

Form B-2
(FY2022)
Must be typed

Date (日付)
29 September 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): Nurmila Sari (ID No.P21404)
- Name and title of the lecture assistant (講義補助者の職・氏名)
Ms. Satoka Maeda
- Participating school (学校名): Yamanashi Prefectural Hikawa High School (Yamanashi-city)
- Date (実施日時): 22 September 2022 (Date/Month/Year: 日/月/年)
- Lecture title (講義題目):
STUDIES ON DRUG DISCOVERY FOR UNTREATED 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) min (分), Q&A time (質疑応答時間) 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))
Projector

- Lecture summary (講義概要): Please summarize your lecture within 200-500 words.
Living in Indonesia, a home for vast biological resources of medicine, I am particularly interested in drug discovery. It is essential to keep finding innovative drugs that are safer, cheaper, and easier to access that qualify as presenting unmet medical needs. Natural products and their derivatives are a valuable source of clinical medicine for humans. To find a new drug candidate, phytochemical analysis and characterization of compound/s derived from natural product of plants are required. Biotechnology approach may be utilized to optimize the production of drug candidates. The goal of drug discovery research is therapeutic application. By performing *in vitro* and *in vivo* studies on drug candidates, efficacy and potential risks before human trials must be performed. Nowadays, heart failure and mitochondrial diseases have become clinical problems that need to be solved. Therefore, I think it is important to target these potentially life-threatening diseases. I investigated the inhibitory effect of natural products derived from Jamu, an Indonesian traditional herbal medicine, on two key processes in the progression of heart failure: hypertrophy and fibrosis, both *in vitro* and *in vivo*. This study provides important information and scientific support for the efficacy of natural products (Cacao bean polyphenols, Zerumbone, and Alpha

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mangostin) suggesting that Jamu may be an important source of compounds for fundamental drug discovery, particularly for heart failure prevention. However, these findings must be further confirmed by clinical studies in humans. Compared with conventional disease modeling (animal models and immortalized cell systems), the complicated genetic signature of humans can be obtained using iPSC disease modeling. I think generating medicine using iPSC may be a solution to overcome drug development obstacles such as the time-consuming nature and high costs of clinical testing.

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

- 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。):

She helped the students to understand more about my research. She prepared this lecturer well by reading all my publications that related. We also have some discussion before the lecturer.