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Form B-2
(FY2022)
Must be typed

Date（日付）
11/11/2022（Date/Month/Year：日/月/年）

Activity Report -Science Dialogue Program-
（サイエンス・ダイアログ事業　実施報告書）

- Fellow's name（講師氏名）: Oduori Sylvanus Okechi（ID No. P22103）

- Name and title of the lecture assistant（講義補助者の職・氏名）
Takashi Matozaki, Professor, Graduate School of Medicine, Kobe University.

- Participating school（学校名）: Hiroshima Kokutaiji Senior High School

- Date （実施日時）: 4/11/2022 （Date/Month/Year:日/月/年）

- Lecture title（講義題目）:
We can teach our bodies to function even in adversity: lessons from diabetes and cancer

- Lecture format（講義形式）:
◆☒Onsite ・ □Online (Please choose one.)（□対面 ・ □オンライン（どちらか選択ください。））
◆Lecture time（講義時間） 70 min（分）, Q&A time（質疑応答時間） 30 min（分）
◆Lecture style（ex.: used projector, conducted experiments）
（講義方法（例：プロジェクター使用による講義、実験・実習の有無など））
I used a projector for my lecture, and microscopes (15) to observe and identify blood cells on the blood smear slides I had prepared

- Lecture summary（講義概要）: Please summarize your lecture within 200-500 words.

My presentation was divided into the following sections: My background, my research work, slide demonstration, Q&A and take home message.
Under my background, I introduced my country, Kenya, and shared some facts about her, including attractive geographical features like Mt. Kenya and the great Rift Valley, world famous tourist attractions like the Maasai Mara and wildbeest migration. I also compared the size and population of Kenya to that of Japan and how our climatic conditions vary. In addition, I talked about the areas of cooperation between the two countries, the assistance we receive through JICA, and also shared the opportunities that students can have to study, research and work in my country. Finally, I talked about some of our staple foods, sporting activities, mainly athletics, and mentioned just a few of our world beating athletes. To complete the introduction part, I talked about myself; where I was born, where I studied till completion of my undergraduate, why I chose to specialise in basic medical research and why I chose to come to Japan for my graduate studies.
Then, I proceeded to talk about my two research themes: mechanisms of insulin secretion and

cancer immunotherapy. First, I described the general biology of our body and introduced why all cells need energy. Then, I explained how insulin is made in the pancreas and why it is critical in helping the body to use energy from the food we eat. Next, I explained the types of diabetes and their characteristics. Using my example, I then explained how we can study the pathology of a disease using animal models. I explained the presentation of my diabetes disease model and how it compared to the presentation of type two diabetic patients. Finally, I briefly explained the summary of my findings and its potential application, where we could potentially adapt the diabetic body to restore near normal insulin secretion. On my new research theme, I introduced the blood cells and their functions. I then described how the immune system works, particularly during an infection. Next, I introduced cancer and how tumor cells within the tumor microenvironment are able to get hold of our immune cells and produce ”dont eat me” signals that not only prevent the immune cells from eliminating the tumor cells, but also help the tumor cells to grow and multiply. I then talked about the new strategy to treat cancer by targeting either the immune system, or specifically, these ”dont eat me” signals. I shared how, by generating antibodies against some of these ”dont eat me” signals highly expressed in some cancers, we can potentially re-teach the immune system to eliminate these tumor cells. I then had a demonstration session, where the students could observe and identify different blood cells on the microscope. This was followed by a 30 minute question and answer session. I completed the lecture with a 5-minute advice on how to become a future researcher or succesful person in life.

◆Other noteworthy information（その他特筆すべき事項）:

I presented to 80 students, drawn from geography, mathematics, biology, chemistry and physics classes. The students seemed to enjoy and sometimes a little suprised, by the information about my country. I was particularly suprised that some had great command of english, and actually asked very good questions from my data, an indication that they followed and understood the presentation. Also, both the teachers and students appeared fascinated by my research and wished me the very best. Finally, the engish teacher was very helpful during the lecture, as she translated all the questions and answers, plus the take home message, in japanese for everyone to fully understand.

- Impressions and comments from the lecture assistant（講義補助者の方から、本事業に対する意見・感想等がありましたら、お願いいたします。）:

My PI was my lecture assistant. He was very pleased with my presentation, and informed me that he too, just as the students and teachers, learnt a lot about my country and myself from the introduction section. Secondly, he indicated that although I tried my level best to simplify my presentation, he acknowledged that it was difficult for some of the students (particularly non biology) from understanding the sections on how insulin is secreted and generation of antibodies. Agreeing that it would certainly be difficult for anyone not from our area of speciality, he observed that the students enjoyed the presentation and must have learnt something from it. Finally, he was surprised at the difference between university and high school students, where the latter have much freedom and freely participate in the discussions.