal year 2022 by National Science Research and Innovation Fund (NSRF)
3. Biological activity and development of curry paste for functional foods, 2022, Fundamental Fund: fiscal year 2022 by National Science Research and Innovation Fund (NSRF)
4. Study and development of southern Thai food for functional health claims, 2023, Program Management Unit for Competitiveness (PMUC).
5. Effect of peptides derived from fish paste (Keil-pla) on dipeptidyl-peptidase IV inhibitory properties in cell culture model, 2024, Fundamental Fund: fiscal year 2024 by National Science Research and Innovation Fund (NSRF).