

Asst.Prof.Dr.Niphawan Panti

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Education

2021 **Ph.D. (Advanced Life Sciences/Biotechnology)**
Department of Biotechnology, College of Life sciences, Ritsumeikan University, Shiga, Japan

2017 **M.Sc. (Applied Microbiology)**
Department of biology, Faculty of Science, Chiang Mai University, Chiang Mai, Thailand

2014 **B.Sc. (Microbiology)**
Department of biology, Faculty of Science, Chiang Mai University, Chiang Mai, Thailand

Scholarships

2017-2021 Innovative Asia (Japan International Cooperation Agency)

2015-2017 Research and Researchers for Industries (Thailand Research Fund) in collaboration with Work for Health Society Co., Ltd.

Grants

2025 CMU Young Researcher Grant 2025 (Research leader)

2025 Fundamental Fund 2025 (Research collaborators)

2024 Fundamental Fund 2024 (Research collaborators)

2022 CMU Young Researcher Grant 2022 (Research leader)

2021 AGRO CMU Young Researcher Grant 2021 (Research leader)

Previous research

Genetic engineering & enzyme technology

- Performed genetic modification and recombinant dna technology in microorganisms to synthesize recombinant alpha-1,3-glucanase enzymes
- Applied recombinant enzymes in the formulation of innovative oral care products
- Conducted 3D protein structure analysis to understand molecular functions and improve enzymatic efficiency

Functional food & beverage innovation

- Developed and optimized fermentation processes for kombucha and kefir using local plants and herbs aimed at enhancing consumer health and wellness

Current research

- Investigating the fermentation of medicinal plants and agricultural by-products using microbial biotechnology to create high-value bioactive compounds.
- Optimizing extraction processes to derive potent ingredients for applications in cosmetics and dietary supplements.

Career experiences

- Research and Development, Amerz Co., Ltd., Thailand (April 2021 – August 2021)

Consulting and product development for entrepreneurs

- 2025 - Developing upcycled food and beauty products under the SUSTAININDUSTRY project, a transformation of industry towards sustainable growth, as part of the annual operational plan of the Upper Northern Thailand 1 provincial cluster (3 businesses)
- 2025- Chiang Mai World Class Wellness City (5 businesses)
- 2025 - Innovative Entrepreneurial Network Development for SEZs and Economic Corridors (SEZEC) (5 businesses)
- 2023 - Lampang innovative entrepreneurs (4 businesses)

Publication

1. **Panti, N.**, Sirilun, S., Kumsab, J., Yingchutrakul, Y., & Sawangrat, K. (2025). Recombinant expression and characterization of N-terminal 43-amino acid deleted human apolipoprotein A-I (apoA-IΔ43) and reconstitution of high-density lipoprotein nanoparticle. *NLSC*, 4(4), E2025074.
2. Chomphoosee, T., Seesuriyachan, P., Wattanutchariya, W., Tipbunjong, C., Therdtatha, P., Insomphun, C., **Panti, N.** & Moukamnerd, C. (2025). A novel beverage of coffee cherry (cascara) water kefir rich in antioxidants, bioactive compounds, and exhibiting promising antibacterial and sensory qualities. *LWT*, 219, 117539.
3. **Panti, N.**, Therdtatha, P., Doungta, S., Saenkam, S., Seesuriyachan, P., Rachtanapun, P., & Sawangrat, K. (2024) Microbiological and Biochemical Characterization, and Sensory Evaluation of Dragon Blood Tea Kombucha.
4. Sawangrat, K., Therdtatha, P., Pundee, A., Seesuriyachan, P., & **Panti, N.** (2024). Development of New Functional Beverage: Longan Kefir Supplemented with Herbs. *Current Applied Science and Technology*, e0259608-e0259608.
5. **Panti, N.**, Cherdvorapong, V., Itoh, T., Hibi, T., Suyotha, W., Yano, S., and Wakayama, M. (2021). Functional analysis of α -1,3-glucanase domain structure from *Streptomyces thermodiastaticus* HF3-3. *Journal of General and Applied Microbiology*. 67, 85-97.
6. Itoh, T., **Panti, N.**, Hayashi, J., Toyotake, Y., Matsui, D., Yano, S., Wakayama, M. and Hibi, T. (2020). Crystal structure of the catalytic domain of thermostable GH87 α -1,3-glucanase from *Streptomyces thermodiastaticus* strain HF3-3. *Biochemical and Biophysical Research Communications*, 533, 1170-1176.

7. Cherdvorapong, V., **Panti, N.**, Suyotha, W., Tsuchiya, Y., Toyotake, Y., Yano, S., and Wakayama, M. (2020). Prevention of oral biofilm formation and degradation of biofilm by recombinant α -1, 3-glucanases from *Streptomyces thermodiastaticus* HF3-3. *Journal of General and Applied Microbiology*, 66, 256-264.

Academic Conferences

1. **Panti, N.**, Kaewyabut, Y., and Sawangrat, K. Biochemical, Microbiological, and Sensory Profiles of Flower Kombucha A Comparative Study of Jasmine, Rose, and Butterfly Pea. The 7th International Conference on Food and Applied Bioscience 2024, 7th -8th February 2024. (Oral presentation)
2. **Panti, N.**, Cherdvorapong, V., Suyotha, W., Takagi, K., Yano, S., Junji, H. and Wakayama, M. Structure and Function of α -1,3-Glucanase from *Streptomyces thermodiastaticus* HF3-3. The International Conference on Enzymology and Molecular Biology, Berlin, Germany, 6th -7th December 2019. (Poster presentation)
3. **Panti, N.**, Cherdvorapong, V., Suyotha, W., Takagi, K., Yano, S., Junji, H. and Wakayama, M. Domain structure and function of α -1,3-Glucanase from *Streptomyces thermodiastaticus* HF3-3. The 71st Annual Meeting of the Society of Biotechnology of Japan (SBJ), Okayama, Japan, 16th-18th September 2019. (Oral presentation)
4. **Panti, N.**, Cherdvorapong, V., Suyotha, W., Takagi, K., Yano, S., Junji, H. and Wakayama, M. Characterization recombinant of α -1,3-glucanase from *Streptomyces thermodiastaticus* HF3-3. The International Conference on Biotechnology and Bioengineering, Budapest, Hungary, 24th -26th October 2018. (Poster presentation)