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Principal Researcher

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### **Education**

Ph.D. | 1998-2004 | The Ohio-State University, USA.

Major: Biochemistry (GPA 3.58)

Thai Government.

M.Sc. | 1993-1996 | Mahidol university, Thailand.

Major: Biochemistry (GPA 3.83)

B.Econ. | 2005-2011 | School of Economics at Sukhothai Thammathirat Open University, Thailand.

Major: Business Economics

B.Sc. | 1989-1993 | Mahidol university, Thailand.

Major: Medical Technology (GPA 3.47: 2nd Class Honor)

### **Expertise and research interest**

Biochemistry of infectious diseases and antimicrobial resistance (AMR) mechanism of zoonotic pathogens to discover biological targets for diagnostic applications and drug development using MS-based HTP omics technologies.

### **Publications (selected: 2014-present)**

<http://scholar.google.com/citations?user=PvX54KUAAAAJ&hl=en>

- Changsen C., Likhitrattanapisal S., Lunha K., Chumpol W., Jiemsup S., Prachumwat A., Kongkasuriyachai D., Ingsriswang S., Chaturongakul S., Lamalee A., **Yongkiettrakul S.**, and Buates S. Incidence, genetic diversity, and antimicrobial resistance profiles of *Vibrio parahaemolyticus* in seafood in Bangkok and eastern

Thailand. PeerJ. 2023 May 11;11:e15283. doi: 10.7717/peerj.15283. eCollection 2023.

- Lunha K., Chumpol W., Jiemsup S., Samngamnim S., Assavacheep P., and **Yongkiettrakul S.** Relationship between penicillin-binding proteins alterations and  $\beta$ -lactams non-susceptibility of diseased pig-Isolated *Streptococcus suis*. *Antibiotics (Basel)*. 2023 Jan 12;12(1):158. doi: 10.3390/antibiotics12010158. PMID: 36671359; PMCID: PMC9854507.
- Yotbuntueng P., Jiemsup S., Deenarn P., Tobwor P., **Yongkiettrakul S.**, Vichai V., Pruksatrakul T., Sittikankaew K., Karoonuthaisiri N., Leelatanawit R., and Wimuttisuk W. Differential distribution of eicosanoids and polyunsaturated fatty acids in the *Penaeus monodon* male reproductive tract and their effects on total sperm counts. *PLoS One*. 2022 Sep 22;17(9):e0275134. doi: 10.1371/journal.pone.0275134. PMID: 36137117; PMCID: PMC9499254.
- Lunha K., Chumpol W., Samngamnim S., Jiemsup S., Assavacheep P., and **Yongkiettrakul S.** Antimicrobial Susceptibility of *Streptococcus suis* Isolated from Diseased Pigs in Thailand, 2018-2020. *Antibiotics (Basel)*. 2022 Mar 18;11(3):410. doi: 10.3390/antibiotics11030410. PMID: 35326873; PMCID: PMC8944821.
- Tobwor P., Deenarn P., Pruksatrakul T., Jiemsup S., **Yongkiettrakul S.**, Vichai V., Phromson M., Chaiyapechara S., Jangsutthivorawat W., Yotbuntueng P., Hargreaves OG., and Wimuttisuk W. Biochemical characterization of the cyclooxygenase enzyme in penaeid shrimp. *PLoS One*. 2021 Apr 22;16(4):e0250276. doi: 10.1371/journal.pone.0250276. PMID: 33886622; PMCID: PMC8062024.
- Songsunghong W., Prasopporn S., Bohan L., Srimanote P., Leartsakulpanich U., and **Yongkiettrakul S.** A novel bicyclic 2,4-diaminopyrimidine inhibitor of *Streptococcus suis* dihydrofolate reductase. *PeerJ*. 2021 Feb 3;9:e10743. doi: 10.7717/peerj.10743. PMID: 33604179; PMCID: PMC7866885.
- **Yongkiettrakul S.**, Wongsurawat T., Jenjaroenpun P., Acheampong D.A., Srimanote P., Maneerat K., Visessanguan W., and Nookaew I. Genome sequences of antibiotic-resistant *Streptococcus suis* strains isolated from human patients and diseased and asymptomatic pigs in Thailand. *Infect Genet Evol*. 2021 Jan;87:104674. doi: 10.1016/j.meegid.2020.104674. Epub 2020 Dec 13.
- **Yongkiettrakul S.**, Kolié .FR., Kongkasuriyachai D., Sattabongkot J., Nguitragool W., Nawattanapaibool N., Suansomjit C., Warit S., Kangwanrangsan N., and Buates S. Validation of PfsNP-LAMP-Lateral Flow Dipstick for Detection of Single Nucleotide Polymorphism Associated with Pyrimethamine Resistance in *Plasmodium falciparum*. *Diagnostics (Basel)*. 2020 Nov 13;10(11):948. doi: 10.3390/diagnostics10110948.
- Pornputtapong, N., Acheampong D.A., Patumcharoenpol P., Jenjaroenpun P., Wongsurawat T., Jun S-R., **Yongkiettrakul S.**, Chokesajjawatee N., and Nookaew I. KITSUNE: A Tool for Identifying Empirically Optimal K-mer Length for Alignment-Free Phylogenomic Analysis. *Front Bioeng Biotechnol*. 2020; 8: 556413. Published online 2020 Sep 23. doi: 10.3389/fbioe.2020.556413.
- Songsunghong W., **Yongkiettrakul S.**, Bohan L. E., Nicholson E. S., Prasopporn S., Chaiyen P., and Leartsakulpanich U. Diaminoquinazoline MMV675968 from Pathogen Box inhibits *Acinetobacter baumannii* growth through targeting of dihydrofolate reductase. *Sci Rep*. 2019 Oct 30;9(1):15625. doi: 10.1038/s41598-019-52176-8.

- **Yongkiettrakul S.**, Maneerat K., Arechanajan B., Malila Y., Srimanote P., Gottschalk M., and Visessanguan W. Antimicrobial susceptibility of *Streptococcus suis* isolated from diseased pigs, asymptomatic pigs, and human patients in Thailand. BMC Vet Res. 2019 Jan 3;15(1):5. doi: 10.1186/s12917-018-1732-5.
- Maneerat K., **Yongkiettrakul S.**, Jiemsup S., Gottschalk M., and Srimanote P. Expression and characterization of serotype 2 *Streptococcus suis* arginine deiminase. 2017. J Mol Microbiol Biotechnol. 27(3): 133-146.
- Kongkasuriyachai D., **Yongkiettrakul S.**, Kiatpathomchai W., and Arunrut N. Loop-Mediated Isothermal Amplification and LFD Combination for Detection of *Plasmodium falciparum* and *Plasmodium vivax*. 2017. Methods Mol Biol. 1572: 431-443.
- **Yongkiettrakul S.**, Kampeera J., Chareanchim W., Rattanajak R., Pornthanakasem W., Kiatpathomchai W., and Kongkasuriyachai D. Detection of point mutation associated with pyrimethamine resistance in *Plasmodium falciparum* by SNP-LAMP assay combined with lateral flow dipstick. 2017. Parasitol Int. 66: 964-971.
- **Yongkiettrakul S.**, Jaroenram W., Arunrut N., Chareanchim W., Pannengpetch S., Suebsing R., Kiatpathomchai W., Pornthanakasem W., and Yuthavong Y., and Kongkasuriyachai D. 2014. Application of loop-mediated isothermal amplification assay combined with lateral flow dipstick for detection of *Plasmodium falciparum* and *Plasmodium vivax*. Parasitol Int. 63: 777-784.

#### **Patent and petty patents (selected: 2004-present)**

- Jiemsup S., **Yongkiettrakul S.**, Wiyada Chumpol, and Kamonwan Lunha. Primer set and MassARRAY-based method for species and serotype identification of zoonotic *Streptococcus suis*. Petty patent submission to the Thai Patent Office, Petty patent number: 1903001164.
- Jiemsup S. and **Yongkiettrakul S.** MS-based ArcA inhibition assay. Petty patent application to the Thai Patent Office, Petty patent number: 1903001164
- Wimuttisuk W., Jiemsup S., Pruksatrakul T., **Yongkiettrakul S.**, Deenarn P., Tobwor P., Yotbuntueng P., and Vichai V., Methods for the analysis of eicosanoids, resolving D2 and polyunsaturated fatty acids. Petty patent application to the Thai Patent Office, Petty patent number: 2003001716.
- **Yongkiettrakul S.**, Kampeera J., Chareanchim W., Kiatpathomchai W., and Kongkasuriyachai D., SNP-LAMP detection for drug-resistant malaria. Patent application to the Thai Patent Office, Patent application number: 1501004966.
- Nivitchanyong T., Wanasen N., **Yongkiettrakul S.**, and Kramyu J., Enhanced production of secretable influenza virus neuraminidase in suspension mammalian cells by influenza virus nonstructural protein 1. Patent application to the Thai Patent Office, Patent application number: 1001001267.
- Thongnoppakhun W., Jiemsup S., **Yongkiettrakul S.**, Karnjanakorn C., Limwongse C., Wilairat P., Vanasant A., Rungroj N., and Yenchitsomanus P. The detection of human beta-globin (HBB) gene mutations with multiplex-primer extension/MALDI-TOF mass spectrometry (mPE-MS). Patent application to the Thai Patent Office, Patent application number: 0801004679.
- **Yongkiettrakul S.**, Eurwilaichitr L., and Boonyapakron K. The production of functional head domain of avian influenza A/H5N1 neuraminidase in yeast

expression system, for antiviral screening. Patent application to the Thai Patent Office, Patent application number: 0801002945.

- Yuthavong Y., Thebtaranonth Y., Sirawaraporn W, Tarnchompoo B., Kamchonwongpaisan S., Vanichtanankul J., **Yongkiettrakul S.**, Sirichaiwat Y., Vilaivan T., and Chitnumsub P. Development of Antimalarials through Selection by the Target Enzyme (Dihydrofolate Reductase) of Inhibitors from Combinatorial Libraries. Patent application to the Thai Patent Office, Patent application number: 052793.
- **Yongkiettrakul S.**, Arunrut N., Kiatpathomchai W., Pannengpetch S., Kongkasuriyachai D., and Yuthavong Y. Detection of Plasmodium vivax using pvLAMP-LFD. Petty patent application to the Thai Patent Office, Petty patent number: 1203000943.
- **Yongkiettrakul S.**, Arunrut N., Kiatpathomchai W., Pannengpetch S., Kongkasuriyachai D., and Yuthavong Y. Detection of Plasmodium falciparum using pfLAMP-LFD. Petty patent application to the Thai Patent Office, Petty patent number: 1203000944.

#### **Prototypes (selected: 2004-present)**

- **Yongkiettrakul S.**, Eurwilaichitr L., and Boonyapakron K. Yeast-based production and application of avian influenza A/H5N1 neuraminidase.
- W., Jiemsup S., **Yongkiettrakul S.**, Kanjanakorn C., Limwongse C., Wilairat P., Vanasant A., Rungroj N., Yenchitsomanus PT. Detection of hemoglobin beta (HBB) gene mutations in  $\beta$ -thalassemia using mPE-MS.

#### **Trade secrets**

- **Yongkiettrakul S.**, Jiemsup S., Suebwongsa N, Chokesajjawatee N., SantiyanontP., Hirunpatrawong P., and AssawapirinP. Primer sets and reagent kits for bacterial strain differentiation using the MassARRAY technique. NSTDA TS0200165.
- **Yongkiettrakul S.**, Jiemsup S., Hirunpatrawong P., and Thongkum M. MassArray primer set for bacterial detection. NSTDA TS0200126.