

## Research Internship In Airlangga University, Indonesia

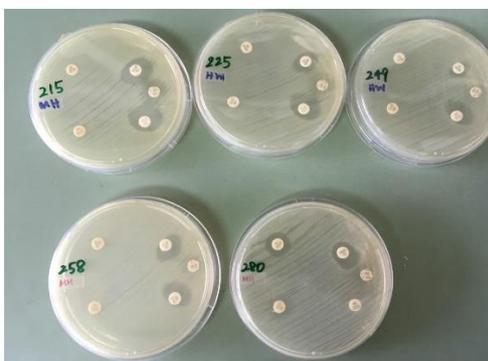
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### 【About My Research】

From July 13, 2016 until August 10, I was studied in ITD (Institute of Tropical Disease). I researched bacterium that causes the infection common in tropical areas and drug-resistant bacteria in ITD. For example, ① Isolation of KPC (*Klebsiella pneumoniae* Carbapenemase) -producing bacteria and ESBL (Extended-spectrum  $\beta$  -lactamase) -producing bacteria, ② Testing chemical sensitivity of CRE (Carbapenem-resistant enterobacteriaceae) , ③ Conducting biochemical test using the culture medium of a test tube, ④ Isolation of *Vibrio* from shrimp.

It is a big problem how we cope with the infection with drug-resistant bacteria.



(left) Picture1. Testing chemical sensitivity of CRE

(right) Picture2. Biochemical test using the culture medium of a test tube

Compared with Japan, the facilities of the local laboratory were insufficient, so a study might not be pushed forward as expected. For example, regard to the petri dish, in Japan, we use made of plastic and disposable one. But in the local laboratory, they has been used made of glass and non-disposable one. Washing and sterilization are necessary to use it repeatedly. Because a number is limited, we cannot make a culture medium when

I use it in large quantities at a time. In Japan, we prevent contamination of bacteria using a gas burner when we are making medium. But in the laboratory of the local, contamination is occurred because it was using alcohol lamps (its fire is weak), medium was often cannot be used. And safety cabinet has not been put, so I had to pay close attention when I dealing with bacteria. Also, because of chronic power shortage, it happened blackout once during my stay. In the laboratory, there are electronic devices, such as an incubator or PCR equipment. In order to do a good quality research, it is necessary to solve problems about power.



( left ) Picture3. Member of Gastroenteritis/Salmonellosis laboratory



(right)Picture4. Member of influenza laboratory

### 【Others】

I visited Dr Soetomo General Hospital on July 22. In the microbiology laboratory, petri dish made of glass, platinum loop had been used those sterilized by a gas burner.

I saw a patients lying on the bed, which was installed in the hallway. Because in the Soetomo hospital always accept patients from many small hospitals, such a situation arise not fit a bed in the hospital room.

On July 23, I accompanied on the visit of Trenggalek Prefecture, we met the governor and deputy governor. I received the impression that Trenggalek Prefecture is in harmony with nature. Especially the coast has rich natural and good landscape, it is possible to spend a quiet time. The construction of an airport and the expressway seems to be pushed forward, and it is hoped that many tourists come from the world in future.

On holidays, I went out with the friend made of a laboratory and dormitories. I saw the sights of the Surabaya city including cigarette museum, Indonesian restaurant, Surabaya souvenir shop, and shopping mall.

Because main transportation was motorcycles or a cars in Surabaya, I could go to the place where it was difficult to go by myself and was able to have a valuable experience. All local friends were very kind for me. They showed interest in Japanese culture, but I couldn't answer for a question exactly by lack of my knowledge and I felt it was necessary to learn about Japan.



(left ) Picture5. Microbiology laboratory in Soetomo Hospital

(right)Picture6. The traditional music at Trenggalek Prefecture

#### • About traffic

One of the impressive things for me is a traffic condition of Indonesia. On the road of two traffic lanes, three cars were side-by-side three at the time of waiting at a stoplight, and a motorcycle was going to advance forward by force. As a result, even the ambulance was not able to advance at all and finally it ran in the opposite traffic lane.

In addition, I saw people selling newspapers and cakes and playing ukulele in order to get money at the time of waiting at a stoplight. There was the young child in that and even if it was past 10:00 p.m., they violated danger and walked around the interval of a car and the motorcycle. New hotels and shopping malls were built one after another, it looks like the city has become rich, but I felt the gap between rich and poor was more and more widespread.

#### • About dormitory

I stayed in the women's dormitory near ITD during one month. There are not an air-conditioner and a kitchen in the dormitory. A restroom and the bath are joint ownership, and hot water does not come out. In most restrooms of Indonesia including this dormitory, it is common to scoop water, and flow. However, the watery place was an outbreak source of mosquitos and mosquitos really habitually resided in the restroom of the dormitory.

- About meals

I thought that the Indonesian dish had many hot things, but I could often regulate hotness by oneself and was able to enjoy a dish. I ate the dish similar to the barbecued chicken called *sate* willingly. As for the price, a lot of cases that were cheaper than Japan. And it is able to purchase the quantity that was enough for lunch for approximately 70-150 yen in the cafeteria.

- About language

I took the communication using English in a laboratory and a dormitory, but it was often that I keenly realized lacking my English skill. In the case of me, when I saw the sights at time to go to the shop in the city, I did not have a hard time too much because I was with a local friend, but I felt it is necessary to learn Indonesian language to live a life in Surabaya.



( left ) Picture7. Women's dormitory



(right) Picture8. Indonesian food

### 【Conclusion】

I was able to experience an environmental difference with Japan in both the study side and the aspect of living by staying for one month. About the experiment, I needed time until I was used to operation unlike Japan, but there was the help of the coworkers and was able to push forward a study. When I just arrived at Indonesia, I had big uneasiness about lives, meals traffic and so on, but I was able to spend it without a problem on the coattails of a friend. Through this program, not only to study in the local laboratory, it

was possible to grow mentally and the ability to adapt to different environments.  
I felt must make use of knowledge in Japan that I learned in Indonesia.

Thanks for everyone concerned of Airlangga University and Kobe University, and everyone who supported me for this program.