

(For JSPS Fellow)

Form B-5

Date (日付)

17/02/2015 (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): Kishan Kumar Nyati (ID No. P13097)- Participating school (学校名): Fukui Prefectural Fujishima Senior High School- Date (実施日時): 30/01/2015 (Date/Month/Year: 日/月/年)- Lecture title (講演題目): (in English) Immunology of IL6 regulation(in Japanese) IL6 規制の免疫学

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

My presentation was divided into five parts. In the first part, I have introduced myself and my laboratory members along with that I gave a brief introduction about my current and past research Institutes and previous research theme. The second part includes explanation about my research in Japan that has been summarized below. Third part of my presentation described the life of a researcher and scientist by showing an interesting video. Fourth part includes explanation about the Science & research environment and about the famous scientists of India. Finally in the fifth part, I have summarized the Indian life including their culture, languages, tourist spots, entertainments, festival seasons, and many other things.

Major part of my lecture is being described here that includes my research in Japan. As my research field belongs to immune regulation so, first I tried to give a general idea about the immunology and human immune system. Immune system is the defense mechanism of our body to protect us from the microorganisms or any infecting particles. Most of the immune cells are located in the circulatory system of the body. Blood contains many types of cells majorly red blood cells, white blood cells and platelets. White blood cells contain many immune cells that kill the infecting microorganisms such as bacteria, viruses, fungi etc (known as antigen), thus protect our body from the infections. Our body's B cells, a type of white blood cell, produce antibodies that recognise these antigens and neutralize their effect. Regulation of the immune cells are very important, failing which results the development of various diseases. For example, in some cases these antibodies recognizes own body's cells and start to kill them, that results in developing some diseases. This condition is known as autoimmunity and disease develops from this condition refers as autoimmune disease. Rheumatoid arthritis is one of the common autoimmune disease throughout the world. The drug for this disease (Tocilizumab) was successfully discovered by my professor Kishimoto in the 1980's. Since the drug discovery, our laboratory has been working on the different aspects of IL6 regulation. Our recent work is extensively focused on the transcriptional regulation of IL6, the mechanism of overproduction of IL6 in autoimmune diseases and its

post-transcriptional regulation. Previously, Regnase-1 was discovered from our research center that was shown to degrade the IL6 mRNA, and finally helps to suppress the autoimmune disease. Arid5a was recently discovered by our group that helps to maintain the IL6 level in the body and counteracts with regnase-1 function. Now, my research work is focused on how do these molecules counteracts with each other, what are the regulatory mechanisms work and how they help to maintain the levels of IL6 at post-transcriptional level during some autoimmune diseases? Beside above, I have given a short presentation about India. The students were given an idea about the Indian culture, languages, sports, costumes, festivals, entertainment, Indian Science and research, some national symbols and famous personalities.

- Language used (使用言語): English (oral), English and 日本語 (PowerPoint slides)

- Lecture format (講演形式):

◆Lecture time (講演時間) 80 min (分), Q&A time (質疑応答時間) 15 min (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))

Power Point presentation via projector. Shown students to extract the DNA from Liver cells as an experiment and given them to do by themselves.

◆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 accompanied person

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

Dr. Barry Ripley, Associate Professor

◆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。):

I greatly enjoyed the experience of participating in JSPS Science Dialogue at Fujishima High School, Fukui. I believe that the students appreciated Dr. Nyati's lecture and gained new scientific knowledge from his excellent presentation. Furthermore there was incredible enthusiasm for undertaking the experiment to extract DNA from liver cells. At the end many students came to Dr. Nyati and myself to express their appreciation for the science event. So I believe that the aims of Science Dialogue were clearly met.