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※弊会記入欄

Form B-2
(FY2022)
Must be typed

Date (日付)
28/11/2022 (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): Mahmoud AbuBakr Ahmed YOUNIS
(ID No. P21105)

- Name and title of the lecture assistant (講義補助者の職・氏名)
None

- Participating school (学校名): 開成中等教育学校

- Date (実施日時): 25/11/2022 (Date/Month/Year: 日/月/年)

- Lecture title (講義題目):
Gene Therapy for the Future of Medicine

- 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) 40 min (分), Q&A time (質疑応答時間) 10 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))

Used projector

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

The recent advancements in medicine have enabled the discovery of the causes of diseases on the genetic level, which can be through the increased expression of undesired (harmful) genes or the insufficient expression of the normal (healthy) genes. This has led to the birth of the science of Gene Therapy in which the diseases can be cured by controlling such genes. A recent example that can be seen in our life is vaccines against the novel corona virus (COVID-19) that use the same technology. However, there are further research on other diseases such as cancer, liver diseases, and hereditary disorders. Genetic materials can be easily destroyed inside the human body, so they need to be incorporated inside special carriers that are called drug delivery systems (DDS) for their protection until they reach their target. These delivery systems should be very small to penetrate through the biological barriers and cellular membranes inside the body, so they are called nanoparticles or nanomedicines (1 nanometer=1/1000000000 meter).

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In the current lecture, we discussed some basics of genes and how they can cause diseases, some examples of gene therapies like COVID-19 vaccines, and examples of our work in Hokkaido University for the treatment of cancer.

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

We discussed additional basics on the differences between Medicine and Pharmacy, Science and its way of critical thinking, how drugs are being discovered and tested, advices to students who are interested in studying Medicine or Pharmacy in their future careers.

- 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。):

We did not need a lecture assistant. The school's staff were very helpful and cooperative. We distributed the Abstract and glossary of keywords in advance, the student were well-prepared and the staff helped to translate some students' detailed questions.