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Multi-Country External Competency Assessment

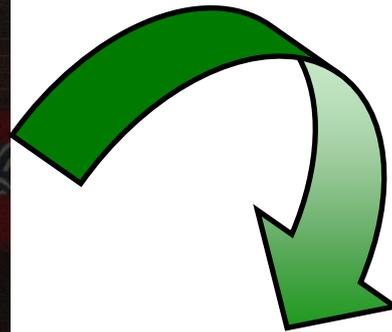
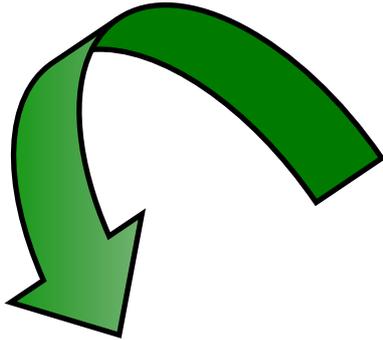
National Institute of Malariology, Parasitology and Entomology hosted the Multi-country External Competency Assessment. It was held at Army Hotel in Hanoi last December 9-13, 2013. The activity was facilitated and assessed by Mr. Ken Lilley, WHO level 1 microscopist, was participated by 12 participants from five countries namely Bangladesh (2), Indonesia (2), Lao PDR (3), Myanmar (2) and host country Vietnam (3). The result of the 5 day assessment was good as there were two level 1, nine Level 2 and one Level 3; according to WHO standard scoring.



Thank You

It is not unknown to the international community what happens to the Philippines these past months. These catastrophes curb the norm of some Filipinos to celebrate the season abundantly and expensively. The nation witnessed the overwhelming response of the countries that extended help to the survivors of the typhoon. And it was initiated by most of the government and private institution to donate their budget for parties to the stricken province as their way of sympathizing to their own people.

The staff of the secretariat of the network also extended help to the survivors through channeling it through a foundation that has already established help in the area. Since Christmas is a season of giving, the ACTMalaria had its Share-the-blessings as the Christmas/Year-end ACTMalaria gathering. The group enjoyed the simple foods served– street food like siomai, squid balls, kikiam etc and long-life goodies (pancit palabok). The gathering’s highlight is the giving of gifts and food packs to the street children in Malate area.



We would like to take this opportunity to thank you all for all the prayers uttered and support to the survivors of the super typhoon Haiyan. It may take time for the Filipinos to fully recover from the damages brought by the typhoon, but the help from the international community we believe would strengthen our faith and eventually give us high hopes that make us all a stronger being. Once again, thank you very much. Happy holidays.

During the past decade, global malaria prevention and control efforts have been scaled up, with notable progress in sub-Saharan Africa. On the occasion of World Malaria Day, 25 April 2012, the World Health Organization launches a new initiative to urge countries and donors to reinforce the malaria fight. The initiative seeks to focus the attention of policy-makers and donors on the importance of adopting WHO’s latest evidence-based recommendations on diagnostic testing, treatment and surveillance, and updating existing malaria control and elimination strategies, as well as country-specific operational plans.



How Immune System Fights Off Malaria

The parasites that cause malaria are exquisitely adapted to the various hosts they infect -- so studying the disease in mice doesn't necessarily reveal information that could lead to drugs effective against human disease.

Now, a team led by MIT researchers has developed a strain of mice that mimics many of the features of the human immune system and can be infected with the most common human form of the malaria parasite, known as *Plasmodium falciparum*. Using this strain, the researchers have already identified a key host defense mechanism, and they believe it should lead to many more useful discoveries.

"Human malaria studies have been hampered by a lack of animal models," says Jianzhu Chen, the Ivan R. Cottrell Professor of Immunology, a member of MIT's Koch Institute for Integrative Cancer Research, and the lead principal investigator of the Infectious Disease Interdisciplinary Research Group at the Singapore-MIT Alliance for Research and Technology (SMART). "This paves the way to start dissecting how the host human immune system interacts with the pathogen." Chen is one of the senior authors of a paper describing the findings in this week's Proceedings of the National Academy of Sciences, along with Ming Dao, a principal research scientist in MIT's Department of Materials Science and Engineering (DMSE); Subra Suresh, president of Carnegie Mellon University (and a former MIT dean of engineering and the Vannevar Bush Professor Emeritus of Engineering); and Peter Preiser, a professor at Nanyang Technology University in Singapore.

Plasmodium falciparum, a parasite carried by mosquitoes, usually infects the liver and red blood cells of its victims. Scientists hoping to study malaria in mice have previously generated mice with human red blood cells -- but these mice also have compromised immune systems, so they can't be used to study the immune response to malaria infection. The humanized mouse project described in the new PNAS study grew out of an interdisciplinary program Suresh initiated in 2003 involving researchers from MIT, several institutions in Singapore, and the Institut Pasteur in France to study the mechanobiology of human red blood cells invaded by malaria parasites and its consequences for the pathogenesis of malaria. In 2007, Chen, Suresh, Dao, and Preiser established a collaboration, through SMART, to develop a humanized mouse model for malaria. Over the past several years, Chen and colleagues have developed strains of mice that have the human cells necessary for a comprehensive immune response. To generate these cells, the researchers deliver human hematopoietic stem cells, along with cytokines that help them mature into B and T cells, natural killer (NK) cells, and macrophages -- all critical components of the immune system. These mice have already proven useful to study other diseases, such as dengue fever. To adapt the mice for the study of malaria, the researchers injected them with human red blood cells every day for a week, at which point 25 percent of their red blood cells were human -- enough for the malaria parasite to cause an infection. Natural defense In the new PNAS paper, the researchers investigated the role of NK cells and macrophages during the first two days of malaria infection. They found that eliminating macrophages had very little impact on the immune response during those early stages. However, in mice lacking NK cells, parasite levels went up sevenfold, suggesting that NK cells are critical to controlling infection early on. To further investigate the role of NK cells, the researchers placed human NK cells in a sample of infected and uninfected red blood cells. The NK cells randomly interacted with both types of cells, but they latched onto infected cells much longer, eventually killing them. The researchers also identified a cell adhesion protein called LFA-1 that helps NK cells bind to red blood cells. They are now studying this process in more detail and trying to figure out what other molecules, including those produced by the malaria parasite, might be involved. Chen and colleagues also hope to use these mice to study experimental malaria vaccines or drugs. And in another future study, they plan to inject the mice with human red blood cells from people with sickle cell anemia to investigate how the sickle-shaped red blood cells help people survive malaria infection.

Source: Massachusetts Institute of Technology (2014, January 13). How immune system fights off malaria. ScienceDaily. Retrieved January 16, 2014, from <http://www.sciencedaily.com/releases/2014/01/140113154225.htm>



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Got a resource material? Share it with us. Drop by at <http://resource.actmalaria.net>.

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A bunch of photographs can now be accessed at the online photo gallery of ACTMalaria:
http://www.actmalaria.net/home/photo_gallery.php#base



Asian Collaborative Training Network for Malaria



ACTMalaria (Asian Collaborative Training Network for Malaria) is a training network to which the National Malaria Control Programmes of Bangladesh, Cambodia, PR China, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Thailand, Timor-Leste and Vietnam are members. The network aims at 2 major activities:

- Provide collaborative training for member countries to meet the needs of malaria control in Southeast Asia and the Mekong Sub-region;
- Improve information and communication exchange among member countries, partners and other stakeholders on malaria problems affecting the region.

ACTMalaria Foundation, Inc.

11/f Ramon Magsaysay Center, 1680 Roxas Boulevard, Malate,
Manila, Philippines

Telephone: 63-2-536-5627

Telefax: 63-2-536-0971

E-mail: infonyetwork@actmalaria.net

Website: <http://www.actmalaria.net>

Resource Email: resource@actmalaria.net

ACTMalaria News

CCD: Dr. Be-Nazir Ahmed (Bangladesh)

Vice-CCD: Dr. Mario Baquilod (Philippines)

Executive Coordinator: Ms. Cecilia T. Hugo

Executive Assistant: Ms. Joy Ann B. Lico

Administrative Assistant: Mr. Rogelio T. Mendoza, Jr.

Information Resource Officer: Ms. Jufel Guinanao

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