

# Systems Biology and Bioinformatics

»ÃÐÇÑµÔ

ÇÑµ¶Ø»ÃÐÊ§¤ì

- à¾xéí¾Ñ²¹Ò·Ñ·ÉÐ¤ÇÒÁÃÙé¾xé¹Ò¹éÒ¹aÕÇÇÔ·ÂÒÃÐººáÅÐ¤ÕÇÊÒÃÈ¹à·È
  - à¾xéí»ÃÐÂØ¡µìaºéà¤ÃxèÍ§Áxí́éÒ¹aÕÇÇÔ·ÂÒÃÐººáÅÐ¤ÕÇÊÒÃÈ¹à·Èa¹¡ÒÁ¾Ñ²¹Òà¤a¹âÅÅÖ¤ÕÇÀò¾a¹»ÃÐà·Èä·Â
  - à¾xéí¾Ñ²¹ÒáÅÐÊ¹ÑºÊ¹Ø¹·ÃÑ¾ÅÒ·ÃºØ¤¤Åa¹éÒ¹aÕÇÇÔ·ÂÒÃÐººáÅÐ¤ÕÇÊÒÃÈ¹à·È

§Ò¹ÇÔ”ÑÂáÅÐ³¼Ñ²¹Ò.Õè’Óà¹Ô¹¡ÒÃ

- iÒÃÈÖiÉÒªÕÇÇÔ·ÂÒàªÔ§ÃÐººçÍ§iÃÐºÇ¹iÒÃÈÃéÒ§ÅÔ»Ô'ª¹Ô'µèÒ§æ ã¹ÂÕÊµì
  - iÒÃÈÖiÉÒªÕÇÇÔ·ÂÒÃÐººà¾xéí»ÃÑº»ÃØ§»ÃÓÁÒ³áÅÐ¤Ø³Àº¾çÍ§á»é§"Ó|µé¹ÁÑ¹ÊÓ»ÐËÅÑ§ ( Cassava )
  - iÒÃÈÖiÉÒËÒÅÓ'ÑºàºÊ'ÔàÍç¹àÍçÍ§ÊÒËÃèÒÂÊä»ÃÙÅÔ¹Ò ( Spirulina )
  - iÒÃÇÔà¤ÃÒÐËiçéÍÙÅçÍ§âÃ¤àºÒËÇÒ¹ âÃ¤iÃÐ'Ùi¾ÃØ¹

à·¤â¹âÅÂÕ·Õè³¼Ñ²¹Ò

- High Throughput Technology
- iÒÃÇÔà¤ÃÒÐËìâ»ÃµÖ¹
- iÒÃÇÔà¤ÃÒÐËì àÁµÖºäÅµì
- iÒÃÇÔà¤ÃÒÐËíÌÒÃìáÍç¹áí
- iÒÃÇÔà¤ÃÒÐËì Protein/DNA & protein interaction

- à.¤¹Ô¤;ÒÃÊÃéÒ§áººÓÃÍ§áÅÐÇÔà¤ÃÒÐËì¢éÍÃÙÅ

- à.¤¹Ô¤;ÒÃÇÔ¤ÃÒÐËì¢éÍÃÙÅÆÅÒÅÃÐ'Ñº
- à.¤¹Ô¤;ÒÃÊÃéÒ§âÅà'Åâ¤Ã§¢èÒÅ
- à.¤¹Ô¤;ÒÃÊÃéÒ§áººÓÃÍ§áÅÐ¡ÒÃºÓÃÍ§¾ÃµÖ;ÃÃÁ¢Í§à«ÅÅì

¤Ø¤ÅÒ¡Ã

- ¼È. 'Ã. ÍÑÈÇÔ¹ ÁÖºÑÂ
- ÄÈ. 'Ã. ÈØÀÒÀÃ³ì ¤ÖÇÐ,¹ÃÑ¡Éì
- 'Ã. "ÔÃÐ¾Ñ¹,¡ ¢Ñ¹¹Òâ¾,Ôì
- 'ÒÅàµÇÔ¤ ÇÃ»ÃÖ'Ò
- 'ÒÅÊÑ¹µÖ,ÃÃÁ¾ÃÆÁÍéÍ¹
- 'Ò§ÊÒÇÊÁ¤Ô' ¤ØÅÖ
- 'Ò§ÊÒÇÍÁÃ¾Ñ¹,¡ ¤Ø..Í§¤èÇÂ

¤ÇÒÁÃèÇÁÁxí

ÃÐ'Ñº¹Ò¹Ò¤ÒµÖ

- Technical University of Denmark (DTU)
- University of Queensland ( Australia )
- Kazusa DNA Research Institute (KDRI), Japan
- RIKEN, Japan

## ÃÐÑºaÒµÔ

- ÈÙ¹Âi¾Ñ¹, ØÇÔÈÇjÃÃÁáÅÐà·¤â¹âÅÂÖªÖÇÀÒ¾áËè§ªÒµÔ
- ÈÙ¹Âià·¤â¹âÅÂÖíÔàÅçj, Áí¹ÔjÈìáÅÐ¤íÁ¾ÔÇàµÍÃiáËè§ªÒµÔ
- ÈÙ¹Âià·¤â¹âÅÂÖâÅËÐáÅÐÇÑÊ'ØáËè§ªÒµÔ
- ÈÙ¹Âi¹Òâ¹à·¤â¹âÅÂÖáËè§ªÒµÔ
- ÁËÒÇÔ·ÅÒÅÑÂàªÖÂ§ãËÁè
- ÁËÒÇÔ·ÅÒÅÑÂà¡ÉµÃËÒÊµÃì
- "ØÌÒÅ§jÃ³ÁËÒÇÔ·ÅÒÅÑÂ
- ÁËÒÇÔ·ÅÒÅÑÂÅËÔ·Å

## ¼Å§Ò¹

### Journal articles

- Nookaew, I., Meechai, A., Thammarongtham, C., Loateng, K., Ruanglek, V., Cheevadhanarak, S., Nielsen, J., and Bhumiratana, S. (2007) Identification of flux regulation coefficients from elementary flux modes: A systems biology tool for analysis of metabolic networks. Biotechnol. Bioeng. (Accepted).
- Meechai, A., Pongakarakun, S., Deshni, P., Cheevadhanarak, S., and Bhumiratana, S. (2004) Metabolic flux distribution for g-linolenic acid synthetic pathways in *Spirulina platensis*. Biotechnol. Bioprocess Eng. Vol 9, No. 6, p506-513
- Saithong, T., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2004) Metabolic control analysis of starch biosynthesis pathways in amyloplast organelle. Thai J. Biotechnol., Vol 5, No.1, p23-33
- Homthawornchoo, W., Sattithamajit, S., Meechai, A., Cheevadhanarak, S., Thammarongtham, C., and Bhumiratana, S. (2004) Genome-scale metabolic representation of *Mycobacterium tuberculosis*. Thai J. Biotechnol., Vol 5, No. 1, p34-42

### Conference Proceedings

- Vorapreeda, T., Thammarongtham, C, Laoteng, K., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2002) In silico analysis of *Saccharomyces* genome: Lipid biosynthesis pathway. The International Conference on Bioinformatics 2002: North-South Networking, 6-8 February 2002, Le Royal Meridien, Bangkok , Thailand
- Nookaew, I., Liamprawat, C., Meechai, A., Laoteng, K., Cheevadhanarak, S., and Bhumiratana, S. (2002) Elementary flux mode analysis of fatty acid metabolism in *Saccharomyces cerevisiae* . The International Conference on Bioinformatics 2002: North-South Networking, 6-8 February 2002, Le Royal Meridien, Bangkok , Thailand
- Nookaew, I., Liamprawat, C., Meechai, A., Laoteng, K., Cheevadhanarak, S., and Bhumiratana, S. (2002) Topology

analysis of fatty acid metabolism in *Saccharomyces cerevisiae*. ;Ò»ÃĐºØÁÇÔºÒ;ÒÁÇÔÈÇ;ÃÄÀà¤ÁÓáÅÐà¤ÁÓ»ÃĐÂØ¡µìáÉ¾ÄÈ"Ô¡Ö¹ 2545 ªÅ·ÇÔ¹ ·ÒÇàÇÍÃì ;ÃØ§à·¾

- Tiyasantiwong, J., Nookaew, I. , Meechai, A., Thamarongtham, C., Cheevadhanarak, S., and Bhumiratana, S. (2002) Elementary mode analysis of fatty acid biosynthetic pathways in *Mycobacterium tuberculosis* : in quest of potential drug targets. At the 14th annual meeting of the Thai Society for Biotechnology, &lsquo;Biotechnology for better living in the new economy' 12-15 November 2002, Hotel Sofitel Raja Orchid, Khon Kaen , Thailand
- Meechai, A., Nookaew, I. , Thamarongtham, C., Laoteng, K., Ruanglek, V., Cheevadhanarak, S., and Bhumiratana, S. (2003) Pathway analyses of yeast metabolic reaction network for potential improvement of fatty acids production. at the 6 th Asia Pacific Biochemical Engineering Conference 03, 30 November &ndash; 4 December 2003, Carlton Crest Hotel, Brisbane , Australia
- Vorapreeda, T., Thamarongtham, C., Laoteng, K., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2003) Insights into the lipid biosynthesis of *Saccharomyces cerevisiae* via pathway reconstruction from genome data. at the 6 th Asia Pacific Biochemical Engineering Conference 03, 30 November &ndash; 4 December 2003, Carlton Crest Hotel, Brisbane , Australia
- Homthawornchoo, W., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2004) In silico model of *Mycobacterium tuberculosis* for drug targets identification JSPS &ndash; NRCT Symposium: The Forefront of Bioinformatics Application, and the 15 th annual meeting of the Thai Society of Biotechnology, 3-6 February 2004, Chiangmai, Thailand
- Langsanam, S., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2004) In silico gene knockout using yeast metabolic model. JSPS &ndash; NRCT Symposium: The Forefront of Bioinformatics Application, and the 15 th annual meeting of the Thai Society of Biotechnology, 3-6 February 2004, Chiangmai, Thailand
- Saithong, T., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2004) Analysis of metabolic flux control in starch biosynthesis pathway using potato as a model for tuber plant. JSPS &ndash; NRCT Symposium: The Forefront of Bioinformatics Application, and the 15 th annual meeting of the Thai Society of Biotechnology, 3-6 February 2004, Chiangmai, Thailand
- Saithong, T., Saraboon, P., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2005) A structured and multi-cellular model of starch biosynthesis in potato. Bioinfo 2005 (the 2005 International Joint Conference of InCoB, AASBi and KSBI), September 22-24, 2005 Busan , Korea
- Vorapreeda, T., Kittichotirat, W., Meechai, A., Bhumiratana, S., and Cheevadhanarak, S.(2005) Probing starch biosynthesis enzyme isoforms by visualization of conserved secondary structure patterns. Bioinfo 2005 (the 2005 International Joint Conference of InCoB, AASBi and KSBI), September 22-24, 2005 Busan , Korea
- Meechai, A., Saithong, T., Saraboon, P., Cheevadhanarak, S., and Bhumiratana, S. (2005) Numerical simulation of plant starch biosynthesis. The 3 rd International Conference on Starch Update 2005, BioThailand 2005. November 4-5, 2005. Bangkok , Thailand
- Ingkasuwan, P., Sutheeworapong, S., Netrphan, S. Chaijaruwanich, J., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2005) Mata-analysis of the transcriptome of *Arabidopsis* : A Challenge in studying starch biosynthesis in higher plants. The 3 rd International Conference on Starch Update 2005, BioThailand 2005. November 4-5, 2005. Bangkok , Thailand
- Vorapreeda, T., Kittichotirat, W., Porkaew, K., Meechai, A., Bhumiratana, S., and Cheevadhanarak, S.(2005) In silico discovery of substrate specificity of soluble starch synthase via secondary structure features. The 3 rd International Conference on Starch Update 2005, BioThailand 2005. November 4-5, 2005. Bangkok , Thailand

## Conference Abstracts

- Pongakarakun, S., Tanyongmaskul, C., Meechai, A., Deshniun, P., Cheevadhanarak, S., and Bhumiratana, S. (2000) Metabolic flux analysis for GLA synthetic pathways in *Spirulina platensis* at the 12th annual meeting of the Thai Society for Biotechnology, 1-3 November, Kanchanaburi, Thailand
- Assawachatchanchai, P., Meechai, A., Loateng, K., Bhumiratana, S., and Cheevadhanarak, S. (2001) Metabolic flux distributions of *Mucor rouxii* grown at different temperatures. at BioThailand 2001, 7-10 November 2001, Queen Sirikit National Convention Center , Bangkok , Thailand

- Meechai, A., Deshniun, P., Cheevadhanarak, S., and Bhumiratana, S. (2001) Maximum theoretical yields of biomass and g -linolenic acid of *Spirulina platensis* under phototrophic growth. at BioThailand 2001, 7-10 November 2001, Queen Sirikit National Convention Center , Bangkok , Thailand
- Sukarrom, N, Nookaew, I. , Meechai, A., Thammarongtham, C., Cheevadhanarak, and S., Bhumiratana, S. (2002) Construction of in silico strain of *Mycobacterium tuberculosis* H37Rv. At the 14th annual meeting of the Thai Society for Biotechnology, &lsquo;Biotechnology for better living in the new economy' 12-15 November 2002, Hotel Sofitel Raja Orchid, Khon Kaen , Thailand
- Vorapreeda, T., Thammarongtham, C, Laoteng, K., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2002) In silico studies in lipid biosynthesis pathway from *Saccharomyces cerevisiae* genome. At the 14th annual meeting of the Thai Society for Biotechnology, &lsquo;Biotechnology for better living in the new economy' 12-15 November 2002, Hotel Sofitel Raja Orchid, Khon Kaen , Thailand
- Nookaew, I. , Meechai, A., Laoteng, K., Thammarongtham, C, Cheevadhanarak, and S., Bhumiratana, S. (2002) Potential improvement of fatty acids production in *Saccharomyces cerevisiae* by elementary flux mode analysis. At the 14th annual meeting of the Thai Society for Biotechnology, &lsquo;Biotechnology for better living in the new economy' 12-15 November 2002, Hotel Sofitel Raja Orchid, Khon Kaen , Thailand
- Direksoonthorn, S., Nookaew, I. , Meechai, A., Thammarongtham, C, Laoteng, K., Ruanglek, V., Cheevadhanarak, S., and Bhumiratana, S. (2002) Construction of computational yeast model by using flux balance analysis. At the 14th annual meeting of the Thai Society for Biotechnology, &lsquo;Biotechnology for better living in the new economy' 12-15 November 2002, Hotel Sofitel Raja Orchid, Khon Kaen , Thailand
- Ruanglek, V., Nookaew, I., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2003) Effect of temperature on growth and fatty acids production in *Saccharomyces cerevisiae* BY4742 at BioThailand 2003: Technology for Life, 17-20 July 2003, Peach, Pattaya , Thailand
- Limcharoen, K., Cheevadhanarak, S., Meechai, A., Chaijaruwanich, J., and Bhumiratana, S. (2003) Inferring lipid regulatory circuits of yeast through gene expression data analysis. at BioThailand 2003: Technology for Life, 17-20 July 2003, Peach, Pattaya , Thailand
- Vorapreeda, T., Thammarongtham, C., Laoteng, K., Meechai, A., Bhumiratana, S., and Cheevadhanarak, S. (2003) Insights into the Acetyl-CoA transportation of *Saccharomyces cerevisiae* via pathway reconstruction from genome data. at BioThailand 2003: Technology for Life, 17-20 July 2003, Peach, Pattaya , Thailand
- Chaijaruwanich, J., Cheevadhanarak, S., Meechai, A., and Bhumiratana, S. (2003) Similar gene reordering: Novel approach of gene expression analysis. at BioThailand 2003: Technology for Life, 17-20 July 2003, Peach, Pattaya , Thailand
- Nookaew, I. , Ruanglek, V., Meechai, A., Laoteng, K., Thammarongtham, C., Cheevadhanarak, S., and Bhumiratana, S. (2003) Metabolic flux analysis of glucose-6-phosphate dehydrogenase deficient *Saccharomyces cerevisiae* strain. at BioThailand 2003: Technology for Life, 17-20 July 2003, Peach, Pattaya , Thailand
- Bhumiratana, B., Cheevadhanarak, S., and Meechai, A. (2003) Exploring microbial lipid metabolism and regulatory circuits through system analysis and metabolic engineering at BioThailand 2003: Technology for Life, 17-20 July 2003, Peach, Pattaya , Thailand
- Limcharoen, K., Cheevadhanarak, S., Meechai, A., Chaijaruwanich, J., and Bhumiratana, S. (2003) Exploring regulatory circuits of of lipid biosynthesis pathway of *Saccharomyces cerevisiae* through gene expression profiling: an approach for drug target identification. at Asia Pacific Biochemical Engineering Conference 03, 30 November &ndash; 4 December 2003, Carlton Crest Hotel, Brisbane , Australia
- Bhumiratana, S., Meechai, A. and Cheevadhanarak, S.(2004) Systems biology and its impact on agricultural and biotechnological application. JSPS &ndash; NRCT Symposium: The Forefront of Bioinformatics Application, and the 15 th annual meeting of the Thai Society of Biotechnology, 3-6 February 2004, Chiangmai, Thailand
- Kalapanulak, S., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2004) From gene expression profiling to potential regulatory elements of gene clusters in *Plasmodium falciparum* , JSPS &ndash; NRCT Symposium: The Forefront of Bioinformatics Application, and the 15 th annual meeting of the Thai Society of Biotechnology, 3-6 February 2004, Chiangmai, Thailand
- Bhumiratana, S., Meechai, A., and Cheevadhanarak, S. (2004) Biotechnology's future for nutrition and health improvement: Realizing the potential for Asia . 4 th Asian Conference on Food and Nutrition Safety, March 2-5, 2004 Bali

International Convention Center (BICC), Nusa Dua, Bali , Indonesia

- Bhumiratana, S., Meechai, A., and Cheevadhanarak, S. (2004) Harnessing the advances in new technology on the food value chain. 4 th Asian Conference on Food and Nutrition Safety, March 2-5, 2004 Bali International Convention Center (BICC), Nusa Dua, Bali , Indonesia
- Bhumiratana, S., Meechai, A., and Cheevadhanarak, S. (2004) Harnessing the advances in genomics and biotechnology for Thai agriculture. AgBiotech Graduate Conference I, March 18-19, 2004, Rama Garden Hotel, Bangkok , Thailand
- Langsanam, S., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2004) Topology analysis of metabolic pathways in Plasmodium falciparum : a first step to drug target identification. Beyond Genome 2004 Solution for new biology, June 21- 24, 2004, Fairmont Hotel, San Francisco , California , USA
- Nookaew, I. , Laoteng, K., Meechai, A., Thammarongtham, C., Ruanglek, V., Cheevadhanarak, S., and Bhumiratana, S. (2004) Exploring effects of flux through pentose phosphate pathway on fatty acid biosynthesis of *Saccharomyces cerevisiae* by metabolic flux analysis. Beyond Genome 2004 Solution for new biology, June 21- 24, 2004, Fairmont Hotel, San Francisco , California , USA
- Meechai, A., Satitthamajit, S., Langsanam, S., Cheevadhanarak, S., and Bhumiratana, S. (2004) From metabolic pathways network to drug development of *Mycobacterium tuberculosis* . 12 th International Conference on Intelligent Systems for Molecular Biology (ISMB2004) and 3 rd European Conference on Computational Biology (ECCB 2004), July 31 &ndash; August 4, 2004, Scottish Exhibition&Conference Centre, Glasgow, Scotland, UK
- Saithong, T., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2004) Modeling of starch synthesis metabolism in tuber plant: a step towards an in silico plant cell. 12 th International Conference on Intelligent Systems for Molecular Biology (ISMB2004) and 3 rd European Conference on Computational Biology (ECCB 2004), July 31 &ndash; August 4, 2004, Scottish Exhibition&Conference Centre, Glasgow, Scotland, UK
- Kalapanulak, S., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2004) Gene cluster regulatory network to drug target identification by using transcriptional profile of Plasmodium falciparum . 12 th International Conference on Intelligent Systems for Molecular Biology (ISMB2004) and 3 rd European Conference on Computational Biology (ECCB 2004), July 31 &ndash; August 4, 2004, Scottish Exhibition&Conference Centre, Glasgow, Scotland, UK
- Chaijaruwanich, J., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2004) Singular value decomposition-based algorithm for gene expression data analysis. 12 th International Conference on Intelligent Systems for Molecular Biology (ISMB2004) and 3 rd European Conference on Computational Biology (ECCB 2004), July 31 &ndash; August 4, 2004, Scottish Exhibition&Conference Centre, Glasgow, Scotland, UK
- Vonsangnak, W., Langsanam, S., Meechai, A., Cheevadhanarak, S., Porkaew, K., and Bhumiratana, S. (2004) An integrated bioinformatics tool for gene function identification of Plasmodium falciparum . The 15 th annual meeting of the Thai Society of Biotechnology. Innovative Biotechnology: The Opportunity for Kitchen of the World. 12-15 December 2004, Topland Hotel, Pitsanulok , Thailand
- Kriengsaksri, K., Hongthong, A., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2004) Proteomics study of *Saccharomyces cerevisiae* grown under different culture temperature. The 15 th annual meeting of the Thai Society of Biotechnology. Innovative Biotechnology: The Opportunity for Kitchen of the World. 12-15 December 2004, Topland Hotel, Pitsanulok , Thailand
- Kalapanulak. S., Saithong T., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2004) An approach to quantify the extent of gene interaction from transcriptome data. The 15 th annual meeting of the Thai Society of Biotechnology. Innovative Biotechnology: The Opportunity for Kitchen of the World. 12-15 December 2004, Topland Hotel, Pitsanulok , Thailand
- Suebtrakoon, S., Kalapanulak, S., Meechai, A., Nukoonkit, C., Cheevadhanarak, S., and Bhumiratana, S. (2004) Development of a Cis-acting element system for Plasmodium falciparum . The 15 th annual meeting of the Thai Society of Biotechnology. Innovative Biotechnology: The Opportunity for Kitchen of the World. 12-15 December 2004, Topland Hotel, Pitsanulok , Thailand
- Bumee, S., Langsanam, S., Vanijja, V., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2004) Development of a graphical user interface for genome-scale modeling. The 15 th annual meeting of the Thai Society of Biotechnology. Innovative Biotechnology: The Opportunity for Kitchen of the World. 12-15 December 2004, Topland Hotel, Pitsanulok , Thailand
- Langsanam, S., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2004) Systems biology for human malaria

parasite Plasmodium falciparum . The 15 th annual meeting of the Thai Society of Biotechnology. Innovative Biotechnology: The Opportunity for Kitchen of the World. 12-15 December 2004, Topland Hotel, Pitsanulok , Thailand

- Wiruchsilpa, K., Langsanam, S., Meechai, A., Vaniia, V., Cheevadhanarak, S., and Bhumiratana, S. (2004) A user-friendly tool for EFM-based drug target identification. The 15 th annual meeting of the Thai Society of Biotechnology. Innovative Biotechnology: The Opportunity for Kitchen of the World. 12-15 December 2004, Topland Hotel, Pitsanulok , Thailand

- Saithong, T., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2004) Kinetic model of starch biosynthesis in potato: a challenge tool to understand living organism and benefit in prediction its behavior. The 15 th annual meeting of the Thai Society of Biotechnology. Innovative Biotechnology: The Opportunity for Kitchen of the World. 12-15 December 2004, Topland Hotel, Pitsanulok , Thailand

- Boontongchuy, A., Saithong, T., Meechai, A., Nukoolkit, C., Porkaew, K., Cheevadhanarak, S., and Bhumiratana, S. (2004) EnzRate predictor: A tool for predicting enzyme kinetics. The 15 th annual meeting of the Thai Society of Biotechnology. Innovative Biotechnology: The Opportunity for Kitchen of the World. 12-15 December 2004, Topland Hotel, Pitsanulok , Thailand

- Wilantho, A., Kalapanulak, S., Meechai, A., Porkaew, K. Cheevadhanarak, S., and Bhumiratana, S. (2004) An integrated platform for gene regulatory network reconstruction of Plasmodium falciparum . The 15 th annual meeting of the Thai Society of Biotechnology. Innovative Biotechnology: The Opportunity for Kitchen of the World. 12-15 December 2004, Topland Hotel, Pitsanulok , Thailand

- Kitichotirat, W., Vorapreeda, T., Cheevadhanarak, S., Meechai, A., and Bhumiratana, S. (2004) Development of secondary structure analysis tool for starch biosynthesis protein. The 15 th annual meeting of the Thai Society of Biotechnology. Innovative Biotechnology: The Opportunity for Kitchen of the World. 12-15 December 2004, Topland Hotel, Pitsanulok , Thailand

- Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2005) Modeling and analyses of Mycobacterium tuberculosis metabolism. The 1 st FEBS Advanced Lecture Course. Systems Biology: From Molecules & Modeling to Cells. March 12-18, 2005, Gosau , Austria .

- Kalapanulak, S., Tang-amornsukan, N., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2005) An applied process control concept to gene motif network modeling for predicting the gene expression profiles. Bioinfo 2005 (the 2005 International Joint Conference of InCoB, AASBi and KSBI), September 22-24, 2005 Busan , Korea

- Chaisawang, M., Kriengsaksri, K., Laoteng, K., Hongsthong, A., Ruanglek, V., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2005) Flux analysis of central metabolic pathways of Saccharomyces cerevisiae grown under low temperature. The 16 th annual meeting of the Thai Society of Biotechnology: The era of bionanotechnology, BioThailand 2005. November 4-5, 2005. Bangkok , Thailand

- Kriengsaksri, K., Chaisawang, M., Ruanglek, V., Hongsthong, A., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2005) Proteome analysis of Saccharomyces cerevisiae grown under different isothermal temperatures using two-dimensional gel electrophoresis (2D-PAGE). The 16 th annual meeting of the Thai Society of Biotechnology: The era of bionanotechnology, BioThailand 2005. November 4-5, 2005. Bangkok , Thailand

- Chairat, K., Meechai, A., Chaijaruwanich, J., Cheevadhanarak, S., and Bhumiratana, S. (2005) Study the underlying regulatory mechanism of yeast lipid metabolism through an integrated analysis of omics data. The 16 th annual meeting of the Thai Society of Biotechnology: The era of bionanotechnology, BioThailand 2005. November 4-5, 2005. Bangkok , Thailand

- Uthaipaisanwong, P., Kalapanulak, S., Saithong, T., Meechai, A., Porkaew, K., Cheevadhanarak, S., and Bhumiratana, S. (2005) Development of a tool for relative gene expression analysis. The 16 th annual meeting of the Thai Society of Biotechnology: The era of bionanotechnology, BioThailand 2005. November 4-5, 2005. Bangkok , Thailand

- Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2006) A computational yeast system: a Virtual laboratory. 10 th Annual National Symposium on Computational Science & Engineering, March 22-24, 2006, Faculty of Science, Chiang Mai University, Chiang Mai, Thailand

- Eungwatwanit, T., Chan, J., Meechai, A., and Jongjaroenprasert, W. (2006) The effect of preprocessing on the results of pooled DNA on SNP microarray analysis. The 18 th annual meeting of the Thai Society of Biotechnology & Biotechnology: Benefits & Bioethics' 2-3 November 2006, The Montien Riverside Hotel, Bangkok , Thailand

- Wongphayak, S., Liamwirat, C., Meechai, A., Cheevadhanarak, S., and Bhumiratana, S. (2006) Simulation of sucrose concentration profiles across phloem during diurnal cycle. The 18 th annual meeting of the Thai Society of Biotechnology

&lsquo;Biotechnology: Benefits & Bioethics' 2-3 November 2006, The Montien Riverside Hotel, Bangkok , Thailand

- Liamwirat, C., Meechai, A., Cheevadhanarak, S., Chaijaruwanich, J. and Bhumiratana, S. (2006) In silico model of starch metabolism in leaves. The 18 th annual meeting of the Thai Society of Biotechnology &lsquo;Biotechnology: Benefits & Bioethics' 2-3 November 2006, The Montien Riverside Hotel, Bangkok , Thailand

- Chatsurachai, S., Meechai, A., Phaitoonrangsarid, K., Ruengjitchatchawalya, M., Cheevadhanarak, S., and Bhumiratana, S. (2006) Towards a systems biology of *Spirulina platensis* . The 18 th annual meeting of the Thai Society of Biotechnology &lsquo;Biotechnology: Benefits & Bioethics' 2-3 November 2006, The Montien Riverside Hotel, Bangkok , Thailand