

Eakapol Wangkahart (ผศ.ดร.เอกพล วัจนะฮาด)

Assistant Professor of Immunology of Aquatic animals

Sex: Male **Religion:** Buddhism **Status:** Married

Date of birth: 16th February 1982 **Age:** 40

Address: Department of Agricultural Technology, Faculty of Technology, Mahasarakham University, Khamriang Sub-District, Kantarawichai District, Maha Sarakham 44150 Thailand

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Language: Thai (Fluently), English (Very good)

Skills and Additional Skills/Preferences: Fish molecular immunology, vaccine and adjuvants development, fish nutrition and genomics

Education

- 2013 - 2017 PhD in Molecular Biology, The Scottish Fish Immunology Research Centre, The University of Aberdeen, Aberdeen, Scotland, UK (The royal Thai government scholarship, under the Ministry of Science and Technology)
- 2012 -2013 Certificate in Cell and Molecular Biology, Department of Comparative Physiology, Uppsala University, Sweden
- 2004 - 2008 MSc (Genetic engineering) with outstanding thesis award
Kasetsart University, Bangkok, Thailand
- 2000 - 2004 BSc (Fisheries), Faculty of Fisheries, Kasetsart University, Bangkok, Thailand

Other experiences

- 2021 Invited speaker, 41 IABMS Conference 2021 Recent trends in biomedical research, 2021, India
- 2020 Invited speaker, Rearing Immunocompetent Animals Trough Cellular Nutrition, The CAMDEN trading group, The Philippines.
- 2020 Associate editors of Journal of Sustainability Science and Management
- 2019 Editor and scientific committee, The 6th International Conference on Food Agriculture & Biotechnology (ICoFAB 2019), Thailand
- 2019 Invited speaker, 2nd Seminar on Biological Security and Sustainability University of Malaysia Terengganu, Malaysia
- 2019 Invited lecture, Guangdong Ocean University, China
- 2019 Invited lecture, National Taiwan Ocean University, Taiwan
- 2017 External examiner for PhD, Vels University, India

Professional Appointments

- 2018 - present Assistant Professor, Division of Fisheries, Department of Agricultural technology, Maharakham University
- 2018 - present Head of research unit of excellence for tropical fisheries and technology, Maharakham University
- 2018 - present Animal ethic committee of Maharakham University
- 2017 - present Peer reviewer of Journal of Fish & Shellfish Immunology, Suranaree Journal of Science and Technology, Crustaceana, Aquaculture Nutrition, Aquaculture International, Aquaculture, Animal Feed Science and Technology, Virulence, World journal of Surgical Oncology, Journal of Marine Science and Engineering, International Journal of Marine Sciences, Veterinary Research Communications
- 2020 - present Member of International Veterinary Vaccinology Network
- 2016 - present Member of International Society of Fish and Shellfish Immunology
- 2015 - present Member of International Society of Developmental and Comparative Immunology
- 2012 - present Member of Genetics Society of Thailand

Grants (Principle investigator (PI) and Co-PI)

- 2022 The Use of Commercial Mycotoxin Binders (Toxin Plus) as Feed Additive in Nile tilapia (*Oreochromis niloticus*) Diets, fund by ORFFA feed company, the Netherlands (PI)
- 2022 The Use of a commercial probiotic mix (ProDi-G) as Feed Additive in Nile tilapia (*Oreochromis niloticus*) Diets, fund by ORFFA feed company, the Netherlands (PI)
- 2022 Effect of Kera-Stim[®] 50 supplementation in low fish meal-based diets on growth performance and amino acid metabolism in juvenile Nile tilapia (*Oreochromis niloticus*), fund by BCF[®] Life Sciences, France (PI)
- 2022 Studies on the use of commercial adjuvants in inactivated vaccine to prevent the streptococcal disease in Nile tilapia (*Oreochromis niloticus*) by combined vaccine delivery method, fund by SEPPIC, France (PI)
- 2022 Toxicity of mercury on Tissue Accumulation and Immune System in Nile tilapia (*Oreochromis niloticus*), fund by National Research Council of Thailand, Thailand (Co-PI)
- 2021 Effect of Natural Free Amino Acids Mixes, Kera-Aqua[®] in Asian seabass *Lates calcarifer* (Bloch), fund by BCF[®] Life Sciences, France (PI)
- 2021 Evaluation of Montanide[™] GR01 for Oral Vaccination in Nile tilapia (*Oreochromis niloticus*): Laboratory and on-farm trials, fund by SEPPIC, France (PI)
- 2021 Molecular characterization and adjuvant effect of interleukin-11 in the streptococcosis formalin-killed vaccine of the Nile tilapia (*Oreochromis niloticus*), fund by National Research Council of Thailand, Thailand (PI)
- 2021 Production of Xylooligosaccharide (XOs) for Prebiotics and Synbiotics application, fund by National Research Council of Thailand, Thailand (Co-PI)
- 2020 Effect of Free Amino Acids, Kera Stim 50 in Nile tilapia Fingerling (*Oreochromis niloticus*), fund by BCF[®] Life Sciences, France (PI)

- 2020 Discovery and potential application of fish antimicrobial peptides, fund by China Government, China (Co-PI)
- 2019 Comparative effect of organic and inorganic selenium supplementation on growth performance, hematological value and immune status in Nile tilapia (*Oreochromis niloticus*), fund by ORFFA feed company, the Netherlands (PI)
- 2019 Effect of Montanide™ ISA 763 B VG and Montanide™ GEL 02 as Adjuvant Administrated with an *Streptococcus agalactiae* Ghost Vaccine in Nile tilapia (*Oreochromis niloticus*), fund by SEPPIC, France (PI)
- 2019 Use of nutritional emulsifier for Nile tilapia (*Oreochromis niloticus*), fund by ORFFA feed company, the Netherlands (PI)
- 2019 Immune response analysis of fairy shrimp *Branchinella thailandensis* against bacterial black disease by *de novo* transcriptome analysis, fund by Applied Taxonomic Research Center, Thailand (PI)
- 2018 Preparation and immunological effectiveness of *S. agalactiae* DNA vaccine encapsulated in nano-particulated, fund by China Government, China (co-PI)
- 2018 Dietary supplementation of organic selenium on growth performance, hematological value and non-specific immune response in Nile tilapia (*Oreochromis niloticus*), fund by National Science and Technology Development Agency: NSTDA (PI)
- 2017 Development of monoclonal antibody for detection of immune response in Nile tilapia (*Oreochromis niloticus*) for the commercial production, fund by Mahasarakham University (PI)

Publications (* corresponding author)

- Wipavee Thaimuangphol, Laorsri Sanoamuang, **Eakapol Wangkahart***. 2022. The immune response of fairy shrimp *Streptocephalus sirindhornae* against bacterial black disease by *de novo* transcriptome analysis. *Fish & Shellfish Immunology*, 212: 108-115. (ISI Q1; IF=4.581)
- Eakapol Wangkahart***, Pierrick Kersanté, Po-Tsang Lee, Onanong Sanbut, Supap Nontasan, Anut Chantiratikul. 2022. Effect of Kera-Stim®50, a feed additive containing free amino acid mix on growth, antioxidant and immune responses, digestive enzymes, and fatty acid composition in Nile tilapia (*Oreochromis niloticus*). *Aquaculture*, 551: 737874. (ISI Q1; IF=4.242)
- Eakapol Wangkahart***, Brecht Bruneel, Anut Chantiratikul, Matthijs de Jong, Noppakun Pakdeenarong, Parasuraman AiyaSubramani. 2022. Optimum dietary sources and levels of selenium improves growth, antioxidant status, and disease resistance: re-evaluation in a farmed fish species, Nile tilapia (*Oreochromis niloticus*). *Fish & Shellfish Immunology*. 121: 172-182. (ISI Q1; IF=4.581)
- Eakapol Wangkahart***, Suriyet Wachiraamonloed, Po-Tsang Lee, Parasuraman Aiya Subramani, Zhitao Qi, Bei Wang. 2022. Impacts of *Aegle marmelos* fruit extract as a medicinal herb on growth performance, antioxidant and immune responses, digestive enzymes, and disease resistance against *Streptococcus agalactiae* in Nile tilapia (*Oreochromis niloticus*). *Fish & Shellfish Immunology*. 120: 402-410. (ISI Q1; IF=4.581)

- Xinjin Chen, Bolin Fan, Chenlong Fan, Zhongliang Wang, **Eakapol Wangkahart**, Yucong Huang, Yu Huang, Jichang Jian, Bei Wang. 2021. First comprehensive proteome analysis of lysine crotonylation in *Streptococcus agalactiae*, a pathogen causing meningoencephalitis in teleosts. *Proteome Science*. 19(1):14. (ISI Q2; IF=2.480)
- Apisit Lueangyangyuen, Saengchan Senapin, Ha Thanh Dong, Sasimanas Unajak, **Eakapol Wangkahart**, Pongsak Khunrae. 2021. Expression and purification of S5196-272 and S6200-317 proteins from Tilapia Lake Virus (TiLV) and their potential use as vaccines. *Protein Expression and Purification*. 190: 106013. (ISI Q3; IF=1.650)
- Hien Van Doan, **Eakapol Wangkahart**, Wipavee Thaimuangphol, Paiboon Panase, Nantaporn Sutthi. 2021. Effects of *Bacillus* spp. mixture on growth, immune responses, expression of immune-related genes, and resistance of Nile tilapia against *Streptococcus agalactiae* infection. *Probiotics and Antimicrobial Proteins*. In press, 2021. (ISI Q2; IF=4.609)
- Bolin Fan, Lixia Pan, Zhongliang Wang, **Eakapol Wangkahart**, Yuchong Huang, Dengfeng Yang, Jichang Jian, Yu Huang, Bei Wang. 2021. The *Streptococcus agalactiae* Ribose Binding Protein B (RbsB) Mediates Quorum Sensing Signal Uptake via Interaction with Autoinducer-2 Signals. *Journal of Ocean University of China* 20(5):1285-1295. (ISI Q3; IF=0.913)
- Vimbai Irene Machimbirike, Natapol Pornputtpong, Saengchan Senapin, **Eakapol Wangkahart**, Prapansak Srisapoom, Pongsak Khunrae, Triwit Rattanarojpong. 2021. A multi-epitope chimeric protein elicited a strong antibody response and partial protection against *Edwardsiella ictaluri* in Nile tilapia. *Journal of Fish Diseases*. 45(5): 1-18. (ISI Q1; IF=2.056)
- Noppakun Pakdeenarong, Komsorn Lauprasert, **Eakapol Wangkahart**. 2021. Evaluation of health of male and female Giant freshwater prawn cultured in remote limited natural resources areas. *Bioscience Research*. 18(4): 2879-2887. (ISI; IF=0.737)
- Eakapol Wangkahart***, Brecht Bruneel, Tanakrit Wisetsri, Supap Nontasan, Sam Martin, Anut Chantiratikul. 2021. Interactive effects of dietary lipid and nutritional emulsifier supplementation on growth, chemical composition, immune response and lipid metabolism of juvenile Nile tilapia (*Oreochromis niloticus*). *Aquaculture*, 546: 737341. (ISI Q1; IF=4.242)
- Eakapol Wangkahart***, Sebastien Deville, Bei Wang, Prapansak Srisapoom, Tiehui Wang, Christopher J. Secombes. 2021. Immune Response and Protective Efficacy of Two New Adjuvants, Montanide™ ISA 763B VG and Montanide™ GEL02, Administered with a *Streptococcus agalactiae* Ghost Vaccine in Nile tilapia (*Oreochromis niloticus*). *Fish & shellfish immunology*, 116: 19-29. (ISI Q1; IF=4.581)
- Anut Chantiratikul, Orawan Arunsangseesod, **Eakapol Wangkahart**, Kwanyuen Leamsamrong, Piyanete Chantiratikul. 2020. Effect of dietary selenium from selenium-enriched kale sprout, selenomethionine, and sodium selenite on performance and selenium concentrations in the tissues of growing quails. *Asian-Australasian Journal of Animal Sciences*, 34: 692-700. (ISI Q1; IF=2.509)
- Takuya Yamaguchi, Chia Jung Chang, AxelAxel Karger Karger, Markus Keller, Florian Pfaff, **Eakapol Wangkahart**, Tiehui Wang, Christopher J. Secombes, Azusa Kimoto,

- Mitsuru Furihata, Keiichiro Hashimoto, Uwe Fischer, Johannes M. Dijkstra. 2020. Ancient cytokine interleukin 15-like (IL-15L) induces a type 2 immune response. *Frontiers in Immunology*, 11: 549319. (ISI Q1; IF=7.561)
- Vijitra Luang-In, Wanee Samappito, Supaporn Pumriw, **Eakapol Wankahart**, Worachot Saengha, Arjan Narbad, Sutisa Nudmamud-Thanoi, Ampa Konsue, Teeraporn Katisart, Nyuk Ling Ma. 2020. Psychobiotic Effects of Multi-Strain Probiotics Originated from Thai Fermented Foods in a Rat Model. *Food Science of Animal Resources*. 40(6):1014-1032. (ISI Q3; IF=2.471)
- Bei Wang, **Eakapol Wankahart**, Christopher J. Secombes, Tiehui Wang. 2019. Insights into the evolution of the suppressors of cytokine signalling (SOCS) gene family in vertebrates. *Molecular biology and evolution*, 36(2): 393-411. (ISI Q1; IF=16.240)
- Eakapol Wankahart**, Christopher J. Secombes, Tiehui Wang. 2019. Studies on the use of flagellin as an immunostimulant and vaccine adjuvant in fish aquaculture. *Frontiers in Immunology*, 9: 3054. (ISI Q1; IF=7.561)
- Eakapol Wankahart**, Christopher J. Secombes, Tiehui Wang. 2019. Dissecting the immune pathways stimulated following injection vaccination of rainbow trout (*Oncorhynchus mykiss*) against enteric redmouth disease (ERM). *Fish & shellfish immunology*, 85: 18-30. (ISI Q1; IF=4.581)
- Tiehui Wang, Yehfang Hu, **Eakapol Wankahart**, Alex Wang, Eman Zahran, Kevin Maisey, Min Liu, Qiaoqing Xu, Mónica Imarai, Christopher J Secombes. 2018. Interleukin (IL)-2 is a key regulator of Th1 and Th2 cytokine expression in fish: functional characterisation of two divergent IL2 paralogues in salmonids. *Frontiers in Immunology* 9: 1683 (ISI Q1; IF=7.561)
- Kimberly A. Veenstra, **Eakapol Wankahart**, Tiehui Wang, Lincoln Tubbs, Juliette Ben. & Christopher J. Secombes. 2018. Rainbow trout (*Oncorhynchus mykiss*) adipose tissue undergoes major changes in immune gene expression following bacterial infection or stimulation with pro-inflammatory molecules. *Developmental & Comparative Immunology*. 81: 83-94. (ISI Q1; IF=3.636)
- Ottavia Benedicentia, Tiehui Wang, **Eakapol Wankahart**, Douglas J. Milne, Jason W. Holland, Catherine Collins, Christopher J. Secombes. 2017. Characterisation of arginase paralogues in salmonids and their modulation by immune stimulation/ infection. *Fish & Shellfish Immunology* 61: 138-151. (ISI Q1; IF=4.581)
- Eakapol Wankahart**, Callum Scott, Christopher J. Secombes, Tiehui Wang. 2016. Re-examination of the rainbow trout (*Oncorhynchus mykiss*) immune response to flagellin: *Yersinia ruckeri* flagellin is a potent activator of acute phase proteins, antimicrobial peptides and pro-inflammatory cytokines *in vitro*. *Developmental & Comparative Immunology*. 57: 75-87. (ISI Q1; IF=3.636)
- Qiaoqing Xu, Yousheng Jiang, **Eakapol Wankahart**, Jun Zou, Mingxian Chang, Daiqin Yang, Chris J Secombes, Pin Nie, Tiehui Wang. 2016. Sequence and Expression Analysis of Interferon Regulatory Factor 10 (IRF10) in Three Diverse Teleost Fish Reveals Its Role in Antiviral Defense. *PloS one*. 11(1): e0147181. (ISI Q2; IF=3.240)
- Sukanya Leethongdee, **Eakapol Wankahart**, Chatsumal Pholseang, Manakan Intrakamhaeng. 2012. Prostaglandin E1 analogue (PGE1) and follicle stimulating hormone (FSH) increase the expression of FSH receptor in the cervix of goats (*Capra*

hircus) during the estrous cycle. *Reproduction in Domestic Animals*. 47: 481-481. (ISI Q2; IF=2.005)

Manakan Intrakamhaeng, Chatsumal Pholseang, **Eakapol Wangkahart**, Sukanya Leethongdee. 2012. The locally cervical administrated of misoprostrol or follicle stimulating hormone (FSH) increase the mRNA expression of beta defensin 2 in the does (*Capra hircus*) cervical tissue during the estrous cycle. *Reproduction in Domestic Animals*. 47: 560-560. (ISI Q2; IF=2.005)

Sukanya Leethongdee, **Eakapol Wangkahart**, Muhammad Khalid. 2011. The effect of FSH or PGE1 analogue on the mRNA expression for EP 2 and EP4 in the goat (*Capra hircus*) cervix. *Reproduction in Domestic Animals*. 46: 122-122. (ISI Q2; IF=2.005)

Chatsumal Pholseang, **Eakapol Wangkahart**, Muhammad Khalid, Sukanya Leethongdee. 2011. The effect of fsh and pge analogue on the cervical penetration during the periovulatory period in mixed bred Thai native goats. *Reproduction in Domestic Animals*. 46: 94-94. (ISI Q2; IF=2.005)

Eakapol Wangkahart, Muhammad Khalid, Sukanya Leethongdee. 2011. The expression of LHR mRNA was induced by the intracervical application of FSH or PGE1 analogue in the cervix of goats (*Capra hircus*) at the oestrus. *Reproduction in Domestic Animals*. 46: 159-159. (ISI Q2; IF=2.005)

Manakan Intrakamhaeng, Watee Kongbuntad, **Eakapol Wangkahart**, Muhammad Khalid, Sukanya Leethongdee. 2011. The anatomy of cervix and the cervical penetrability during oestrus in the Thai goat. *Reproduction in Domestic Animals*. 46: 113-113. (ISI Q2; IF=2.005)

Supranee Wigriboon, **Eakapol Wangkahart***, Ruamruedee Panchan. 2011. Reproductive biology of green catfish (*Hemibagrus nemurus*) in the Chi River, Thailand. *Reproduction in Domestic Animals*. 46: 159-159. (ISI Q2; IF=2.005)

International conferences

Eakapol Wangkahart, Wipavee Thaimuangphol, La-orsri Sanoamuang. 2020. Immune response analysis of fairy shrimp *Streptocephalus sirindhornae* against bacterial black disease by *de novo* transcriptome analysis. The 7th International Conference on Food Agriculture & Biotechnology, Mahasarakham, Thailand, (Poster presentation)

Eakapol Wangkahart, Sunanta Pungsri, Pimtida Uppahrad. 2019. Effect of selenium supplementation on growth performance, hematological value and immune response in Nile tilapia (*Oreochromis niloticus*). The 6th International Conference on Food Agriculture & Biotechnology, Mahasarakham, Thailand, (Poster presentation)

Eakapol Wangkahart, Jakkapun Sirikaewleod, Theerawat Wongkweaw. 2019. Preliminary study of species diversity and its morphology of siam fighting fish in maha sarakham province. The 6th International Conference on Food Agriculture & Biotechnology, Mahasarakham, Thailand, (Poster presentation)

Wipavee Thaimuangphol, **Eakapol Wangkahart**, Noppakun Pakdeenarong and Nantaporn Sutthi. 2019. Effect of frozen fairy shrimp (*Branchinella thailandensis*) on growth performance, carotenoid content, antioxidant activity and innate immune response of

- flower horn (*Cichlasoma trimaculatum*). The 6th International Conference on Food Agriculture & Biotechnology, Mahasarakham, Thailand, (Poster presentation)
- Nantaporn Sutthi, **Eakapol Wangkahart**, Wipavee Thaimuangphol. 2019. Effect of *Bacillus* spp. supplement in diet for growth survival rate and carcass quality of Nile Tilapia. The 6th International Conference on Food Agriculture & Biotechnology, Mahasarakham, Thailand, (Poster presentation)
- Eakapol Wangkahart**. 2018. Development of monoclonal antibody against IgM of Nile tilapia (*Oreochromis niloticus*), and its application in evaluating immune response related to IgM. The 5th International Conference on Food Agriculture & Biotechnology, Mahasarakham, Thailand, (Oral presentation)
- Tiehui Wang, Yehfang Hu, **Eakapol Wangkahart**, Fuguo Liu, Alex Wang, Eman Zahran, Kevin Maisey, Min Liu, Qiaoqing Xu, Mónica Imarai, Chris J Secombes. 2018. Interleukin (IL)-2 is a key regulator of the TH1 and TH2 cytokine expression in fish: Functional characterization of two divergent IL-2 paralogues in salmonids, 13th ISDCI Congress 2018, New Mexico, USA. (Oral presentation)
- Eakapol Wangkahart**, Christopher J. Secombes, Tiehui Wang. 2017. The immune response of rainbow trout to flagellin: Antibody response and adjuvant potential. The Association of Thai Professionals in European Region 2017 conference, The Royal Thai Embassy Vienna, Austria (Oral presentation)
- Eakapol Wangkahart**, Christopher J. Secombes, Tiehui Wang. 2016. Vaccination of rainbow trout against enteric redmouth disease (ERM) induces an early balanced expression of cytokines in the spleen but a heightened expression of acute phase proteins and antimicrobial peptides in both spleen and gills. 2nd International conference on Fish&Shellfish Immunology, Maine, USA. (Poster presentation)
- Eakapol Wangkahart**, Callum Scott, Christopher J. Secombes, Tiehui Wang. 2015. Bacterial flagellin - a novel molecular adjuvant for fish vaccine strategies. 5th Health Challenge Thailand, Office of educational affairs royal Thai embassy, London, UK. (Oral presentation)
- Eakapol Wangkahart**, Callum Scott, Christopher J. Secombes, Tiehui Wang. 2015. Recombinant flagellin from *Yersinia ruckeri* induces a long lasting expression of antimicrobial peptides in rainbow trout (*Oncorhynchus mykiss*) head kidney leukocytes. Fish immunology/vaccination workshop 2015, Wageningen University, the Netherlands. (Oral presentation)
- Eakapol Wangkahart**, Callum Scott, Christopher J. Secombes, Tiehui Wang. 2015. Recombinant flagellin from *Yersinia ruckeri* induces a long lasting expression of antimicrobial peptides in rainbow trout (*Oncorhynchus mykiss*) head kidney leukocytes. 13th ISDCI Congress 2015, Murcia, Spain. (Oral presentation)
- Milena M. Monte, Callum J.W. Scott, Tiehui Wang, Po-Tsang Lee, **Eakapol Wangkahart**, Beatriz Cash, Laura Mollon and Chris J. Secombes. 2015. Characterization of monoclonal antibodies (mAbs) against interferon (IFN)- γ in rainbow trout. 13th ISDCI Congress 2015, Murcia, Spain. (Poster presentation)
- Callum. J. W. Scott, Tiehui Wang, Po-Tsang Lee, **Eakapol Wangkahart**, Ayham Alnabulsi, Laura Mollon and Chris J. Secombes. 2014. Production and characterisation of

monoclonal antibodies towards rainbow trout (*Oncorhynchus mykiss*, Walbaum) interferon gamma (IFN γ). EAFP UK and Ireland Branches Inaugural Meeting 15th - 16th September 2014 -Keele University, UK (Poster presentation)

Eakapol Wangkahart , Manakant Intrakamhaeng, Chatsumal Pholseang, and Sukanya Leethongdee. 2012. The locally cervical administration of follicle stimulating hormone (FSH) or PGE1 analogue induces the expression of prostaglandin E 1 receptor (EP1) in Thai goat (*Capra hircus*) during the oestrus. The 17th International Congress on Animal Reproduction (ICAR), Vancouver, British Columbia, Canada on July 29 - Aug. 2, 2012. (Poster presentation)

Sukanya Leethongdee, **Eakapol Wangkahart** and Chatsumal Pholseang. 2012. The PGE₁ analogue and FSH increase the expression of FSH receptor in the cervix tissue of does (*Capra hircus*) during the estrous cycle. The 17th International Congress on Animal Reproduction (ICAR), Vancouver, British Columbia, Canada on July 29 - Aug. 2, 2012. (Poster presentation)

Chatsumal Pholseang, **Eakapol Wangkahart** and Sukanya Leethongdee. 2012. The expression of Prostaglandin E 2 receptor (EP₂) in the cervical tissue of goat (*Capra hircus*) decreased when administered by the Misoprostol and Follicle stimulating hormone (FSH) during the periovulatory period of oestrus. The 17th International Congress on Animal Reproduction (ICAR), Vancouver, British Columbia, Canada on July 29 - Aug. 2, 2012. (Poster presentation)

Manakant Intrakamhaeng, Chatsumal Pholseang, **Eakapol Wangkahart** and Sukanya Leethongdee. 2012. The locally cervical administrated of Misoprostol or Follicle stimulating hormone (FSH) increase the mRNA expression of beta defensin 2 in the does (*Capra hircus*) cervical tissue during the estrous cycle. The 17th International Congress on Animal Reproduction (ICAR), Vancouver, British Columbia, Canada on July 29 - Aug. 2, 2012. (Poster presentation)

Eakapol Wangkahart, Nontawith Areechon and Prapansak Srisapoome. 2011. Molecular Characterization of the Acidic Ribosomal Phosphoproteins P1 and P2 from Nile tilapia (*Oreochromis niloticus*). The 4th International Fisheries Conference. Maejo University, Chiangmai, Thailand. (Poster presentation)

Eakapol Wangkahart, Pattanapong Kaewwangchai and Poompat Suvannamoon. 2011. Study on Hematological Value of Hybrid Catfish (*Clarias macrocephalus* \times *Clarias gariepinus*) Infected with *Aeromonas hydrophila* and Sensitivity Test to Antibiotic Drugs. The 4th International Fisheries Conference. Maejo University, Chiangmai, Thailand. (Poster presentation)

Kritsada Keawsa-art, Patcharin Saisema, Udomsak Noppibool, **Eakapol Wangkahart**, Ruamruedee Panchan, Supranee Wigraiboon. 2011. Fish species composition caught by brush bundle from Chi river, Mahasarakram province, Thailand. The 4th International Fisheries Conference. Maejo University, Chiangmai, Thailand. (Poster presentation)

Ruamruedee Panchan, Supranee wigriboon and **Eakapol Wangkahart**. 2011. Gillnets Selectivity of Dominant Commercial Fishes in Chi River: Case Study from Chi River, Mahasarakram Province, Thailand. The 4th International Fisheries Conference, Maejo University, Chiang Mai, Thailand. (Poster presentation)

- Ruamruedee Panchan, **Eakapol Wangkahart** and Supranee wigriboon. 2011. Fish Species Composition Caught by Gillnets: Case Study from Chi River, Mahasarakram Province, Thailand. The 4th International Fisheries Conference, Maejo University, Chiang Mai, Thailand. (Poster presentation)
- Eakapol Wangkahart**, Thongchai Boonsorn, Worapol Aengwanich, Nontawith Areechon and Prapansak Srisapoome. 2011. Molecular characterization and expression analysis of α -hemoglobin B from Nile tilapia (*Oreochromis niloticus*). The 9th Asian Fisheries and Aquaculture Forum 2011, Shanghai, China (Oral presentation)
- Eakapol Wangkahart** and Sukanya Leethongdee. 2011. Isolation and Expression Analysis of Follicle Stimulating Hormone Receptor from Goat (*Capra hircus*) after Hormones Induction. The Society for reproduction and Fertility (SRF) Annual Conference and Exhibition, University of Sussex, Brighton, UK (Poster presentation)
- Eakapol Wangkahart** and Sukanya Leethongdee. 2011. Isolation, Partial Characterization and Expression Analysis of Prostaglandin E receptor 3 (EP3) from Goat (*Capra hircus*). The Society for reproduction and Fertility (SRF) Annual Conference and Exhibition, University of Sussex, Brighton, UK (Poster presentation)
- Sukanya Leethongdee, Thanapol Nongbua, Chatsumal Pholseang and **Eakapol Wangkahart**. 2011. The incidence of bacterial infection in the cervical discharge following the oestrous synchronization using progesterone –impregnated sponges in Thai native and Thai mixed bred goats. The Society for reproduction and Fertility (SRF) Annual Conference and Exhibition, University of Sussex, Brighton, UK (Poster presentation)
- Sukanya Leethongdee, Chatsumal Pholseang, Watee Kongbuntad, Thanapol Nongbua and **Eakapol Wangkahart**. 2011. The effect of Hyaluronan on the cervical penetrability during the periovulatory period in Thai native goat. The Society for reproduction and Fertility (SRF) Annual Conference and Exhibition, University of Sussex, Brighton, UK (Poster presentation)
- Sukanya Leethongdee, Watee Kongbuntud, Chatsumal Pholseang and **Eakapol Wangkahart**. 2011. The effects of FSH and PGE analogues altered the proportion of smooth muscle and collagen and increased the width of the cervical layer of during the oestrus in goats. The Society for reproduction and Fertility (SRF) Annual Conference and Exhibition, University of Sussex, Brighton, UK (Poster presentation)
- Eakapol Wangkahart**, Paweena rattanasena, Nontawith Areechon and Prapansak Srisapoome. 2008. Molecular Characterization and Evolution of a cDNA Encoding β -hemoglobin A from Nile tilapia (*Oreochromis niloticus*). The Proceeding of the 10th International Symposium on Genetic in Aquaculture (ISGA), Bangkok, Thailand. (Poster presentation)
- Eakapol Wangkahart**, Nontawith Areechon and Prapansak Srisapoome. 2008. Gene expression Analyses in Head kidney and Spleen of Nile tilapia (*Oreochromis niloticus*) Infected with *Streptococcus agalactiae* by Expressed Sequence Tags (ESTs) Technique. The proceeding of the 5th World Fisheries Congress. Pacifico Yokohama, Yokohama, Japan. (Oral presentation)

Eakapol Wangkahart, Nontawith Areechon and Prapansak Srisapoome. 2007. Molecular Cloning and Characterization a cDNA Encoding Interleukin- 8 Gene in Nile tilapia (*Oreochromis niloticus*). The proceeding of the JSPS-NRCT International Symposium Joint Seminar 2007, Kasetsart University, Bangkok, Thailand. (Oral presentation)

National conferences

Eakapol Wangkahart, Supranee Wigriboon, Ruemruedee Panchan, Supap Nontasan, Nontawith Areechon and Prapansak Srisapoome. 2012. Molecular characterization of Biliverdin reductase gene in Nile tilapia (*Oreochromis niloticus*). The proceeding of the 13th Agriculture annual conference. Khon Kaen University, Thailand (Oral presentation)

Pacharee Jaiboon, Chatsumal Phonsaeng, Thongchai Boonsorn, Worapol Angwanich, **Eakapol Wangkahart**, Surangkanang Chaiyasak, and Sukanya Leethongdee. 2010. The Preliminary Study of the Internal Parasite Infection in Goats Reared in the North Eastern: The Case Study of Goats Rearing in the Mahasarakham University's farm. The proceeding of the 4th MUT Veterinary annual conference 2010, Mahanakorn University of Technology, Bangkok, Thailand. (Poster presentation)

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Workshop attended

2015 17th-18th November 2015 Dafinet and ProFish Workshop at Copenhagen University, Copenhagen, Denmark

2015 26th – 30th April 2015 15th Fish Immunology/Vaccination workshop at Wageningen University, Wageningen, The Netherlands