Hokkaido University
Program for Leading Graduate Schools
Fostering Global Leader in Veterinary Science for contributing to One Health

（Abroad・Domestic）Official trip report form（Student） 2016/07/06 (Year/Month/Day)

Name	Jeewan THAPA
Laboratory	Division of Bioresources, CZC
Year (Grade)	D3
Destination	Boston, USA
Period of trip	2016/06/15 to 2016/06/22
Purpose of trip	To attend the ASM microbe conference 2016 (June 16-20, 2016) and present my research works entitled "Molecular characterization of *Mycobacterium orygis* isolates from animals of South Asia".

Summary of activities （about 800 words, provide photos, tables and figures that clearly show the activities during the period）

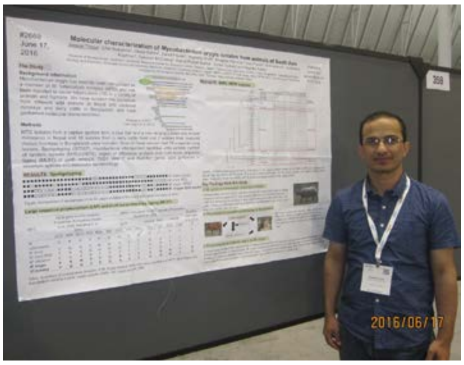
This year's American Society of Microbiology (ASM) conference named ASMmicrobe 2016 was a joint meeting of ASM's conferences and annual general meeting. It was organized at Boston's convention and exhibition center and three other satellite venues from June 15 to 20, 2016. The conference was very large and more than 10,000 attendants were expected. Fortunately, conference app was developed so that it was easy to navigate the programs and keep track on events. In this report, I will briefly describe on my activities on the conference.

Activities of June 16

It was the first day of the conference so there were many paid workshops on different disciplines of microbiology like next generation sequencing, metabolomics, antibiotic resistance, microbiology careers etc. Out of many interesting workshops, I choose 013-WS Assemble, Annotate and Analyze Your Own Genome using PATRIC, the All Bacterial Bioinformatics Resource Center workshop (https://www.patricbrc.org/portal/portal/patric/Home). In this workshop, there was hand on workshop on PATRIC software. This software was funded by US government as dedicated software to handle bacterial next generation sequencing data. As I am also working on bacteria, I was interested in this workshop. Here we learned about genome assembly, annotation, comparison and interpretation. We used *E.coli* data as a model to explore the software. Attending this workshop gave me confidence to explore whole genome data and interpret it. I am planning to use this software for analysis of my own data in future.

Activities of June 17

On this day, I attended one session of recent advances of early diagnosis of infectious diseases. I was quite impressed with presentation of Prof Jeff Cirillo who presented about rapid diagnosis of tuberculosis (TB) based on fluorescent marker. This test use bacterial cell was component which can be targeted by fluorescent proteins and help in diagnosis. Tuberculosis suspected sputum can be used for diagnosis.



At afternoon session I presented my poster entitled "Molecular characterization of *Mycobacterium orygis* isolates from animals of South Asia". I was fortunate to be quizzed by some of the participants about my poster. They were interested to know in detail about new kind of TB bacteria. Almost all asked me why and how this bacterium is different from other members of MTC. Some of them asked if this bacterium is also natural resistant to one of the important TB drugs, pyrazinaminde. Two of the participants advised to collaborate in future. I had good time presenting poster and interacting with participants.

Activities of June 18

This day, I dedicated my time attending poster presentation in detail and visiting exhibitor's booths. In exhibition booths, many famous companies were demonstrating their product and services. I keenly visited each of the exhibitors and explored the products. There were new techniques of bacterial culture, next generation pipetting techniques, different sequencing machines, diagnostic platforms. One of the highlights was increasing use of MALDI-TOF machine for diagnosis of TB, bacteria and fungi.

Activities of June 19

On the morning session, I attended workshop on "Antibiotic resistance: One health". I found that the use of next generation sequencing in every aspect of microbiology and antibiotic resistance were some of the hot topics in the conference. In this session, different presenters highlighted the increasing antibiotic resistance in public health from consumption of antibiotic contaminated animal products. During the afternoon session, I again explored poster presentation and attended exhibition booths that had interested me a day before.

Activities of June 20

I attended the session entitled "aiming at non-conventional approaches to TB therapies". In this session there were different lectures discussing on novel approaches for TB therapies. Two presenters discussed on host directed therapies for TB control where one of them showed about the potential possibility and other cautioned by presenting unwanted result. There was also a presentation on compound screening of anti-TB drugs where presenter explained about using host cell and bacterial interaction for screening anti-TB drugs. I was impressed by the presentation as they used different approach for screening TB drugs. Usually the initial screening of TB drugs is conducted in 96-well plate that only takes in account of bacterial side influences. However, in this study, the presenter introduced the method of screening TB drugs in macrophage infection model. This model takes into account both bacterial and host side (Fig 1).

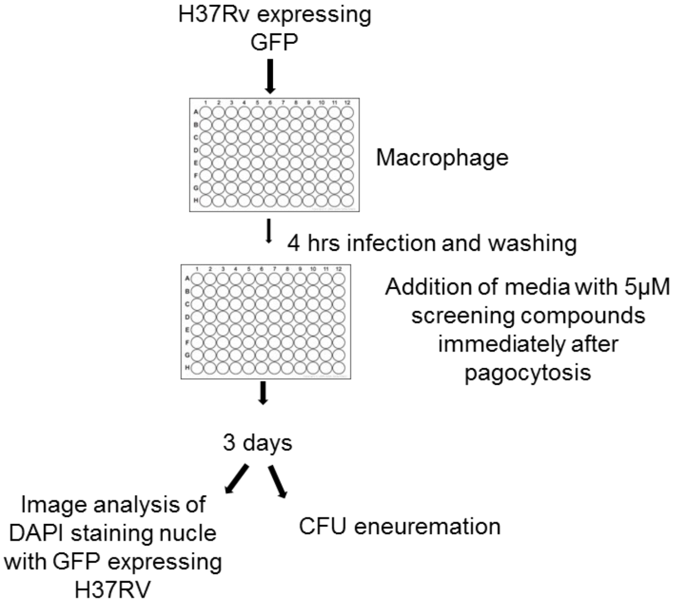


Fig 1. Model for screening TB drugs at host pathogen interface

Finally I would like to sincerely thank leading office, leading steering committee and my supervisors for providing opportunity to attend this international conference.

Approval of supervisor	Institution・Official title・Name： Hokkaido University, Research Center for Zoonosis Control Professor 印 Yasuhiko SUZUKI

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Submit to：Leading School section, International Affairs Office
Ext: 9545 e-mail: leading@vetmed.hokudai.ac.jp