

This report should be submitted within 2 weeks after you return to Japan. Please do not change the formatting

(Abroad • **Domestic**) Internship report form (Student)

2019/11/15 (Year/Month/Day)

Name	Dagvajamts Badrakh
Laboratory	Theriogenology
Year (Grade)	DC 4
Internship institution	Laboratory of Reproductive Physiology and Biotechnology, Department of Bioresource Sciences, Faculty of Agriculture, Kyushu University
Internship period	Internship period: 11/06/2019 - 11/13/2019 (Departure Date from Sapporo: 11/06/2019, Arrival Date in Sapporo: 11/14/2019)
Purpose	The purpose of my internship was to broaden my knowledge about animal reproductive physiology covering from oocyte maturation, fertilization, and early development through implantation and placental development and learn analysis and detection of RNA in live tissues, culture of uterine endometrial cell. During the internship, I built a good relationship with members of the host laboratory for future collaborations

- The reason why you chose this institute

Our research team focused to study beneficial functions of uterine related with embryo development to improve fertility in dairy cattle. The host laboratory (Dr. Yamauchi) analyses function of genes on the uterus expressed during oocyte maturation and early development embryo using RNA interference method. Furthermore, they clarify the complex implantation and placental development and analyze the functions are being developed from and placental derived cells. For the reason, the laboratory will be an ideal place for having my internship, so that I can both deepen my understanding on my current research topic as well as prepare my future research as bovine reproduction.

- Result of the activity (about 800 words、 provide photos, tables and figures that clearly show the activities during the period)

During the internship, I was primarily trained procedure of the uterine cell culture and gene analysis of uterine tissue.

1. Culture uterine tissue cells

They collected the bovine uterus from the slaughter house twice a week. I attend procedure as uterine tissue preparation, isolation and culture of uterine tissue cell (bovine epithelial cells and stromal cells), passage of cell culture, cell preservation and analyses.

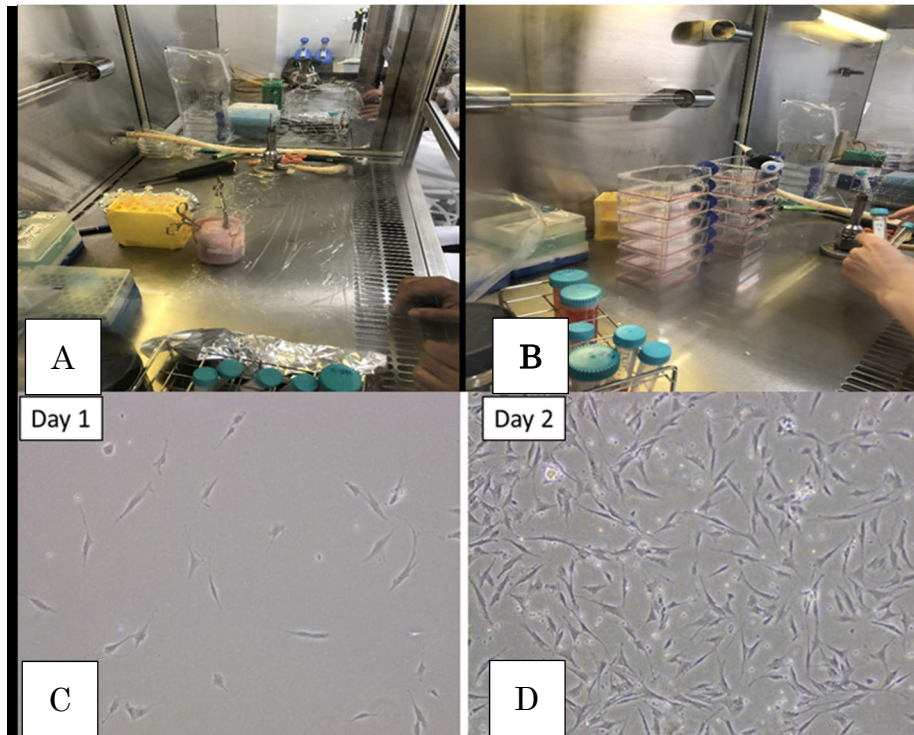


Fig 1. Preparation and culture of uterine tissue cells. A: Collecting of endometrial tissue of intercaruncle and caruncle regions. B: Culture tissue cells in the flasks with Dulbecco's Modified Eagle Medium (DMEM). C: and D: Resulting cultures on Day 1 and 2, respectively.

2. Analysis gene of uterine cells

I performed a practice of fluorescent western blotting that obtain the heparin-binding epidermal growth factor (HB EGF) in uterine tissue cells with graduate students. I also practiced reverse transcription polymerase chain reaction (RT- PCR) and quantitative reverse transcription polymerase chain reaction (RT- qPCR) for analysis gene of uterine cells.

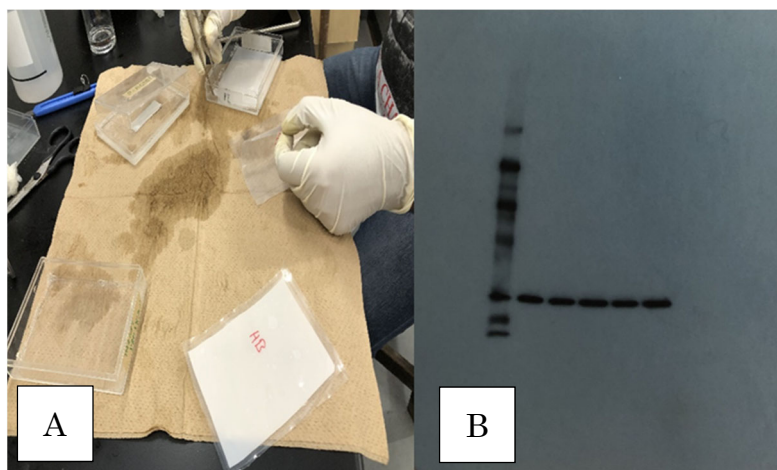


Fig 2. Fluorescent western blotting. A: Procedure of blotting by skim milk solution. B: An example of Western blotting results.

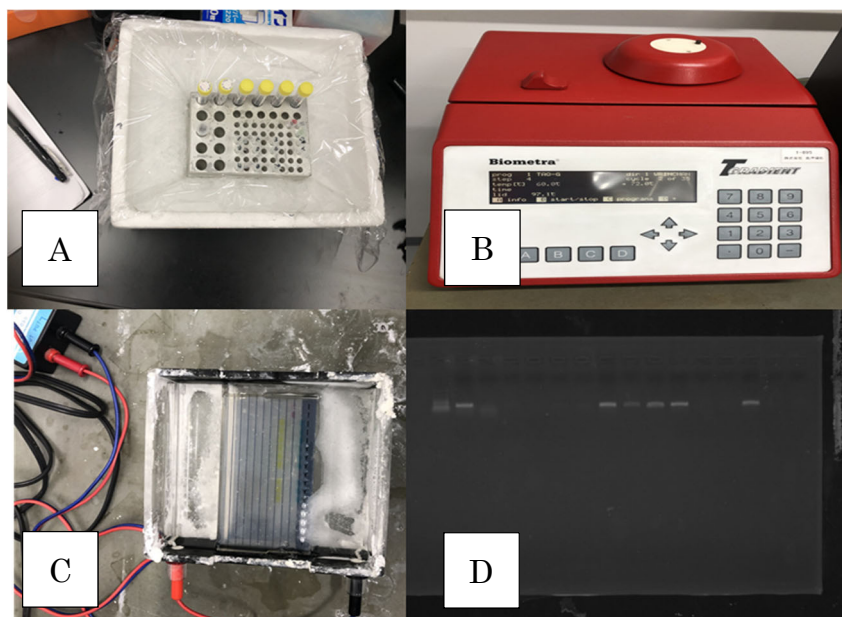


Fig 3. Reverse transcription polymerase chain reaction (RT- PCR). A: Preparation of tissue sample. B: DNA amplification in the tissue sample. C: Procedure of agarose gel electrophoresis. D: Results of DNA separation in tissue sample.

3. Other activities

I obtained knowledge of our research methodologies such as gel zymography, preparation of cDNA and so on. In addition, I participated students with an in vitro study of cat oocyte growth and maturation in vitro. During these internship I worked closely with all undergraduate and graduate students to academic and research activities at the laboratory and I attended the research seminar and the journal clubs of our laboratory. Host Prof Yamauchi talked or discussed the end of everyday practice to me and shared his experience and knowledge of academic and research.

- What do you think the positive impact of the activity will have on your further career path?

I expand the knowledge and experience of my research field. I got useful advice and important technique support by host Prof Yamauchi and his team members, for my future research and career experiences.

- Advice for your junior fellows

When choosing an institute for the internship, you think what is important in your research and career path. You should clearly describe expected achievements of internship and discuss this plan with host supervisor.

Approval of supervisor	Institution • Official title • Name Seiji Katagiri
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- ※1 Send the electronic file to the Leading School section, International Affairs Office
- ※2 Attach a copy certificate of the content of internship activity that is prepared by the counterpart at the internship institution (any form with a signature of the counterpart).
- ※3 The Steering Committee of the Leading Program will first confirm the content of this report and report will be forwarded to the Educational Affairs Committee for credits evaluation.

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