Event Overview

• Day 0: APAC DAEWG Research Center Site Visit (closed session)

[Date and time] 9 am – 5 pm Tuesday, October 11, 2016

[Venue] Next generation Natural Product Chemistry and Daiichi-Sankyo (Shinagawa R&D Center) [Purpose] This tour will introduce APAC researchers to the research capabilities of Japanese research facilities and promote bilateral understanding of drug discovery being undertaken in each country.

Seven people from Taiwan, eight from Thailand and three from JPMA visited Technology Research Association for Next-generation Natural Product Chemistry in the morning of October 11, where we learned (1) large-scale natural product screening system and (2) production of microbial secondary compounds by heterologous expression with biosynthesis genes. We moved to Daiichi-Sankyo Co., Ltd., and watched DVD on how Daiichi-Sankyo is going to expedite the launch of new drugs. Then, we visited laboratories of Oncology and Modality Institute of Shinagawa R&D Center of Daiichi-Sankyo Co., Ltd.



(At Technology Research Association for Next-generation Natural Product Chemistry)

• Day 1 : APAC Business Development Partnering Conference

[Date and time] : 1.00 pm - 4.00 pm Wednesday, October 12, 2016

[Venue] : Harbor Lounge-B, Annex Hall, Pacifico Yokohama

[Purpose] : The purpose of this session is to provide an opportunity for APAC countries to introduce their drug candidates direct to business development representatives from Japanese pharmaceutical companies and to encourage them to build cross-border network through direct communication.

With the great assistance by each APAC country representative to disseminate the event information and nominate appropriate participants for business development partnering from their countries, totally 2 members from China, 29 from Taiwan, 9 from Thailand, 2 from South Korea and 16 from Japan participated in this conference. In the first session, 16 Asian companies gave their presentations about their drug seeds and then 9 Japanese companies shared their corporate information. In the 2nd session, they exchanged

information about their business interests and built network through face-to-face communication. Most of feedbacks from participants were positive, and they answered that the conference was valuable for expanding their networks and they learned a lot of new things from the face-to-face communication.



Day 2 : Modern Natural Products Drug Discovery in Asia
[Date and time] 1.30 pm-3.00 pm Thursday, October 13, 2016
[Venue] Room F203, Annex Hall, Pacifico Yokohama

[Purpose] In order to enhance the drug R&D capability of Asian countries, it is important to promote cross-border open innovations between academia and industry in the Asian region. Since there is unique research taken place in Asian academia, including in Japan, the application of their basic research to drug discovery has a great deal of potential, especially in the natural product chemistry.

As a main theme of this year's Bio Japan JPMA session on Oct. 13, we invited four panelists from Taiwan, Malaysia, Thailand and Japan to share information about how natural products have been used for their drug discovery.

A panel discussion with the four panelists was moderated by Yoshinori Ikeura (Chairman, R&D Committee, JPMA) & Nares Damrongchai (Member, DAEWG, APAC)

In the panel discussion, Dr. Nares asked about expectation to Asian countries from the Japanese pharma industry. Dr. Okuda (Eisai) commented that "Both a variety of materials for HTS and refined screening are important in the innovative drug discovery. Asian countries are attractive because they have a variety of natural products. There used to be a lot of research that evaluated natural compounds obtained in Asian countries, however, few companies are taking effort to screen a nature products these days. I think we should consider an effective collaborative framework based on each country's research strength"

The panelists also exchanged ideas about how to promote cross-border open innovation. Through the discussion, we recognized the following points;

- \checkmark Asian countries have advantages in reaching bioactive molecules from natural resources.
- ✓ Asian countries have made efforts to advance scientific research using natural products.
- ✓ Eisai succeeded in generating innovative drugs from natural products, through which they have acquired know-how in using natural products for drug discovery.
- ✓ If basic research and drug R&D expertise accumulated in Asian countries are integrated by cross-border

open innovation, Asian countries would have advantage in drug discovery using natural products.

✓ In order to comply with Nagoya protocol as well as promote cross-border open innovation, there should be a guideline regarding exchange of biomaterials in cross-border collaboration.



After the Day 2 session, we held an ad hoc meeting with the following members to discuss action items and schedule of pillar 5 activity. At the meeting, Dr. Kawakami (Co-leader of Pillar 5) shared results of a questionnaire about drug discovery using natural resources taken in JPMA R&D committee. Most of the JPMA member companies are positive to promote use of natural resources for drug discovery. He plans to organize a taskforce team with JPMA member companies after goals and action items are determined.

Dr. Nares Damrongchai (Leader), Dr. Tsu-Hwie Annie Liu, Dr. Wanchai De-Eknamkul, Dr. Pei-Jean Tan, Mr. Akifumi Okuda, Ms. Taweeporn Gedarram, Mr. Ching-Lung Hu, Dr. Atsushi Hasuoka, Mr. Naoki Yoshikawa, Dr. Jun Terauchi, Mr. Yoichi Takashita, Dr. Hiroaki Yoshida, Mr. Noriyuki Matsumoto, Dr. Yoshiyuki Kawakami (Co-leader)

Topics at the ad hoc meeting

- 1. JPMA members (R&D Committee) conducted a survey and supported the concept of Pillar 5
- 2. Natural Product Drug Discovery session at Bio Japan 2016
- 3. Formulation of "pillar 5 sub-working group" with members from Japan, Thailand, Taiwan, Malaysia, and more to be added later.
- 4. Updated schedule by March, 2017.
 - ✓ Site visit to Thailand by JPMA APAC DAEWG members in November 2016
 - ✓ All members meeting in January 2017
 - ✓ Proposal for draft protocols
 - ✓ Proposal for pilot project
 - ✓ Development of management systems starting locally
 - ✓ Prepare to report at APAC Tokyo Annual Meeting, April 2017