

Collaborative Research Activities at International  
Center for Medical Research (ICMR), Kobe University  
School of Medicine

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International Center for Medical Research (ICMR), affiliated with Kobe University School of Medicine, was established in 1979, with the aim of promoting medical science in both southeast Asian countries and Japan, through scientists exchange, collaborative study, and international seminars. At present, there are five scientific divisions in ICMR.

1) Division of International Preventive Medicine: Prof. Masato Kawabata has been working on epidemiology of such infectious diseases as malaria, dengue and other vector-borne diseases. Prof. Ryutaro Ohtsuka, a visiting professor from University of Tokyo, also belongs to this division.

2) Division of International Health and Epidemiology: Prof. Naotaka Shinfuku has been working on stress-induced psychiatric disorders, such as post-traumatic stress disorders after the Great Hashin Earthquake that hit Kobe in January 1995. Associate Prof. Kiichiro Tsutani, a visiting associate professor from Tokyo Medical and Dental University, belongs to this division.

3) Division of Genetics: Prof. Masafumi Matsuo has been working on the molecular aspects of genetic disorders of children, especially those found in Indonesia, Singapore and Thailand, in collaboration with many researchers and students from abroad.

4) Division of Oncology: Associate Prof. Eiji Tatsumi has been working on virus-induced lymphoma and leukemia, such as Burkitt lymphoma and adult T cell leukemia. Associate Prof. Nobuo Oguma, visiting associate professor from Hiroshima University, belongs to this division.

5) Division of Metabolism and Nutrition: Prof. Yasuyuki Fukumaki, a visiting professor from Kyushu University, has been actively working on human genetics.

*Core university program (bilateral cooperative research program)*

In addition to conducting its five divisions' own activities, ICMR has been participating in international collaborative research program in the field of medical science, serving as the core university of the Japanese side, with the help of many cooperating universities, including Nagasaki University. This program is supported by the Japan Society for Promotion of

Science (JSPS). ICMR is conducting collaborative research projects with four ASEAN countries, such as the Philippines, Thailand, Singapore and Indonesia. The topics of the collaborative study with the Philippines are:

- 1) Perinatology and trophoblastic diseases.
- 2) Nutrition.
- 3) Environmental and occupational health.
- 4) Immunology and microbiology.
- 5) Hepatitis, hepatocellular carcinoma and other malignancies.
- 6) Pharmaceuticals.
- 7) Degenerative and metabolic disorders.

The topics of the collaborative study with Thailand are:

- 1) Diseases in the perinatal period.
- 2) Molecular medicine.
- 3) Cancer.
- 4) Hematologic disorders in tropical diseases.
- 5) Atherosclerotic vascular disorders.
- 6) Common infectious diseases.
- 7) Environmental and occupational health hazard.
- 8) Free radicals in health and diseases.

Unfortunately, however, the core university program with the Philippines and Thailand has ended on March 31, 1998. We are trying to resume the collaborative study with them under new schemes. The topics of the collaborative study with Singapore are:

- 1) Child development.
- 2) Noncommunicable diseases.
- 3) Infectious diseases.

As for the number of Japanese scientists who visited the ASEAN countries through the core university program, some 20-50 researchers visit Indonesia each year and a total of more than 600 researchers have visited there by now. Around 10-20 Japanese researchers visited the Philippines and Thailand each year and the totals are more than 200 each for the Philippines and Thailand. As for Singapore, 5-10 Japanese researchers visit there each year, with the total number being nearly 100.

As for the number of ASEAN researchers who visited Japan, 270 Indonesian researchers have come to Japan to have collaboration with their Japanese host scientists. Since 1996, the number of Indonesian researchers through this system dropped markedly, due to the change in the JSPS policy, in which Indonesian researchers are supposed to study at the Tropical Disease Center (TDC), Airlangga University, Surabaya, Indonesia. From the Philippines and Thailand, around 180 researchers each have visited Japanese counterparts. From Singapore, some 100 researchers have come to Japan.

*Core university program (multilateral cooperative research program)*

With Indonesia, core university program started in 1979, when ICMR was established. In the beginning, the main activity was scientists exchange but, since 1990, it has been expanded to what is called the Large Scale Cooperative Research project, in which mutual collaborative research work has been carried out. In Indonesian side, Airlangga University plays a role as the core university, with the cooperation of University of Indonesia, Jakarta, and Gadjah Mada University, Yogyakarta. This is a multi-lateral project, in collaboration with the Philippines, Thailand and Singapore as well, with the major part of the project being carried out in Indonesia. There are three main topics in this project, each of which is further divided into a few subgroups:

- 1) Perinatology problems in the tropical area (coordinators; Prof. Sulchan Soefoewan, Gadjah Mada University, and Prof. Hajime Morikawa, Nara Medical University).
  - 1-1) Prevention of pregnancy-induced hypertension and perinatal infections (Prof. Soefoewan and Prof. Morikawa).
  - 1-2) Hereditary disorders (Prof. Purunomo Suryanto and Prof. Matsuo).
- 2) Infectious diseases in the tropical area (coordinators; Prof. Yoes Prijatna Dachlan, Airlangga University, and Prof. Hak Hotta, Kobe University School of Medicine).
  - 2-1) Viral hepatitis and hepatocellular carcinoma (Dr. Soetjipto and Prof. Hotta).
  - 2-2) Malaria (Prof. Yoes Dachlan and Prof. Hiroji Kanbara).
  - 2-3) Diarrheal diseases (Dr. Eddy Bagus Wasito and Prof. Masaaki Iwanaga).
  - 2-4) Dengue hemorrhagic fever (Prof. Soegang Soegijanto and Prof. Kawabata).
- 3) Noncommunicable diseases in the tropical area (coordinators; Prof. Ali Sulaiman, University of Indonesia, and Prof. Hideyo Itakura, Nagasaki University). This topic, launched a few years ago with the strong desire from both Japanese and Indonesian sides.
  - 3-1) Malignancy (Dr. Santoso Cornain and Prof. Itakura).
  - 3-2) Metabolic diseases, especially diabetes mellitus (Prof. Slamet Suryono and Prof. Hiroshi Taniguchi).
  - 3-3) Environmental and psychiatric health (Prof. Sasanto Wibisono and Prof. Shin-fuku).
  - 3-4) Vascular diseases (Dr. Endang Susalit and Dr. Yoshinori Funahara).

#### *Scientific achievements through the core university program*

ICMR has recently published an interim report that describes 7-year-achievements on the topics of perinatology problems and infectious diseases. The English version of the interim report has appeared in the fiscal 1997 issue (Vol. 17) of ICMR Annals. Cited in the report are some 53 scientific articles that have been published mostly in international journals. For example, the hereditary disorders research group, in collaboration with researchers in southeast Asian countries, has found particular genetic polymorphisms in Indonesians and Singaporeans. Similarly, the viral hepatitis research group has identified new subtypes of hepatitis C virus in Indonesia, one of which has been found exclusively there. This research group, in collaboration with Thai and Filipino researchers, have found a number of the other new subtypes of hepatitis C virus in Thailand, which have turned out to be unique to

southeastern part of the Asian continent, including Thailand, Vietnam and southernmost part of China. This group has also identified a new subtype of another hepatitis virus candidate, GB virus or hepatitis G virus, in Thailand and Indonesia. Those data have been published in international journals. The malaria research group has reported, in international journals, the identification of a new species of mosquito in Indonesia in relation to the transmission of malaria parasites. Also, the diarrheal diseases research groups has demonstrated endemic distribution of O157 enterohemorrhagic *Escherichia coli*, the causative agent of hemorrhagic colitis, which would, in certain cases, lead to potentially fatal complications, such as hemolytic uremic syndrome and encephalopathy.

In addition to having the data published in international journals, TCMR has held international or regional seminars each year, either in southeast Asian countries or Japan, to distribute the scientific information to other researchers and also to discuss the future plans of the on-going projects. The topics of the seminars include perinatology & child health, viral hepatitis & hepatocellular carcinoma, malaria, diarrheal diseases, dengue hemorrhagic fever, malignancy, metabolic diseases, environmental & occupational toxicology, cardiovascular & renal diseases, and disasters & health.

*The aims of the research activities, including cooperative research program, in ICMR, Kobe University School of Medicine*

The aims of the research activities, including cooperative research program, in ICMR are: 1) to carry out original and creative scientific studies, hopefully, on subjects that are unique to Asian countries, 2) to provide higher education, such as the M.Sc. and Ph.D. courses, through the research activities, and also, 3) to provide training and enlightenment as well as information service for clinicians, other medical staffs and researchers, both in Japan and the counterpart countries. To help pursue those activities in East Java, Indonesia, Tropical Disease Center (TDC), Airlangga University, has been established, since February 1998, under the support of Directorate General of Higher Education (DGHE), Indonesia, and Japan International Cooperation Agency (JICA). JSPS and other governmental agencies have also participated in maintaining this facility. It is our hope that TDC, in collaboration with other regional and international institutions, will keep playing an important role in promoting medical science and public health in that region. Also, it is our conviction that ICMR, as well as the representative institutions involved in this project, will continue to serve as an indispensable core organization for our mutual collaboration.