The Project for Surveillance of Viral Zoonosis in Africa

Japan International Cooperation Agency
ZAMBIA OFFICE
Background

Recently, emerging and reemerging infectious diseases are appearing worldwide, and becoming of major concern to public health. Most of these diseases are zoonoses whose causative agents infect both humans and animals. Zoonoses are one of the highest priority issues for public health in Zambia and Southern African countries. As well as major human and animal infectious diseases including influenza, viral diseases such as haemorrhagic fevers that so far we do not have any control measures for, are also becoming of major public health concern in Zambia. Typically, the causative viruses are originally harmless in their natural host wild animals and occasionally transmit to other animal species including humans, causing infectious diseases. Despite all this, there is inadequate research, educational and administrative basis for the control of zoonoses, probably because it falls between the two sciences, human and veterinary medicine. In fact, there is a pressing need to develop effective measures for diagnosis, prophylaxis and therapy, to widely disseminate information and technology and to train experts for the control of zoonoses in Zambia and sub-Saharan Africa. Particularly, capacity building for research and diagnosis on viral diseases should be one of the most important subjects, so that Zambia can demonstrate leadership for the control of zoonoses in sub-Saharan Africa.

Project Purpose

Encompassing research and surveillance capacity for viral zoonosis is strengthened in Zambia, through collaborative researches between Zambian and Japanese research Institutes.

Project Outputs

1. Research and education systems for viral zoonoses are established in UNZA-SVM.

2. Diagnostic methods (detection of viral genome, viral-specific antibody and viral antigen) are established/improved for known viral zoonoses such as influenza and viral haemorrhagic fevers.

3. Risks of known and/or unknown (or uncharacterized) viruses as pathogens are assessed on the basis of information on genetic analyses, natural reservoirs, transmission pathways, host ranges and pathogenicity.

Target Area: Endemic areas of viral zoonoses in Zambia
Beneficiaries: Residents in Zambia
Country population: Approx. 13 million
Whole process of the development of monoclonal antibody is done at UNZA-SVM by themselves:
1. The Project has completed setting up the experimental environment such as the installation of research instruments and other necessary items as well as animal facility to produce monoclonal antibody/ies. Moreover, Zambian researchers were dispatched to HU and acquired experimental techniques necessary to produce monoclonal antibodies. For these reasons, the Project is ready to start the research work for the development of viral antigen detection method.
2. The Project started rearing experiential animals at UNZA-SVM, and has just started to prepare immunogens using gene recombinant techniques.
3. The Project is planning to perform 1st screening of antibodies against NP of Marburg virus to select antibodies with high affinity to viral NP, followed by the preparation of monoclonal antibody for the development of viral antigen detection method for the said virus.

A surveillance system for viral zoonoses is established in UNZA-SVM:
1. The Project has been continuing the sampling trip to collect faeces of wild aquatic birds to monitor the prevalence of avian influenza viruses epidemiologically at the Lockinvar National Park on a monthly basis after the commencement of the Project. The fecal samples are regularly subjected to isolation and identification of influenza subtypes by the Project.
2. Concerning the African swine fever, UNZA-SVM and CVRI provided diagnostic services for this disease with the support from Japanese researchers at the time of its outbreak in Zambia in 2013. Both institutes established the diagnostic system for the African swine fever independently.
3. Responding to the EVD outbreak in western African countries in 2014, UNZA-SVM was designated as the only laboratory to provide EVD diagnostic services in Zambia. Through the countermeasure activities, EVD diagnosis system amongst UNZA-SVM, MOH and UTH including sample flow, information flow (feedback) and other necessary counteractions.

The Project has published a total of 6 scientific articles (one article is in press) with the theme of viral infectious diseases in international journals:
Implementing Organization
School of Veterinary Medicine, University of Zambia, Ministry of Education, Science and Vocational Training
Address:  P.O. Box 32379, Lusaka, Zambia
Project Director: Vice Chancellor, University of Zambia

Period of cooperation
From June 1st, 2013 to May 31st, 2018

For further information, please contact;
JICA Zambia Office
Plot No. 11743A, Brentwood Lane, Long acres
P.O. Box 30027, Lusaka, Zambia
Phone: +260-211-254501/254509
Fax: +260-211-254935
Website: http://www.jica.go.jp/zambia/english/index.html