

CURRICULUM VITAE



Name: Anchalee Tassanakajon

Position: Professor

Education:

1978-1982 B. Sc. (Chemistry), Chulalongkorn University

1982-1984 M. Sc. (Biochemistry), University of Montana, U.S.A.

1984-1987 Ph. D. (Biochemistry), University of Montana, U.S.A.

Position:

2006-Present Professor, Department of Biochemistry, Faculty of Science, Chulalongkorn University

1995-2006 Associate Professor, Department of Biochemistry, Faculty of Science, Chulalongkorn University

1994-1995 Assistant Professor, Department of Biochemistry, Faculty of Chulalongkorn University

1991-1994 Assistant Professor, Department of Biochemistry, Faculty of Medicine Srinakharinwirot University

1988-1991 Lecturer, Department of Biochemistry, Faculty of Medicine Srinakharinwirot University

Areas of Expertise Shrimp Molecular Biology and Genomics

Present Appointment

1. Director of Omics Science and Bioinformatics Center, Faculty of Science, Chulalongkorn University (2016-present)
2. Director of Center of Excellence for Molecular Biology and Genomics of Shrimp, Faculty of Science, Chulalongkorn University (2010-present)

Career Highlight:

1. Head of Biochemistry Department, Faculty of Science, Chulalongkorn University (2012-2015)
2. Director of Center for International Cooperation Promotion, Faculty of Science, Chulalongkorn University (2012-2015)

Honor and Awards:

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| 2016 | Thai Frontier Researcher Awards, from Thompson Reuters and Comission for Higher Education |
| 2012-2018 | TRF Research Scholar |
| 2010 | National Outstanding Researcher Award, from National Research Council of Thailand |
| 2004 | Outstanding Women in Science Fellowship, from L'Oreal (Thailand) joined hands with the Thai National Commission for UNESCO |
| 2003 | Outstanding Technologist Awards, from Foundation of the Promotion of Science and Technology under the Patronage of His Majesty the King |
| 2001 | The National Research Council Prize for Research (Principal-Investigator). |
| 2000 | Taguchi Prize for Outstanding Research Achievements in Field of Biotechnology |
| 1994 | Young Scientist Awards, from Foundation of the Promotion of Science and Technology under the Patronage of His Majesty the King |

Research interest: focuses on applying genome information to study the innate immune system of shrimp and develop a platform for evaluation of shrimp health based on gene expression profiling and to assist selective breeding of disease resistance shrimp.

Recent Publications (2017-present)

1. Jatuyosporn, T., Laohawutthichai, P., Supungul, P., Sotelo-Mundo, R.R., Ochoa-Leyva, A., **Tassanakajon, A.**, Krusong, K. PmAP2- β depletion enhanced activation of the Toll signaling pathway during yellow head virus infection in the black tiger shrimp *Penaeus monodon* Scientific Reports (2021) 11 (1), art. no. 10534.
2. Noothuan, N., Apitanyasai, K., Panha, S., **Tassanakajon, A.** Snail mucus from the mantle and foot of two land snails, *Lissachatina fulica* and *Hemiplecta distincta*, exhibits different protein profile and biological activity. BMC Research Notes (2021) 14 (1), art. no. 138.
3. Singrang, N., Laophetsakunchai, S., Tran, B.N., Matsudaira, P.T., **Tassanakajon, A.**, Wangkanont, K. Biochemical and structural characterization of a recombinant fibrinogen-related lectin from *Penaeus monodon*. Scientific Reports (2021) 11 (1), art. no. 2934.
4. Amparyup, P., Charoensapsri, W., Sophonpong, S., Jearaphunt, M., Wongpanya, R., **Tassanakajon, A.** Stimulator of interferon gene (STING) and interferon regulatory factor (IRF) are crucial for shrimp antiviral defense against WSSV infection. Fish and Shellfish Immunology (2021) 117, pp. 240-247.
5. Oangkhana, P., Amparyup, P., **Tassanakajon, A.**, Preetham, E., Wongpanya, R. Characterization and functional analysis of fibrinogen-related protein (FreP) in the black tiger shrimp, *Penaeus monodon*. Fish and Shellfish Immunology (2021) 109, pp. 87-96.
6. Junprung, W., Supungul, P., **Tassanakajon, A.** Structure, gene expression, and putative functions of crustacean heat shock proteins in innate immunity. Developmental and Comparative Immunology (2021) 115, art. no. 103875.
7. Junprung, W., Supungul, P., **Tassanakajon, A.**, Van Stappen, G., Bossier, P. Balancing selection at the ATP binding site of heat shock cognate 70 (HSC70) contributes to increased thermotolerance in *Artemia franciscana*. Aquaculture (2021) 531, art. no. 735988.
8. Sakunwattana, T., Jaree, P., Rimphanitchayakit, V., **Tassanakajon, A.**, Tharntada, S. Antibacterial and antiproteinase activities of a double whey acidic protein domain-containing protein from *Penaeus vannamei* Boone, 1931 (*Decapoda, Penaeidae*) Crustaceana (2020) 93 (1), pp. 51-69.
9. Janewanthanakul, S., Supungul, P., Tang, S., **Tassanakajon, A.** Heat shock protein 70 from *Litopenaeus vannamei* (LvHSP70) is involved in the innate immune response against white spot syndrome virus (WSSV) infection. Developmental and Comparative Immunology (2020) 102, art. no. 103476.
10. Boonchuen, P., Maralit, B.A., Jaree, P., **Tassanakajon, A.**, Somboonwiwat, K. MicroRNA and mRNA interactions coordinate the immune response in non-lethal heat stressed *Litopenaeus vannamei* against AHPND-causing *Vibrio parahaemolyticus* Scientific Reports (2020) 10 (1), art. no. 787.
11. Thammatinna, K., Egan, M.K.E., Htoo, H.H., Khanna, K., Sugie, J., Nideffer, J.F., Villa, E., **Tassanakajon, A.**, Pogliano, J., Nonejuie, P., Chaikerasitak, V. A novel vibriophage exhibits inhibitory activity against host protein synthesis machinery Scientific Reports (2020) 10 (1), art. no. 2347.

12. Jatuyosporn, T., Laohawutthichai, P., Supungul, P., Sotelo-Mundo, R.R., Ochoa-Leyva, A., **Tassanakajon, A.**, Krusong, K. Role of Clathrin Assembly Protein-2 Beta Subunit during White Spot Syndrome Virus Infection in Black Tiger Shrimp *Penaeus monodon*. *Scientific Reports* (2019) 9 (1), art. no. 13489.
13. Jaree, P., Kawai, T., Lo, C.-F., **Tassanakajon, A.**, Somboonwiwat, K. Genome organization and definition of the *Penaeus monodon* viral responsive protein 15 (PmVRP15) promoter. *Fish and Shellfish Immunology* (2019) 93: 997-1006.
14. Taengchaiyaphum, S., Srisala, J., Bunphimpapha, P., Supungul, P., **Tassanakajon, A.**, Chaiyapechara, S., Bowornpinyo, S., Sritunyalucksana, K., Flegel, T.W. Mendelian inheritance of endogenous viral elements (EVE) of white spot syndrome virus (WSSV) in shrimp. *Developmental and Comparative Immunology* (2019) 96: 144-149
15. Soponpong, S., Amparyup, P., Kawai, T., **Tassanakajon, A.** A cytosolic sensor, *PmDDX41*, binds double stranded-DNA and triggers the activation of an innate antiviral response in the shrimp *Penaeus monodon* via the STING-dependent signaling pathway. *Frontiers in Immunology* (2019) 10:2069.
16. Nhnkhorn, Z., Amparyup, P., Kawai, T., **Tassanakajon, A.** *Penaeus monodon* IKKs participate in regulation of cytokine-like system and antiviral responses of innate immune system *Frontiers in Immunology* (2019) 10:1430.
17. Junprung, W., Norouzitalab, P., De Vos, S., **Tassanakajon, A.**, Nguyen Viet, D, Van Stappen, G., Bossier, P. Sequence and gene expression analysis of HSP70 family in *Artemia franciscana*. *Scientific Reports* (2019) 9: 8391.
18. Junprung, W., Supungul, P., **Tassanakajon, A.** *Litopenaeus vannamei* heat shock protein 70 (*LvHSP70*) enhances resistance to a strain of *Vibrio parahaemolyticus*, which can cause acute hepatopancreatic necrosis disease (AHPND), by activating shrimp immunity. *Developmental and Comparative Immunology* (2019) 90: 138-146.
19. Chomwong, S., Charoensapsri, W., Amparyup, P., **Tassanakajon, A.** Two host gut-derived lactic acid bacteria activate the proPO system and increase resistance to an AHPND-causing strain of *Vibrio parahaemolyticus* in the shrimp *Litopenaeus vannamei*. *Developmental and Comparative Immunology* (2018) 89: 54-65.
20. Sornchuer, P., Junprung, W., Yingsunthonwattana, W., **Tassanakajon, A.** Heat shock factor 1 regulates heat shock proteins and immune-related genes in *Penaeus monodon* under thermal stress. *Developmental and Comparative Immunology* (2018) 88: 19-27.

21. Matjank, W., Ponprateep, S., Rimphanitchayakit, V., **Tassanakajon, A.**, Somboonwiwat, K., Vatanavicharn, T. Plasmolipin, PmPLP1, from *Penaeus monodon* is a potential receptor for yellow head virus infection. *Developmental and Comparative Immunology* (2018) 88: 137-143.
22. Maralit, B.A., Jaree, P., Boonchuen, P., **Tassanakajon, A.**, Somboonwiwat, K. Differentially expressed genes in hemocytes of *Litopenaeus vannamei* challenged with *Vibrio parahaemolyticus* AHPND (VP_{AHPND}) and VP_{AHPND} toxin. *Fish and Shellfish Immunology* (2018) 81: 284-296.
23. Boonrawd, S., Supungul, P., **Tassanakajon, A.**, Rimphanitchayakit, V. Antimicrobial activity of a serine proteinase inhibitor SPIPm5 from the black tiger shrimp *Penaeus monodon*. *Fish and Shellfish Immunology* (2018) 77: 147-155.
24. Soponpong, S., Amparyup, P., **Tassanakajon, A.** A cytosolic sensor, PmDDX41, mediates antiviral immune response in black tiger shrimp *Penaeus monodon*. *Developmental and Comparative Immunology* (2018) 81: 291-302.
25. Visetnan, S., Donpuksa, S., **Tassanakajon, A.**, Rimphanitchayakit, V. Silencing of a Kazal-type serine proteinase inhibitor SPIPm2 from *Penaeus monodon* affects YHV susceptibility and hemocyte homeostasis. *Fish and Shellfish Immunology* (2018) 79: 18-27.
26. Boonchuen, P., Jaree, P., **Tassanakajon, A.**, Somboonwiwat, K. Hemocyanin of *Litopenaeus vannamei* agglutinates *Vibrio parahaemolyticus* AHPND (VP_{AHPND}) and neutralizes its toxin. *Developmental and Comparative Immunology* (2018) 84, 371-381.
27. Boonrawd, S., Supungul, P., **Tassanakajon, A.**, Rimphanitchayakit, V. Antimicrobial activity of a serine proteinase inhibitor SPIPm5 from the black tiger shrimp *Penaeus monodon*. *Fish and Shellfish Immunology* (2018) 77: 147-155.
28. Apitanyasai, K., Amparyup, P., Charoensapsri, W., Sangsuriya, P., **Tassanakajon, A.** Shrimp hemocyte homeostasis-associated protein (PmHHAP) interacts with WSSV134 to control apoptosis in white spot syndrome virus infection. *Fish and Shellfish Immunology* (2018) 76: 174-182.
29. Soponpong, S., Amparyup, P., **Tassanakajon, A.** A cytosolic sensor, PmDDX41, mediates antiviral immune response in black tiger shrimp *Penaeus monodon*. *Developmental and Comparative Immunology* (2018) 81: 291-302.
30. **Tassanakajon, A.**, Rimphanitchayakit, V., Visetnan, S., Amparyup, P., Somboonwiwat, K., Charoensapsri, W., Tang, S. Shrimp humoral responses against pathogens: Antimicrobial peptides and melanization. *Developmental and Comparative Immunology* (2018) 80: 81-93.
31. Khorattanakulchai, N., Amparyup, P., **Tassanakajon, A.** Binding of PmClipSP2 to microbial cell wall components and activation of the proPO-activating system in the black tiger shrimp *Penaeus monodon*. *Developmental and Comparative Immunology* (2017) 77: 38-45.

32. Sutthangkul, J., Amparyup, P., Eum, J., Strand, M.R., **Tassanakajon, A.** Anti-melanization mechanism of the white spot syndrome viral protein, WSSV453, via interaction with shrimp proPO-activating enzyme, PmpProPPAE2. *Journal of General Virology* (2017) 72:769-778.
33. Noothuan, N., Amparyup, P., **Tassanakajon, A.** Melanization inhibition protein of *Penaeus monodon* acts as a negative regulator of the prophenoloxidase-activating system. *Developmental and Comparative Immunology* (2017) 72:97-102.
34. Boonrawd, S., Mani, R., Ponprateep, S., Supungul, P., Masrinoul, P., **Tassanakajon, A.**, Rimphanitchayakit, V. Characterization of PmSpätzle 1 from the black tiger shrimp *Penaeus monodon*. *Fish and Shellfish Immunology* (2017) 65:88-95.
35. Visetnan, S., Supungul, P., **Tassanakajon, A.**, Donpudsa, S., Rimphanitchayakit, V. A single WAP domain-containing protein from *Litopenaeus vannamei* possesses antiproteinase activity against subtilisin and antimicrobial activity against AHPND-inducing *Vibrio parahaemolyticus*. *Fish and Shellfish Immunology* (2017) 68:341-348.
36. Jaturontakul, K., Jatuyosporn, T., Laohawutthichai, P., Kim, S.Y., Mori, T., Supungul, P., Hakoshima, T., **Tassanakajon, A.**, Krusong, K. Molecular Characterization of viral responsive protein 15 and its possible role in nuclear export of virus in black tiger shrimp *Penaeus monodon*. *Scientific Reports* (2017) 7:6523.
37. Ponprateep, S., Vatanavicharn, T., Lo, C.F., **Tassanakajon, A.**, Rimphanitchayakit, V. Alpha-2-macroglobulin is a modulator of prophenoloxidase system in pacific white shrimp *Litopenaeus vannamei*. *Fish and Shellfish Immunology* (2017) 62: 68-74.
38. Monwan, W., Amparyup, P., **Tassanakajon, A.** A snake-like serine proteinase (PmSnake) activates prophenoloxidase-activating system in black tiger shrimp *Penaeus monodon*. *Developmental and Comparative Immunology* (2017) 67: 229-238.
39. Arayamethakorn, S., Supungul, P., **Tassanakajon, A.**, Krusong, K. Characterization of molecular properties and regulatory pathways of CrustinPm1 and CrustinPm7 from the black tiger shrimp *Penaeus monodon*. *Developmental and Comparative Immunology* (2017) 67: 18-29.
40. Junprung, W., Supungul, P., **Tassanakajon, A.** HSP70 and HSP90 are involved in shrimp *Penaeus vannamei* tolerance to AHPND-causing strain of *Vibrio parahaemolyticus* after non-lethal heat shock. *Fish and Shellfish Immunology* (2017) 60: 237-246.
41. Methatham, T., Boonchuen, P., Jaree, P., **Tassanakajon, A.**, Somboonwiwat, K. Antiviral action of the antimicrobial peptide ALFPm3 from *Penaeus monodon* against white spot syndrome virus. *Developmental and Comparative Immunology* (2017) 69: 23-32.

42. Supungul, P., Jaree, P., Somboonwiwat, K., Junprung, W., Proespraiwong, P., Mavichak, R., **Tassanakajon, A.** A potential application of shrimp antilipopopolysaccharide factor in disease control in aquaculture. *Aquaculture Research* (2017) 48: 809–821.