

## **Eakapol Wangkahart** (ผศ.ดร.เอกพล วัจนะฮาด)

Assistant Professor of Molecular Biology of Aquatic animals

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

**Date of birth:** 16<sup>th</sup> February 1982    **Age:** 37

**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:** Proficiency in molecular biology technique including molecular cloning, cell culture, mutagenesis, bioinformatics, sequence analysis. Broad knowledge of molecular immunology principles and expertise with PCR, qPCR, ELISA, Western blot, nucleic acid extraction, purification. Extensive experience with protein biochemistry, including recombinant protein expression and purification and co-immunoprecipitations in particular vaccine and adjuvant development. Also, expertise with transcriptome analysis, as well as genomics and or proteomics software. Effective oral and written communications skills.

### **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**

- 2019            Editor and scientific committee, The 6th International Conference on Food Agriculture & Biotechnology (ICoFAB 2019), Thailand
- 2019            Invited speaker, 2<sup>nd</sup> Seminar on Biological Security and Sustainability  
University of Malaysia Terengganu, Malaysia
- 2019            Invited lecture, Guangdong Ocean University, China
- 2019            Invited lecture, National Taiwan Ocean, Taiwan
- 2017            External examiner for PhD, Vels University, India

### **Professional Appointments**

- 2018 - present Assistant Professor, Division of Fisheries, Department of Agricultural  
 2018 - present Head of research unit of excellence for tropical fisheries and technology,  
 Maharakham University  
 2020 - present Peer reviewer of Suranaree Journal of Science and Technology  
 2017 - present Peer reviewer of Journal of Fish & Shellfish Immunology  
 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)**

- 2017 Development of monoclonal antibody for detection of immune response in Nile tilapia (*Oreochromis niloticus*) for the commercial production, fund by Maharakham University (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)  
 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)  
 2019 Effect of Natural Free Amino Acids Mixes, Kera-Aqua® in Asian seabass *Lates calcarifer* (Bloch), fund by bcf® Life Sciences, France (PI)  
 2020 Discovery and potential application of fish antimicrobial peptides, fund by China Government, China (co-PI)

### **Publications**

- Bei Wang, **Eakapol Wangkahart**, 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. (IF=14.80)

- Eakapol Wangkahart**, 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. (IF=5.51)
- Eakapol Wangkahart**, 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. (IF=3.19)
- Tiehui Wang, Yehfang Hu, **Eakapol Wangkahart**, 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 (IF=5.51)
- Kimberly A. Veenstra, **Eakapol Wangkahart**, 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. (IF=3.82)
- Ottavia Benedicentia, Tiehui Wang, **Eakapol Wangkahart**, 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. (IF=3.21)
- Eakapol Wangkahart**, 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, anti-microbial peptides and pro-inflammatory cytokines *in vitro*. *Developmental & Comparative Immunology*. 57: 75-87. (IF=3.82)
- Qiaoqing Xu, Yousheng Jiang, **Eakapol Wangkahart**, 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. (IF=3.23)
- Sukanya Leethongdee, **Eakapol Wangkahart**, 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. (IF=1.42)
- Manakan Intrakamhaeng, Chatsumal Pholseang, **Eakapol Wangkahart**, Sukanya Leethongdee. 2012. The locally cervical administered 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. (IF=1.42)
- 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. (IF=1.42)

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. (IF=1.42)

**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. (IF=1.42)

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. (IF=1.42)

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. (IF=1.42)

### **International conferences**

**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)- $\gamma$  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 $\gamma$ ). 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 17<sup>th</sup> 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 PGE<sub>1</sub> analogue and FSH increase the expression of FSH receptor in the cervix tissue of does (*Capra hircus*) during the estrous cycle. The 17<sup>th</sup> 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<sub>2</sub> receptor (EP<sub>2</sub>) 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 17<sup>th</sup> 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 administered 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 17<sup>th</sup> 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 4<sup>th</sup> 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* × *Clarias gariepinus*) Infected with *Aeromonas hydrophila* and Sensitivity Test to Antibiotic Drugs. The 4<sup>th</sup> 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 4<sup>th</sup> 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 4<sup>th</sup> 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 4<sup>th</sup> 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  $\alpha$ -hemoglobin B from Nile tilapia (*Oreochromis niloticus*). The 9<sup>th</sup> 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  $\beta$ -hemoglobin A from Nile tilapia (*Oreochromis niloticus*). The Proceeding of the 10<sup>th</sup> 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 5<sup>th</sup> 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 13<sup>th</sup> 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)
- Pacharee Jaiboon, Chatsumal Phonsaeng, Thongchai Boonsorn, Worapol Angwanich, **Eakapol Wangkahart**, Surangkanang Chaiyasak, and Sukanya Leethongdee. 2010. The Effect of Using Liquid from the Fermented Herbal Plant on the Reduction of the Number of the Internal Parasite Egg in the Goats Rearing at Mahasarakham University's farm. The proceeding of the 4th MUT Veterinary annual conference 2010, Mahanakorn University of Technology, Bangkok, Thailand. (Poster presentation)
- Sujitta Chiengnam, Anongluk Prapong, Paweena Rattanasena, Supanee Wigriboon and **Eakapol Wangkahart**. 2010. Study on Efficacy Formalin-killed *Aeromonas hydrophila* Vaccine in Hybrid Catfish (*Clarias macrocephalus* × *Clarias gariepinus*). in the proceeding of 4th Ubonratchatani University annual conference, Ubonratchatani, Thailand. (Poster presentation)
- Eakapol Wangkahart** and Puntip Wisespongpan. 2010. Preliminary Study of species Richness and Distribution of Rice-field Crabs in Mahasarakham Province. p 22-32. in the proceeding of 45th Kasetsart University annual conference, Bangkok, Thailand. (Oral presentation)
- Eakapol Wangkahart**, Nontawith Areechon and Prapansak Srisapoome. 2008. Molecular Cloning and Characterization of  $\beta$ -hemoglobin B Gene from Nile tilapia (*Oreochromis niloticus*). pp.178-184. The proceeding of 10th KKU Veterinary Annual Conference, Khonhaen University, Khonkaen, Thailand. (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*). pp.22-32. The proceeding of 46th Kasetsart University annual conference, Bangkok, Thailand. (Oral presentation)
- Eakapol Wangkahart**, Nontawith Areechon and Prapansak Srisapoome. 2006. Gene expression Analyses in Head kidney and Spleen of Nile tilapia (*Oreochromis niloticus*) Infected with *Streptococcus agalactiae* by Expressed Sequence Tags (ESTs) Technique, 204-211. The proceeding of 45th Kasetsart University annual conference, Bangkok, Thailand. (Oral presentation)
- Eakapol Wangkahart** and Teera Lekchonlayut. 2004. Biodiversity of Crabs in the Rocky Shore and Corals at Samaesarn Island, Chonburi Province. The 2nd Plant Genetic Conservation Project Under the Royal Initiative of Her Royal Highness Princess Maha Chakri Sirindhorn Annual Conference. Sekhio, Nakhon Ratchasima, Thailand. (Oral presentation)

### Workshop attended



- 2015 17<sup>th</sup>-18<sup>th</sup> November 2015 Dafinet and ProFish Workshop at Copenhagen University, Copenhagen, Denmark
- 2015 26<sup>th</sup> – 30<sup>th</sup> April 2015 15<sup>th</sup> Fish Immunology/Vaccination workshop at Wageningen University, Wageningen, The Netherlands