

Bongkoj Boonburapong

Department of General Science, Faculty of Science,
Srinakharinwirot University
114 Sukhumvit 23, Bangkok 10110, Thailand
E-mail: b.bongkoj@gmail.com, bongkoj@g.swu.ac.th
Phone: (+66)2-649-5000 ext. 18251

Education

**May 2008 –
August 2014**

Ph.D. in Biochemistry

Department of Biochemistry, Faculty of Science,
Chulalongkorn University, Bangkok, Thailand

Dissertation: Glutamate uptake and characterization of glutamate transporter in halotolerant cyanobacterium *Aphanothece halophytica*

– *Advisor:* Professor Aran Incharoensakdi

Chulalongkorn University, Thailand

– *Co-advisor:* Professor Teruhiro Takabe

Meijo University, Japan

**May 2003 –
May 2007**

M.Sc. in Biochemistry

Department of Biochemistry, Faculty of Science,
Chulalongkorn University, Bangkok, Thailand

Thesis: Identification and expression of calmodulin genes and involvement in salt stress response in rice *Oryza sativa* L.

– *Advisor:* Associate Professor Teerapong Buaboocha

Chulalongkorn University, Thailand

– *Co-advisor:* Associate Professor Supachitra Chadchawan

Chulalongkorn University, Thailand

**May 1997 –
May 2001**

B.Sc. in Microbiology

Department of Microbiology, Faculty of Science,
King Mongkut's University of Technology Thonburi, Bangkok, Thailand

Senior project: Plasmid of lactic acid bacteria

– *Advisor:* Assistant Professor Nongpanga Khunajakr

King Mongkut's University of Technology Thonburi, Thailand

Scholarships and Fellowships

2010 – 2014

Research grant from the 90th Anniversary of Chulalongkorn University Fund (Ratchadaphiseksomphot Endowment Fund)

2008 – 2014

The Program Strategic Scholarships for Frontier Research Networks, granted by the Commission of Higher Education for Ph.D. sandwich program student (CHE-PhD-SW)

2008

The IUBMB Fellowship of 8th FEBS-IUBMB Young Scientist Forum 2008, 33rd FEBS Congress and 11th IUBMB Conference "Biochemistry of Cell Regulation", Athens, Greece (June 26 – July 3, 2008)

2006

The FAOBMB Travel Fellowship of 20th IUBMB International Congress of Biochemistry and Molecular Biology and 11th FAOBMB Congress, Kyoto, Japan (June 18 – 23, 2006)

2004 – 2006 Research grant from Graduate School Thesis Grant, Chulalongkorn University, Bangkok, Thailand

Awards

2007 Outstanding Graduate Thesis Publication Awards of academic year 2007 awarded by Department of Biochemistry, Faculty of Science, Chulalongkorn University, Bangkok, Thailand

Teaching Experiences

2012 Teaching Assistant in “2310360 GENERAL BIOCHEMISTRY LABORATORY” and “2310252 BIOCHEMISTRY LABORATORY FOR MEDICAL SCIENCES” at Department of Biochemistry, Faculty of Science, Chulalongkorn University, Bangkok, Thailand

2008 Invited Lecturer in “BMS318 BIOMEDICAL INFORMATICS: PHYLOGENETIC ANALYSIS” at Biochemistry Unit, Department of Medical Science, Faculty of Science, Rangsit University, Pathumthani, Thailand

2005 Teaching Assistant in “2310360 GENERAL BIOCHEMISTRY LABORATORY” and “2310252 BIOCHEMISTRY LABORATORY FOR MEDICAL SCIENCES” at Department of Biochemistry, Faculty of Science, Chulalongkorn University, Bangkok, Thailand

Research Experiences

Sep 2014 – present Project Research Assistant under the supervision of Associate Professor Jirundon Yuvaniyama at Center for Excellence in Protein Structure and Function (CPSF), Department of Biochemistry, Faculty of Science, Mahidol University

2008 – 2014 Glutamate uptake and characterization of glutamate transporter in halotolerant cyanobacterium *Aphanothece halophytica*, Department on Biochemistry, Faculty of Science, Chulalongkorn University, Bangkok, Thailand (Advisor: Professor Aran Incharoensakdi)

Jan – Apr 2008 Research Assistant under the supervision of Associate Professor Vijittra Leardkamolkarn at Department of Anatomy, Faculty of Science, Mahidol University entitled “Cloning of recombinant dengue-2 virus” and “Expression level of estrogen receptor gene in *Lymnaea ollula*”

May – Dec 2007 Research Assistant under the supervision of Assistant Professor Patchra Limpanavech and Associate Professor Supachitra Chadchawan at Department of Botany, Faculty of Science, Chulalongkorn University, entitled “Effects of type and concentration of chitosan treatments on growth, flora diameter and floral production of *Dendrobium formosum*”

2002 – 2006 Identification and expression of calmodulin genes and involvement in salt stress response in rice *Oryza sativa* L., Department of Biochemistry, Faculty of Science, Chulalongkorn University, Bangkok, Thailand (Advisor: Associate Professor Teerapong Buaboocha)

2000 Plasmid of Lactic acid bacteria, Department of Microbiology, Faculty of Science, King Mongkut’s University of Technology Thonburi, Bangkok, Thailand (Advisor: Assistant Professor Nongpanga Khunajakr)

Professional Training

- 2009** Short training workshop program on “Physiology and Molecular Biology in Cyanobacteria”, Research Institute and Graduate School of Environmental and Human Science, Meijo University, Nagoya, Japan (Apr 1 - May 31, 2009)
- 2007** LEARN Online web-based course on “Hypercourse on Bioinformatics”, NSTDA Institute (NI) & Faculty of Graduate Studies, Mahidol University, Bangkok, Thailand (Oct 16, 2007 - Oct 16, 2007)
- 2007** Workshop on “Phenotyping: Plant abiotic stress”, Kasetsart University, Bangkok, Thailand (Jun 4 – 8, 2007)

Professional Experiences

- 2012** Organizing Committee of the 17th Biological Science Graduate Congress, Faculty of Science, Chulalongkorn University, Bangkok, Thailand (December 8 – 10, 2012)
- 2012** Organizing Subcommittee of the 13th FAOBMB International Congress of Biochemistry and Molecular Biology “Discovery of Life Processes: From Biomolecules to Systems Biology”, Bangkok International Trade & Exhibition Centre (BITEC), Bangkok, Thailand (November 25 – 29, 2012)
- 2012** Organizing Subcommittee of the Young Scientist Program associated with the 13th FAOBMB Congress, Sirindhorn Science Home, Pathumthani, Thailand (November 23 – 25, 2012)
- 2009** Staff of the 14th Biological Science Graduate Congress, Faculty of Science, Chulalongkorn University, Bangkok, Thailand (December 10 – 12, 2009)
- 2004** Staff of the 17th FAOBMB Symposium / 2nd IUBMB Special Meeting / 7th A-IMBN Conference on "Genomics and Health in the 21st Century" at the Imperial Queen's Park Hotel, Bangkok, Thailand (November 22 – 26, 2004)

Publications

- **Boonburapong B**, Laloknam S, Incharoensakdi A. **2016**. Accumulation of gamma-aminobutyric acid in halotolerant cyanobacterium *Aphanothece halophytica* under salt and acid stress. *J. Appl. Phycol.* 28: 141-148
- Laloknam S, Kanchitanurak P, **Boonburapong B**, Rai V, Kongwitthaya S. **2014**. Inorganic and Organic Compounds of Freshwater Filamentous Cyanobacteria under Normal and Salt Stress Conditions. *J. Chem. Chem. Eng.* 8: 1059-1067 doi: 10.17265/1934-7375/2014.11.00
- **Boonburapong B**, Laloknam S, Yamada N, Incharoensakdi A, Teruhiro T. **2012**. Sodium-dependent uptake of glutamate by novel ApGltS enhanced growth under salt stress of halotolerant cyanobacterium *Aphanothece halophytica*. *Biosci. Biotechnol. Biochem.* 76(9): 1702–1707
- Laloknam S, **Boonburapong B**. **2012**. Potential of Cyanobacteria in Thailand. *J. Res. Unit Sci. Technol. Environ. Learning* 3(2): 149-154.
- **Boonburapong B**, Bualuang A, Incharoensakdi A, Yuwathida N, Puangkwan P, Boonprokobkul A, Laloknam S. 2011. Effect of glycine, proline, and glutamate on growth on cyanobacteria *Synechococcus* PCC 7942, *Synechocystis* PCC 6803 and *Aphanothece halophytica* under normal and salt stress conditions. *J. Res. Unit Sci. Technol. Environ. Learning* 2(1): 48-58.

- Sripinyowanich S, Klomsakul P, **Boonburapong B**, Bangyeekhun T, Tadao A, Hongya G, Buaboocha T, Chadchawan S. **2010**. Exogenous ABA induces salt tolerance in indica rice (*Oryza sativa* L.): The role of OsP5CS1 and OsP5CR gene expression during salt stress. *Env. Exp. Bot.* 86: 94–105.
- Laloknam S, Bualuang A, **Boonburapong B**, Rai V, Teruhiro T, Incharoensakdi A. **2010**. Salt stress induced glycine-betaine accumulation with amino and fatty acid changes in cyanobacterium *Aphanothece halophytica*. *As. J. Food Ag-Ind.* 3(01): 25–34.
- Kumkate S, Onmek N, **Boonburapong B**, Singhakaew S, and Leardkamolkarn V. **2009**. Estrogen-related fecundity reduction of fecundity reduction of *Lymnaea ollula* following *Fasciola gigantica* infection. *J. Parasitol.* 95(6): 1391–1396.
- **Boonburapong B**, Buaboocha T. **2007**. Genome-wide identification and analyses of the rice calmodulin and related potential calcium sensor proteins. *BMC Plant Biology.* 7:4.

Oral Presentations

- **Boonburapong B**, Laloknam S, Teruhiro T, Incharoensakdi A. **2012**. Glutamate utilization in *Aphanothece halophytica*. 20th The Science Forum 2012: Science-Preparation for the Asian Economic Community. Faculty of science, Chulalongkorn University, Bangkok, Thailand (April 19-20, 2012)
- **Boonburapong B**, Laloknam S, Takashi H, Yoshito T, Teruhiro T, Incharoensakdi A. **2010**. Glutamate uptake in *Aphanothece halophytica*. 15th Biological Science Graduate Congress. University of Malaya, Kuala Lumpur, Malaysia (December 15-17, 2010)
- **Boonburapong B**, Phean-o-pas S, Chadchawan S, Buaboocha T. **2008**. Expression of *OsCam1-1* gene under salt stress in rice *Oryza sativa* L. is mediated by abscisic acid. 13th Biological Science Graduate Congress: The Big Bang of Biological Sciences: unveiling the complexities of life. National University of Singapore, Singapore (December 15-17, 2008)

Poster Presentations

- **Boonburapong B**, Laloknam S, Takashi H, Yoshito T, Teruhiro T, Incharoensakdi A. **2010**. Glutamate uptake under salt stress in *Aphanothece halophytica*. CHE-USDC Congress III, Royal Cliff Grand Hotel and Spa, Pattaya, Chonburi, Thailand (September 9-11, 2010)
- Phornphisutthimas S, Limchoowong S, Sirisopana S, **Boonburapong B**, Bualuang A, Boonprakobkul A, Incharoensakdi A, and Laloknam S. **2010**. Bacterial osmoprotectants part I: Isolation of halotolerant bacteria producing osmoprotectants proline and betaine from soil at Boklua, Nan province. The 36th Congress on Science and Technology of Thailand (STT36), Bangkok International Trade and Exhibition Centre (BITEC), Bangkok, Thailand (October 26-28, 2010)
- Laloknam S, Sirisopana S, Phornphisutthimas S, Limchoowong S, **Boonburapong B**, Bualuang A, Boonprakobkul A, and Incharoensakdi A. **2010**. Bacterial osmoprotectants part II: Reduction of salt stressed to Mung bean by using crude extract of bacteria producing osmoprotectants proline and betaine. The 36th Congress on Science and Technology of Thailand (STT36), Bangkok International Trade and Exhibition Centre (BITEC), Bangkok, Thailand (October 26-28, 2010)
- Yodsang P, Raksajit W, **Boonburapong B**, Incharoensakdi A. **2008**. Mutagenesis of polyamine-binding protein D (PotD) in cyanobacterium *Synechocystis* sp. PCC 6803. The 34th Congress on Science and Technology of Thailand (STT34), Queen Sirikit National Convention Center, Bangkok, Thailand (October 31-November 2, 2008)

- **Boonburapong B**, Phean-o-pas S, Chadchawan S, Buaboocha T. **2008**. Expression of *OsCam1-1* gene under salt stress in rice *Oryza sativa* L. is mediated by abscisic acid. The 33rd FEBS CONGRESS and 11th IUBMB Conference: Biochemistry of cell regulation, Megaron Athens International Conference Centre, Athens, Greece (June 28-July 3, 2008)
- **Boonburapong B**, Phean-o-pas S, Chadchawan S, Buaboocha T. **2008**. Expression of *OsCam1-1* gene under salt stress in rice *Oryza sativa* L. is mediated by abscisic acid. The 8th FEBS-IUBMB Young Scientist Forum 2008. Hotel Poseidon, Loutraki, Greece (June 26-28, 2008)
- **Boonburapong B**, Phean-o-pas S, Chaikeratisak V, Buaboocha T. **2007**. Calmodulin isoforms in *Oryza sativa* L. are encoded by multiple divergent mRNAs. The 1st Biochemistry and Molecular Biology Conference: Biochemistry and Molecular Biology for the Integration of Life, Bangkok, Thailand (April 26-27, 2007)
- Buaboocha T, **Boonburapong B**, Phean-o-pas S, Phithakrotchanakoon C, Tanchotsrinon W. **2006**. Isolation, expression pattern and recombinant protein production of two calmodulin genes from *Oryza sativa* L. cv. KDML105 and their possible role under environmental stress. The 20th IUBMB International Congress of Biochemistry and Molecular Biology and the 11th FAOBMB Congress, Kyoto, Japan (June 18-23, 2006)
- **Boonburapong B**, Buaboocha T. **2006**. Genome-wide identification of the rice calmodulin and its related potential calcium sensor proteins. The 20th IUBMB International Congress of Biochemistry and Molecular Biology and the 11th FAOBMB Congress, Kyoto, Japan (June 18-23, 2006)
- Phean-o-pas S, Phithakrotchanakoon C, **Boonburapong B**, Buaboocha T. **2005**. Expression of Ca²⁺-binding OsCaM1 identified from a large calmodulin gene family in *Oryza sativa* L. and its possible role under osmotic stress. BioThailand 2005, Queen Sirikit National Convention Center, Bangkok, Thailand (November 2-3, 2005)

Skills and Expertise

- **Molecular Biology**: DNA and RNA extraction, DNA Cloning, PCR, RT-PCR, Real Time PCR, Mutant strain construction
- **Biochemical and Chemical Analysis**: Northern blot, Southern blot, Surface plasmon resonance (SPR), Matrix-assisted laser desorption/ionization (MALDI) mass spectrometry, High performance liquid chromatography (HPLC), Liquid chromatography-mass spectrometry (LC-MS)
- **Bioinformatics**: Database mining, Sequence alignment, Motif analysis, Phylogenetic tree construction, Rasmol, SECentral
- **Computer**: Microsoft Windows, Microsoft Office, Adobe Photoshop and Illustrator

Referees

1. Jirundon Yuvaniyama, Ph.D.
Associate Professor
Department of Biochemistry, Faculty of Science,
Mahidol University, Bangkok 10400, Thailand
Phone: (+66) 2-201-5592 **Fax:** (+66) 2-354-7174 **E-mail:** jirundon.yuv@mahidol.ac.th
2. Aran Incharoensakdi, Ph.D. (Ph.D. dissertation advisor)
Professor
Department of Biochemistry, Faculty of Science
Chulalongkorn University, Bangkok 10330, Thailand
Phone: (+66) 2-218-5422 **Fax:** (+66) 2-218-5418 **E-mail:** aran.i@chula.ac.th