

様式 A-1
(FY2023)

R6 年 4 月 3 日

サイエンス・ダイアログ 実施報告書

1. 学校名・実施責任者氏名: 北海道登別明日中等教育学校・小林 夢仁
2. 講師氏名: Dr.Shimaa Abd el-salam EL-SAYED
3. 講義補助者氏名: 李航 様
4. 実施日時: R6 年 3 月 12 日 (火) 10:50-12:40
5. 参加生徒: 1 年生 65 人、 2 年生 人、 年生 人 (合計 65 人)
備考: (例: 理数科の生徒)
6. 講義題目: 犬バベシア症
7. 講義概要: 講義
8. 講義形式:
☒ 対面 ・ ☐ オンライン (どちらか選択ください。)
1) 講義時間 80 分 質疑応答時間 20 分
2) 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)
プロジェクター使用による講義、実験
3) 事前学習
有 (どちらかに○をしてください。)
使用教材 本校担当が CDC よりダウンロードした論文資料
9. その他特筆すべき事項:

Form B-2
(FY2023)
Must be typed

Date (日付)
13-3-2024
(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): Shimaa Abd El-Salam El-Sayed
(ID No. _____)

- Name and title of the accompanying person (講義補助者の職・氏名)

博士 李航

- Participating school (学校名): _ Hokkaido Noboribetsu Akebi Secondary High School

- Date(実施日時): 12-3-2024 (Date/Month/Year: 日/月/年)

- Lecture title (講義題目):

Ticks and ticks borne diseases

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

(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))

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

Ticks are a small ectoparasites, vary in colour (reddish to dark brown or black).
It can Climb up plants or/and walk on the ground and Latch on to a passing animal
host by using hooks on their legs. They preferred shady and humid woodland
habitats and become most active from spring to autumn but present all year round.
Each tick pass with 4 main life stages start from the egg layed by the female adult
tick .The egg hatched to larvae which grow to nymph followed by the adult stage.
They can easily recognize their host by sensors on their legs that detect carbon
dioxide get off the animal and human host. Three major species of ticks distribute
in Hokkaido, Japan, *Haemaphysalis megaspinosa* , *Ixodes ovatus* , and *Ixodes
persulcatus* . They may carry different pathogens, *rickettsia*, *bacteria*, *viruses* and
protozoa. The common TBDs in most of Hokkaido includes Severe Fever with
Thrombocytopenia Syndrome (virus), Japanese Spotted Fever (virus), Lyme

disease (bacteria) and Babesiosis (parasite). Lyme disease is caused by the bacterium *Borrelia*. Larval and nymphal ticks can become infected with Lyme disease bacteria when feeding on an infected wildlife host, usually a rodent. The bacteria are passed along to the next life stage. Nymphs or adult females can then spread the bacteria during their next blood meal. In most cases, a tick must be attached for 36 to 48 hours or more before the Lyme disease bacterium can be transmitted. If you remove a tick quickly (within 24 hours), this can greatly reduce the chances of getting Lyme disease. Lyme disease in Japan is caused mainly by *Borrelia garinii* and the number of reported cases is highest in July and almost absent in winter seasons. Babesiosis is a disease caused by parasite *Babesia*. There are more than 100 species. It is distributed all over the world where there is tick available. Carried by the hard-bodied *Ixodes* tick and more severe in patients who are immunosuppressed, splenectomized, and/or elderly. It infects domestic and wild animals all over the world. From these animals is dog which can be infected by canine babesiosis. Two hosts are required for complete life cycle of canine babesiosis. The first host is a tick, and *Babesia* multiplies in the tick's intestine to form sporozoites, which enter the dog's body during a tick bite. In dogs, sporozoites invade red blood cells and multiply to form one, two, or four merozoites. Some of these merozoites can be converted into male and female gametes and transferred back into the tick. It can be detected in red blood cells by microscopy and has the characteristic shape of a Maltese four-cross. It can be controlled by using neck collar, spot on repellent to prevent tick bites, however several challenges still facing the control of tick borne diseases the issue that required developing a more effective strategy for *Babesia* prevention. In this regards Nanoparticle (NP)-based delivery systems, are gaining more attention in the recent years, however still using the nanoparticles in the control of tick borne diseases under the extensive studies until now.

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

- Impressions and comments from the accompanying person (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。):

学生たちは優しく、話を聞く能力があり、私たちの交流に非常に協力的でした。みんなと過ごした時間は本当に楽しかったです。