

Thailand Metabolomics Workshop 2017
18 - 19 July 2017
Thailand Science Park, Thailand



Venue: Thailand Science Park, Pathum Thani, Thailand
Lecture Session: Lecture 2, Sirindhorn Science Home (July 18, 2017)
Lab Session: Room 127 and room 238, BIOTEC Building (July 19, 2017)

Organized by: National Center for Genetic Engineering and Biotechnology (BIOTEC)
National Science and Technology Development Agency (NSTDA)
Ministry of Science and Technology, Thailand (MOST)

In Collaboration with: Thermo Fisher Scientific
Sci Spec Co., Ltd.

Rationale and Background:

Metabolomics is one of the “omics” technologies that have been employed in different R&D applications. It is a comprehensive and transdisciplinary research, which simultaneously determines metabolite level and metabolic changes over time as a consequence of any stimuli. As a powerful tool for functional genomics, metabolomics provides a complete link of cellular functions, which can directly reflect the physiological response of the cell.

Although the metabolomics technology has been developed for over a decade, it is still a newly emerging field of "omics" research in Thailand. Together with genomics and proteomics analyses, National Center for Genetic Engineering and Biotechnology (BIOTEC) realized that the integration of metabolomics can lead to a better holistic understanding of biological system and strengthening of system biology for the country. In 2016, BIOTEC therefore established metabolomics platform aiming to employ the state-of-the-art technology to address many diverse research problems of the country, including human and animal health, agriculture and food, safety assessments, environment, natural products, and microbial researches. Moreover, as a national research center, BIOTEC is determined to be a regional metabolomics hub serving researchers who are in need of this technology for active research collaborations

Thus, to fully exploit the capacity of this high-level technology, Thailand Metabolomics Workshop 2017 aims to cover a wide range of activities including lectures and hand-on experiments.

Objectives:

1. To provide an introduction on metabolomics and its applications with an emphasis on food security research
2. To offer a hand-on experience in high resolution liquid chromatography-mass spectrometry and data analysis tools
3. To foster a collaborative network of metabolomics research in Thailand

Workshop Outline:

This 2-day workshop is designed to provide necessary information and knowledge on metabolomics for participants. The workshop will be led by experts in the field and include lectures and laboratory sessions (20 participants). The first day of this workshop will provide lectures and background on

- An introduction to metabolomics
- Metabolomics technology and applications
 - Food
 - Agriculture
 - Human Nutrition
- Future challenges and development of metabolomics

The second day of this workshop will be open to a limited group of 20 participants who will have an opportunity to perform experiments using high resolution LC-MS and analyze the data. The hand-on workshop will cover the following activities

- Targeted and untargeted sample preparation
- Experimental work flow and data acquisition
- Targeted and untargeted data analysis

Key Speakers:

1. **Dr. Simone Rochfort**
Department of Primary Industries and LA Trobe University
Principal Research Scientist DPI Biosciences Research Division, XNB Bioscience
2. **Dr. Albert Koulman**
MRC Human Nutrition Research, University of Cambridge
3. **Dr. Lin-Tang Goh**
Regional Senior Product Manager, LCMS & IOMS, Thermo Fisher Scientific
4. **Dr. Chris Cheah**
Senior Laboratory Manager, Thermo Fisher Scientific

Speakers from BIOTEC:

5. Dr. Wonnop Visessanguan (TBC)
6. Dr. Wachareewan Jamboonsri
7. Dr. Nitsara Karoonuthaisiri
8. Dr. Suganya Yongkiettrakul
9. Dr. Rinrada Suntivich
10. Dr. Umaporn Uawisetwathana

Target Group: Researchers and students

No. of Participants:

Lecture session	70 Persons
Lecture & Lab session	20 Persons

Registration Fee:

Lecture Session (1 day)

- Student 600 Baht
- General 800 Baht

Remark : The participants can choose whether to attend the lab visit or not. Those who sign up for the second day will have work in the lab on the second day so there will be no need to visit on the first day.

Lecture & Lab Session (include lab visit) (2 days)

- Student 1,400 Baht
- General 1,800 Baht

Payment:

Payment method is wire transfer, please make a payment to

Bank Name: Bangkok Bank, Thailand Science Park Branch

Savings Account Name: BIOTEC - National Center for Genetic Engineering and Biotechnology

Account No.: 080-0-002800

Swift Code: BKKBTHBK

Bank Code: 0080

Bank Address: 111 Phahonyothin Road, Khlong Nueng, Khlong Luang, Pathum Thani 12120

Language: English (No translation)

Registration Deadline: 30 June 2017

Accommodation:

You are responsible for making your own arrangements.

Suggested accommodation:

- Sirindhorn Science Home (Located in Thailand Science Park)

Dormitory: 2 beds 1,000 Baht/night including Breakfast

Dormitory: 4 beds 1,500 Baht/night including Breakfast

Deluxe room: 2 beds 1,500 Baht/night including Breakfast

Tel: (66) 2529 7100 ext. 77235 Fax: (66) 2529 7147

Website: http://www.nstda.or.th/ssh/service/service_1.php

- Institute of East Asian Studies (A 10-minute-walk from Thailand Science Park)

Twin room: 2 beds 950 Baht/night not include Breakfast

Tel: (66) 2564 5000 – 3

Website: http://www.asia.tu.ac.th/ieas/ieas_buiding.htm

For further information, please contact: Course Secretariat

Technical Training Unit

National Center for Genetic Engineering and Biotechnology (BIOTEC)

113 Thailand Science Park, Phahonyothin Rd., Khlong Nueng

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Phone: (66) 2564 6700 ext. 3379-3382 Fax: (66) 2564 6574

E-mail: TrainingUnit@biotec.or.th

Tentative Workshop Program:

Day 1: July 18, 2017 (Tuesday)

08.30 – 09.00	Registration
09.00 – 09.10	Opening address By BIOTEC STU director
09.10 – 09.20	Welcome remark By BIOTEC Executive Director
09.20 – 10.10	Introduction of Metabolomics By Dr. Simone Rochfort
10.10 – 11.00	Metabolomics Tools and Data Analysis By Dr. Albert Koulman
11.00 – 11.20	Tea break
11.20 – 12.00	Instrument/analytical technology By Dr. Lin-Tang Goh
12.00 – 13.00	Lunch
13.00 – 13.30	Metabolomics applications in agriculture and food By Dr. Simone Rochfort
13.30 – 13.45	Untargeted metabolomics analysis of brown planthopper-resistant traits in rice By Dr. Umaporn Uawisetwathana
13.45 – 14.00	Co-cultivation effect to study antagonistic activity of Actinomycetes as a potential biocontrol for antracnose disease in chilli By Dr. Rinrada Suntivich
14.00 – 14.20	Tea break
14.20 – 14.50	Metabolomics applications in human nutrition By Dr. Albert Koulman
14.50 – 15.05	Application of an LC-MS based enzyme activity assay to evaluation of kinetic analysis By Dr. Suganya Yongkiettrakul
15.05 – 16.05	Discussion: Current and future direction of metabolomics research Speakers: (TBC) Dr. Simone Rochfort Dr. Albert Koulman Dr. Wonnop Visessanguan (TBC) Dr. Wachareewan Jamboonsri
16.05 – 16.35	Lab visit (2 groups; A and B) -metabolomics facility -etc.

Day 2: July 19, 2017 (Wednesday)
20 people (10 people in each section)

08.30 – 09.00	Registration
09.00 – 10.00	Introduction to MS-based Metabolomics Workflow & Lab Demonstration By Dr. Chris Cheah and BIOTEC staff
10.00 – 10.15	Tea break
10.15 – 12.00	Sample Preparation and LC-HRMS system preparation By BIOTEC staff
12.00 – 13.00	Lunch
13.00 – 14.30	Group 1: Data Acquisition by UHPLC-HRMS By Staff from BIOTEC and Sci Spec Co., Ltd. Group 2: Data processing and mining By Staff from BIOTEC and Sci Spec Co., Ltd.
14.30 – 14.45	Tea break
14.45 – 16.00	Group 1: Data processing and mining By Staff from BIOTEC and Sci Spec Co., Ltd. Group 2: Data Acquisition by UHPLC-HRMS By Staff from BIOTEC and Sci Spec Co., Ltd.
16.00 – 16.30	Summary By Dr. Suganya Yongkiettrakul
