

Indonesia-Japan-Thailand (INiTha) collaboration research
Report of collaboration research for exchanging technology

Implementation period; Data: 15th July, 2012 -29th July, 2012.

Implementation place: Institute of Tropical Disease (ITD), Airlangga University (AU)

Persons in charge

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REPORT

“The generation of human monoclonal antibody using peripheral blood lymphocytes from mosquito-borne diseases patients in Indonesia”

by Dr. Tamaki Okabayashi, MOCID, MU, Thailand

OBJECTIVE

It was already succeed to produce human monoclonal antibody (hMAb) against dengue virus using Thai patient blood in the collaboration works with RIMD, Osaka University, Japan and Mahidol University, Thailand. To produce these hMAbs, SPYMEG cells (MBL), generated fusing SP2/O myeloma cells of murine original with MEG-01 human megakaryoblastic leukemia cells, were used. This technology is very useful to the development of hMAb against viral infections. According to transfer this technology from Thai-side to Indonesia-side, collaboration research and training course for generation of hMAb using SPYMEG cells were held in ITD, AU.



MATERIALS AND METHODS

This technology transfer was conducted in the Isolate Bank Lab. of ITD, AU.



The use of SPYMEG cells was received by MBL Company. These cells were taken to ITD, AU from MOCID. Patient bloods were kindly provided by Dr. Soengeng Soegijanto (Soerya Hospital, Surabaya, Indonesia). Blood samples were collected from dengue fever patient (serotype 2). The protocol was followed as recommended by MBL with a few modifications since some reagents could not prepare in time.



RESULTS

Set out below were the list of technology transferred.

Handling of SPYMEG cells.

Preparation of PBMC from patients' blood.

Cell Fusion of SPYMEG with patients'

PBMC

Screening of Hybridoma produced hMAb*.

Cloning of Hybridoma produced hMAb*.

(*demonstration only)



Discussion about outlook for the future of the hMAbs produced in this project.
(with Dr. Nasronudin, Dr. Inge Lusida and Dr. Soengeng Soegijanto)

DISUCUSSION

The technology of hybridoma preparation using human samples was transferred to ITD, AU. Now, the member of ITD are maintaining the fused cells, and will make the 1st screening of antibodies production against dengue virus at 2nd Aug. We are convinced that the members of ITD can perform all the needed experiments to produce hMAbs against dengue virus. Hopefully, they will show a good report in the next Indonesia-Japan-Thailand Joint Forum.



In this project, we needed to use fresh patients' blood at acute phase or within 7 days after onset of dengue fever patient and convalescent phase of chikungunya fever patient or 2 weeks later after onset. According to Dr. Soengeng and Dr. Kris, they are kindly arrangement of those dengue patient and we smoothly collected their blood samples. We were incredibly impressed with good collaboration system between bench and bed in ITD, AU.

We are grateful for the cooperation one has received from the member of ITD, AU, Collaborative Research Center for Emerging and Reemerging Infectious Diseases, and INiTha.

