

Form B-5

Date (日付)

26 / 08 / 2011 (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) Elly (Petronella Helena) van Riet (ID No. P 10515)

- Participating school (学校名): Yoshida High School, Fujiyoshida, Yamanashi

- Date (実施日時): 25 / 08 / 2011 (Date/Month/Year: 日/月/年)

- Lecture title (講演題目): Improving influenza vaccines

インフルエンザワクチンの改良を目指して

- Lecture summary (講演概要): Please summary your lecture 200-500 words.

In case of an infection a battle between the pathogen and the host's immune cells will take place. In the case of influenza, if the virus wins the battle, the infected human will die. If the human being wins the battle, the virus will be killed and, importantly the immune system will remember the virus for a very long time, making sure that next time the virus infects the human again, the immune system knows exactly what to do and can quickly kill the virus.

In case of vaccination, there is no fight for life and death, but it is a way of teaching the immune system how the virus looks like and to induce memory. Thus if the virus infects you after a vaccination, your army (immune system) is prepared and can easier win the fight. In childhood you get many vaccinations, and often you are protected for life. So why, if we have this memory, we make new vaccines every year for influenza?

Influenza is very smart and can change the way it looks very quickly, so if you are infected in one year, the next year the appearance of the virus can have changed so much, that your immune system cannot recognize that it is the same virus. Now people are trying to improve influenza vaccines, to try and teach your immune system also about how the virus could possibly change and be prepared for those viruses that changed their appearance.

After vaccination, the amount of antibodies, that are a part of your immune defence, are measured to check whether the influenza vaccination was successful. The amount of antibody produced can be determined by a technique called ELISA. After the lecture the students performed a slightly adjusted ELISA (since a normal one will take several hours), and got to see how results look like and how they are analysed.

- Language used (使用言語): English for the lecture, the experimental protocol was translated in Japanese by my colleague (as a hand-out) and he also explained about the conclusion of the

experiment in Japanese.

- Lecture format (講演形式):

◆Lecture time (講演時間) 120 (分), Q&A time (質疑応答時間) 5~10 (分)

◆Lecture style (ex.: used projector, conducted experiments)

(講演方法 (例: プロジェクター使用による講演、実験・実習の有無など))

I used a projector for the presentation about the Netherlands (25 min) and my research (30 min). After each presentation there was time for questions. Then the students performed the experiment, which in total took about 1 hour, during the experiment also questions could be asked.

◆Interpretation (ex.: assistance by accompanied person, provided Japanese explanation by yourself) (通訳 (例: 同行者によるサポート、講師本人による日本語説明))

Assistance by accompanying person and the English teacher at the High School

◆Name and title of accompanied person (同行者 職・氏名)

Dr. Akira Ainai

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

- Impressions and opinions from accompanied person (同行者の方から、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。):

私自身、今回の外国人研究者による英語での講義がどのようになるのか非常に興味がありました。実際、今回同行させて頂き Elly さんの講義を聴いている学生の姿を見て感じたことは、高校では学ぶことのできない内容の講義であり非常に興味を抱いているようでした。また、Elly さんの考案で模擬実験を行いました。十分な時間ではありませんでしたが、実際に学生が実験に使用する器具などに触れる機会を持てたことは、彼らにとって良い経験であったのではないかと思います。

学生間で英語の聞き取り能力により差があると思われるため、どれだけの学生が理解できたのかは分かりませんが、重要な部分に関しては英語の先生や私自身が説明を加えることで補助できたのではないかと思います。

吉田高校の先生の話によりますと、これまでも何度か JSPS の同企画により外国人研究者の方の講演があったようです。しかしながら、これまでは外国人研究員の方が一人で何回ケースが多かったようで、専門的な内容に関して学生への説明が非常に難しいことがあったようです。同じ分野の方が、通訳あるいは補助のために必ず同行できれば、高校生にとってもより分かりやすい講義になるのではないかと感じました。