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# CONTENTS

# List of Publications for 2024: FUJIYAMA Kazuhito

1. Kim, M. S., Tanaka, Y., Kajiura, H., Misaki, R., and Fujiyama, K. (2025). Optimization of the culture medium for an iron-sensitive oleaginous yeast, *Rhodotorula toruloides* NBRC 0559, through functional iron deficiency. FEMS Yeast Res. **25**: foaf002.

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1. Tanaka, T., Sugiyama, R., Sato, Y., Kawaguchi, M., Honda, K., Iwaki, H., and Okano, K. (2024). Precise microbiome engineering using natural and synthetic bacteriophages targeting an artificial bacterial consortium. *Front Microbiol* **15**:1403903.

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specific antibodies. *Journal of Bioscience and Bioengineering* **138(2)**: 127-136. DOI:10.1016/j.jbiosc.2024.05.008

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# List of Publications for 2024: AOKI Wataru

1. Kosaka, Y., Miyawaki, Y., Mori, M., Aburaya, S., Nishizawa, C., Chujo, T., Niwa, T., Miyazaki, T., Sugita, T., Fukuyama, M., Taguchi, H., Tomizawa, K., Sugase, K., Ueda, M., and Aoki, W. (2025). Autonomous ribosome biogenesis *in vitro*. *Nature Communications* **16(1)**: 514.

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# List of Publications for 2024: KURISU Genji

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# List of Publications for 2024: Choowong AUESUKAREE

1. Limcharoensuk, T., Chusuth, P., Utaisincharoen, P., and Auesukaree, C. (2024). Protein quality control systems in the endoplasmic reticulum and the cytosol coordinately prevent alachlor-induced proteotoxic stress in *Saccharomyces cerevisiae*. *J. Hazard. Mater.* **471**: 134270.

2. Kerdsomboon, K., Techo, T., Mhuantong, W., Limcharoensuk, T., Luangkamchorn, S. T., Laoburin, P., and Auesukaree, C. (2024). Genomic and transcriptomic analyses reveal insights into cadmium resistance mechanisms of *Cupriavidus nantongensis* strain E324. *Sci. Total Environ.* **952**: 175915.

3. Buranasudja, V., Sanookpan, K., Vimolmangkang, S., Binalee, A., Mika, K., Krobthong, S., Kerdsomboon, K., Kumkate, S., Poolpak, T., Kidhakarn, S., Yang, K. M., Limcharoensuk, T., and Auesukaree, C. (2024). Pretreatment with aqueous *Moringa oleifera* Lam. leaf extract prevents cadmium-induced hepatotoxicity by improving cellular antioxidant machinery and reducing cadmium accumulation. *Heliyon.* **10(18)**: e37424.

4. Wang, X. Q., Yuan, B., Zhang, F. L., Liu, C. G., Auesukaree, C., and Zhao, X. Q. (2024). Novel roles of the greatwall kinase Rim15 in yeast oxidative stress tolerance through mediating antioxidant systems and transcriptional regulation. *Antioxidants (Basel).* **13(3)**: 260.

# List of Publications for 2024: Pannida KHUNNAMWONG

1. Khunnamwong, P., Jindamorakot, S., Am-In, S., Sakpuntoon, V., Srisuk, N., Nutaratat, P., Boontham, W. and Limtong, S. (2024). *Savitreea siamensis* sp. nov., an ascomycetous yeast species in the family *Saccharomycetaceae* discovered in Thailand. *Int. J. Syst. Evol. Microbiol.*

2. Gungprakhon, P., Khammeankea, M., Limtong, S., and Khunnamwong, P. (2025). *Vishniacozyma siamensis* sp. nov., a new anamorphic tremellomycetous yeast species isolated from a mangrove forest in Thailand. *Int. J. Syst. Evol. Microbiol.* **75**: 006623.

3. Khunnamwong, P., Nualthaisong, P., Kingphadung, K., Takashima, M., Sugita, T., Sumerta, I. N., Kanti, A., Kawasaki, H. and Limtong, S. (2025). *Rhodotorula tropicalis* sp. nov., a novel red yeast of the order Sporidiobolales isolated from Thailand, Indonesia and Japan. *Int. J. Syst. Evol. Microbiol.* **75**: 006701.

# List of Publications for 2024: Wanchai ASSAVALAPSAKUL

1. Angsujinda, K., Kitchanakan, P., Daewang, N., Chintapitaksakul, L., Wanganurakkul, S., Chaiyo, S., Khongchareonporn, N., Mahony, T. J., and Assavalapsakul, W. (2025). Evaluation of recombinant extracellular enveloped virion protein candidates for the detection of serological responses to lumpy skin disease virus in cattle. *Vet Q.* **45(1)**:1-13.

2. Suksai, S., Attasart, P., Angsujinda, K., Zhang, B., Xu, Z, P., Mitter, N., Mahony, T. J., and Assavalapsakul, W. (2025). Delivery of virus-specific dsRNA using a composite nanomaterial improves the protection of shrimp (*Litopenaeus vannamei*) against yellow head virus challenge. *Aquaculture* **595**: 741570.

3. Peala, W., Kitchanakan, P., Khongchareonporn, N., Angsujinda, K., Sittidech, A., Wanganurakkul, S., Chintapitaksakul, L., Suea-Ngam, A., Wang, S. F., Kunpatee, K., Chaiyo, S., and Assavalapsakul, W. (2024). Paper-based electrochemical immunosensor for highly sensitive detection of chicken anemia virus. *Talanta* **272**: 125820.

# List of Publications for 2024: Onruthai PINYAKONG

1. Muangchinda, C. and Pinyakong, O. (2024). Enrichment of LDPE-degrading bacterial consortia: Community succession and enhanced degradation efficiency through various pretreatment methods. *Scientific Reports* **14**: 28795. https://doi.org/10.1038/s41598-024-80306-4

2. Naloka, K., Kuntaveesuk, A., Muangchinda, C., Chavanich, S., Viyakarn, V., Chen, B., and Pinyakong, O. (2024). *Pseudomonas* and *Pseudarthrobacter* are the key players in synergistic phenanthrene biodegradation at low temperatures. *Scientific Reports* **14(1)**: 11976. https: 10.1038/s41598-024-62829-y

3. Ningthoujam, R. and Pinyakong, O. (2024). Exploring di (2-ethylhexyl) phthalate degradation by a synthetic marine bacterial consortium: Genomic insights, pathway and interaction prediction, and application in sediment microcosms. *Journal of Hazardous Materials* **472**: 134557. https://doi.org/10.1016/j.jhazmat.2024.134557

4. Saeng-kla, K., Mhuantong, W., Termsaithong, T., Pinyakong, O., and Sonthiphand, P. (2025). Biodegradation of di-2-ethylhexyl phthalate by mangrove sediment microbiome impacted by chronic plastic waste. *Marine Biotechnology* **27**: 19. https://doi.org/10.1007/s10126-024-10399-5

# List of Publications for 2024: Kannika DUANGMAL

1. Thanompreechachai, J., Butdee, W., Chantavorakit, T., Suriyachadkun, C., and Duangmal, K. (2025). *Kineococcus halophytocola* sp. nov., isolated from leaves of halophyte *Sesuvium portulacastrum* L. *Curr Microbiol.* **82(2)**: 92. doi: 10.1007/s00284-025-04069-5

2. Butdee, W., Saimee, Y., Suriyachadkun, C., and Duangmal, K. (2025). *Pseudonocardia spirodelae* sp. nov., isolated from duckweed and formal proposal to reclassify *Pseudonocardia antarctica* as a later heterotypic synonym of *Pseudonocardia alni* and reclassify *Pseudonocardia carboxydivorans* as *Pseudonocardia alni* subsp. *carboxydivorans*. *Int J Syst Evol Microbiol.* **75(1)**. doi: 10.1099/ijsem.0.006608.

3. Chantavorakit, T., Thanompreechachai, J., Suriyachadkun, C., and Duangmal, K. (2024). *Klenkia sesuvii* sp. nov., isolated from leaves of halophyte *Sesuvium portulacastrum*. *Int. J. Syst. Evol. Microbiol.* **74(6)**: 006410. https://doi.org/10.1099/ijsem.0.006410

# List of Publications for 2024: Nujarin JONGRUJA

1. Rukying, N., Ajingi, Y. S., Sombuttra, N., Duangkeaw, P., Jiddah, N. U., Ruengvisesh, S., Euanorasetr, J., Rattanarojpong, T., Pason, P., Angsuthanasombat, C., and Jongruja, N. (2025). Functional Characterization of a Novel Heat-stable Recombinant LCI Bacteriocin. *Appl Food Biotechnol.* **12 (1)**: e12. http://dx.doi.org/10.22037/afb.v12i1.47824

2. Jiddah, N. U., Ajingi, Y. S., Rukying, N., Rattanarojpong, T., Suntornsuk, W., Pason, P., and Jongruja, N. (2024). Synergistic effects of recombinant AGAAN antimicrobial peptide with organic acid against foodborne pathogens attached to chicken meat. *Appl Food Biotechnol.* **11 (1)**: e21. http://dx.doi.org/10.22037/afb.v11i1.44981

3. Phrutpoom, N., Khaokhiew, T., Linn, A. K., Sakdee, S., Imtong, C., Jongruja, N., and Angsuthanasombat, C. (2024). Efficient Production and Purification of Bioactive E50-52-Class IIa Peptidic Bacteriocin Is Achieved through Fusion with the Catalytic Domain of Lysostaphin-Class III Bacteriocin. *Biochemistry Moscow.* **89(9)**: 1610-1618. https://doi.org/10.1134/S0006297924090074

# List of Publications for 2024: NGUYEN Thanh Hoa

1. Nguyen, H. T., Nguyen, T. T., Do, H. T., Bui, L. V. K., Nguyen, T. A., Nguyen, H. T., and Tran, T. T. (2025). Hydrogel Based on Cellulose and Mangosteen Rind Extract With Antibacterial Activity: Preparation and Characterization. *Biopolymers*. https://doi.org/10.1002/bip.70024

2. Nguyen, T. T., Mai, T. H. N., Nguyen, T. T., Nguyen, T. H., and Truong, Q. P. (2024). Isolation and Characterization of a Specific Bacteriophage for *Vibrio parahaemolyticus* Causing Acute Hepatopancreatic Necrosis Disease in Shrimp. *National Conference on Biotechnology 2024*. https://huib.hueuni.edu.vn/wp-content/uploads/2024/10/43.pdf

3. Duong, D. L., Nguyen, T. M., Le, T. H. Y., Le, S. P. A., and Nguyen, T. H. (2024). Evaluation of Probiotic and Antibacterial Properties of *Lactobacillus plantarum* Strains D3 and D5. *National Conference on Biotechnology 2024*. https://huib.hueuni.edu.vn/wp-content/uploads/2024/10/MFE34.pdf

4. Le, P. L., Ho, T. Q., Le, T. H. Y., Le, S. P. A., and Nguyen, T. H. (2024). Isolation, Selection of Lactic Acid Bacteria Strains and Evaluation of Anti-*Candida albicans* Activity. *National Conference on Biotechnology 2024*. https://huib.hueuni.edu.vn/wp-content/uploads/2024/10/MFE33.pdf

# List of Publications for 2024: Francisco B. ELEGADO

1. Zapater, J. E. I., Elegado, F. B., Suministrado, M. K. C., Merca, F. E., Aguila, M. J. B., Fernando-Corpuz, L. M. and Alocilja, E. C. (2025). *Hyperinvasive locus* A gene-based electrochemical nanobiosensor for rapid detection of Salmonella enterica in chicken eggshell matrices. *Food Research* **9(3)**: 303-311.

2. Dumandan, N. G., Raiz, C. J. B., Kagaoan, A. C. T., Labitag, L. J. F., Conejos, J. R. V., Elegado, F. B. Hizon-Fradejas, A. B., Abrera, A. T., and Arreolaa, S. L. B. (2025). Tannic acid degradation potential and biochemical characterization of *Paenibacillus lautus* BCA501 isolated from the gut of Silver therapon (*Leiopotherapon plumbeus*). *Process Biochemistry* **156**: 236-243.

3. Guno Jr., F. J., Mopera, L., Santiago, D. M., Francisco Elegado, F., and Galeon, P. (2025). Optimization of biocomposite taro (Colocasia esculenta (L.) Schott) starch and Aloe vera (Aloe barbadensis (L.) Burm.f.) gel based film-using response surface methodology. *International Journal of Biological Macromolecules* **305**: 140960.

4. Botthoulath, V., Dalmacio, I. F., and Elegado, F. B. (2024). Physico-chemical and functional properties of the lao fermented bamboo shoots (*Nor Mai Som*) inoculated with potential probiotic bacteria, *Pediococcus pentosaceus* BBS1 and *Lactiplantibacillus plantarum* BBS13. *Food Chemistry Advances* **5**: 100803.

# List of Publications for 2024: Neung TEAUMROONG

1. Wangthaisong, P., Piromyou, P., Songwattana, P., Phimphong, T., Songsaeng, A., Pruksametanan, N., ... and Teaumroong, N. (2024). CopG1, a Novel Transcriptional Regulator Affecting Symbiosis in *Bradyrhizobium* sp. SUTN9-2. *Biology* **13(6)**: 415.

2. Maikhunthod, B., Chaipayang, S., Jittmittraphap, A., Thippornchai, N., Boonchuen, P., Tittabutr, P., Eumkeb, G., Sabuakham, S., Rungrotmongkol, T., Mahalapbutr, P., Leaungwutiwong, P., Teaumroong, N., and Tanthanuch, W. (2024). Exploring the therapeutic potential of Thai medicinal plants: in *vitro* screening and in silico docking of phytoconstituents for novel anti-SARS-CoV-2 agents. *BMC complementary medicine and therapies* **24(1)**: 274.

3. Songsaeng, A., Boonchuen, P., Nareephot, P., Piromyou, P., Wongdee, J., Greetatorn, T., nthaisong, S., Tantasawat, P. A., Teamtisong, K., Tittabutr, P., Sato, S., Boonkerd, N., Songwattana, P., and Teaumroong, N. (2024). Enhancing Resistance to Cercospora Leaf Spot in Mung Bean (*Vigna radiata* L.) through *Bradyrhizobium* sp. DOA9 Priming: Molecular Insights and Bio-Priming Potential. *Plants* **13(17)**: 2495.

4. Kiddee, S., Lakkasorn, N., Wongdee, J., Piromyou, P., Songwattana, P., Greetatorn, T., Teamtisong, K., Boonkerd, N., Saito, S., Teaumroong, N., and Tittabutr, P. (2024). Improving Inoculum Production of Arbuscular Mycorrhizal Fungi in Zea mays L. Using Light-Emitting Diode (LED) Technology. *Agronomy* **14(10)**: 2342.

5. Piromyou, P., Pruksametanan, N., Nguyen, H. P., Songwattana, P., Wongdee, J., Nareephot, P., Greetatorn, T., Teamtisong, K., Tittabutr, P., Boonkerd, N., Sato, S., Boonchuen, P., Okazaki, S., and Teaumroong, N. (2024). NopP2 effector of *Bradyrhizobium elkanii* USDA61 is a determinant of nodulation in *Vigna radiata* cultivars. *Scientific Reports* **14 (1)**: 24541. DOI: 10.1038/s41598-024-75294-4

6. Chandakhiaw, T., Teaumroong, N., Piromyou, P., Songwattana, P., Tanthanuch, W., Tancharakorn, S., and Khumkoa, S. (2024). Efficiency of *Penicillium* sp. and *Aspergillus* sp. for bioleaching lithium cobalt oxide from battery wastes in potato

dextrose broth and sucrose medium. *Results in Engineering* **24**: 103170. DOI: 10.1016/j.rineng.2024.103170

7. Aphaiso, B., Piromyou, P., Boonchuen, P., Songwattana, P., Wongdee, J., Greetatorn, T., Teamtisong, K., Camuel, A., Tittabutr, P., Boonkerd, N., Giraud, E., and Teaumroong, N. (2024). A new type III effector from *Bradyrhizobium* sp. DOA9 encoding a putative SUMO-protease blocks nodulation in *Arachis hypogaea* L. *Scientific Reports* **14 (1)**: 31646. DOI: 10.1038/s41598-024-78913-2

8. Kondo, T., Sibponkrung, S., Tittabutr, P., Boonkerd, N., Ishikawa, S., Teaumroong, N., and Yoshida, K. I. (2025). *Bacillus velezensis* S141 improves the root growth of soybean under drought conditions. *Bioscience, Biotechnology, and Biochemistry* **89(2)**: 304-312.

9. Inthaisong, S., Boonchuen, P., Jaichopsanthia, T., Songwattana, P., Khairum, A., Chueakhunthod, W., Tharapreuksapong, A., Tittabutr, P., Teaumroong, N., and Tantasawat, P. A. (2025). Insights into mungbean defense response to Cercospora leaf spot based on transcriptome analysis. *Scientific Reports* **15(1)**:1334. doi: 10.1038/s41598-024-84787-1.

10. Phiwthong, T., Limkul, S., Aunkam, P., Seabkongseng, T., Teaumroong, N., Tittabutr, P., and Bunchuen, P. (2025). Quaking RNA-Binding protein (QKI) mediates circular RNA biogenesis in *Litopenaeus vannamei* during WSSV infection. *Fish & Shellfish Immunology*: 110178.

11. Greetatorn, T., Boonchuen, P., Piromyou, P., Songwattana, P., Wongdee, J., Teamtisong, K., Boonkerd, N., Sato, S., Teaumroong, N., and Tittabutr, P. (2025). Differential responses of *Bradyrhizobium* sp. SUTN9-2 to plant extracts and implications for endophytic interactions within different host plants. *Sci Rep* **15**: 3154. https://doi.org/10.1038/s41598-025-87488-5

12. Limkul, S., Phiwthong, T., Wanvimonsuk, S., Seabkongseng, T., Aunkam, P., Jaree, P., Luangtrakul, W., Mahanil, K., Teamtisong, K., Tittabutr, P., Teaumroong, N., Sarnow, P., Wang, H.-C., Somboonwiwat, K., and Boonchuen, P. (2025). Viral circular RNA–encoded protein, ceVP28, divulges an antiviral response in

invertebrates. *Proceedings of the National Academy of Sciences* **122(8)**: e2321707122.

13. Phiwthong, T., Limkul, S., Aunkam, P., Seabkongseng, T., Teaumroong, N., Tittabutr, P., and Boonchuen, P. (2025). Quaking RNA-Binding protein (QKI) mediates circular RNA biogenesis in *Litopenaeus vannamei* during WSSV infection. *Fish & Shellfish Immunology* **159**: 110178.

14. Limkul, S., Phiwthong, T., Wanvimonsuk, S., Seabkongseng, T., Aunkam, P., Jaree, P., Luangtrakul, W., Mahanil, K., Teamtisong, K., Tittabutr, P., Teaumroong, N., Sarnow, P., Wang, H.-C., Somboonwiwat, K., and Boonchuen, P. (2025). Viral circular RNA–encoded protein, ceVP28, divulges an antiviral response in invertebrates. *Proc. Natl. Acad. Sci. U.S.A.* **122 (8)**: e2321707122. https://doi.org/10.1073/pnas.2321707122

# List of Publications for 2024: Zhen-Ming CHI

1. Tint, K. M. M., Wei, X., Wang, P., Liu, G.-L., Zhang, M., Chi, Z.-M., and Chi, Z. (2024). Biotechnological application of *Aureobasidium* spp. as a promising chassis for biosynthesis of ornithine-urea cycle-derived bioproducts. *Critical Reviews in Biotechnology* **19**: 1-15.

2. Hansali, K., Wang, P., Zha, S.-F., Wang, P., Ma, Z.-C., Chi, Z., and Chi, Z.-M. (2024). Overexpression of the pullulan synthetase gene enhanced pullulan production and its molecular weight by a mutant of *Aureobasidium melanogenum* P16. *International Journal of Biological Macromolecules* **282**: 137013.

3. Chi, Z., Wei, X., Ge, N., Jiang, H., Liu, G.-L., and Chi, Z.-M. (2024). NsdD, a GATA-type transcription factor is involved in regulation and biosynthesis of macromolecules melanin, pullulan, and polymalate in *Aureobasidium melanogenum*. *International Journal of Biological Macromolecules* **268**: 131820.

4. Wang, P., Chen, H., Wei, X., Liu, G.-L., Chi, Z., Jiang, B., and Chi, Z.-M. (2024). Efficient calcium fumarate overproduction from xylose and corncob-derived xylose by engineered strains of *Aureobasidium pullulans* var. *aubasidani* DH177. *Microbial Cell Factories* **23**: 327.

5. Wang, P., Zhang, M., Zhao, S.-F., Zhang, Z.-R., Liu, G.-L., Chi, Z., and Chi, Z.-M. (2024). Liamocins overproduction via the two-pH stage fermentation and anti-*Aspergillus flavus* activity of Massoia lactone. *Biotechnol. J.* **19**: 2300675.

6. Wei, X., Zhao, S.-F., Liu, G.-L., Chi, Z., and Chi, Z.-M. (2024). The role of the acetyl-glutamate cycle in fumarate biosynthesis through L-ornithine supply via the ornithine-urea cycle in *Aureobasidium pullulans* var. *aubasidani*. *Food Bioscience* **61**: 104853.

7. Zhang, M., Wei, X., Wang, P., Chi, Z., Liu, G.-L., and Chi, Z.-M. (2024). Liamocin biosynthesis is induced by an autogenous host acid activation in *Aureobasidium melanogenum*. *Biotechnol. J.* **19**: 2200440.

# List of Publications for 2024: Khanok RATANAKHANOKCHAI

1. Eat, S., Wulansari, W., Prattana, P., Rattiya, W., Patthra, P., Ayaka, U., Akihiko, K., Ratanakhanokchai, K., and Tachaapaikoon, C. (2024). A novel cellobiose 2-epimerase from anaerobic halophilic *Iocasia fonsfrigidae* and its ability to convert lactose in fresh goat milk into epilactose. *Journal of the Science of Food and Agriculture* **104**: 8529-8540. https://doi:org/10.1002/jsfa.13680

2. Baramee, S., Thianheng, P., Uke, A., Cheawchanlertfa, P., Tachaapaikoon, C., Waeonukul, R., Pason, P., Ratanakhanokchai, K., Liu, Y.-J., and Kosugi A. (2024). Extracytoplasmic polysaccharides control cellulosomal and non-cellulosomal systems in *Herbivorax saccincola* A7. *Applied Microbiology and Biotechnology* **108**: 477. https://doi.org/10.1007/s00253-024-13310-3

3. Nhim, S., Baramee, S., Tachaapaikoon, C., Pason, P., Ratanakhanokchai, K., Uke, A., Ceballos, R. M., Kosugi, K., and Waeonukul, W. (2024). Effective semi-fed-batch saccharification with high lignocellulose loading using co-culture of *Clostridium thermocellum* and *Thermobrachium celere* strain A9. *Frontiers in Microbiology* **15**: 1519060. https://doi.org/10.3389/fmicb.2024.1519060

4. Phitsuwan, P., Salaipeth, L., and Ratanakhanokchai, K. (2024). Microbial and enzymatic strategy for the treatment of toxic aromatic compounds. *Advances in Applied Microbiology* **130**. https://doi.org/1016/bs.aambs.2023.11.001

5. Sooklim, C., Paemanee, A., Ratanakhanokchai, K., Wiwatratana, D., and Soontorngun, N. (2025). Integrated omic analysis of new flavor yeast strain in fermented rice milk. *FEMS Yeast Research* **25**: foaf017. https://doi.org/10.1093/femsyr/foaf017

6. Fatmawati, N. V., Singkhala, A., Ketbot, P., Baramee, S., Waeonukul, R., Tachaapaikoon, C., Uke, A., Kosugi, A., Ratanakhanokchai, K., and Pason, P. (2025). Non-catalytic domains of glycoside hydrolase family 5 from *Paenibacillus curdlanolyticus* are important for promoting multifunctional enzyme activities and degradation of agricultural residues. *Journal of Microbiology and Biotechnology* **35**: e2501046. https://doi.org/10.4014/jmb.2501.01046

# List of Publications for 2024: Connie F. Cañete-GIBAS

1. Max, A., Glasgow, H. L., Santiago, T. C. B., Holland, A., Inaba, H., Cañete-Gibas, C. F., Wiederhold, N. P., Hayden, R. T., and Adderson. E. E. (2024). *Choanephora infundibulifera* Rhinosinusitis in Man with Acute Lymphoblastic Leukemia, Tennessee, USA. Emerging infectious diseases 30(6): 1245-1248. https://wwwnc.cdc.gov/eid/

2. Theophilopoulos, J., King, R., Citta, A., Alford, C., Dotson, N., Cañete Gibas, C., Sanders, C., Wiederhold, N., Ligon, J. A., and Trieu C. (2024). *Cutaneous Lagenidium Deciduum* Infection in a Patient with Relapsed Acute Myeloid Leukemia. *BMC Infectious Diseases* **24**: 515. DOI: 10.1186/s12879-024-09281-5

3. Black, A., Wiertek, M., Ferguson, S., Wycislo, K., Rayhel, L., Reid, H., Wiederhold, N., and Cañete-Gibas, C. (2024). Case Report: Localized Coloproctitis Caused by Novel *Basidiobolus Arizonensis* in a Dog. *Frontiers in Veterinary Science* **11**: 1427496. https://doi.org/10.3389/fvets.2024.1427496

4. Lambert, J. R., Cheng, A. C., Lee, L. M., Raiford, D., Zuber, E., Kilbane, E., Eric J. Fish, E. J., Cañete-Gibas, C. et al. (2024). Intra-Abdominal Nocardiosis and Scedosporiosis in a Dog: Case Report and Literature Review. *Journal of Veterinary Diagnostic Investigation* **37(1)**: 189-198. https://doi.org/10.1177/10406387241287799

5. Jaffey, J. A., Cañete-Gibas, C. F., Wiederhold, N. P., Sanders, C. J., Struthers, J. D., Black, A., Wu, B., Thomas, K. S., Bennett, P., and Watt, J. (2024). Novel *Curvularia* species causing disseminated phaeohyphomycosis in a dog. *Topics in Companion Animal Medicine* **64**: 100939. https://doi.org/10.1016/j.tcam.2024.100939

6. Ransom, E. M., Wallace, M. A., Wiederhold, N. P., Cañete-Gibas, C, and Burnham, C.-AD. (2025). Evaluation of two MALDI-TOF MS systems and extraction methods for identification of filamentous fungi recovered from clinical specimens. *J Clin Microbiol.* **63(2)**: e0154824. doi: 10.1128/jcm.01548-24. Epub 2025 Jan 14. PMID: 39807897; PMCID: PMC11837564.

7. Levy, I., Wiederhold, N., Cañete-Gibas, C., and Mans, C. (2025). Oral osteomyelitis and gingivitis caused by Fusarium epipeda is challenging to treat in the bearded dragon (Pogona vitticeps). *J Am Vet Med Assoc.* **263(5)**: 1-4. doi: 10.2460/javma.24.12.0774. PMID: 39938205.

# List of Publications for 2024: Naeem RASHID

1. Naz, Z., Rathore, I., Saleem, M., Rahman, M., Wlodawer, A., and Rashid, N. (2025). A bifunctional Phosphoglucomutase/Phosphomannomutase from *Thermococcus kodakarensis*: Biophysical Analysis and cryo-EM Structure. *Biomolecules* **15**: 319. https://doi.org/10.3390/biom15030319

2. Naz, Z., Lubkowski, J., Saleem, M., Rahman, M., Wlodawer, A., and Rashid, N. (2024). Biophysical Characterization of a Novel Phosphopentomutase from the Hyperthermophilic Archaeon *Thermococcus kodakarensis*. *Int. J. Mol. Sci.* **25**: 12893. https://doi.org/10.3390/ijms252312893

3. Khalid, H. M., Zaidi, N. u. S. S., Rashid, N., and Tahir, M. (2024). Development of an immunodiagnostic assay for the detection of Sugarcane mosaic virus. *Turk. J. Biol.* **48**: 390-400. doi:10.55730/1300-0152.2714

4. Sania, A., Muhammad, M. A., Sajed, M., Ahmad, N., Aslam, M., Tang, X.-F., and Rashid, N. (2024). Engineering Tk1656, a highly active L-asparaginase from *Thermococcus kodakarensis*, for enhanced activity and stability. *Int. J. Biol. Macromol.* **281**: 136442. https://doi.org/10.1016/j.ijbiomac.2024.136442

5. Sania, A., Sajed, M., and Rashid, N. (2024). Looking into the thermostable archaeal L-asparaginases. *Biologia.* **79**: 3637–3648. https://doi.org/10.1007/s11756-024-01801-7

6. Shaeer, A., Aroob, I., Aslam, M., Azim, N., and Rashid, N. (2024). Investigating recombinant manganese-catalases from *Geobacillus thermopakistaniensis* for sustainable and eco-friendly textile processing. *Int. J. Environ. Sci. Technol.* https://doi.org/10.1007/s13762-024-06072-y

7. Maqsood, A., Shakir, N. A., Aslam, M., Rahman, M., and Rashid, N. (2024). Structural and Functional investigations of Pcal_0606, a bifunctional phosphoglucose/ phosphomannose isomerase from *Pyrobaculum calidifontis*. *Int. J. Biol. Macromol.* **279**: 135127. https://doi.org/10.1016/j.ijbiomac.2024.135127

8. Sania, A., Muhammad, M. A., Sajed, M., Azim, N., Ahmad, N., Aslam, M., Tang, X.-F., and Rashid, N. (2024). Structural and functional analyses of an L-asparaginase from *Geobacillus thermopakistaniensis. Int. J. Biol. Macromol.* **263**: 130438. doi.org/10.1016/j.ijbiomac.2024.130438

# List of Publications for 2024: Hai YAN

1. Song, M., Xu, Q., Raka, R. N., Yin, C., Liu. X., and Yan, H. (2025). Detection of *Cereibacter azotoformans*-YS02 as a Novel Source of Coenzyme Q10 and Its Metabolic Analysis. *Antioxidants* **14(4)**: 429. DOI: 10.3390/antiox14040429

2. Cao, X., Xu, Q., Zhang, Y., and Yan, H. (2025). From Isolation to Pilot-Scale Production: *Enterococcus faecium* YC07 with Urate-Lowering Potential from Fermented Food Jiangshui. *Foods* **14(12)**: 2076. DOI: 10.3390/foods14122076.

3. Sheng, P., Xu, Q., Zhang, K., Cao, X., Du, X., Lin, K., and Yan, H. (2025). Biodegradation of Cholesterol by *Cellulosimicrobium cellulans* YS01 Isolated from the Gut of Healthy Individuals. *Microorganisms* **13(7)**: 1451. DOI: 10.3390/microorganisms13071451

4. Zhang, Y., Cao, X., Cai, J., Song, M., Du, X., Liu, Y., Xu, Q., and Yan, H. (2025). Genome analysis of a newly isolated *Lysinibacillus fusiformis*–YC01 for biodegrading inosine and guanosine. *Biodegradation* **36**: 21. DOI: 10.1007/s10532-025-10117-5.

5. Cao, X., Zhang, Y., Xu, Q., and Yan, H. (2025). Genome Analysis and In Vitro Assay of Probiotic Properties of *Bacillus paranthracis* YC03 with Urate-Lowering Potential. *Microorganisms* **13(4)**: 798. DOI: 10.3390/microorganisms13040798.

6. Cao, X., Zhang, Y., Xu, Q., and Yan, H. (2025). Whole-genome analysis of *Bacillus paranthracis* YC06 isolated from healthy individual feces for biodegrading inosine and guanosine. *BMC Microbiology* **25**: 335. DOI: 10.1186/s12866-025-04063-8.

7. Wang, J., Wang, Z., Liu, C., Song, M., Xu, Q., Liu, Y., and Yan, H. (2024). Genome analysis of a newly isolated *Bacillus velezensis*-YW01 for biodegrading acetaldehyde. *Biodegradation* **35(3)**: 11. DOI: 10.1007/s10532-024-10075-4.

8. Ahmad, S., Ahmad, S., Ali, S., Esa, M., Khan, A., and Yan, H. (2024). Recent Advancements and Unexplored Biomedical Applications of Green Synthesized Ag and Au Nanoparticles: A Review. *International Journal of Nanomedicine* **19**: 3187-3215. DOI: 10.2147/IJN.S453775.

9. Liu, C., Xu, Q., Liu, Y., Song, M., Cao, X., Du, X., and Yan, H. (2024). Metabolomic Analysis of Carotenoids Biosynthesis by *Sphingopyxis* sp. USTB-05. *Molecules* **29(17)**: 4235. DOI: 10.3390/molecules29174235.

10. Ahmad, S., Ahmad, S., Xu, Q., Khan, I., Cao, X., Yang, R., and Yan, H. (2024). Green synthesis of gold and silver nanoparticles using crude extract of *Aconitum violaceum* and evaluation of their antibacterial, antioxidant and photocatalytic activities. *Frontiers in Bioengineering and Biotechnology* **11**: 1320739. DOI: 10.3389/fbioe.2023.1320739.

11. Ahmad, S., Xu, Q., Tariq, M., Song, M., Liu, C., and Yan, H. (2024). Assessing the Potential of *Aconitum Laeve* Extract for Biogenic Silver and Gold Nanoparticle Synthesis and Their Biological and Catalytic Applications. *Molecules* **29(11)**: 2640. DOI: 10.3390/molecules29112640.

# List of Publications for 2024: Dananjeyan BALACHANDAR

1. Naveen, S. and Balachandar, D. (2025). Extracellular polymeric substances of plant-growth-promoting rhizobacteria modulate the positive plant-soil feedback in maize via soil conditioning. *Science of The Total Environment* **975**: 179256.

2. Dakshayini, E., Muthuramu, S., Maragatham, S., Anandham, R., and Balachandar, D. (2025). Rhizosphere Microbiome and Functioning in Alternative Rice Cropping Methods: A Critical Review for Rice Sustainability. *Frontiers in Bioscience-Elite* **17(1)**: 25926.

3. Nunna, S. A. D., and Balachandar, D. (2024). Rhizobacterial Community Structure Differs Between Landrace and Cultivar of Rice Under Drought Conditions. *Current Microbiology* **81(10)**: 334.

4. Adithya, S., Nunna, S. A. D., Chinnadurai, C., and Balachandar, D. (2024). Rhizosphere bacterial diversity and soil biological attributes of rice in different phenological stages and wetland cultivation methods. *Pedosphere* 2024.

5. Mohanapriya, R., Paranidharan, V., Karthikeyan, S., and Balachandar, D. (2024). Assessment of microbial safety of fresh vegetables through *Caenorhabditis elegans* model. *The Microbe* **4**: 100155.

6. Nunna, S. A. D. and Balachandar, D. (2024). Genotype-specificity in putative competitive endophytes modulated by root exudation of rice. *Rhizosphere* **31**: 100940.

7. Mohanapriya, R., Paranidharan, V., Karthikeyan, S., and Balachandar, D. (2024). Surveillance and source tracking of foodborne pathogens in the vegetable production systems of India. *Food Control* **162**: 110427.

8. Ambreetha, S., Zincke, D., Balachandar, D., and Mathee, K. (2024). Genomic and metabolic versatility of Pseudomonas aeruginosa contributes to its inter-kingdom transmission and survival. *Journal of Medical Microbiology* **73(2)**: 001791.

# List of Publications for 2024: Md. Anowar Khasru PARVEZ

1. Parvez, M. A. K., Jubyda, F. T., Ayaz, M., Sarker, A., Haque, N., Khan, M. S., Mou, T. J., Rahman, M. A., and Huq, M. A. (2024). Microbial-and Plant-Derived Bioactive Peptides and Their Applications against Foodborne Pathogens: Current Status and Future Prospects. *International Journal of Microbiology* **2024(1)**: 9978033.

2. Adnan, N., Haq, M. A., Akter, S., Sajal, S. M. S. A., Islam, M. F., Mou, T. J., Jamiruddin, M. R., Jubyda, F. T., Islam, M. S., Tuli, J. F., Liza, S. M., Hossain, S., Islam, Z., Ahmed, S., Khandker, S. S., Hossain, R., Ahmed, M. F., Khondoker, M. U., Azmuda, N., and Parvez, M. A. K. (2024). Antibody Response after Homologous and Heterologous Prime-Boost COVID-19 Vaccination in a Bangladeshi Residential University Cohort. *Vaccines (Basel)* **12(5)**: 482. doi: 10.3390/vaccines12050482. PMID: 38793733; PMCID: PMC11125736

3. Das, S. K., Khan, A. H., Islam, M. S., Alam, N., Nesaruddin, M., Alam, M. J., Rahman, T., Shawon, A. A., Himel, P. R., and Parvez, M. A. K. (2024). Specialized Physiotherapy and Pharmacological Management Strategies in Optimizing Chronic Lower Back Pain Rehabilitation. *Integrative Biomedical Research* **8(5)**: 1-0.

4. Rahman, M. S., Shimul, M. E., and Parvez, M. A. K. (2024). Comprehensive analysis of genomic variation, pan-genome and biosynthetic potential of Corynebacterium glutamicum strains. *Plos one.* **19(5)**: e0299588.

5. Huq, M. A., Nam, K., Rahman, M. S., Rahman, M. M., Parvez, M. A. K., Kang, K. K., and Akter, S. (2024). Nocardioides agri sp. nov., isolated from garden soil. *International Journal of Systematic and Evolutionary Microbiology* **74(6)**: 006407.

6. Das, S. K., Nahid, Z. B., Hossain, M. A., Alam, M. J., Utshab, K. Z., Haque, M. F., Islam, M. R., and Parvez, M. A. K. (2024). Evaluation of Functional Improvement and Community Integration Status among Persons with Spinal Cord Injury after a One-Year Follow-Up in the Community. *Archives of Microbiology and Immunology* **8**: 318-24.

7. Rahman, M. A., Rakib-Uz-Zaman, S. M., Chakraborti, S., Bhajan, S. K., Gupta, R. D., Jalouli, M., Parvez, M. A. K., Shaikh, M. H., Hoque Apu, E., Harrath, A. H., and Moon, S. (2024). Advancements in utilizing natural compounds for modulating autophagy in liver cancer: Molecular mechanisms and therapeutic targets. *Cells* **13(14)**: 1186.

8. Rahman, M. A., Sarker, A., Ayaz, M., Shatabdy, A. R., Haque, N., Jalouli, M., Rahman, M. H., Mou, T. J., Dey, S. K., Hoque Apu, E, Zafar, M. S., and Parvez, M. A. K. (2024). An update on the study of the molecular mechanisms involved in autophagy during bacterial pathogenesis. *Biomedicines* **12(8)**: 1757.

9. Mou, T. J., Mun, R. A., Haque, F., Sharif, N., Kamal, A. K. I., Islam, M. F., Rahman, M. S., Dey, S. K., and Parvez, M. A. K. (2024). Cadmium Resistance and Bioremediation Potential of Bacteria Isolated from Hospital Wastewater Samples of Bangladesh. *Microbiology and Biotechnology Letters* **52(4)**: 416-427. DOI: 10.48022/mbl.2407.07006

10. Mou, T. J., Sumon, S. H., Nupur, N. A., Sharif, N., Islam, M. F., Dey, S. K., and Parvez, M. A. K. (2024). Comprehensive insight on multidrug resistance and virulence genes of ESBL-producing E. coli from different surface water sources in Bangladesh. *Journal of Water and Health* **22(10)**: 1808-25.

11. Das, S. K., Bakhtiar, M., Sabrin, S. M., Curtin, M., Rahman, E., Nahid, Z. B. S., Rahman, Z., Haque, M. F., Patwary, M. F. K., Alam, M. J., Hossain, M. E., Rahman, M. A., Islam, S., Ashfaquzzaman, M., and Parvez, M. A. K. (2024). Relationship between functional independence and community integration of people with spinal cord injury in Bangladesh. *Front Rehabil Sci.* **5**: 1435656. doi: 10.3389/fresc.2024.1435656. PMID: 39723157; PMCID: PMC11668740.

12. Sarker, A., Haque, N., Ayaz, M., Antu, U. S., Mou, T. J., Dey, S. K., and Parvez, M. A. K. (2025). Heavy metal and antibiotic co-resistance in bacteria isolated from poultry samples in Bangladesh: an emerging environmental threat. *J Surg Res.* **8**: 189–201.

# List of Publications for 2024: Floirendo FLORES

1. Tanveer, J., Banerjee, D., Dey, B., Sahu, D., Sivaraman, J., Jarzebski, M., . . . Pal, K. (2025). Selected materials techniques for evaluation of attributes of sourdough bread with Kombucha SCOBY. Reviews on *Advanced Materials Science* **64(1)**. doi:10.1515/rams-2025-0133

2. Labrador, M. L., Jumawan, A. Q., Flores, F. P., Esteban, M. A. S. and Sumague, M. J. V. (2025). Physicochemical characteristics, microbiological quality, and Salmonella spp. detection of commercial broilers sold in Batong Malake public market, Los Baños, Philippines. *Food Research* **9(2)**: 20-31. doi:10.26656/fr.2017.9(2).038

3. Jayme, J. W. O., Jumawan, A. Q., Destura, J. A. A., Flores, F. P., Esteban, M. A. S., and Sumague, M. J. V. (2025). Effect of purchasing time and market stall on the physicochemical characteristics and microbiological quality of broiler breast and thigh sold in a public market within Los Baños, Laguna. *Mindanao Journal of Science and Technology* **23(1)**: 185-207.

4. Flores, F. P. (2025). Advances in microencapsulation of β-carotene: innovating traditional and emerging materials and techniques for enhanced functional properties. *Food Materials Research* **5(1)**: e005. doi:10.48130/fmr-0025-0005

5. Sahu, D., Jayaraman, S., Neelapu, B. C., Flores, F., and Pal, K. (2024). IoT-driven reflectance-based multimode colorimeter for real-time monitoring of crystallization process: A study on oleogels. *Journal of Food Engineering* **383**: 112244. doi:https://doi.org/10.1016/j.jfoodeng.2024.112244

6. Flores, F. P., Cirunay, A. R. T., and Esteban, M. A. S. (2024). Microencapsulation with biopolymers—current/next-generation probiotics and impact of FODMAP materials. In K. Pal, P. Sarkar, & M. Â. Cerqueira (Eds.), A*dvances in Biopolymers for Food Science and Technology* pp. 233-266. MA, United States: Elsevier.

# List of Publications for 2024: Merkuria KARYANTINA

1. Wulansari, A. M., Akhmad Mustofa, A., and Merkuria Karyantina, M. (2024). Characteristics of Donuts with Variations in Soy Flour Substitution (*Glycine max L.*) and Fermentation Time. *Jurnal Agrobiotek* **1(1)**: 1-9. https://ejurnal.unisri.ac.id/index.php/Agro/article/view/9818/5552

2. Wibowowati, S. A., Karyantina, M., and Akhmad Mustofa, A. (2024). Physicochemical and Organoleptic Characteristics of Snack Bars Combination of Red Bean Flour (*Phaseolus vulgaris* L.) and Rice Bran Flour with Variation of Roasting Time. *Jurnal Agrobiotek* **1(1)**: 29-41. https://ejurnal.unisri.ac.id/index.php/Agro/article/view/9849/5555

3. Setiyarini, I., Nur'aini, V., and Karyantina, M. (2024). Physicochemical Analysis of Subtitution Sus Cake Wheat Flour with Mocaf in AVarariation of Peanut FlourAnalisis. *Jurnal Agrobiotek* **1(1)**. https://ejurnal.unisri.ac.id/index.php/Agro/article/view/9824/5557

4. Karyantina, M., Surulloh, A., and Suhartatik, N. (2024). Antioxidant activity kombucha coffee (Coffee spp) with variation concentration and type. *BIO Web of Conferences* **99**: 02009. DOI: https://doi.org/10.1051/bioconf/20249902009 https://www.bio-conferences.org/articles/bioconf/pdf/2024/18/bioconf_icafes2024_02009.pdf https://www.bio-conferences.org/articles/bioconf/abs/2024/18/bioconf_icafes2024_02009/bioconf_icafes2024_02009.html

5. Dewi, M. S. T., Husnun, F., Karyantina, M., and Widanti, Y. A. (2024). Characteristics of margarine based on VCO (*Virgin Coconut Oil*) with the addition of white guava leaf extract (*Psidium guajava L.*). *BIO Web of Conferences* **99**: 02008 *ICAFES 2023*. https://doi.org/10.1051/bioconf/20249902008 https://www.bio-conferences.org/articles/bioconf/pdf/2024/18/bioconf_icafes2024_02008.pdf

6. Yahya, A. P. S., Karyantina, M., Suhartatik, N. (2024). Effect of Stabilizer anda Moringa Leaves Concentration on Dragon Fruit Velva. *Agrobiotek* **1(2)**: 64-73. https://ejurnal.unisri.ac.id/index.php/Agro/article/view/11733/5923, DOI: https://doi.org/10.33061/agrobiotek.v1i2.11733

7. Mahmudah, S. R., Widanti, Y. A., and Karyantina, M. (2024). Karakteristik Fisikokimia dan Organoleptik Velva dengan Variasi Jenis Ubi Jalar (*Ipomea batatas*)dan Penambahan Ekstrak Bunga Kecombrang (*Etlingera elatior*). *Agrobiotek* **1(2)**: 140-148. https://ejurnal.unisri.ac.id/index.php/Agro/article/view/9817/5932 DOI: https://doi.org/10.33061/agrobiotek.v1i2.9817

8. Rahmawati, M. D., Mutofa, A., and Karyantina, M. (2024). Karakteristik Kimia dan Organoleptik Nugget ikan layur dan layang benggol dengan fortifikasi Tepung daun kelor. *Agritekno* **13(2)**: 202-209. ISSN 2620-9721 https://ojs3.unpatti.ac.id/index.php/agritekno/article/view/13044/9329 DOI: https://doi.org/10.30598/jagritekno.2024.13.1.202

9. Rejerusalem, P. GA. R., Nuraini,V., Karyantina, M. (2024). Karakteristik Naget Ikan dengan Bahan Pengisi Tepung Tapioka dan Tepung Wortel (*Daucus carota* L). *Agrobiotek* **1(2)**: 103-110. https://ejurnal.unisri.ac.id/index.php/Agro/article/view/9826/5927 DOI: https://doi.org/10.33061/agrobiotek.v1i2.9826

10. Wibowowati, S. A., Karyantina, M., and Mustofa, A. (2024). Physicochemical and organoleptic characteristics of snack bars combination of red bean flour and rice bran flour with variation of roasting time. *Agrobiotek* **1(1)**: 29-41. https://ejurnal.unisri.ac.id/index.php/Agro/article/view/9849/5555 DOI: https://doi.org/10.33061/agrobiotek.v1i1.9849

11. Setyarini, I., Nuraini, V., and Karyantina, M. (2024). Physicochemichal Analysis of Substitution Sus Cake Wheat Flour with Mocaf in a Variation of Peanut Flour. *Agrobiotek* **1(1)**: 42-50. https://ejurnal.unisri.ac.id/index.php/Agro/article/view/9824/5601 DOI: https://doi.org/10.33061/agrobiotek.v1i1.9824

12. Andini, M., Karyantina, M., and NJuraini, V. (2024). Variation of sago flour and tapioca starch in carrot fortified mackarel susages. *Jitipari* **9(2)**:130-140. https://ejurnal.unisri.ac.id/index.php/jtpr/article/view/8650/5888 DOI: https://doi.org/10.33061/jitipari.v9i2.8650

13. Karyantina, M., Pramesti, G. D., and Wulandari, Y. W. (2025). Karakteristik sosis berbahan dasar jamur tiram putih dan tahu serta penambahan tepung kacang merah. *Agrointek* **19(1)**: 114-123. ISSN 2527-5410 https://journal.trunojoyo.ac.id/agrointek/article/view/20005/pdf https://doi.org/10.21107/agrointek.v19i1.20005

# ACTIVITIES OF ICBiotech

# ACTIVITIES OF INTERNATIONAL CENTER FOR BIOTECHNOLOGY FOR FY 2024

The International Center for Biotechnology (ICBiotech) was founded in April 1995 as an independent institute in The University of Osaka with a mission to pursue academic advancement and collaborative research in biotechnology. ICBiotech has its origin from the "International Center of Cooperative Research Center in Microbial Engineering Japan (ICME)" which was established in the Faculty of Engineering, Osaka University in April 1978, through renaming to "International Center of Cooperative Research in Biotechnology (ICBiotech)" in April 1985 with the recognition of the wide acceptance and success of ICME's activities and achievements.

ICBiotech is dedicated to promote international cooperation among Asian countries in the aspects of research and educational advancement in the field of Biotechnology by propelling academic interactions in Asian countries, and is committed to industrial biotechnology studies by means of microbial engineering and related sciences, focusing on the sustainable utilization of abundant natural resources in Southeast Asian countries.

ICBiotech has serveed as the seat of education and research in Asia, with the support of the Ministry of Education, Culture, Sports, Science and Technology (Monbu-kagaku-sho, MEXT), the Japan Science and Technology Agency (JST), the Japan Student Service Organization (JASSO) the Japan International Cooperation Agency (JICA), and other related funding agencies, in cooperation with the Department of Biotechnology, Graduate School of Engineering, The University of Osaka, as well as researchers from prestigious universities nationwide and abroad.

In 2002 Cooperative Research Station (CRS) in Southeast Asia and Mahidol University-Osaka University Collaborative Research Center for Bioscience and Biotechnology (MU-OU:CRC) were set up at Faculty of Science, Mahidol University in Thailand as a collaborative research center to accomplish multidisciplinary research in the field of Bioscience and Biotechnology.

The activities of the ICBiotech include:

1. Research and Education

The main area of research is industrial biotechnology rooted in microbial engineering, whilst centering on the sustainable use of agricultural and forest resources in bioresource-rich countries such as those in Southeast Asia. Research is underway in the field of cell engineering with the objectives of analyzing the cellular functions of bacteria, fungi and plants, and developing and using functions of these cells for management and rational use of biological resources that exist on our planet. ICBiotech covers three areas of Bio-technology:

1) Discovery of new functions from biological resources.
2) Bio-conversion and process engineering of biological resources.
3) Conservation of biological resources.

For undergraduate and post graduate courses, ICBiotech is involved in the education activities of Department of Biotechnology, Graduate School of Engineering as collabo-rating laboratories and currently covers several fields of biotechnology in education and research: Applied Microbiology Laboratory chaired by Prof. FUJIYAMA Kazuhito and

Molecular Microbiology laboratory chaired by Prof. HONDA Kohsuke.

2. Participating in FrontierLab@OsakaU 'Scientific Empowerment Program for International Students' which was created for international students to conduct thematic studies and achieve results under the guidance of supervisors while acquiring skills necessary for continuing research in one of The University of Osaka's internationally renowned science and technology laboratories for a period of up to 12 months.
3. Acting as collaborating laboratories with Department of Biotechnology, Graduate School of Engineering, The University of Osaka for 'Biotechnology' and 'Industry-University Co-Creation'. The aim of this program is to expose graduate students (privately financed as well as the Japanese Government Scholarship students) to state-of-the-art research skills and in-depth knowledge of advanced biology to harness the potential of biotechnology.
4. Promoting international cooperative researches in biotechnology with the Southeast Asian countries related to biotechnology. In addition, ICBiotech cooperates in developing international organization and conducting academic seminars related to biotechnology.
5. Implementing Student Exchange Program with the support of JASSO. Under the program, graduate students of The University of Osaka are sent to Thai four universities for a field study program named "Global Leadership Development Program for Driving the Bioeconomy", and graduate students of Thailand and ASEAN countries are invited to The University of Osaka for lab study programs named "Japan-ASEAN Program for Developing Bridge-Building Talent in Bio-Manufacturing", all for about 5 weeks.
6. Inviting Asian students through Sakura Science Plan (SAKURA SCIENCE Exchange Program) of JST to introduce and offer experiences in Japanese science and technology. By exchanging ideas among the participants, the Plan aims to support the development of talented people overseas who have the potential to contribute to innovation in science and technology and support continuous interaction between Japan and other countries; to promote globalization of Japanese education and research institutes; to strengthen good relationship between Japan and other countries.
7. Implementation of international collaborative research with RWTH Aachen, Germany, supported by the JSPS International Leading Research Program. Implementation of student exchange programs with Bielefeld University, Germany, supported by the Erasmus+ Program.
8. Implementing Plant Biotech Program with the University of California, Davis, that enhances cooperation between the two universities to promote healthy and sustainable planet by exploring the intersectionality of biology and engineering.
9. Promoting ASEAN Campus Project organized by The University of Osaka that aims at contributing to "Quality Growth" and the development of high-level global human resources for the next generation in ASEAN countries and Japan.
10. Periodical publishing of Annual Reports of ICBiotech.

## STEERING COMMITTEE

| | |
|---|---|
| Chairman | Prof. FUJIYAMA Kazuhito (Director of ICBiotech) |
| Committee Members | Prof. HONDA Kohsuke (International Center for Biotechnology) |
| | Prof. ARAI Masayoshi (Graduate School of Pharmaceutical Sciences) |
| | Prof. FUKUSAKI Eiichiro (Graduate School of Engineering) |
| | Prof. WATANABE Hajime (Graduate School of Engineering) |
| | Prof. TOBISU Mamoru (Graduate School of Engineering) |
| | Prof. UMAKOSHI Hiroshi (Graduate School of Engineering Science) |
| | Prof. IIDA Tetsuya (Research Institute for Microbial Diseases) |
| | Prof. KURISU Genji (Institute for Protein Research) |

## STAFF

| | |
|---|---|
| Director/Professor | Dr. FUJIYAMA Kazuhito |
| Professor | Dr. HONDA Kohsuke |
| Adjunct Professor | Dr. IKE Michihiko (Division of Sustainable Energy and Environmental Engineering, Grad. School of Engineering, The University of Osaka) |
| Collaborative Professor | Dr. Watanalai PANBANGRED (Mahidol University, Thailand) |
| | Dr. Irfan Dwidya PRIJAMBADA (Universitas Gadjah Mada, Indonesia) |
| | Dr. Raymond L. RODRIGUEZ (University of California-Davis, USA) |
| | Dr. Choowong AUESUKAREE (Mahidol University, Thailand) |
| | Dr. Jochen BUECHS (Former Professor for Biochemical Engineering, Faculty of Mechanical Engineering, RWTH Aachen University, Germany) |
| Guest Professor | Dr. SEKI Tatsuji (Prof. Emer., The University of Osaka) |
| | Dr. ISHINO Yoshizumi (Kyushu University) |
| | Dr. TAKEGAWA Kaoru (Kyushu University) |
| | Mr. ASAI Hiroaki (President & CEO, GlyTech, Inc.) |
| | Dr. KITANI Shigeru (Aoyamagakuin University) |
| Specially Appointed Professor | Dr. MIYAZAKI Kentaro |
| Adjunct Professor | Dr. SUMIMURA Yoshinori (Institute for International Initiatives, The University of Osaka) |
| Associate Professor | Dr. MISAKI Ryo |
| | Dr. TOMITA Hiroya |
| Guest Associate Professor | Dr. FUKUZAWA Noriho (National Institute of Advanced Industrial Science and Tecnology (AIST) Hokkaido) |
| | Dr. OHASHI Takao (Setsunan University |
| Assistant Professor | Dr. KAJIURA Hiroyuki |
| Visiting Academic Staff | Dr. Bungonsiri INTRA<br>(Lecturer, Department of Biotechnology, Faculty of Science, Mahidol University, Thailand)<br>Specially Appointed Lecturer under the Cross-appointment Agreement |
| | Dr. Pannida KHUNNAMWONG<br>(Assistant Professor, Faculty of Science, Kasetsart University, Thailand)<br>Specially Appointed Lecturer under the Cross-appointment Agreement |
| Administrative Official | Ms. ARAKI Megumi |
| | Ms. SHIMOMURA Kyoko |
| Administrative Assistant | Ms. TOMOMATSU Fumiko |
| | Ms. YAMASHITA Keiko |
| | Ms. OHASHI Sumie |
| Technical Assistant | Ms. ITADANI Akiko |

## I. COOPERATIVE RESEARCH STATION (CRS) IN SOUTHEAST ASIA

The ICBiotech, The University of Osaka launched out the Cooperative Research Station (CRS) in Southeast Asia at Chalermprakiat Building, Faculty of Science, Mahidol University in 2002 through the generous support by Mahidol University. The CRS's space and equipments are made available for Southeast Asian and Japanese researchers to undertake cooperative onsite researches on the development of the abundant natural biological and genetic resources and their sustainable utilization in Southeast Asian countries through JSPS core university program (ended in 2005), JST Special Coordination Funds for Promoting Science and Technology (2006-2009) and JSPS Asian CORE Program (2009-2014). The CRS also functioned as a lecturing and research station of the UNESCO International Post-graduate Inter-University program, which The University of Osaka operated in coordination with Thai universities. The CRS is considering support to the alumni of The University of Osaka and provision of university information for recruitment of students for study in The University of Osaka. Moreover, the CRS has become the base for the research at the DDP program with Mahidol University.

Mahidol University (MU) and The University of Osaka together established the Mahidol University-Osaka University Collaborative Research Center (MU-OU:CRC) for Bioscience and Biotechnology at Faculty of Science, Mahidol University in 2002, to strengthen the research cooperation in these fields which are amongst the most active fields of study and research in both universities.

Currently, MU-OU:CRC has coordinated a research projects under the jointly support of National Research Council of Thailand (NRCT), National Center for Genetic Engineering and Biotechnology (BIOTEC) and The Japan Society for the Promotion of Science (JSPS). Researchers from Mahidol University, Chulalongkorn University, Kasetsart University, King Mongkut's University of Technology Thonburi and BIOTEC participate in this project.

CRS is conducting researches on:

1. Identification and characterization of unique enzymes.
2. Screening for bioactive compounds from actinomycetes and related microorganisms, and elucidation of their biosynthetic pathways.
3. Adapting Laboratory Evolution of industrially useful microorganisms.

In addition to above, CRS has been taking care of graduate students of The University of Osaka sent to Thai universities and Thai graduate students sent to The University of Osaka under the JASSO Student Exchange Support Program (details in Chapter III) from FY2011. (For FY2020 and FY2021, this program was cancelled due to COVID-19).

## II. JASSO STUDENT EXCHANGE SUPPORT PROGRAM
### Scholarship for Short Stay/ Short Visit Program (SSSV)

This is a field study program jointly operated with several universities in Thailand and 3 ASEAN countries. In 2024, 24 first year students of the master's course of The University of Osaka was supposed to visit 4 universities in Thailand between August 8 and September 13, and 6 postgraduate students from Thailand, Philippines, and Indonesia was supposed to visit The University of Osaka between September 26 and October 28, 2024, and 5 postgraduate students from Thailand, Indonesia and Vietnam was supposed to visit The University of Osaka between November 15 and December 17, 2024 which enhanced mutual interactions.

## III. JST JAPAN-ASIA YOUTH EXCHANGE PROGRAM IN SCIENCE
### (SAKURA Exchange Program in Science)

Purpose of the Program: Promoting science and technology is a key engine to materialize a bright future of Asia and it is vitally important to enhance the exchange of youths in Asian countries and Japan who will play a crucial role in the field of science and technology. Based on this concept, “Japan-Asia Youth Exchange Program in Science” (SAKURA Exchange Program in Science) is the program for enhancing exchanges between Asia and Japan of the youths who will play a crucial role in the future field of science and technology through the close collaboration of industry-academia-government by facilitating short-term visits of competent Asian youths to Japan. This program aims at raising the interest of Asian youths toward the leading Japanese science and technologies at Japanese universities, research institutions and private companies.

List of Participants (Period: January 26, 2025 – February 1, 2025)

| Country | University |
|---|---|
| Philippines | University of The Philippines Los Banos |
| Philippines | University of The Philippines Los Banos |
| Philippines | University of The Philippines Los Banos |
| Indonesia | Universitas Gadjah Mada,<br>Faculty of Agriculture |
| Malaysia | University of Malaya, Faculty of Science (Biotechnology) |
| Mongolia | National University of Mongolia<br>School of Arts and Sciences |
| Taiwan | National Cheng Kung University<br>Department of Biotechnology and Bioindustry Sciences |

## IV. SCIENTIST EXCHANGES

### *Record of Scientist Exchange (FY2024)*

**From ICBiotech to counterpart countries / From Counterpart countries to ICBiote**

* Please contact us for more information.

## Ⅴ. GUESTS/VISITORS

* Please contact us for more information.

### SEMINARS AND SYMPOSIUMS

| Date | Title | Lecturer/University |
|---|---|---|
| May 9-10, 2024 | MCLS Molecular, Cellular, and Life Sciences 2024<br>"Bio-Molecule Engineering in Life and Natural Sciences for Supporting Sustainable Bio-circular Green Technology" | The University of Osaka, Universitas Airlangga (Indonesia) and Universiti Teknologi Malaysia (Malaysia). |
| May 31, 2024 | Yeast Community in Mangrove Forest and Their Ability to Degrade Bioplastics | Dr. Pannida Khunnamwong<br>Assistant Professor, Faculty of Science, Kasetsart University, Thailand |
| Jul 18, 2024 | Biotechnological Potential of Actinomycetota in Agricultural and Medical Perspectives | Dr. Intra Bungonsiri<br>Lecturer, Department of Biotechnology, Faculty of Science, Mahidol University, Thailand |
| Oct 29, 2024 | Cocoa Biotechnology: Past, Present and Future （First half） Cocoa Biotechnology: Microbiome and Cocobiota（Second half） | Dr. Tawatchai Sumpradit<br>Assoc. Prof., Head of Department of Microbiology and Parasitology, Faculty of Medical Science, Naresuan University, Thailand |
| Dec 4, 2024 | Glycan-mediated molecular interactions of microorganisms | Professor TAKEGAWA Kaoru<br>Kyushu University, Guest Professor of ICBiotech |
| Jan 20, 2025 | History of CRISPR Research and Discovery of Novel CRISPR-Cas from Environmental DNA | Professor Emeritus ISHINO Yoshizumi<br>Kyushu University, Guest Professor of ICBiotech |
| Jan 24, 2025 | Development of DNA methylation control technology for endogenous plant genes - Aiming to increase production of useful plant secondary metabolites (Japanese only) | Dr. FUKUZAWA Noriho<br>National Institute of Advanced Industrial Science and Tecnology (AIST) Hokkaido, Guest Associate Prof. of ICBitotech |
| Feb 21, 2025 | NSTDA-OSAKA University Collaborative Research on Microbial Products for Industry, Energy and Environment | ENTEC, BIOTEC (NSTDA, Thailand) |

## VII. STEERING COMMITTEE MEETING 2024

Steering Committee Meetings of ICBiotech were convened as follows:

・April 10, 2024: Discussion on:
*Renewal of a contract of Specially Appointed Professor
Dr. MIYAZAKI Kentaro

・October 7, 2024: Discussion on:
*Selection of New Director of ICBiotech
Dr. HONDA Kohsuke (April 1, 2025 – March 31, 2027)

・January 23, 2025: Report on:
*Exchange of professors and students
*Organization of ICBiotech
*Approval of New Director of ICBiotech
Dr. HONDA Kohsuke (April 1, 2025 – March 31, 2027)
*Adjunct professors

Discussion on:
*Replacement of an Evaluation Committee member from
Prof. FUKUSAKI Eiichiro to Prof. OMASA Takeshi
(April 01, 2025 – March 31, 2027)
*Concluding MOU:
・RWTH Aachen University, Germany
・Fac. of Forestry and Environment, IPB University, Indonesia
・School of Chemistry and Life Science, Hanoi Univ. Science and Technology, Vietnam
・Erasmus Program, Bielefeld University, Germany
*Updating MOU:
・Thai Academic Consortium
*Concluding a cross appointment agreement to employ a full-time specially appointed Assistant Professor
Dr. Kamarisima (April 1, 2025-March 31, 2026)
*Concluding a cross appointment agreement to employ a full-time specially appointed Lecturer
Dr. Chutima Kaewkrajay (April 1, 2025-March 31, 2026)
*Conferring the title of Collaborative Professors from abroad for FY2025
Prof. Irfan Dwidya PRIJAMBADA
Prof. Choowong AUESUKAREE
Former Prof. Jochen BUECHS
*Inviting Visiting Professors for FY2025
Emer. Prof. SEKI Tatsuji
Prof. ONAKA Hiroyasu
Mr. ASAI Hiroaki
Prof. KITANI Shigeru
Assoc. Prof. KATO Toshihiko
Assoc. Prof. FUKUZAWA Noriho

Assoc. Prof. Suchada Chanprateep NAPATHORN
Assoc. Prof. NGUYEN Thanh Hoa
Assoc. Prof. OHASHI Takao
*Inviting Visiting Researcher for FY2025
Assit. Prof. Pannida KHUNNAMWONG
*Renewal of a contract of Specially Appointed Professor
Dr. MIYAZAKI Kentaro

・March 4, 2025: Discussion on:
*Approval of Research Assistant remuneration